

# RF Exposure Lab

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## CERTIFICATE OF COMPLIANCE SAR EVALUATION

HP Inc.  
3390 East Harmony Road  
Fort Collins, CO 80528

Dates of Test:  
Test Report Number:

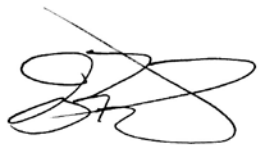
July 1-9, 2019  
SAR.20190702  
Revision C

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC ID:                      | B94TNQ225WWPT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Model(s):                    | TPN-Q225                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Test Sample:                 | Engineering Unit Same as Production                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Serial Number:               | Eng 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Equipment Type:              | Convertible Notebook                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Classification:              | Portable Transmitter Next to Body                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| TX Frequency Range:          | 699 – 716 MHz, 777 – 787 MHz, 788 – 798 MHz, 814 – 849 MHz; 1710 – 1780 MHz, 1850 – 1915 MHz, 2305 – 2315 MHz, 2496 – 2690 MHz; 2412 – 2462 MHz, 5150 – 5350 MHz, 5500 – 5700 MHz, 5745 – 5825 MHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Frequency Tolerance:         | ± 2.5 ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Maximum RF Output:           | 750 MHz (LTE) – 24.0 dBm, 850 MHz (WCDMA) – 24.5 dBm, 850 MHz (LTE) – 24.0 dBm, 1750 MHz (WCDMA) – 24.5 dBm, 1750 MHz (LTE) – 24.0 dBm, 1900 MHz (WCDMA) – 24.5 dBm, 1900 MHz (LTE) – 24.0 dBm, 2300 MHz (LTE) – 24.0 dBm; 2600 MHz (LTE) – 24.0 dBm; 2450 MHz (b) – 20.50 dB, 2450 MHz (g) – 20.50 dB, 2450 MHz (n20) – 20.50 dB, 2450 MHz (n40) – 20.00 dB, 5250 MHz (a) – 20.50 dB, 5250 MHz (n20) – 20.50 dB, 5250 MHz (n40) – 20.00 dB, 5250 MHz (ac80) – 20.00 dB, 5250 MHz (ac160) – 20.00 dB, 5600 MHz (a) – 20.50 dB, 5600 MHz (n20) – 20.50 dB, 5600 MHz (n40) – 20.00 dB, 5600 MHz (ac80) – 20.00 dB, 5600 MHz (ac160) – 20.00 dB, 5800 MHz (a) – 20.50 dB, 5800 MHz (n20) – 20.50 dB, 5800 MHz (n40) – 20.00 dB, 5800 MHz (ac80) – 20.00 dB Conducted |
| Signal Modulation:           | WCDMA, QPSK, 16QAM, DSSS, OFDM, GFSK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Antenna Type:                | PIFA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Application Type:            | Certification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| FCC Rule Parts:              | Part 2, 15C, 15E, 22, 24, 27                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| KDB Test Methodology:        | KDB 447498 D01 v06, KDB 248227 v02r02, KDB 616217 D04 v01r02, KDB 941225 D01 v03r01 & D05 v02r05                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Max. Stand Alone SAR Value:  | 1.42 W/kg Reported                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Max. Simultaneous SAR Value: | 0.04 Separation Ratio                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Separation Distance:         | 0 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

This wireless mobile and/or portable device has been shown to be compliant for localized specific absorption rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and IEC 62209-2:2010 (See test report).

I attest to the accuracy of the data. All measurements were performed by myself or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RF Exposure Lab, LLC certifies that no party to this application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).



Jay M. Moulton  
Vice President



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| Comment/Revision                                           | Date               |
|------------------------------------------------------------|--------------------|
| Original Release                                           | July 12, 2019      |
| Revision A – Correct Table Title page 8                    | July 25, 2019      |
| Revision B – Correct typo in Data Summary Sheets for Power | August 6, 2019     |
| Revision C – Correct FCC responses                         | September 13, 2019 |
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## 1. Preface

The HP model TPN-Q225 convertible PC includes the Time Averaging SAR (TAS) concept. The TAS algorithm is implemented in the Intel XMM 7560 Cellular Modem, which is incorporated in the Fibocom M2 L860-GL cellular module (FCC ID: ZMOL860GL).

The implementation details and TAS operating characteristics are described in a separated document which is held in the confidential files within the filing [1]. The validation of algorithm operations is performed by Intel Corporation according to the range of commonly used accessible control parameters used for typical host products. The validation results are reported in document [2].

The FCC SAR limit is a time averaged exposure metric. At host level, the normally required SAR test procedures are applicable for SAR compliance testing at upper-threshold values of the algorithm, which is the maximum output power level for continuous time-averaging operations TAS algorithm enforces. The reliability of this has been demonstrated by results in the Algorithm Validation Test Report [2].

The HP model TPN-Q225 supports simultaneous transmission of WWAN, BT and WLAN. The TAS algorithm is only applied to WWAN cellular module.

The SAR evaluation of WWAN, WLAN / BT is performed in this report as well as the RF exposure assessment for simultaneous transmission of WWAN, WLAN and BT.

[1] 190214\_TAS\_Operational\_Report\_XMM7560\_KDB\_V01

[2] 171110-01.TR02 - TAS\_Validation\_report\_Rev00

## 2. Introduction

This measurement report shows compliance of the HP Inc. Model TPN-Q225 FCC ID: B94TNQ225WWPT with FCC Part 2, 1093, ET Docket 93-62 Rules for mobile and portable devices. The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on August 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC regulated portable devices. [1], [6]

The test results recorded herein are based on a single type test of HP Inc. Model TPN-Q225 and therefore apply only to the tested sample.

The test procedures and limits, as described in ANSI C95.1 – 1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [2], ANSI C95.3 – 2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields [3], IEEE Std.1528 – 2013 Recommended Practice [4], and Industry Canada Safety Code 6 Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz were employed.

The following table indicates all the wireless technologies operating in the TPN-Q225 Convertible Notebook. The table also shows the tolerance for the power level for each mode.

| Band                            | Power Setting | Technology        | Class | Nominal Power dBm | Tolerance dBm | Lower Tolerance dBm | Upper Tolerance dBm |
|---------------------------------|---------------|-------------------|-------|-------------------|---------------|---------------------|---------------------|
| Band 12 – 750 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 13 – 750 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 14 – 750 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 17 – 750 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 5 – 835 MHz                | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 26 – 835 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 4 – 1750 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 66 – 1750 MHz              | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 2 – 1900 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 25 – 1900 MHz              | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 30 – 2300 MHz              | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 7 – 2500 MHz               | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 38 – 2500 MHz              | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 41 – 2600 MHz              | Full          | LTE               | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 5 – 850 MHz                | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 4 – 1750 MHz               | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 2 – 1900 MHz               | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 12 – 750 MHz               | Notebook      | LTE               | 3     | 22.0              | ±1.0          | 21.0                | 23.0                |
| Band 17 – 750 MHz               | Notebook      | LTE               | 3     | 22.0              | ±1.0          | 21.0                | 23.0                |
| Band 4 – 1750 MHz               | Notebook      | LTE               | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 66 – 1750 MHz              | Notebook      | LTE               | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 2 – 1900 MHz               | Notebook      | LTE               | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 25 – 1900 MHz              | Notebook      | LTE               | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 30 – 2300 MHz              | Notebook      | LTE               | 3     | 17.5              | ±1.0          | 16.5                | 18.5                |
| Band 7 – 2500 MHz               | Notebook      | LTE               | 3     | 16.0              | ±1.0          | 15.0                | 17.0                |
| Band 38 – 2500 MHz              | Notebook      | LTE               | 3     | 18.0              | ±1.0          | 17.0                | 19.0                |
| Band 41 – 2600 MHz              | Notebook      | LTE               | 3     | 18.0              | ±1.0          | 17.0                | 19.0                |
| Band 4 – 1750 MHz               | Notebook      | WCDMA/HSPA        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 2 – 1900 MHz               | Notebook      | WCDMA/HSPA        | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 12 – 750 MHz               | Tablet        | LTE               | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 13 – 750 MHz               | Tablet        | LTE               | 3     | 20.0              | ±1.0          | 19.0                | 21.0                |
| Band 14 – 750 MHz               | Tablet        | LTE               | 3     | 20.0              | ±1.0          | 19.0                | 21.0                |
| Band 17 – 750 MHz               | Tablet        | LTE               | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 5 – 835 MHz                | Tablet        | LTE               | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 26 – 835 MHz               | Tablet        | LTE               | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 4 – 1750 MHz               | Tablet        | LTE               | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 66 – 1750 MHz              | Tablet        | LTE               | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 2 – 1900 MHz               | Tablet        | LTE               | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| Band 25 – 1900 MHz              | Tablet        | LTE               | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| Band 30 – 2300 MHz              | Tablet        | LTE               | 3     | 13.0              | ±1.0          | 12.0                | 14.0                |
| Band 7 – 2500 MHz               | Tablet        | LTE               | 3     | 13.5              | ±1.0          | 12.5                | 14.5                |
| Band 38 – 2500 MHz              | Tablet        | LTE               | 3     | 15.5              | ±1.0          | 14.5                | 16.5                |
| Band 41 – 2600 MHz              | Tablet        | LTE               | 3     | 15.5              | ±1.0          | 14.5                | 16.5                |
| Band 5 – 850 MHz                | Tablet        | WCDMA/HSPA        | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 4 – 1750 MHz               | Tablet        | WCDMA/HSPA        | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 2 – 1900 MHz               | Tablet        | WCDMA/HSPA        | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| WLAN – 2.4 GHz                  | Notebook      | 802.11bgn20       | N/A   | 19.5              | ±1.5          | 18.0                | 21.0                |
| WLAN – 2.4 GHz                  | Notebook      | 802.11n40ac       | N/A   | 19.0              | ±1.5          | 17.5                | 20.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Notebook      | 802.11an20        | N/A   | 19.5              | ±1.5          | 18.0                | 21.0                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Notebook      | 802.11n40ac80/160 | N/A   | 19.0              | ±1.5          | 17.5                | 20.5                |
| WLAN – 2.4 GHz                  | Tablet        | 802.11bgn20       | N/A   | 16.5              | ±1.5          | 15.0                | 18.0                |
| WLAN – 2.4 GHz                  | Tablet        | 802.11n40ac       | N/A   | 15.0              | ±1.5          | 13.5                | 16.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Tablet        | 802.11an20        | N/A   | 14.0              | ±1.5          | 12.5                | 15.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Tablet        | 802.11n40ac80/160 | N/A   | 13.5              | ±1.5          | 12.0                | 15.0                |
| BT – BDR                        | N/A           | Bluetooth         | N/A   | 10.0              | ±1.5          | 8.5                 | 11.5                |
| BT – EDR2 & EDR3                | N/A           | Bluetooth         | N/A   | 9.5               | ±1.5          | 8.0                 | 11.0                |
| BT – BLE                        | N/A           | Bluetooth         | N/A   | 7.5               | ±1.5          | 6.0                 | 9.0                 |

As mentioned in the preface, the SAR compliance testing is performed at upper-threshold values of the algorithm, which is the maximum output power level for continuous time-averaging operations TAS algorithm enforces.

In TAS operation, the control parameters including the upper-threshold value are stored in NVM. They are inaccessible to the normal users and no other interface is available for changing these control parameters.

The table below shows the upper-threshold values used as continuous power for SAR testing (noted as Reduced Power in the previous table), as well as the different TAS parameters defined in [1] and [2] to be embedded in the host:

#### Notebook Mode

| Mode    | Bands                         | Nominal Power (dBm) | Upper Threshold (dBm) | Lower Threshold (dBm) | DPR_ON Power (dBm) |
|---------|-------------------------------|---------------------|-----------------------|-----------------------|--------------------|
| WCDMA   | FDD II (1850.0 – 1910.0 MHz)  | 23.5                | 19                    | 18                    | 17                 |
|         | FDD IV (1710.0 – 1755.0 MHz)  | 23.5                | 19.5                  | 18.5                  | 17.5               |
|         | FDD V (824.0 – 849.0 MHz)     | 23.5                | 23.5                  | 22.5                  | 21.5               |
| LTE FDD | Band 2 (1850.0 – 1910.0 MHz)  | 23                  | 19                    | 18                    | 17                 |
|         | Band 4 (1710.0 – 1755.0 MHz)  | 23                  | 19.5                  | 18.5                  | 17.5               |
|         | Band 5 (824.0 – 849.0 MHz)    | 23                  | 23                    | 22                    | 21                 |
|         | Band 7 (2500.0 – 2570.0 MHz)  | 23                  | 16                    | 15                    | 14                 |
|         | Band 12 (699.0 – 716.0 MHz)   | 23                  | 22                    | 21                    | 20                 |
|         | Band 13 (777.0 – 787.0 MHz)   | 23                  | 23                    | 22                    | 21                 |
|         | Band 14 (788.0 – 798.0 MHz)   | 23                  | 23                    | 22                    | 21                 |
|         | Band 17 (704.0 – 716.0 MHz)   | 23                  | 22                    | 21                    | 20                 |
|         | Band 25 (1850.0 – 1915.0 MHz) | 23                  | 19                    | 18                    | 17                 |
|         | Band 26 (814.0 – 849.0 MHz)   | 23                  | 23                    | 22                    | 21                 |
|         | Band 30 (2305.0 – 2315.0 MHz) | 23                  | 17.5                  | 16.5                  | 15.5               |
|         | Band 66 (1710.0 – 1780.0 MHz) | 23                  | 19.5                  | 18.5                  | 17.5               |
| LTE TDD | Band 38 (2570.0 – 2620.0 MHz) | 23                  | 18                    | 17                    | 16                 |
|         | Band 41 (2496.0 – 2690.0 MHz) | 23                  | 18                    | 17                    | 16                 |

SAR compliance is demonstrated with the *Reported SAR*:

*Reported SAR = measured 1gSAR @ Reported Upper Threshold < FCC SAR limit*

*Where, Reported Upper Threshold = Upper Threshold (stored in NVM) + Tolerance (1dB).*

### Tablet Mode

| Mode    | Bands                         | Nominal Power (dBm) | Upper Threshold (dBm) | Lower Threshold (dBm) | DPR_ON Power (dBm) |
|---------|-------------------------------|---------------------|-----------------------|-----------------------|--------------------|
| WCDMA   | FDD II (1850.0 – 1910.0 MHz)  | 23.5                | 14.5                  | 13.5                  | 12.5               |
|         | FDD IV (1710.0 – 1755.0 MHz)  | 23.5                | 15                    | 14                    | 13                 |
|         | FDD V (824.0 – 849.0 MHz)     | 23.5                | 21                    | 20                    | 19                 |
| LTE FDD | Band 2 (1850.0 – 1910.0 MHz)  | 23                  | 14.5                  | 13.5                  | 12.5               |
|         | Band 4 (1710.0 – 1755.0 MHz)  | 23                  | 15                    | 14                    | 13                 |
|         | Band 5 (824.0 – 849.0 MHz)    | 23                  | 21                    | 20                    | 19                 |
|         | Band 7 (2500.0 – 2570.0 MHz)  | 23                  | 13.5                  | 12.5                  | 11.5               |
|         | Band 12 (699.0 – 716.0 MHz)   | 23                  | 19.5                  | 18.5                  | 17.5               |
|         | Band 13 (777.0 – 787.0 MHz)   | 23                  | 20                    | 19                    | 18                 |
|         | Band 14 (788.0 – 798.0 MHz)   | 23                  | 20                    | 19                    | 18                 |
|         | Band 17 (704.0 – 716.0 MHz)   | 23                  | 19.5                  | 18.5                  | 17.5               |
|         | Band 25 (1850.0 – 1915.0 MHz) | 23                  | 14.5                  | 13.5                  | 12.5               |
|         | Band 26 (814.0 – 849.0 MHz)   | 23                  | 21                    | 20                    | 19                 |
|         | Band 30 (2305.0 – 2315.0 MHz) | 23                  | 13                    | 12                    | 11                 |
|         | Band 66 (1710.0 – 1780.0 MHz) | 23                  | 15                    | 14                    | 13                 |
| LTE TDD | Band 38 (2570.0 – 2620.0 MHz) | 23                  | 15.5                  | 14.5                  | 13.5               |
|         | Band 41 (2496.0 – 2690.0 MHz) | 23                  | 15.5                  | 14.5                  | 13.5               |

SAR compliance is demonstrated with the *Reported SAR*:

*Reported SAR = measured 1gSAR @ Reported Upper Threshold < FCC SAR limit*

*Where, Reported Upper Threshold = Upper Threshold (stored in NVM) + Tolerance (1dB).*

## SAR Definition [5]

Specific Absorption Rate is defined as the time derivative (rate) of the incremental energy ( $dW$ ) absorbed by (dissipated in) an incremental mass ( $dm$ ) contained in a volume element ( $dV$ ) of a given density ( $\rho$ ).

$$SAR = \frac{d}{dt} \left( \frac{dW}{dm} \right) = \frac{d}{dt} \left( \frac{dW}{\rho dV} \right)$$

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

where:

$\sigma$  = conductivity of the tissue (S/m)

$\rho$  = mass density of the tissue (kg/m<sup>3</sup>)

$E$  = rms electric field strength (V/m)

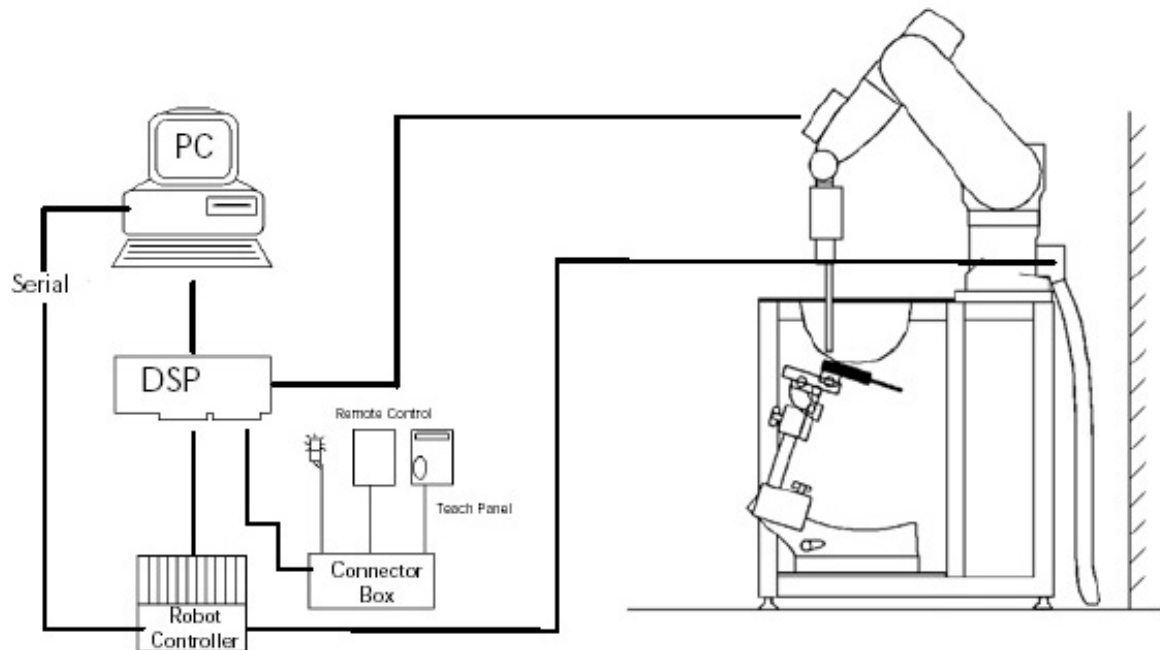
### 3. SAR Measurement Setup

#### Robotic System

These measurements are performed using the DASY52 automated dosimetric assessment system. The DASY52 is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland and consists of high precision robotics system (Staubli), robot controller, Intel Core2 computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Fig. 2.1).

#### System Hardware

A cell controller system contains the power supply, robot controller teach pendant (Joystick), and a remote control used to drive the robot motors. The PC consists of the HP Intel Core2 computer with Windows XP system and SAR Measurement Software DASY52, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.



**Figure 2.1 SAR Measurement System Setup**

## System Electronics

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

## Probe Measurement System

The SAR measurements were conducted with the dosimetric probe EX3DV4, designed in the classical triangular configuration (see Fig. 2.2) and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi fiber line ending at the front of the probe tip. (see Fig. 2.3) It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY52 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped at reaching the maximum.



**DAE System**

**Probe Specifications**

**Calibration:** In air from 10 MHz to 6.0 GHz  
In brain and muscle simulating tissue at Frequencies of 450 MHz, 835 MHz, 1750 MHz, 1900 MHz, 2450 MHz, 2600 MHz, 3500 MHz, 5200 MHz, 5300 MHz, 5600 MHz, 5800 MHz

**Frequency:** 10 MHz to 6 GHz

**Linearity:**  $\pm 0.2\text{dB}$  (30 MHz to 6 GHz)

**Dynamic:** 10 mW/kg to 100 W/kg

**Range:** Linearity:  $\pm 0.2\text{dB}$

**Dimensions:** Overall length: 330 mm

**Tip length:** 20 mm

**Body diameter:** 12 mm

**Tip diameter:** 2.5 mm

**Distance from probe tip to sensor center:** 1 mm

**Application:** SAR Dosimetry Testing  
Compliance tests of wireless device

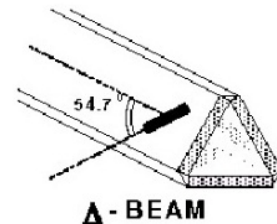


Figure 2.2 Triangular Probe Configurations



Figure 2.3 Probe Thick-Film Technique

## Probe Calibration Process

### Dosimetric Assessment Procedure

Each probe is calibrated according to a dosimetric assessment procedure described in with accuracy better than +/- 10%. The spherical isotropy was evaluated with the procedure described in and found to be better than +/-0.25dB. The sensitivity parameters (Norm X, Norm Y, Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe is tested.

### Free Space Assessment

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a waveguide above 1GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm<sup>2</sup>.

### Temperature Assessment \*

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium, correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor based temperature probe is used in conjunction with the E-field probe

$$SAR = C \frac{\Delta T}{\Delta t}$$

where:

$\Delta t$  = exposure time (30 seconds),

$C$  = heat capacity of tissue (brain or muscle),

$\Delta T$  = temperature increase due to RF exposure.

$$SAR = \frac{|E|^2 \cdot \sigma}{\rho}$$

where:

$\sigma$  = simulated tissue conductivity,

$\rho$  = Tissue density (1.25 g/cm<sup>3</sup> for brain tissue)

SAR is proportional to  $\Delta T / \Delta t$ , the initial rate of tissue heating, before thermal diffusion takes place.

Now it's possible to quantify the electric field in the simulated tissue by equating the thermally derived SAR to the E- field;

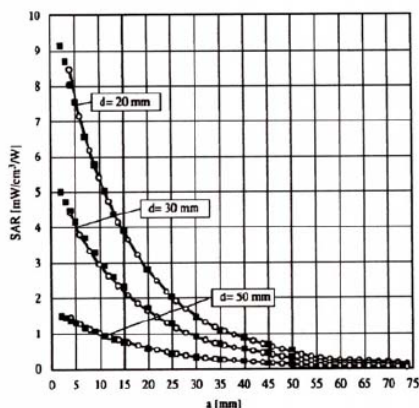


Figure 2.4 E-Field and Temperature Measurements at 900MHz

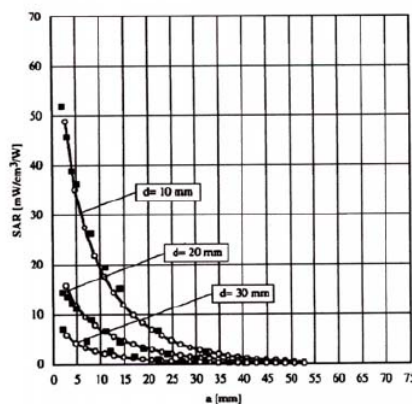


Figure 2.5 E-Field and Temperature Measurements at 1800MHz

## Data Extrapolation

The DASY52 software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given like below;

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with  $V_i$  = compensated signal of channel i (i=x,y,z)  
 $U_i$  = input signal of channel i (i=x,y,z)  
 $cf$  = crest factor of exciting field (DASY parameter)  
 $dcp_i$  = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

with  $V_i$  = compensated signal of channel i (i = x,y,z)  
 $Norm_i$  = sensor sensitivity of channel i (i = x,y,z)  
 $\mu V/(V/m)^2$  for E-field probes  
 $ConvF$  = sensitivity of enhancement in solution  
 $E_i$  = electric field strength of channel i in V/m

The RSS value of the field components gives the total field strength (Hermetian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with  $SAR$  = local specific absorption rate in W/g  
 $E_{tot}$  = total field strength in V/m  
 $\sigma$  = conductivity in [mho/m] or [Siemens/m]  
 $\rho$  = equivalent tissue density in g/cm<sup>3</sup>

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{free} = \frac{E_{tot}^2}{3770}$$

with  $P_{pwe}$  = equivalent power density of a plane wave in W/cm<sup>2</sup>  
 $E_{tot}$  = total electric field strength in V/m

## Scanning procedure

- The DASY installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.
- The „reference“ and „drift“ measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT's output power and should vary max. +/- 5 %.
- The highest integrated SAR value is the main concern in compliance test applications. These values can mostly be found at the inner surface of the phantom and cannot be measured directly due to the sensor offset in the probe. To extrapolate the surface values, the measurement distances to the surface must be known accurately. A distance error of 0.5mm could produce SAR errors of 6% at 1800 MHz. Using predefined locations for measurements is not accurate enough. Any shift of the phantom (e.g., slight deformations after filling it with liquid) would produce high uncertainties. For an automatic and accurate detection of the phantom surface, the DASY5 system uses the mechanical surface detection. The detection is always at touch, but the probe will move backward from the surface the indicated distance before starting the measurement.
- The „area scan“ measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The scan uses different grid spacings for different frequency measurements. Standard grid spacing for head measurements in frequency ranges  $\leq 2$  GHz is 15 mm in x - and y-dimension. For higher frequencies a finer resolution is needed, thus for the grid spacing is reduced according the following table:

| Area scan grid spacing for different frequency ranges |              |
|-------------------------------------------------------|--------------|
| Frequency range                                       | Grid spacing |
| $\leq 2$ GHz                                          | $\leq 15$ mm |
| 2 – 4 GHz                                             | $\leq 12$ mm |
| 4 – 6 GHz                                             | $\leq 10$ mm |

Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation. Results of this coarse scan are shown in annex B.

- A „zoom scan“ measures the field in a volume around the 2D peak SAR value acquired in the previous „coarse“ scan. It uses a fine meshed grid where the robot moves the probe in steps along all the 3 axis (x,y and z-axis) starting at the bottom of the Phantom. The grid spacing for the cube measurement is varied according to the measured frequency range, the dimensions are given in the following table:

| Zoom scan grid spacing and volume for different frequency ranges |                            |                         |                          |
|------------------------------------------------------------------|----------------------------|-------------------------|--------------------------|
| Frequency range                                                  | Grid spacing for x, y axis | Grid spacing for z axis | Minimum zoom scan volume |
| $\leq 2$ GHz                                                     | $\leq 8$ mm                | $\leq 5$ mm             | $\geq 30$ mm             |
| 2 – 3 GHz                                                        | $\leq 5$ mm                | $\leq 5$ mm             | $\geq 28$ mm             |
| 3 – 4 GHz                                                        | $\leq 5$ mm                | $\leq 4$ mm             | $\geq 28$ mm             |
| 4 – 5 GHz                                                        | $\leq 4$ mm                | $\leq 3$ mm             | $\geq 25$ mm             |
| 5 – 6 GHz                                                        | $\leq 4$ mm                | $\leq 2$ mm             | $\geq 22$ mm             |

DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in annex B. Test

results relevant for the specified standard (see section 3) are shown in table form in section 7.

### **Spatial Peak SAR Evaluation**

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of all points in the three directions x, y and z. The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 1 to 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting 'Graph Evaluated'.
- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.
- All neighbouring volumes are evaluated until no neighbouring volume with a higher average value is found.

### **Extrapolation**

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

### **Interpolation**

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

### **Volume Averaging**

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

### **Advanced Extrapolation**

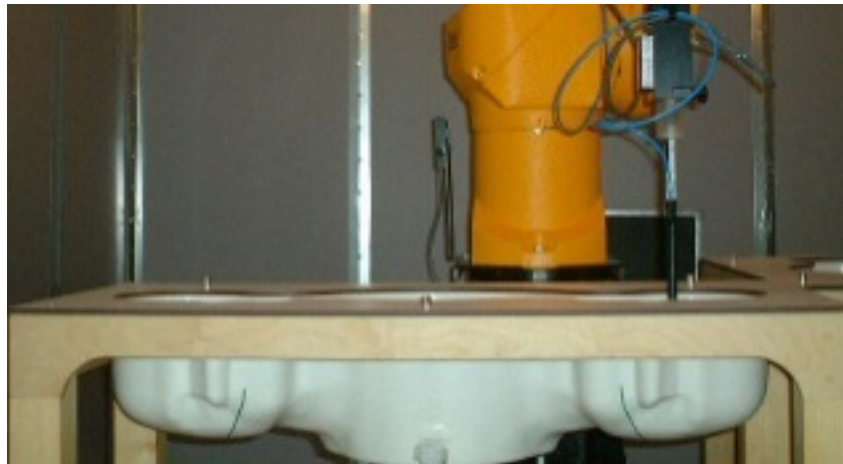
DASY uses the advanced extrapolation option which is able to compensate boundary effects on E-field probes.

**SAM PHANTOM**

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. (see Fig. 2.6)

**Phantom Specification**

**Phantom:** SAM Twin Phantom (V4.0)  
**Shell Material:** Vivac Composite  
**Thickness:**  $2.0 \pm 0.2$  mm



**Figure 3.6 SAM Twin Phantom**

**Device Holder for Transmitters**

In combination with the SAM Twin Phantom V4.0 the Mounting Device (see Fig. 2.7), enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation point is the ear opening. The devices can be easily, accurately, and repeatedly be positioned according to the FCC, CENELEC, IEC and IEEE specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).



**Figure 2.7 Mounting Device**

Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produce infinite number of configurations. To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

## **4. Probe and Dipole Calibration**

**See Appendix D and E.**

## 5. Phantom & Simulating Tissue Specifications

### Head & Body Simulating Mixture Characterization

The head and body mixtures consist of the material based on the table listed below. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. Body tissue parameters that have not been specified in IEEE1528 – 2013 are derived from the issue dielectric parameters computed from the 4-Cole-Cole equations.

**Table 5.1 Typical Composition of Ingredients for Tissue**

| Ingredients         |        | Simulating Tissue                      |              |                                        |               |                                        |                                        |
|---------------------|--------|----------------------------------------|--------------|----------------------------------------|---------------|----------------------------------------|----------------------------------------|
|                     |        | 750 MHz Body                           | 835 MHz Body | 1750 MHz Body                          | 1900 MHz Body | 2300 MHz Body                          | 2600 MHz Body                          |
| Mixing Percentage   |        |                                        |              |                                        |               |                                        |                                        |
| Water               |        | Proprietary<br>Purchased<br>from Speag | 52.50        | Proprietary<br>Purchased from<br>Speag | 69.91         | Proprietary<br>Purchased from<br>Speag | Proprietary<br>Purchased from<br>Speag |
| Sugar               |        |                                        | 45.00        |                                        | 0.00          |                                        |                                        |
| Salt                |        |                                        | 1.40         |                                        | 0.13          |                                        |                                        |
| HEC                 |        |                                        | 1.00         |                                        | 0.00          |                                        |                                        |
| Bactericide         |        |                                        | 0.10         |                                        | 0.00          |                                        |                                        |
| DGBE                |        |                                        | 0.00         |                                        | 29.96         |                                        |                                        |
| Dielectric Constant | Target | 55.5                                   | 55.20        | 53.4                                   | 53.30         | 52.90                                  | 52.51                                  |
| Conductivity (S/m)  | Target | 0.96                                   | 0.97         | 1.49                                   | 1.52          | 1.81                                   | 2.16                                   |

| Ingredients         |        | Simulating Tissue |                                            |                  |                  |
|---------------------|--------|-------------------|--------------------------------------------|------------------|------------------|
|                     |        | 2450 MHz<br>Body  | 5250 MHz<br>Body                           | 5600 MHz<br>Body | 5785 MHz<br>Body |
| Mixing Percentage   |        |                   |                                            |                  |                  |
| Water               |        | 73.20             | Proprietary Mixture<br>Procured from Speag |                  |                  |
| Sugar               |        | 0.00              |                                            |                  |                  |
| Salt                |        | 0.04              |                                            |                  |                  |
| HEC                 |        | 0.00              |                                            |                  |                  |
| Bactericide         |        | 0.00              |                                            |                  |                  |
| DGBE                |        | 26.70             |                                            |                  |                  |
| Dielectric Constant | Target | 52.70             | 48.96                                      | 48.47            | 48.25            |
| Conductivity (S/m)  | Target | 1.95              | 5.35                                       | 5.77             | 5.96             |

## 6. ANSI/IEEE C95.1 – 1992 RF Exposure Limits [2]

### Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

### Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

**Table 6.1 Human Exposure Limits**

|                                                              | UNCONTROLLED ENVIRONMENT<br>General Population<br>(W/kg) or (mW/g) | CONTROLLED ENVIROMENT<br>Professional Population<br>(W/kg) or (mW/g) |
|--------------------------------------------------------------|--------------------------------------------------------------------|----------------------------------------------------------------------|
| SPATIAL PEAK SAR <sup>1</sup><br>Head                        | 1.60                                                               | 8.00                                                                 |
| SPATIAL AVERAGE SAR <sup>2</sup><br>Whole Body               | 0.08                                                               | 0.40                                                                 |
| SPATIAL PEAK SAR <sup>3</sup><br>Hands, Feet, Ankles, Wrists | 4.00                                                               | 20.00                                                                |

<sup>1</sup> The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

<sup>2</sup> The Spatial Average value of the SAR averaged over the whole body.

<sup>3</sup> The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

## 7. Measurement Uncertainty

Measurement uncertainty table is not required per KDB 865664 D01 v01r04 section 2.8.2 page 12. SAR measurement uncertainty analysis is required in the SAR report only when the highest measured SAR in a frequency band is  $\geq 1.5$  W/kg for 1-g SAR. The equivalent ratio (1.5/1.6) should be applied to extremity and occupational exposure conditions. The highest reported value is less than 1.5 W/kg. Therefore, the measurement uncertainty table is not required.

## 8. System Validation

### Tissue Verification

**Table 8.1 Measured Tissue Parameters**

|                                 |      | 750 MHz Body  |          | 835 MHz Body  |          | 1750 MHz Body |          |
|---------------------------------|------|---------------|----------|---------------|----------|---------------|----------|
| Date(s)                         |      | July 1, 2019  |          | July 9, 2019  |          | July 8, 2019  |          |
| Liquid Temperature (°C)         | 20.0 | Target        | Measured | Target        | Measured | Target        | Measured |
| Dielectric Constant: $\epsilon$ |      | 55.35         | 54.93    | 55.20         | 54.99    | 53.43         | 52.81    |
| Conductivity: $\sigma$          |      | 0.96          | 0.98     | 0.97          | 1.01     | 1.49          | 1.51     |
|                                 |      | 1900 MHz Body |          | 2300 MHz Body |          | 2550 MHz Body |          |
| Date(s)                         |      | July 8, 2019  |          | July 2, 2019  |          | July 2, 2019  |          |
| Liquid Temperature (°C)         | 20.0 | Target        | Measured | Target        | Measured | Target        | Measured |
| Dielectric Constant: $\epsilon$ |      | 53.30         | 52.61    | 52.90         | 52.26    | 52.57         | 51.73    |
| Conductivity: $\sigma$          |      | 1.52          | 1.55     | 1.81          | 1.83     | 2.09          | 2.13     |
|                                 |      | 2450 MHz Body |          | 5250 MHz Body |          | 5600 MHz Body |          |
| Date(s)                         |      | July 2, 2019  |          | July 1, 2019  |          | July 1, 2019  |          |
| Liquid Temperature (°C)         | 20.0 | Target        | Measured | Target        | Measured | Target        | Measured |
| Dielectric Constant: $\epsilon$ |      | 52.70         | 52.77    | 49.01         | 49.00    | 48.47         | 48.47    |
| Conductivity: $\sigma$          |      | 1.95          | 1.92     | 5.30          | 5.27     | 5.77          | 5.73     |
|                                 |      | 5750 MHz Body |          |               |          |               |          |
| Date(s)                         |      | July 1, 2019  |          |               |          |               |          |
| Liquid Temperature (°C)         | 20.0 | Target        | Measured |               |          |               |          |
| Dielectric Constant: $\epsilon$ |      | 48.20         | 48.25    |               |          |               |          |
| Conductivity: $\sigma$          |      | 6.00          | 5.93     |               |          |               |          |

See Appendix A for data printout.

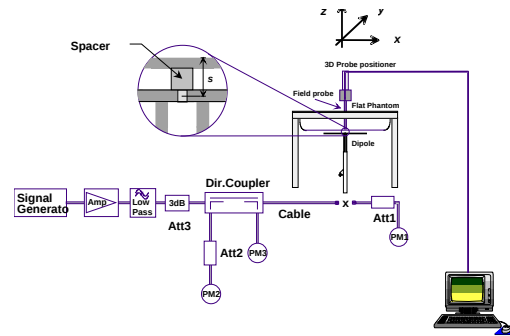
### Test System Verification

Prior to assessment, the system is verified to the  $\pm 10\%$  of the specifications at the test frequency by using the system kit. Power is normalized to 1 watt. (Graphic Plots Attached)

**Table 8.2 System Dipole Validation Target & Measured**

|             | Test Frequency | Targeted SAR <sub>1g</sub> (W/kg) | Measure SAR <sub>1g</sub> (W/kg) | Tissue Used for Verification | Deviation (%) | Plot Number |
|-------------|----------------|-----------------------------------|----------------------------------|------------------------------|---------------|-------------|
| 01-Jul-2019 | 750 MHz        | 8.55                              | 8.61                             | Body                         | + 0.70        | 1           |
| 09-Jul-2019 | 835 MHz        | 9.57                              | 9.52                             | Body                         | - 0.52        | 2           |
| 08-Jul-2019 | 1750 MHz       | 36.50                             | 36.70                            | Body                         | + 0.55        | 3           |
| 08-Jul-2019 | 1900 MHz       | 39.90                             | 40.10                            | Body                         | + 0.50        | 4           |
| 02-Jul-2019 | 2300 MHz       | 47.30                             | 47.50                            | Body                         | + 0.42        | 5           |
| 02-Jul-2019 | 2550 MHz       | 52.40                             | 53.50                            | Body                         | + 2.10        | 6           |
| 02-Jul-2019 | 2450 MHz       | 51.00                             | 52.20                            | Body                         | + 2.35        | 7           |
| 01-Jul-2019 | 5250 MHz       | 76.80                             | 78.30                            | Body                         | + 1.95        | 8           |
| 01-Jul-2019 | 5600 MHz       | 79.50                             | 81.30                            | Body                         | + 2.26        | 9           |
| 01-Jul-2019 | 5750 MHz       | 76.20                             | 77.90                            | Body                         | + 2.23        | 10          |

See Appendix A for data plots.



**Figure 8.1 Dipole Validation Test Setup**

## 9. SAR Test Data Summary

### See Measurement Result Data Pages

See Appendix B for SAR Test Data Plots.  
See Appendix C for SAR Test Setup Photos.

### Procedures Used To Establish Test Signal

The device was either placed into simulated transmit mode using the manufacturer's test codes or the actual transmission is activated through a base station simulator or similar equipment. See data pages for actual procedure used in measurement.

### Device Test Condition

In order to verify that the device was tested at full power, conducted output power measurements were performed before and after each SAR measurement to confirm the output power unless otherwise noted. The power drift of each test is measured at the start of the test and again at the end of the test. The drift percentage is calculated by the formula  $((\text{end/start})-1)*100$  and rounded to two decimal places.

The EUT was tested in the tablet configuration of the device. The EUT was tested on all sides of the device where the antenna was within 25 mm of that side. All measurements were conducted with the side of the device in direct contact with the phantom. For sides of the antenna which were not measured in this report, the SAR was conducted on the module in the modular approval with the maximum distance of 8 mm on all six sides of the antenna. Data is located in the original modular report. Therefore, the requirements mentioned in RSS-102 Supplementary Procedures (SPR)-001 – SAR Testing Requirements with Regards to Bystanders for Laptop Type Computers with Antennas Built-In on Display Screen (Laptop/Tablet Mode) are covered.

This device employs a sensor configuration that will reduce the power based on a gyro sensor and Hall sensor. The sensors detect the position of the LCD screen. When the LCD screen is between 190° - 360° in tablet mode or 10° – 360° in book mode, the power is reduced to the lower power level. When the LCD screen is between 10° - 190°, the power is set to laptop mode. When the LCD screen is between 0° - 10°, the transmission is turned off. The power reduction in each of the modes was validated using the proprietary software supplied on the tablet. All testing in this report has been conducted at the reduced power settings.

The Bluetooth transmitter does simultaneously transmit with the WiFi transmitter. When the BT is turned on, it transmits on Aux and the WiFi transmits on Main. Simultaneous transmission is evaluated on pages 188-189.

The main antenna was evaluated for stand-alone SAR per RSS-102 Issue 5 for BT. Please see data sheet summary on page 184.

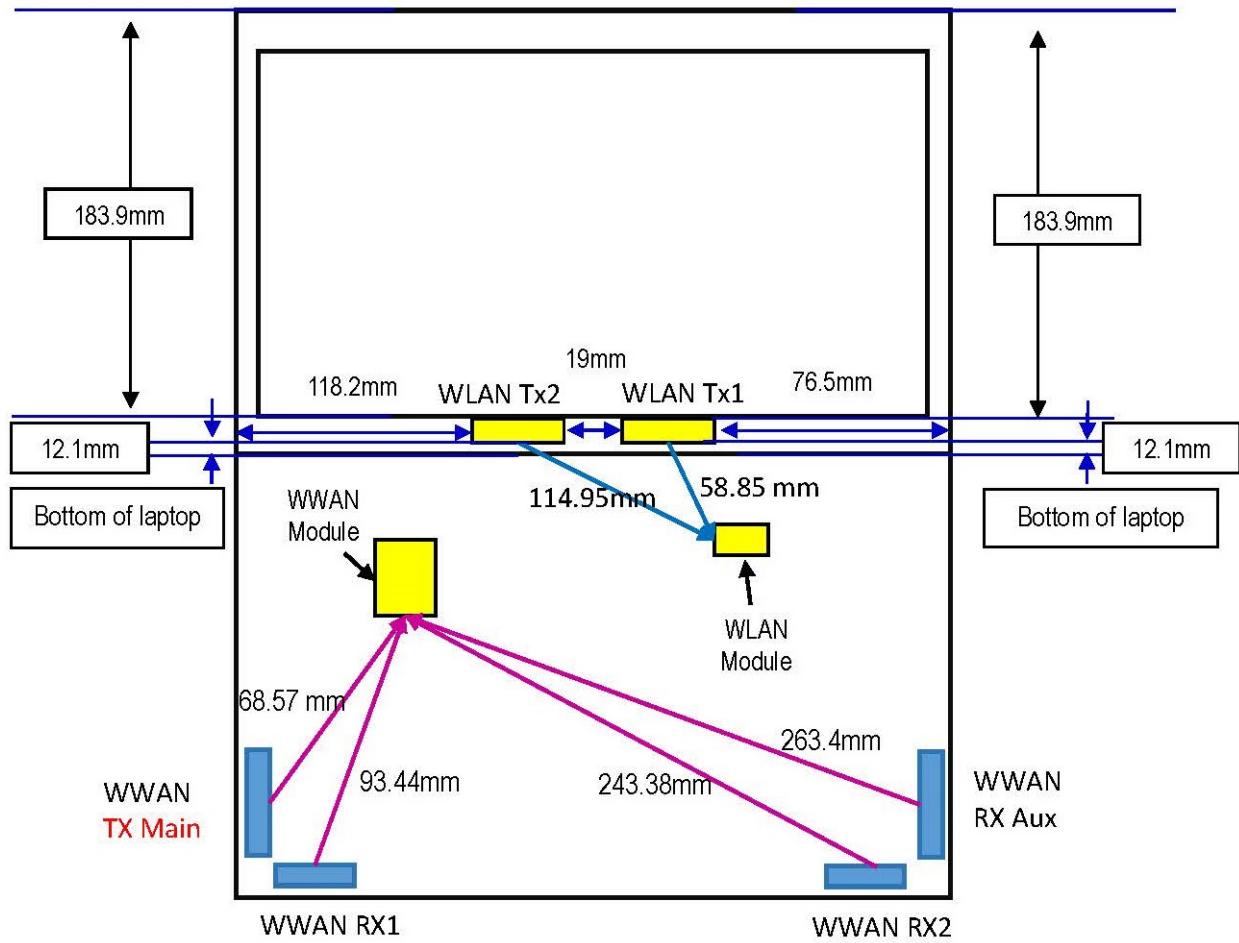
The data rates used when evaluating the WiFi transmitter were the lowest data rates for each mode. The device was operating at its maximum output power at the lowest data rate for all measurements.

The tablet was using the Intel test utility DRTU Version 11.1902.0-09060 and the device driver was version 20.120.0.3.

The antenna was on a minimum of 10 cm of Styrofoam during each test. The following is a pictorial drawing of the locations and separation distances.

The WCDMA testing was conducted using 12.2 kbps RMC configured in Test Loop Mode 1. The HSPA testing was conducted with HS-DPCCH, E-DPCCH and E-DPDCH all enabled and a 12.2 kbps RMC. FRC was configured according to HS-DPCCH Sub-Test 1 using H-set 1 and QPSK.

## Location and Separation Distances Diagrams



## 10. LTE Document Checklist

- 1) Identify the operating frequency range of each LTE transmission band used by the device

| LTE Operating Band | Uplink (transmit) | Downlink (Receive) | Duplex mode (FDD/TDD) |
|--------------------|-------------------|--------------------|-----------------------|
|                    | Low - high        | Low - high         |                       |
| 4 & 66             | 1710-1780         | 2110-2200          | FDD                   |
| 5 & 26             | 814-849           | 859-894            | FDD                   |
| 13                 | 777-787           | 746-756            | FDD                   |
| 14                 | 788-798           | 758-768            | FDD                   |
| 12 & 17            | 699-716           | 729-746            | FDD                   |
| 2 & 25             | 1850-1915         | 1930-1995          | FDD                   |
| 30                 | 2305-2315         | 2350-2360          | FDD                   |
| 7                  | 2500-2570         | 2620-2690          | FDD                   |
| 38 & 41            | 2496-2690         | 2496-2690          | TDD                   |

- 2) Identify the channel bandwidths used in each frequency band; 1.4, 3, 5, 10, 15, 20 MHz etc

| LTE Band Class | Bandwidth (MHz)       | Frequency or Freq. Band (MHz) |
|----------------|-----------------------|-------------------------------|
| 17             | 5, 10                 | 704-716                       |
| 12             | 1.4, 3, 5, 10         | 699-716                       |
| 13             | 5, 10                 | 777-787                       |
| 14             | 5, 10                 | 788-798                       |
| 5              | 1.4, 3, 5, 10         | 824-849                       |
| 26             | 1.4, 3, 5, 10, 15     | 814-849                       |
| 4              | 1.4, 3, 5, 10, 15, 20 | 1710-1755                     |
| 66             | 1.4, 3, 5, 10, 15, 20 | 1710-1780                     |
| 2              | 1.4, 3, 5, 10, 15, 20 | 1850-1910                     |
| 25             | 1.4, 3, 5, 10, 15, 20 | 1850-1915                     |
| 30             | 5, 10                 | 2305-2315                     |
| 7              | 5, 10, 15, 20         | 2500-2570                     |
| 38             | 5, 10, 15, 20         | 2570-2620                     |
| 41             | 5, 10, 15, 20         | 2496-2690                     |

- 3) Identify the high, middle and low (H, M, L) channel numbers and frequencies in each LTE frequency band

| LTE Band Class | Bandwidth (MHz) | Frequency (MHz)/Channel # |       |       |       |       |       |
|----------------|-----------------|---------------------------|-------|-------|-------|-------|-------|
|                |                 | Low                       |       | Mid   |       | High  |       |
| 17             | 5               | 706.5                     | 23755 | 710.0 | 23790 | 713.5 | 23824 |
| 17             | 10              | 709.0                     | 23780 | 710.0 | 23790 | 711.0 | 23799 |
| 12             | 1.4             | 699.7                     | 23017 | 707.5 | 23095 | 715.3 | 23173 |
| 12             | 3               | 700.5                     | 23025 | 707.5 | 23095 | 714.5 | 23165 |
| 12             | 5               | 701.5                     | 23035 | 707.5 | 23095 | 713.5 | 23155 |
| 12             | 10              | 704.0                     | 23060 | 707.5 | 23095 | 711.0 | 23130 |
| 13             | 5               | 779.5                     | 23205 | 782.0 | 23230 | 784.5 | 23255 |
| 13             | 10              | -----                     | ----- | 782.0 | 23230 | ----- | ----- |
| 14             | 5               | 790.5                     | 23305 | 793.0 | 23330 | 795.5 | 23355 |
| 14             | 10              | -----                     | ----- | 793.0 | 23330 | ----- | ----- |
| 5              | 1.4             | 824.7                     | 20407 | 836.5 | 20525 | 848.3 | 20643 |
| 5              | 3               | 825.5                     | 20415 | 836.5 | 20525 | 847.5 | 20635 |

|    |     |        |        |        |        |        |        |
|----|-----|--------|--------|--------|--------|--------|--------|
| 5  | 5   | 826.5  | 20425  | 836.5  | 20525  | 846.5  | 20625  |
| 5  | 10  | 829.0  | 20450  | 836.5  | 20525  | 844.0  | 20600  |
| 26 | 1.4 | 814.7  | 26697  | 831.5  | 26865  | 848.3  | 27033  |
| 26 | 3   | 815.5  | 26705  | 831.5  | 26865  | 847.5  | 27025  |
| 26 | 5   | 816.5  | 26715  | 831.5  | 26865  | 846.5  | 27015  |
| 26 | 10  | 819.0  | 26740  | 831.5  | 26865  | 844.0  | 26990  |
| 26 | 15  | 821.5  | 24765  | 831.5  | 26865  | 841.5  | 26995  |
| 4  | 1.4 | 1710.7 | 19957  | 1732.5 | 20175  | 1754.3 | 20393  |
| 4  | 3   | 1711.5 | 19965  | 1732.5 | 20175  | 1753.5 | 20385  |
| 4  | 5   | 1712.5 | 19975  | 1732.5 | 20175  | 1752.5 | 20375  |
| 4  | 10  | 1715.0 | 20000  | 1732.5 | 20175  | 1750.0 | 20350  |
| 4  | 15  | 1717.5 | 20025  | 1732.5 | 20175  | 1747.5 | 20325  |
| 4  | 20  | 1720.0 | 20050  | 1732.5 | 20175  | 1745.0 | 20300  |
| 66 | 1.4 | 1710.7 | 131979 | 1745.0 | 132322 | 1779.3 | 132665 |
| 66 | 3   | 1711.5 | 131987 | 1745.0 | 132322 | 1778.5 | 132657 |
| 66 | 5   | 1712.5 | 131997 | 1745.0 | 132322 | 1777.5 | 132647 |
| 66 | 10  | 1715.0 | 132022 | 1745.0 | 132322 | 1775.0 | 132622 |
| 66 | 15  | 1717.5 | 132047 | 1745.0 | 132322 | 1772.5 | 132597 |
| 66 | 20  | 1720.0 | 132072 | 1745.0 | 132322 | 1770.0 | 132572 |
| 2  | 1.4 | 1850.7 | 18607  | 1880.0 | 18900  | 1909.3 | 19193  |
| 2  | 3   | 1851.5 | 18615  | 1880.0 | 18900  | 1908.5 | 19185  |
| 2  | 5   | 1852.5 | 18625  | 1880.0 | 18900  | 1907.5 | 19175  |
| 2  | 10  | 1855.0 | 18650  | 1880.0 | 18900  | 1905.0 | 19150  |
| 2  | 15  | 1857.5 | 18675  | 1880.0 | 18900  | 1902.5 | 19125  |
| 2  | 20  | 1860.0 | 18700  | 1880.0 | 18900  | 1900.0 | 19100  |
| 25 | 1.4 | 1850.7 | 26047  | 1882.5 | 26365  | 1914.3 | 26683  |
| 25 | 3   | 1851.5 | 26055  | 1882.5 | 26365  | 1913.5 | 26675  |
| 25 | 5   | 1852.5 | 26065  | 1882.5 | 26365  | 1912.5 | 26665  |
| 25 | 10  | 1855.0 | 26090  | 1882.5 | 26365  | 1910.0 | 26640  |
| 25 | 15  | 1857.5 | 26115  | 1882.5 | 26365  | 1907.5 | 26615  |
| 25 | 20  | 1860.0 | 26140  | 1882.5 | 26365  | 1905.0 | 26590  |
| 30 | 5   | 2307.5 | 27685  | 2310   | 27710  | 2312.5 | 27735  |
| 30 | 10  | -----  | -----  | 2310   | 27710  | -----  | -----  |
| 7  | 5   | 2502.5 | 20775  | 2535.0 | 21100  | 2567.5 | 21425  |
| 7  | 10  | 2505.0 | 20800  | 2535.0 | 21100  | 2565.0 | 21400  |
| 7  | 15  | 2507.5 | 20825  | 2535.0 | 21100  | 2562.5 | 21375  |
| 7  | 20  | 2510.0 | 20850  | 2535.0 | 21100  | 2560.0 | 21350  |
| 38 | 5   | 2572.5 | 37775  | 2595.0 | 38000  | 2617.5 | 38225  |
| 38 | 10  | 2575.0 | 37800  | 2595.0 | 38000  | 2615.0 | 38200  |
| 38 | 15  | 2577.5 | 37825  | 2595.0 | 38000  | 2612.5 | 38175  |
| 38 | 20  | 2580.0 | 37850  | 2595.0 | 38000  | 2610.0 | 37150  |
| 41 | 5   | 2498.5 | 39675  | 2593.0 | 40620  | 2687.5 | 41565  |
| 41 | 10  | 2501.0 | 39700  | 2593.0 | 40620  | 2685.0 | 41540  |
| 41 | 15  | 2503.5 | 39725  | 2593.0 | 40620  | 2682.5 | 41515  |
| 41 | 20  | 2506.0 | 39750  | 2593.0 | 40620  | 2680.0 | 41490  |

4) Specify the UE category and uplink modulations used:

- UE Category: 3
- Uplink modulations: QPSK and 16QAM

- 5) Include descriptions of the LTE transmitter and antenna implementation; and also identify whether it is a standalone transmitter operating independently of other wireless transmitters in the device or sharing hardware components and/or antenna(s) with other transmitters etc

The device has 2 antennas:

- WWAN Main Antenna
- WWAN Diversity Antenna

- 6) Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc

The device is a data only device. Data mode was tested in each operating mode and exposure condition in the body configuration. See test setup photos to see all configurations tested.

- 7) Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:

- a) Only mandatory MPR may be considered during SAR testing, when the maximum output power is permanently limited by the MPR implemented within the UE; and only for the applicable RB (resource block) configurations specified in LTE standards

MPR is mandatory, built-in by design on all production units. It was enabled during testing.

| Modulation | Channel Bandwidth/transmission Bandwidth Configuration (RB) |         |       |        |        |        | MPR (dB) |
|------------|-------------------------------------------------------------|---------|-------|--------|--------|--------|----------|
|            | 1.4 MHz                                                     | 3.0 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |          |
| QPSK       | > 5                                                         | > 4     | > 8   | > 12   | > 16   | > 18   | ≤ 1      |
| 16QAM      | ≤ 5                                                         | ≤ 4     | ≤ 8   | ≤ 12   | ≤ 16   | ≤ 18   | ≤ 1      |
| 16QAM      | > 5                                                         | > 4     | > 8   | > 12   | > 16   | > 18   | ≤ 2      |

- b) A-MPR (additional MPR) must be disabled

A-MPR was disabled during testing.

- 8) Include the maximum average conducted output power on the required test channels for each channel bandwidth and UL modulation used in each frequency band:

The maximum average conducted output power for the testing is listed on pages 63-148 of this report. The below table shows the factory set point with the allowable tolerance.

| Band               | Power Setting | Technology | Class | Nominal Power dBm | Tolerance dBm | Lower Tolerance dBm | Upper Tolerance dBm |
|--------------------|---------------|------------|-------|-------------------|---------------|---------------------|---------------------|
| Band 12 – 750 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 13 – 750 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 14 – 750 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 17 – 750 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 5 – 835 MHz   | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 26 – 835 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 4 – 1750 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 66 – 1750 MHz | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 2 – 1900 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 25 – 1900 MHz | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 30 – 2300 MHz | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 7 – 2500 MHz  | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 38 – 2500 MHz | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 41 – 2600 MHz | Full          | LTE        | 3     | 23.0              | ±1.0          | 22.0                | 24.0                |
| Band 12 – 750 MHz  | Notebook      | LTE        | 3     | 22.0              | ±1.0          | 21.0                | 23.0                |
| Band 17 – 750 MHz  | Notebook      | LTE        | 3     | 22.0              | ±1.0          | 21.0                | 23.0                |
| Band 4 – 1750 MHz  | Notebook      | LTE        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 66 – 1750 MHz | Notebook      | LTE        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 2 – 1900 MHz  | Notebook      | LTE        | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 25 – 1900 MHz | Notebook      | LTE        | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 30 – 2300 MHz | Notebook      | LTE        | 3     | 17.5              | ±1.0          | 16.5                | 18.5                |
| Band 7 – 2500 MHz  | Notebook      | LTE        | 3     | 16.0              | ±1.0          | 15.0                | 17.0                |
| Band 38 – 2500 MHz | Notebook      | LTE        | 3     | 18.0              | ±1.0          | 17.0                | 19.0                |
| Band 41 – 2600 MHz | Notebook      | LTE        | 3     | 18.0              | ±1.0          | 17.0                | 19.0                |
| Band 12 – 750 MHz  | Tablet        | LTE        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 13 – 750 MHz  | Tablet        | LTE        | 3     | 20.0              | ±1.0          | 19.0                | 21.0                |
| Band 14 – 750 MHz  | Tablet        | LTE        | 3     | 20.0              | ±1.0          | 19.0                | 21.0                |
| Band 17 – 750 MHz  | Tablet        | LTE        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 5 – 835 MHz   | Tablet        | LTE        | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 26 – 835 MHz  | Tablet        | LTE        | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 4 – 1750 MHz  | Tablet        | LTE        | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 66 – 1750 MHz | Tablet        | LTE        | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 2 – 1900 MHz  | Tablet        | LTE        | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| Band 25 – 1900 MHz | Tablet        | LTE        | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| Band 30 – 2300 MHz | Tablet        | LTE        | 3     | 13.0              | ±1.0          | 12.0                | 14.0                |
| Band 7 – 2500 MHz  | Tablet        | LTE        | 3     | 13.5              | ±1.0          | 12.5                | 14.5                |
| Band 38 – 2500 MHz | Tablet        | LTE        | 3     | 15.5              | ±1.0          | 14.5                | 16.5                |
| Band 41 – 2600 MHz | Tablet        | LTE        | 3     | 15.5              | ±1.0          | 14.5                | 16.5                |

- 9) Identify all other U.S. wireless operating modes (3G, Wi-Fi, WiMax, Bluetooth etc), device/exposure configurations (head and body, antenna and handset flip-cover or slide positions, antenna diversity conditions etc.) and frequency bands used for these modes

Other wireless modes:

| Band                            | Power Setting | Technology        | Class | Nominal Power dBm | Tolerance dBm | Lower Tolerance dBm | Upper Tolerance dBm |
|---------------------------------|---------------|-------------------|-------|-------------------|---------------|---------------------|---------------------|
| Band 5 – 850 MHz                | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 4 – 1750 MHz               | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 2 – 1900 MHz               | Full          | WCDMA/HSPA        | 3     | 23.5              | ±1.0          | 22.5                | 24.5                |
| Band 4 – 1750 MHz               | Notebook      | WCDMA/HSPA        | 3     | 19.5              | ±1.0          | 18.5                | 20.5                |
| Band 2 – 1900 MHz               | Notebook      | WCDMA/HSPA        | 3     | 19.0              | ±1.0          | 18.0                | 20.0                |
| Band 5 – 850 MHz                | Tablet        | WCDMA/HSPA        | 3     | 21.0              | ±1.0          | 20.0                | 22.0                |
| Band 4 – 1750 MHz               | Tablet        | WCDMA/HSPA        | 3     | 15.0              | ±1.0          | 14.0                | 16.0                |
| Band 2 – 1900 MHz               | Tablet        | WCDMA/HSPA        | 3     | 14.5              | ±1.0          | 13.5                | 15.5                |
| WLAN – 2.4 GHz                  | Notebook      | 802.11bgn20       | N/A   | 19.5              | ±1.5          | 18.0                | 21.0                |
| WLAN – 2.4 GHz                  | Notebook      | 802.11n40ac       | N/A   | 19.0              | ±1.5          | 17.5                | 20.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Notebook      | 802.11an20        | N/A   | 19.5              | ±1.5          | 18.0                | 21.0                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Notebook      | 802.11n40ac80/160 | N/A   | 19.0              | ±1.5          | 17.5                | 20.5                |
| WLAN – 2.4 GHz                  | Tablet        | 802.11bgn20       | N/A   | 16.5              | ±1.5          | 15.0                | 18.0                |
| WLAN – 2.4 GHz                  | Tablet        | 802.11n40ac       | N/A   | 15.0              | ±1.5          | 13.5                | 16.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Tablet        | 802.11an20        | N/A   | 14.0              | ±1.5          | 12.5                | 15.5                |
| WLAN – 5 GHz Band I,IIA,IIC,III | Tablet        | 802.11n40ac80/160 | N/A   | 13.5              | ±1.5          | 12.0                | 15.0                |
| BT – BDR                        | N/A           | Bluetooth         | N/A   | 10.0              | ±1.5          | 8.5                 | 11.5                |
| BT – EDR2 & EDR3                | N/A           | Bluetooth         | N/A   | 9.5               | ±1.5          | 8.0                 | 11.0                |
| BT – BLE                        | N/A           | Bluetooth         | N/A   | 7.5               | ±1.5          | 6.0                 | 9.0                 |

- 10) Include the maximum average conducted output power measured for the other wireless modes and frequency bands.

The maximum average conducted output power measured for the testing is listed on pages 32-40 of this report. The table in item 9 shows the factory set point with the allowable tolerance.

- 11) When power reduction is applied to certain wireless modes to satisfy SAR compliance for simultaneous transmission conditions, other equipment certification or operating requirements, include the maximum average conducted output power measured in each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands; and also include details of the power reduction implementation and measurement setup

The device has two power settings during operation. When the device is installed in keyboard case, the power is set to the full power mode. When the device is not installed in the keyboard case, the power is set to the reduced power mode. Please see the operational description (confidential) for details on power reducing control.

- 12) Include descriptions of the test equipment, test software, built-in test firmware etc. required to support testing the device when power reduction is applied to one or more transmitters/antennas for simultaneous voice/data transmission

No special equipment was required for the testing. A special software program by the module manufacturer is used to reduce the power.

## 11. FCC 3G Measurement Procedures

Power measurements were performed using a base station simulator under average power.

### 11.1 Procedures Used to Establish RF Signal for SAR

The device was placed into a simulated call using a base station simulator in a screen room. Such test signals offer a consistent means for testing SAR and recommended for evaluating SAR. The SAR measurement software calculates a reference point at the start and end of the test to check for power drifts. If conducted power deviations of more than 5% occurred, the tests were repeated.

### 11.2 SAR Measurement Conditions for WCDMA/HSDPA/HSUPA

Configure the call box 8960 to support all WCDMA tests in respect to the 3GPP 34.121 (listed in Table below). Measure the power at Ch4132, 4182 and 4233 for US cell; Ch9262, 9400 and 9538 for US PCS band.

For Rel99

- Set a Test Mode 1 loop back with a 12.2kbps Reference Measurement Channel (RMC).
- Set and send continuously Up power control commands to the device
- Measure the power at the device antenna connector using the power meter with average detector.

For HSDPA Rel 6

- Establish a Test Mode 1 loop back with both 1 12.2kbps RMC channel and a H-Set1 Fixed Reference Channel (FRC). With the 8960 this is accomplished by setting the signal Channel Coding to "Fixed Reference Channel" and configuring for HSET-1 QKSP.
- Set beta values and HSDPA settings for HSDPA Subtest1 according to Table below.
- Send continuously Up power control commands to the device
- Measure the power at the device antenna connector using the power meter with modulated average detector.
- Repeat the measurement for the HSDPA Subtest2, 3 and 4 as given in Table below.

For HSUPA Rel 6

- Use UL RMC 12.2kbps and FRC H-Set1 QPSK, Test Mode 1 loop back. With the 8960 this is accomplished by setting the signal Channel Coding to "E-DCH Test Channel" and configuring the equipment category to Cat5\_10ms.
- Set the Absolute Grant for HSUPA Subtest1 according to Table below.
- Set the device power to be at least 5dB lower than the Maximum output power
- Send power control bits to give one TPC\_cmd = +1 command to the device. If device doesn't send any E-DPCH data with decreased E-TFCl within 500ms, then repeat this process until the decreased E-TFCl is reported.
- Confirm that the E-TFCl transmitted by the device is equal to the target E-TFCl in Table below. If the E-TFCl transmitted by the device is not equal to the target E-TFCl, then send power control bits to give one TPC\_cmd = -1 command to the UE. If UE sends any E-DPCH data with decreased E-TFCl within 500 ms, send new power control bits to give one TPC\_cmd = -1 command to the UE. Then confirm that the E-TFCl transmitted by the UE is equal to the target E-TFCl in Table below.
- Measure the power using the power meter with modulated average detector.
- Repeat the measurement for the HSUPA Subtest2, 3, 4 and 5 as given in Table below.

## Notebook Mode

| 3GPP Release Version | Mode  | Cellular Band [dBm] |       |       | Sub-Test (See Table Below) | MPR |
|----------------------|-------|---------------------|-------|-------|----------------------------|-----|
|                      |       | 4132                | 4183  | 4233  |                            |     |
| 99                   | WCDMA | 23.97               | 23.64 | 23.72 | -                          | -   |
| 6                    | HSDPA | 23.76               | 23.99 | 23.53 | 1                          | 0   |
| 6                    |       | 23.82               | 23.89 | 23.68 | 2                          | 0   |
| 6                    |       | 23.05               | 23.17 | 23.30 | 3                          | 0.5 |
| 6                    |       | 23.12               | 23.00 | 23.29 | 4                          | 0.5 |
| 6                    | HSUPA | 23.86               | 23.60 | 23.99 | 1                          | 0   |
| 6                    |       | 21.74               | 21.64 | 21.59 | 2                          | 2   |
| 6                    |       | 22.85               | 22.86 | 22.88 | 3                          | 1   |
| 6                    |       | 21.72               | 21.57 | 21.83 | 4                          | 2   |
| 6                    |       | 23.99               | 23.90 | 23.90 | 5                          | 0   |
| PP Release Version   | Mode  | AWS Band [dBm]      |       |       | Sub-Test (See Table Below) | MPR |
|                      |       | 1312                | 1413  | 1513  |                            |     |
| 99                   | WCDMA | 19.54               | 19.57 | 19.69 | -                          | -   |
| 6                    | HSDPA | 19.95               | 19.80 | 19.83 | 1                          | 0   |
| 6                    |       | 19.94               | 19.62 | 19.77 | 2                          | 0   |
| 6                    |       | 19.32               | 19.39 | 19.23 | 3                          | 0.5 |
| 6                    |       | 19.34               | 19.41 | 19.27 | 4                          | 0.5 |
| 6                    | HSUPA | 19.64               | 19.81 | 19.56 | 1                          | 0   |
| 6                    |       | 17.83               | 17.98 | 17.94 | 2                          | 2   |
| 6                    |       | 18.75               | 18.65 | 18.73 | 3                          | 1   |
| 6                    |       | 17.67               | 17.93 | 17.90 | 4                          | 2   |
| 6                    |       | 19.72               | 19.71 | 19.60 | 5                          | 0   |
| 3GPP Release Version | Mode  | PCS Band [dBm]      |       |       | Sub-Test (See Table Below) | MPR |
|                      |       | 9262                | 9400  | 9538  |                            |     |
| 99                   | WCDMA | 19.01               | 19.09 | 19.12 | -                          | -   |
| 6                    | HSDPA | 19.32               | 19.29 | 19.22 | 1                          | 0   |
| 6                    |       | 19.46               | 19.40 | 19.41 | 2                          | 0   |
| 6                    |       | 18.89               | 18.68 | 18.86 | 3                          | 0.5 |
| 6                    |       | 18.52               | 18.67 | 18.67 | 4                          | 0.5 |
| 6                    | HSUPA | 19.00               | 19.31 | 19.02 | 1                          | 0   |
| 6                    |       | 17.50               | 17.45 | 17.28 | 2                          | 2   |
| 6                    |       | 18.24               | 18.46 | 18.45 | 3                          | 1   |
| 6                    |       | 17.08               | 17.15 | 17.41 | 4                          | 2   |
| 6                    |       | 19.35               | 19.24 | 19.16 | 5                          | 0   |

## Tablet Mode

| 3GPP Release Version | Mode  | Cellular Band [dBm] |       |       | Sub-Test (See Table Below) | MPR |
|----------------------|-------|---------------------|-------|-------|----------------------------|-----|
|                      |       | 4132                | 4183  | 4233  |                            |     |
| 99                   | WCDMA | 21.37               | 21.39 | 21.29 | -                          | -   |
| 6                    | HSDPA | 21.40               | 21.07 | 21.38 | 1                          | 0   |
| 6                    |       | 21.31               | 21.36 | 21.15 | 2                          | 0   |
| 6                    |       | 20.78               | 20.59 | 20.78 | 3                          | 0.5 |
| 6                    |       | 20.54               | 20.58 | 20.86 | 4                          | 0.5 |
| 6                    | HSUPA | 21.35               | 21.40 | 21.01 | 1                          | 0   |
| 6                    |       | 19.40               | 19.47 | 19.10 | 2                          | 2   |
| 6                    |       | 20.27               | 20.14 | 20.47 | 3                          | 1   |
| 6                    |       | 19.15               | 19.18 | 19.17 | 4                          | 2   |
| 6                    |       | 21.20               | 21.02 | 21.07 | 5                          | 0   |
| PP Release Version   | Mode  | AWS Band [dBm]      |       |       | Sub-Test (See Table Below) | MPR |
|                      |       | 1312                | 1413  | 1513  |                            |     |
| 99                   | WCDMA | 15.43               | 15.19 | 15.23 | -                          | -   |
| 6                    | HSDPA | 15.32               | 15.47 | 15.32 | 1                          | 0   |
| 6                    |       | 15.25               | 15.05 | 15.44 | 2                          | 0   |
| 6                    |       | 14.59               | 14.52 | 14.65 | 3                          | 0.5 |
| 6                    |       | 14.85               | 14.59 | 14.60 | 4                          | 0.5 |
| 6                    | HSUPA | 15.01               | 15.05 | 15.38 | 1                          | 0   |
| 6                    |       | 13.35               | 13.18 | 13.38 | 2                          | 2   |
| 6                    |       | 14.40               | 14.13 | 14.12 | 3                          | 1   |
| 6                    |       | 13.03               | 13.43 | 13.18 | 4                          | 2   |
| 6                    |       | 15.48               | 15.38 | 15.40 | 5                          | 0   |
| 3GPP Release Version | Mode  | PCS Band [dBm]      |       |       | Sub-Test (See Table Below) | MPR |
|                      |       | 9262                | 9400  | 9538  |                            |     |
| 99                   | WCDMA | 14.67               | 14.86 | 14.51 | -                          | -   |
| 6                    | HSDPA | 14.70               | 14.80 | 14.96 | 1                          | 0   |
| 6                    |       | 14.53               | 14.62 | 14.77 | 2                          | 0   |
| 6                    |       | 14.09               | 14.09 | 14.40 | 3                          | 0.5 |
| 6                    |       | 14.48               | 14.05 | 14.11 | 4                          | 0.5 |
| 6                    | HSUPA | 14.96               | 14.96 | 14.62 | 1                          | 0   |
| 6                    |       | 12.58               | 12.80 | 12.68 | 2                          | 2   |
| 6                    |       | 13.73               | 13.93 | 13.54 | 3                          | 1   |
| 6                    |       | 12.86               | 12.65 | 12.51 | 4                          | 2   |
| 6                    |       | 14.97               | 14.79 | 14.69 | 5                          | 0   |

### Sub-Test Setup for Release 6 HSDPA

| Sub-Test                                                | $\beta_c$ | $\beta_d$ | $B_c / \beta_d$ | $\beta_{hs}$ |
|---------------------------------------------------------|-----------|-----------|-----------------|--------------|
| 1                                                       | 2/15      | 15/15     | 2/15            | 4/15         |
| 2                                                       | 12/15     | 15/15     | 15/15           | 24/15        |
| 3                                                       | 15/15     | 8/15      | 15/8            | 30/15        |
| 4                                                       | 15/15     | 4/15      | 15/4            | 30/15        |
| $\Delta_{ack}$ , $\Delta_{nack}$ and $\Delta_{cqi} = 8$ |           |           |                 |              |

### Sub-Test Setup for Release 6 HSUPA

| Sub-Test                                                | $\beta_c$ | $\beta_d$ | $B_c / \beta_d$ | $\beta_{hs}$ | $B_{ec}$ | $B_{ed}$ | MPR | AG Index | E-TFCI |
|---------------------------------------------------------|-----------|-----------|-----------------|--------------|----------|----------|-----|----------|--------|
| 1                                                       | 11/15     | 15/15     | 11/15           | 22/15        | 209/225  | 1039/225 | 0.0 | 20       | 75     |
| 2                                                       | 6/15      | 15/15     | 6/15            | 12/15        | 12/15    | 94/75    | 2.0 | 12       | 67     |
| 3                                                       | 15/15     | 9/15      | 15/9            | 30/15        | 30/15    | 47/15    | 1.0 | 15       | 92     |
| 4                                                       | 2/15      | 15/15     | 2/15            | 4/15         | 2/15     | 56/15    | 2.0 | 17       | 71     |
| 5                                                       | 15/15     | 15/15     | 15/15           | 30/15        | 24/15    | 134/15   | 0.0 | 21       | 81     |
| $\Delta_{ack}$ , $\Delta_{nack}$ and $\Delta_{cqi} = 8$ |           |           |                 |              |          |          |     |          |        |

## Power Measurements Notebook Mode

| Band          | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |  |
|---------------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|--|
| 2450 MHz      | 802.11b  | 20              | 1       | 2412            | 1 Mbps    | Chain A | 20.95           | 21.00             |  |
|               |          |                 | 6       | 2437            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 11      | 2462            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 1       | 2412            |           | Chain B | 20.94           | 21.00             |  |
|               |          |                 | 6       | 2437            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 11      | 2462            |           |         | 21.00           | 21.00             |  |
|               | 802.11g  | 20              | 1       | 2412            | 6 Mbps    | Chain A | 20.47           | 20.50             |  |
|               |          |                 | 6       | 2437            |           |         | 20.44           | 20.50             |  |
|               |          |                 | 11      | 2462            |           |         | 20.44           | 20.50             |  |
|               |          |                 | 1       | 2412            |           | Chain B | 20.39           | 20.50             |  |
|               |          |                 | 6       | 2437            |           |         | 20.36           | 20.50             |  |
|               |          |                 | 11      | 2462            |           |         | 20.42           | 20.50             |  |
|               | 802.11n  | 20              | 1       | 2412            | HTO       | Chain A | 20.45           | 20.50             |  |
|               |          |                 | 6       | 2437            |           |         | 20.37           | 20.50             |  |
|               |          |                 | 11      | 2462            |           |         | 20.40           | 20.50             |  |
|               |          |                 | 1       | 2412            |           | Chain B | 20.41           | 20.50             |  |
|               |          |                 | 6       | 2437            |           |         | 20.38           | 20.50             |  |
|               |          |                 | 11      | 2462            |           |         | 20.39           | 20.50             |  |
|               | 802.11n  | 40              | 3       | 2422            | HTO       | Chain A | 16.45           | 16.50             |  |
|               |          |                 | 6       | 2437            |           |         | 16.37           | 16.50             |  |
|               |          |                 | 9       | 2452            |           |         | 16.40           | 16.50             |  |
|               |          |                 | 3       | 2422            |           | Chain B | 16.41           | 16.50             |  |
|               |          |                 | 6       | 2437            |           |         | 16.38           | 16.50             |  |
|               |          |                 | 9       | 2452            |           |         | 16.39           | 16.50             |  |
| 5.15-5.25 GHz | 802.11a  | 20              | 36      | 5180            | 6 Mbps    | Chain A | 18.92           | 19.00             |  |
|               |          |                 | 40      | 5200            |           |         | 20.00           | 20.00             |  |
|               |          |                 | 44      | 5240            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 48      | 5230            |           |         | 20.97           | 21.00             |  |
|               |          |                 | 36      | 5180            |           | Chain B | 18.98           | 19.00             |  |
|               |          |                 | 40      | 5200            |           |         | 20.50           | 20.50             |  |
|               |          |                 | 44      | 5240            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 48      | 5230            |           |         | 20.94           | 21.00             |  |
|               | 802.11n  | 20              | 36      | 5180            | HTO       | Chain A | 18.91           | 19.00             |  |
|               |          |                 | 40      | 5200            |           |         | 19.88           | 20.00             |  |
|               |          |                 | 44      | 5240            |           |         | 20.89           | 21.00             |  |
|               |          |                 | 48      | 5230            |           |         | 20.85           | 21.00             |  |
|               |          |                 | 36      | 5180            |           | Chain B | 18.84           | 19.00             |  |
|               |          |                 | 40      | 5200            |           |         | 20.38           | 20.50             |  |
|               |          |                 | 44      | 5240            |           |         | 20.89           | 21.00             |  |
|               |          |                 | 48      | 5230            |           |         | 20.83           | 21.00             |  |
|               | 802.11n  | 40              | 38      | 5190            | HTO       | Chain A | 18.92           | 19.00             |  |
|               |          |                 | 46      | 5230            |           |         | 20.94           | 21.00             |  |
|               |          |                 | 38      | 5190            | HTO       | Chain B | 18.98           | 19.00             |  |
|               |          |                 | 46      | 5230            |           |         | 20.95           | 21.00             |  |
|               | 802.11ac | 80              | 42      | 5210            | VHTO      | Chain A | 19.92           | 19.00             |  |
|               |          | 160             | 50      | 5250            |           | Chain B | 18.44           | 18.50             |  |
|               |          |                 |         |                 |           | Chain A | 15.38           | 15.50             |  |
|               |          |                 |         |                 |           | Chain B | 15.42           | 15.50             |  |
| 5.25-5.35 GHz | 802.11a  | 20              | 52      | 5260            | 6 Mbps    | Chain A | 20.95           | 21.00             |  |
|               |          |                 | 56      | 5280            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 60      | 5300            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 64      | 5320            |           |         | 18.47           | 18.50             |  |
|               |          |                 | 52      | 5260            |           | Chain B | 20.94           | 21.00             |  |
|               |          |                 | 56      | 5280            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 60      | 5300            |           |         | 21.00           | 21.00             |  |
|               |          |                 | 64      | 5320            |           |         | 18.48           | 18.50             |  |
|               | 802.11n  | 20              | 52      | 5260            | HTO       | Chain A | 20.92           | 21.00             |  |
|               |          |                 | 56      | 5280            |           |         | 20.89           | 21.00             |  |
|               |          |                 | 60      | 5300            |           |         | 20.88           | 21.00             |  |
|               |          |                 | 64      | 5320            |           |         | 18.40           | 18.50             |  |
|               |          |                 | 52      | 5260            |           | Chain B | 20.91           | 21.00             |  |
|               |          |                 | 56      | 5280            |           |         | 20.83           | 21.00             |  |
|               |          |                 | 60      | 5300            |           |         | 20.86           | 21.00             |  |
|               |          |                 | 64      | 5320            |           |         | 18.39           | 18.50             |  |
|               | 802.11n  | 40              | 54      | 5270            | HTO       | Chain A | 20.92           | 21.00             |  |
|               |          |                 | 62      | 5310            |           |         | 17.44           | 17.50             |  |
|               |          |                 | 54      | 5270            | HTO       | Chain B | 20.89           | 21.00             |  |
|               |          |                 | 62      | 5310            |           |         | 17.40           | 17.50             |  |
|               | 802.11ac | 80              | 58      | 5290            | VHTO      | Chain A | 18.35           | 18.50             |  |
|               |          |                 |         |                 |           | Chain B | 18.41           | 18.50             |  |

| Band     | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|----------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|
| 5600 MHz | 802.11a  | 20              | 100     | 5500            | 6 Mbps    | Chain A | 19.42           | 19.50             |
|          |          |                 | 104     | 5520            |           |         | 21.00           | 21.00             |
|          |          |                 | 108     | 5540            |           |         | 20.95           | 21.00             |
|          |          |                 | 112     | 5560            |           |         | 20.97           | 21.00             |
|          |          |                 | 116     | 5580            |           |         | 21.00           | 21.00             |
|          |          |                 | 120     | 5600            |           |         | 20.91           | 21.00             |
|          |          |                 | 124     | 5620            |           |         | 21.00           | 21.00             |
|          |          |                 | 128     | 5640            |           |         | 20.98           | 21.00             |
|          |          |                 | 132     | 5660            |           |         | 20.94           | 21.00             |
|          |          |                 | 136     | 5680            |           |         | 21.00           | 21.00             |
|          |          |                 | 140     | 5700            |           |         | 17.90           | 18.00             |
|          |          |                 | 100     | 5500            |           | Chain B | 19.39           | 19.50             |
|          |          |                 | 104     | 5520            |           |         | 21.00           | 21.00             |
|          |          |                 | 108     | 5540            |           |         | 20.92           | 21.00             |
|          |          |                 | 112     | 5560            |           |         | 20.97           | 21.00             |
|          |          |                 | 116     | 5580            |           |         | 21.00           | 21.00             |
|          |          |                 | 120     | 5600            |           |         | 20.93           | 21.00             |
|          |          |                 | 124     | 5620            |           |         | 21.00           | 21.00             |
|          |          |                 | 128     | 5640            |           |         | 20.91           | 21.00             |
|          |          |                 | 132     | 5660            |           |         | 20.88           | 21.00             |
|          |          |                 | 136     | 5680            |           |         | 21.00           | 21.00             |
|          |          |                 | 140     | 5700            |           |         | 18.44           | 18.50             |
|          | 802.11n  | 20              | 100     | 5500            | HT0       | Chain A | 19.38           | 19.50             |
|          |          |                 | 104     | 5520            |           |         | 20.83           | 21.00             |
|          |          |                 | 108     | 5540            |           |         | 20.85           | 21.00             |
|          |          |                 | 112     | 5560            |           |         | 20.86           | 21.00             |
|          |          |                 | 116     | 5580            |           |         | 20.84           | 21.00             |
|          |          |                 | 120     | 5600            |           |         | 20.90           | 21.00             |
|          |          |                 | 124     | 5620            |           |         | 20.91           | 21.00             |
|          |          |                 | 128     | 5640            |           |         | 20.84           | 21.00             |
|          |          |                 | 132     | 5660            |           |         | 20.81           | 21.00             |
|          |          |                 | 136     | 5680            |           |         | 20.89           | 21.00             |
|          |          |                 | 140     | 5700            |           |         | 17.88           | 18.00             |
|          |          |                 | 100     | 5500            |           | Chain B | 19.42           | 19.50             |
|          |          |                 | 104     | 5520            |           |         | 20.90           | 21.00             |
|          |          |                 | 108     | 5540            |           |         | 20.87           | 21.00             |
|          |          |                 | 112     | 5560            |           |         | 20.89           | 21.00             |
|          |          |                 | 116     | 5580            |           |         | 20.83           | 21.00             |
|          |          |                 | 120     | 5600            |           |         | 20.86           | 21.00             |
|          |          |                 | 124     | 5620            |           |         | 20.90           | 21.00             |
|          |          |                 | 128     | 5640            |           |         | 20.94           | 21.00             |
|          |          |                 | 132     | 5660            |           |         | 20.91           | 21.00             |
|          |          |                 | 136     | 5680            |           |         | 20.86           | 21.00             |
|          |          |                 | 140     | 5700            |           |         | 18.39           | 18.50             |
|          | 802.11n  | 40              | 102     | 5510            | HT0       | Chain A | 18.45           | 18.50             |
|          |          |                 | 110     | 5550            |           |         | 20.40           | 20.50             |
|          |          |                 | 118     | 5590            |           |         | 20.42           | 20.50             |
|          |          |                 | 126     | 5630            |           |         | 20.37           | 20.50             |
|          |          |                 | 134     | 5670            |           |         | 19.38           | 19.50             |
|          |          |                 | 102     | 5510            |           | Chain B | 18.44           | 18.50             |
|          |          |                 | 110     | 5550            |           |         | 20.40           | 20.50             |
|          |          |                 | 118     | 5590            |           |         | 20.33           | 20.50             |
|          |          |                 | 126     | 5630            |           |         | 20.38           | 20.50             |
|          |          |                 | 134     | 5670            |           |         | 19.35           | 19.50             |
|          | 802.11ac | 80              | 106     | 5530            | VHT0      | Chain A | 19.38           | 19.50             |
|          |          |                 | 122     | 5610            |           |         | 20.42           | 20.50             |
|          |          |                 | 138     | 5690            |           |         | 20.36           | 20.50             |
|          |          |                 | 106     | 5530            |           | Chain B | 19.38           | 19.50             |
|          |          |                 | 122     | 5610            |           |         | 20.41           | 20.50             |
|          |          |                 | 138     | 5690            |           |         | 20.38           | 20.50             |
|          |          | 160             | 114     | 5570            |           | Chain A | 14.37           | 14.50             |
|          |          |                 | 114     | 5570            |           | Chain B | 14.44           | 14.50             |

| Band     | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|----------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|
| 5800 MHz | 802.11a  | 20              | 149     | 5745            | 6 Mbps    | Chain A | 21.00           | 21.00             |
|          |          |                 | 153     | 5765            |           |         | 20.92           | 21.00             |
|          |          |                 | 157     | 5785            |           |         | 21.00           | 21.00             |
|          |          |                 | 161     | 5805            |           |         | 20.94           | 21.00             |
|          |          |                 | 165     | 5825            |           |         | 21.00           | 21.00             |
|          |          |                 | 150     | 5750            |           |         | 21.00           | 21.00             |
|          |          |                 | 153     | 5765            |           | Chain B | 20.93           | 21.00             |
|          |          |                 | 157     | 5785            |           |         | 21.00           | 21.00             |
|          |          |                 | 161     | 5805            |           |         | 20.94           | 21.00             |
|          |          |                 | 165     | 5825            |           |         | 21.00           | 21.00             |
|          |          |                 | 150     | 5750            |           |         | 20.88           | 21.00             |
|          |          |                 | 153     | 5765            |           |         | 20.87           | 21.00             |
|          | 802.11n  | 20              | 157     | 5785            | HT0       | Chain A | 20.90           | 21.00             |
|          |          |                 | 161     | 5805            |           |         | 20.82           | 21.00             |
|          |          |                 | 164     | 5820            |           |         | 20.84           | 21.00             |
|          |          |                 | 150     | 5750            |           |         | 20.85           | 21.00             |
|          |          |                 | 153     | 5765            |           | Chain B | 20.90           | 21.00             |
|          |          |                 | 157     | 5785            |           |         | 20.89           | 21.00             |
|          |          |                 | 161     | 5805            |           |         | 20.85           | 21.00             |
|          |          |                 | 164     | 5820            |           |         | 20.87           | 21.00             |
|          |          | 40              | 151     | 5755            | HT0       | Chain A | 20.42           | 20.50             |
|          |          |                 | 159     | 5795            |           |         | 20.45           | 20.50             |
|          |          |                 | 151     | 5755            |           | Chain B | 20.43           | 20.50             |
|          |          |                 | 159     | 5795            |           |         | 20.40           | 20.50             |
|          | 802.11ac | 80              | 155     | 5775            | VHT0      | Chain A | 18.92           | 19.00             |
|          |          |                 |         |                 |           | Chain B | 18.94           | 19.00             |

| Band     | Mode           | Channel | Frequency (MHz) | Data Rate         | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|----------|----------------|---------|-----------------|-------------------|---------|-----------------|-------------------|
| 2450 MHz | Bluetooth v5.0 | 0       | 2402            | Basic Rate GFSK   | Chain B | 10.90           | 11.00             |
|          |                | 39      | 2441            |                   |         | 11.00           | 11.00             |
|          |                | 78      | 2480            |                   |         | 10.92           | 11.00             |
|          |                | 0       | 2402            | EDR $\pi/4$ DQPSK |         | 6.92            | 7.00              |
|          |                | 39      | 2441            |                   |         | 6.93            | 7.00              |
|          |                | 78      | 2480            |                   |         | 6.88            | 7.00              |
|          |                | 0       | 2402            | EDR 8-DPSK        |         | 6.94            | 7.00              |
|          |                | 39      | 2441            |                   |         | 6.91            | 7.00              |
|          |                | 78      | 2480            |                   |         | 6.93            | 7.00              |
|          |                | 0       | 2402            | Low Energy GFSK   |         | 6.99            | 7.00              |
|          |                | 39      | 2441            |                   |         | 6.88            | 7.00              |
|          |                | 78      | 2480            |                   |         | 6.93            | 7.00              |

## Power Measurements Tablet Mode

| Band          | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|---------------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|
| 2450 MHz      | 802.11b  | 20              | 1       | 2412            | 1 Mbps    | Chain A | 17.95           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 18.00           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 18.00           | 18.00             |
|               |          |                 | 1       | 2412            |           | Chain B | 17.94           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 18.00           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 18.00           | 18.00             |
|               | 802.11g  | 20              | 1       | 2412            | 6 Mbps    | Chain A | 17.97           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 17.94           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 17.94           | 18.00             |
|               |          |                 | 1       | 2412            |           | Chain B | 17.89           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 17.86           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 17.92           | 18.00             |
|               | 802.11n  | 20              | 1       | 2412            | HTO       | Chain A | 17.95           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 17.87           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 17.90           | 18.00             |
|               |          |                 | 1       | 2412            |           | Chain B | 17.91           | 18.00             |
|               |          |                 | 6       | 2437            |           |         | 17.88           | 18.00             |
|               |          |                 | 11      | 2462            |           |         | 17.89           | 18.00             |
|               | 802.11n  | 40              | 3       | 2422            | HTO       | Chain A | 16.45           | 16.50             |
|               |          |                 | 6       | 2437            |           |         | 16.37           | 16.50             |
|               |          |                 | 9       | 2452            |           |         | 16.40           | 16.50             |
|               |          |                 | 3       | 2422            |           | Chain B | 16.41           | 16.50             |
|               |          |                 | 6       | 2437            |           |         | 16.38           | 16.50             |
|               |          |                 | 9       | 2452            |           |         | 16.39           | 16.50             |
| 5.15-5.25 GHz | 802.11a  | 20              | 36      | 5180            | 6 Mbps    | Chain A | 15.42           | 15.50             |
|               |          |                 | 40      | 5200            |           |         | 15.50           | 15.50             |
|               |          |                 | 44      | 5240            |           |         | 15.50           | 15.50             |
|               |          |                 | 48      | 5230            |           |         | 15.47           | 15.50             |
|               |          |                 | 36      | 5180            |           | Chain B | 14.98           | 15.00             |
|               |          |                 | 40      | 5200            |           |         | 15.00           | 15.00             |
|               |          |                 | 44      | 5240            |           |         | 15.00           | 15.00             |
|               |          |                 | 48      | 5230            |           |         | 14.94           | 15.00             |
|               | 802.11n  | 20              | 36      | 5180            | HTO       | Chain A | 15.41           | 15.50             |
|               |          |                 | 40      | 5200            |           |         | 15.38           | 15.50             |
|               |          |                 | 44      | 5240            |           |         | 15.39           | 15.50             |
|               |          |                 | 48      | 5230            |           |         | 15.35           | 15.50             |
|               |          |                 | 36      | 5180            |           | Chain B | 14.84           | 15.00             |
|               |          |                 | 40      | 5200            |           |         | 14.88           | 15.00             |
|               |          |                 | 44      | 5240            |           |         | 14.89           | 15.00             |
|               |          |                 | 48      | 5230            |           |         | 14.83           | 15.00             |
|               | 802.11n  | 40              | 38      | 5190            | HTO       | Chain A | 14.92           | 15.00             |
|               |          |                 | 46      | 5230            | 14.94     | 15.00   |                 |                   |
|               |          |                 | 38      | 5190            | HTO       | Chain B | 14.38           | 14.50             |
|               |          |                 | 46      | 5230            | 14.45     | 14.50   |                 |                   |
|               | 802.11ac | 80              | 42      | 5210            | VHTO      | Chain A | 14.92           | 15.00             |
|               |          | 160             | 50      | 5250            |           | Chain B | 14.44           | 14.50             |
|               |          |                 |         |                 |           | Chain A | 14.88           | 15.00             |
|               |          |                 |         |                 |           | Chain B | 14.92           | 15.00             |
| 5.25-5.35 GHz | 802.11a  | 20              | 52      | 5260            | 6 Mbps    | Chain A | 15.45           | 15.50             |
|               |          |                 | 56      | 5280            |           |         | 15.50           | 15.50             |
|               |          |                 | 60      | 5300            |           |         | 15.50           | 15.50             |
|               |          |                 | 64      | 5320            |           |         | 15.47           | 15.50             |
|               |          |                 | 52      | 5260            |           | Chain B | 14.94           | 15.00             |
|               |          |                 | 56      | 5280            |           |         | 15.00           | 15.00             |
|               |          |                 | 60      | 5300            |           |         | 15.00           | 15.00             |
|               |          |                 | 64      | 5320            |           |         | 14.98           | 15.00             |
|               | 802.11n  | 20              | 52      | 5260            | HTO       | Chain A | 15.42           | 15.50             |
|               |          |                 | 56      | 5280            |           |         | 15.39           | 15.50             |
|               |          |                 | 60      | 5300            |           |         | 15.38           | 15.50             |
|               |          |                 | 64      | 5320            |           |         | 15.40           | 15.50             |
|               |          |                 | 52      | 5260            |           | Chain B | 14.91           | 15.00             |
|               |          |                 | 56      | 5280            |           |         | 14.83           | 15.00             |
|               |          |                 | 60      | 5300            |           |         | 14.86           | 15.00             |
|               |          |                 | 64      | 5320            |           |         | 14.89           | 15.00             |
|               | 802.11n  | 40              | 54      | 5270            | HTO       | Chain A | 14.92           | 15.00             |
|               |          |                 | 62      | 5310            | HTO       | Chain B | 14.94           | 15.00             |
|               |          |                 | 54      | 5270            |           |         | 14.39           | 14.50             |
|               |          |                 | 62      | 5310            |           |         | 14.40           | 14.50             |
|               | 802.11ac | 80              | 58      | 5290            | VHTO      | Chain A | 14.85           | 15.00             |
|               |          |                 |         |                 |           | Chain B | 14.41           | 14.50             |

| Band     | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|----------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|
| 5600 MHz | 802.11a  | 20              | 100     | 5500            | 6 Mbps    | Chain A | 15.42           | 15.50             |
|          |          |                 | 104     | 5520            |           |         | 15.50           | 15.50             |
|          |          |                 | 108     | 5540            |           |         | 15.45           | 15.50             |
|          |          |                 | 112     | 5560            |           |         | 15.47           | 15.50             |
|          |          |                 | 116     | 5580            |           |         | 15.50           | 15.50             |
|          |          |                 | 120     | 5600            |           |         | 15.41           | 15.50             |
|          |          |                 | 124     | 5620            |           |         | 15.50           | 15.50             |
|          |          |                 | 128     | 5640            |           |         | 15.48           | 15.50             |
|          |          |                 | 132     | 5660            |           |         | 15.44           | 15.50             |
|          |          |                 | 136     | 5680            |           |         | 15.50           | 15.50             |
|          |          |                 | 140     | 5700            |           |         | 15.40           | 15.50             |
|          |          |                 | 100     | 5500            |           | Chain B | 14.89           | 15.00             |
|          |          |                 | 104     | 5520            |           |         | 15.00           | 15.00             |
|          |          |                 | 108     | 5540            |           |         | 14.92           | 15.00             |
|          |          |                 | 112     | 5560            |           |         | 14.97           | 15.00             |
|          |          |                 | 116     | 5580            |           |         | 15.00           | 15.00             |
|          |          |                 | 120     | 5600            |           |         | 14.93           | 15.00             |
|          |          |                 | 124     | 5620            |           |         | 15.00           | 15.00             |
|          |          |                 | 128     | 5640            |           |         | 14.91           | 15.00             |
|          |          |                 | 132     | 5660            |           |         | 14.88           | 15.00             |
|          |          |                 | 136     | 5680            |           |         | 15.00           | 15.00             |
|          |          |                 | 140     | 5700            |           |         | 14.94           | 15.00             |
|          | 802.11n  | 20              | 100     | 5500            | HT0       | Chain A | 15.38           | 15.50             |
|          |          |                 | 104     | 5520            |           |         | 15.33           | 15.50             |
|          |          |                 | 108     | 5540            |           |         | 15.35           | 15.50             |
|          |          |                 | 112     | 5560            |           |         | 15.36           | 15.50             |
|          |          |                 | 116     | 5580            |           |         | 15.34           | 15.50             |
|          |          |                 | 120     | 5600            |           |         | 15.40           | 15.50             |
|          |          |                 | 124     | 5620            |           |         | 15.41           | 15.50             |
|          |          |                 | 128     | 5640            |           |         | 15.34           | 15.50             |
|          |          |                 | 132     | 5660            |           |         | 15.31           | 15.50             |
|          |          |                 | 136     | 5680            |           |         | 15.39           | 15.50             |
|          |          |                 | 140     | 5700            |           |         | 15.38           | 15.50             |
|          |          |                 | 100     | 5500            |           | Chain B | 14.92           | 15.00             |
|          |          |                 | 104     | 5520            |           |         | 14.90           | 15.00             |
|          |          |                 | 108     | 5540            |           |         | 14.87           | 15.00             |
|          |          |                 | 112     | 5560            |           |         | 14.88           | 15.00             |
|          |          |                 | 116     | 5580            |           |         | 14.83           | 15.00             |
|          |          |                 | 120     | 5600            |           |         | 14.86           | 15.00             |
|          |          |                 | 124     | 5620            |           |         | 14.90           | 15.00             |
|          |          |                 | 128     | 5640            |           |         | 14.94           | 15.00             |
|          |          |                 | 132     | 5660            |           |         | 14.91           | 15.00             |
|          |          |                 | 136     | 5680            |           |         | 14.86           | 15.00             |
|          |          |                 | 140     | 5700            |           |         | 14.89           | 15.00             |
|          | 802.11n  | 40              | 102     | 5510            | HT0       | Chain A | 14.95           | 15.00             |
|          |          |                 | 110     | 5550            |           |         | 14.90           | 15.00             |
|          |          |                 | 118     | 5590            |           |         | 14.92           | 15.00             |
|          |          |                 | 126     | 5630            |           |         | 14.87           | 15.00             |
|          |          |                 | 134     | 5670            |           |         | 14.88           | 15.00             |
|          |          |                 | 102     | 5510            |           | Chain B | 14.44           | 14.50             |
|          |          |                 | 110     | 5550            |           |         | 14.40           | 14.50             |
|          |          |                 | 118     | 5590            |           |         | 14.33           | 14.50             |
|          |          |                 | 126     | 5630            |           |         | 14.38           | 14.50             |
|          | 802.11ac | 80              | 134     | 5670            | VHT0      | Chain A | 14.35           | 14.50             |
|          |          |                 | 106     | 5530            |           |         | 14.88           | 15.00             |
|          |          |                 | 122     | 5610            |           |         | 14.92           | 15.00             |
|          |          |                 | 138     | 5690            |           |         | 14.86           | 15.00             |
|          |          | 160             | 106     | 5530            |           | Chain B | 14.38           | 14.50             |
|          |          |                 | 122     | 5610            |           |         | 14.41           | 14.50             |
|          |          |                 | 138     | 5690            |           |         | 14.38           | 14.50             |
|          |          |                 | 114     | 5570            |           | Chain A | 14.37           | 14.50             |
|          |          |                 | 114     | 5570            |           | Chain B | 14.44           | 14.50             |

| Band     | Mode     | Bandwidth (MHz) | Channel | Frequency (MHz) | Data Rate | Antenna | Avg Power (dBm) | Tune-up Pwr (dBm) |
|----------|----------|-----------------|---------|-----------------|-----------|---------|-----------------|-------------------|
| 5800 MHz | 802.11a  | 20              | 149     | 5745            | 6 Mbps    | Chain A | 15.50           | 15.50             |
|          |          |                 | 153     | 5765            |           |         | 15.42           | 15.50             |
|          |          |                 | 157     | 5785            |           |         | 15.50           | 15.50             |
|          |          |                 | 161     | 5805            |           |         | 15.44           | 15.50             |
|          |          |                 | 165     | 5825            |           |         | 15.50           | 15.50             |
|          |          |                 | 150     | 5750            |           | Chain B | 15.00           | 15.00             |
|          |          |                 | 153     | 5765            |           |         | 14.93           | 15.00             |
|          |          |                 | 157     | 5785            |           |         | 15.00           | 15.00             |
|          |          |                 | 161     | 5805            |           |         | 14.94           | 15.00             |
|          |          |                 | 165     | 5825            |           |         | 15.00           | 15.00             |
|          | 802.11n  | 20              | 150     | 5750            | HT0       | Chain A | 15.38           | 15.50             |
|          |          |                 | 153     | 5765            |           |         | 15.37           | 15.50             |
|          |          |                 | 157     | 5785            |           |         | 15.40           | 15.50             |
|          |          |                 | 161     | 5805            |           |         | 15.32           | 15.50             |
|          |          |                 | 164     | 5820            |           |         | 15.34           | 15.50             |
|          |          |                 | 150     | 5750            |           | Chain B | 14.85           | 15.00             |
|          |          |                 | 153     | 5765            |           |         | 14.90           | 15.00             |
|          |          |                 | 157     | 5785            |           |         | 14.89           | 15.00             |
|          |          |                 | 161     | 5805            |           |         | 14.85           | 15.00             |
|          |          |                 | 164     | 5820            |           |         | 14.87           | 15.00             |
|          | 802.11n  | 40              | 151     | 5755            | HT0       | Chain A | 14.92           | 15.00             |
|          |          |                 | 159     | 5795            |           |         | 14.95           | 15.00             |
|          |          |                 | 151     | 5755            |           | Chain B | 14.43           | 14.50             |
|          |          |                 | 159     | 5795            |           |         | 14.40           | 14.50             |
|          | 802.11ac | 80              | 155     | 5775            | VHT0      | Chain A | 14.42           | 14.50             |
|          |          |                 |         |                 |           | Chain B | 14.44           | 14.50             |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Lid Close      | 0°        | 0.0           | Aux     | Lid Close      | 0°        | 0.0           |
|         |                | 1°        | 0.0           |         |                | 1°        | 0.0           |
|         |                | 2°        | 0.0           |         |                | 2°        | 0.0           |
|         |                | 3°        | 0.0           |         |                | 3°        | 0.0           |
|         |                | 4°        | 0.0           |         |                | 4°        | 0.0           |
|         |                | 5°        | 0.0           |         |                | 5°        | 0.0           |
|         |                | 6°        | 0.0           |         |                | 6°        | 0.0           |
|         |                | 7°        | 0.0           |         |                | 7°        | 0.0           |
|         |                | 8°        | 0.0           |         |                | 8°        | 0.0           |
|         |                | 9°        | 0.0           |         |                | 9°        | 20.4          |
|         | Laptop Mode    | 10°       | 20.7          |         | Laptop Mode    | 10°       | 20.4          |
|         |                | 11°       | 20.7          |         |                | 11°       | 20.4          |
|         |                | 12°       | 20.7          |         |                | 12°       | 20.4          |
|         |                | 13°       | 20.7          |         |                | 13°       | 20.4          |
|         |                | 14°       | 20.7          |         |                | 14°       | 20.4          |
|         |                | 15°       | 20.7          |         |                | 15°       | 20.4          |
|         |                | 25°       | 20.7          |         |                | 15°       | 20.4          |
|         |                | 35°       | 20.7          |         |                | 25°       | 20.4          |
|         |                | 45°       | 20.7          |         |                | 35°       | 20.4          |
|         |                | 55°       | 20.7          |         |                | 45°       | 20.4          |
|         |                | 65°       | 20.7          |         |                | 55°       | 20.4          |
|         |                | 75°       | 20.7          |         |                | 65°       | 20.4          |
|         |                | 85°       | 20.7          |         |                | 75°       | 20.4          |
|         |                | 95°       | 20.7          |         |                | 85°       | 20.4          |
|         |                | 105°      | 20.7          |         |                | 95°       | 20.4          |
|         |                | 115°      | 20.7          |         |                | 105°      | 20.4          |
|         |                | 125°      | 20.7          |         |                | 115°      | 20.4          |
|         |                | 135°      | 20.7          |         |                | 125°      | 20.4          |
|         |                | 145°      | 20.7          |         |                | 135°      | 20.4          |
|         |                | 155°      | 20.7          |         |                | 145°      | 20.4          |
|         |                | 165°      | 20.7          |         |                | 155°      | 20.4          |
|         |                | 175°      | 20.7          |         |                | 165°      | 20.4          |
|         |                | 185°      | 20.7          |         |                | 175°      | 20.4          |
|         |                | 186°      | 20.7          |         |                | 185°      | 20.4          |
|         |                | 187°      | 20.7          |         |                | 186°      | 20.4          |
|         |                | 188°      | 20.7          |         |                | 187°      | 20.4          |
|         |                | 189°      | 17.3          |         |                | 188°      | 20.4          |
|         |                | 190°      | 17.3          |         |                | 189°      | 20.4          |
|         |                |           |               |         |                | 190°      | 17.1          |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Tablet Mode    | 191°      | 17.3          | Aux     | Tablet Mode    | 191°      | 17.1          |
|         |                | 192°      | 17.3          |         |                | 192°      | 17.1          |
|         |                | 193°      | 17.3          |         |                | 193°      | 17.1          |
|         |                | 194°      | 17.3          |         |                | 194°      | 17.1          |
|         |                | 195°      | 17.3          |         |                | 195°      | 17.1          |
|         |                | 205°      | 17.3          |         |                | 205°      | 17.1          |
|         |                | 215°      | 17.3          |         |                | 215°      | 17.1          |
|         |                | 225°      | 17.3          |         |                | 225°      | 17.1          |
|         |                | 235°      | 17.3          |         |                | 235°      | 17.1          |
|         |                | 245°      | 17.3          |         |                | 245°      | 17.1          |
|         |                | 255°      | 17.3          |         |                | 255°      | 17.1          |
|         |                | 265°      | 17.3          |         |                | 265°      | 17.1          |
|         |                | 275°      | 17.3          |         |                | 275°      | 17.1          |
|         |                | 285°      | 17.3          |         |                | 285°      | 17.1          |
|         |                | 295°      | 17.3          |         |                | 295°      | 17.1          |
|         |                | 305°      | 17.3          |         |                | 305°      | 17.1          |
|         |                | 315°      | 17.3          |         |                | 315°      | 17.1          |
|         |                | 325°      | 17.3          |         |                | 325°      | 17.1          |
|         |                | 335°      | 17.3          |         |                | 335°      | 17.1          |
|         |                | 345°      | 17.3          |         |                | 345°      | 17.1          |
|         |                | 355°      | 17.3          |         |                | 355°      | 17.1          |
|         |                | 356°      | 17.3          |         |                | 356°      | 17.1          |
|         |                | 357°      | 17.3          |         |                | 357°      | 17.1          |
|         |                | 358°      | 17.3          |         |                | 358°      | 17.1          |
|         |                | 359°      | 17.3          |         |                | 359°      | 17.1          |
|         |                | 360°      | 17.3          |         |                | 360°      | 17.1          |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Book Mode      | 11°       | 20.7          | Aux     | Book Mode      | 11°       | 20.4          |
|         |                | 12°       | 20.7          |         |                | 12°       | 17.1          |
|         |                | 13°       | 17.3          |         |                | 13°       | 17.1          |
|         |                | 14°       | 17.3          |         |                | 14°       | 17.1          |
|         |                | 15°       | 17.3          |         |                | 15°       | 17.1          |
|         |                | 25°       | 17.3          |         |                | 25°       | 17.1          |
|         |                | 35°       | 17.3          |         |                | 35°       | 17.1          |
|         |                | 45°       | 17.3          |         |                | 45°       | 17.1          |
|         |                | 55°       | 17.3          |         |                | 55°       | 17.1          |
|         |                | 65°       | 17.3          |         |                | 65°       | 17.1          |
|         |                | 75°       | 17.3          |         |                | 75°       | 17.1          |
|         |                | 85°       | 17.3          |         |                | 85°       | 17.1          |
|         |                | 95°       | 17.3          |         |                | 95°       | 17.1          |
|         |                | 105°      | 17.3          |         |                | 105°      | 17.1          |
|         |                | 115°      | 17.3          |         |                | 115°      | 17.1          |
|         |                | 125°      | 17.3          |         |                | 125°      | 17.1          |
|         |                | 135°      | 17.3          |         |                | 135°      | 17.1          |
|         |                | 145°      | 17.3          |         |                | 145°      | 17.1          |
|         |                | 155°      | 17.3          |         |                | 155°      | 17.1          |
|         |                | 165°      | 17.3          |         |                | 165°      | 17.1          |
|         |                | 175°      | 17.3          |         |                | 175°      | 17.1          |
|         |                | 185°      | 17.3          |         |                | 185°      | 17.1          |
|         |                | 195°      | 17.3          |         |                | 195°      | 17.1          |
|         |                | 205°      | 17.3          |         |                | 205°      | 17.1          |
|         |                | 215°      | 17.3          |         |                | 215°      | 17.1          |
|         |                | 225°      | 17.3          |         |                | 225°      | 17.1          |
|         |                | 235°      | 17.3          |         |                | 235°      | 17.1          |
|         |                | 245°      | 17.3          |         |                | 245°      | 17.1          |
|         |                | 255°      | 17.3          |         |                | 255°      | 17.1          |
|         |                | 265°      | 17.3          |         |                | 265°      | 17.1          |
|         |                | 275°      | 17.3          |         |                | 275°      | 17.1          |
|         |                | 285°      | 17.3          |         |                | 285°      | 17.1          |
|         |                | 295°      | 17.3          |         |                | 295°      | 17.1          |
|         |                | 305°      | 17.3          |         |                | 305°      | 17.1          |
|         |                | 315°      | 17.3          |         |                | 315°      | 17.1          |
|         |                | 325°      | 17.3          |         |                | 325°      | 17.1          |
|         |                | 335°      | 17.3          |         |                | 335°      | 17.1          |
|         |                | 345°      | 17.3          |         |                | 345°      | 17.1          |
|         |                | 355°      | 17.3          |         |                | 355°      | 17.1          |
|         |                | 356°      | 17.3          |         |                | 356°      | 17.1          |
|         |                | 357°      | 17.3          |         |                | 357°      | 17.1          |
|         |                | 358°      | 17.3          |         |                | 358°      | 17.1          |
|         |                | 359°      | 17.3          |         |                | 359°      | 17.1          |
|         |                | 360°      | 17.3          |         |                | 360°      | 17.1          |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Book Mode      | 360°      | 17.3          | Aux     | Book Mode      | 360°      | 17.1          |
|         |                | 359°      | 17.3          |         |                | 359°      | 17.1          |
|         |                | 358°      | 17.3          |         |                | 358°      | 17.1          |
|         |                | 357°      | 17.3          |         |                | 357°      | 17.1          |
|         |                | 356°      | 17.3          |         |                | 356°      | 17.1          |
|         |                | 355°      | 17.3          |         |                | 355°      | 17.1          |
|         |                | 345°      | 17.3          |         |                | 345°      | 17.1          |
|         |                | 335°      | 17.3          |         |                | 335°      | 17.1          |
|         |                | 325°      | 17.3          |         |                | 325°      | 17.1          |
|         |                | 315°      | 17.3          |         |                | 315°      | 17.1          |
|         |                | 305°      | 17.3          |         |                | 305°      | 17.1          |
|         |                | 295°      | 17.3          |         |                | 295°      | 17.1          |
|         |                | 285°      | 17.3          |         |                | 285°      | 17.1          |
|         |                | 275°      | 17.3          |         |                | 275°      | 17.1          |
|         |                | 265°      | 17.3          |         |                | 265°      | 17.1          |
|         |                | 255°      | 17.3          |         |                | 255°      | 17.1          |
|         |                | 245°      | 17.3          |         |                | 245°      | 17.1          |
|         |                | 235°      | 17.3          |         |                | 235°      | 17.1          |
|         |                | 225°      | 17.3          |         |                | 225°      | 17.1          |
|         |                | 215°      | 17.3          |         |                | 215°      | 17.1          |
|         |                | 205°      | 17.3          |         |                | 205°      | 17.1          |
|         |                | 195°      | 17.3          |         |                | 195°      | 17.1          |
|         |                | 185°      | 17.3          |         |                | 185°      | 17.1          |
|         |                | 175°      | 17.3          |         |                | 175°      | 17.1          |
|         |                | 165°      | 17.3          |         |                | 165°      | 17.1          |
|         |                | 155°      | 17.3          |         |                | 155°      | 17.1          |
|         |                | 145°      | 17.3          |         |                | 145°      | 17.1          |
|         |                | 135°      | 17.3          |         |                | 135°      | 17.1          |
|         |                | 125°      | 17.3          |         |                | 125°      | 17.1          |
|         |                | 115°      | 17.3          |         |                | 115°      | 17.1          |
|         |                | 105°      | 17.3          |         |                | 105°      | 17.1          |
|         |                | 95°       | 17.3          |         |                | 95°       | 17.1          |
|         |                | 85°       | 17.3          |         |                | 85°       | 17.1          |
|         |                | 75°       | 17.3          |         |                | 75°       | 17.1          |
|         |                | 65°       | 17.3          |         |                | 65°       | 17.1          |
|         |                | 55°       | 17.3          |         |                | 55°       | 17.1          |
|         |                | 45°       | 17.3          |         |                | 45°       | 17.1          |
|         |                | 35°       | 17.3          |         |                | 35°       | 17.1          |
|         |                | 25°       | 17.3          |         |                | 25°       | 17.1          |
|         |                | 15°       | 17.3          |         |                | 15°       | 17.1          |
|         |                | 14°       | 17.3          |         |                | 14°       | 17.1          |
|         |                | 13°       | 20.7          |         |                | 13°       | 17.1          |
|         |                | 12°       | 20.7          |         |                | 12°       | 20.4          |
|         |                | 11°       | 20.7          |         |                | 11°       | 20.4          |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Tablet Mode    | 360°      | 17.3          | Aux     | Tablet Mode    | 360°      | 17.1          |
|         |                | 359°      | 17.3          |         |                | 359°      | 17.1          |
|         |                | 358°      | 17.3          |         |                | 358°      | 17.1          |
|         |                | 357°      | 17.3          |         |                | 357°      | 17.1          |
|         |                | 356°      | 17.3          |         |                | 356°      | 17.1          |
|         |                | 355°      | 17.3          |         |                | 355°      | 17.1          |
|         |                | 345°      | 17.3          |         |                | 345°      | 17.1          |
|         |                | 335°      | 17.3          |         |                | 335°      | 17.1          |
|         |                | 325°      | 17.3          |         |                | 325°      | 17.1          |
|         |                | 315°      | 17.3          |         |                | 315°      | 17.1          |
|         |                | 305°      | 17.3          |         |                | 305°      | 17.1          |
|         |                | 295°      | 17.3          |         |                | 295°      | 17.1          |
|         |                | 285°      | 17.3          |         |                | 285°      | 17.1          |
|         |                | 275°      | 17.3          |         |                | 275°      | 17.1          |
|         |                | 265°      | 17.3          |         |                | 265°      | 17.1          |
|         |                | 255°      | 17.3          |         |                | 255°      | 17.1          |
|         |                | 245°      | 17.3          |         |                | 245°      | 17.1          |
|         |                | 235°      | 17.3          |         |                | 235°      | 17.1          |
|         |                | 225°      | 17.3          |         |                | 225°      | 17.1          |
|         |                | 215°      | 17.3          |         |                | 215°      | 17.1          |
|         |                | 205°      | 17.3          |         |                | 205°      | 17.1          |
|         |                | 195°      | 17.3          |         |                | 195°      | 17.1          |
|         |                | 194°      | 17.3          |         |                | 194°      | 17.1          |
|         |                | 193°      | 17.3          |         |                | 193°      | 17.1          |
|         |                | 192°      | 17.3          |         |                | 192°      | 20.4          |
|         |                | 191°      | 20.7          |         |                | 191°      | 20.4          |

| Antenna | Operation Mode | Lid Angle | 802.11b [dBm] | Antenna | Operation Mode | Lid Angle | 802.11b [dBm] |
|---------|----------------|-----------|---------------|---------|----------------|-----------|---------------|
| Main    | Laptop Mode    | 190°      | 20.7          | Aux     | Laptop Mode    | 190°      | 20.4          |
|         |                | 189°      | 20.7          |         |                | 189°      | 20.4          |
|         |                | 188°      | 20.7          |         |                | 188°      | 20.4          |
|         |                | 187°      | 20.7          |         |                | 187°      | 20.4          |
|         |                | 186°      | 20.7          |         |                | 186°      | 20.4          |
|         |                | 185°      | 20.7          |         |                | 185°      | 20.4          |
|         |                | 175°      | 20.7          |         |                | 175°      | 20.4          |
|         |                | 165°      | 20.7          |         |                | 165°      | 20.4          |
|         |                | 155°      | 20.7          |         |                | 155°      | 20.4          |
|         |                | 145°      | 20.7          |         |                | 145°      | 20.4          |
|         |                | 135°      | 20.7          |         |                | 135°      | 20.4          |
|         |                | 125°      | 20.7          |         |                | 125°      | 20.4          |
|         |                | 115°      | 20.7          |         |                | 115°      | 20.4          |
|         |                | 105°      | 20.7          |         |                | 105°      | 20.4          |
|         |                | 95°       | 20.7          |         |                | 95°       | 20.4          |
|         |                | 85°       | 20.7          |         |                | 85°       | 20.4          |
|         |                | 75°       | 20.7          |         |                | 75°       | 20.4          |
|         |                | 65°       | 20.7          |         |                | 65°       | 20.4          |
|         |                | 55°       | 20.7          |         |                | 55°       | 20.4          |
|         |                | 45°       | 20.7          |         |                | 45°       | 20.4          |
|         |                | 35°       | 20.7          |         |                | 35°       | 20.4          |
|         |                | 25°       | 20.7          |         |                | 25°       | 20.4          |
|         |                | 15°       | 20.7          |         |                | 15°       | 20.4          |
|         |                | 14°       | 20.7          |         |                | 14°       | 20.4          |
|         |                | 13°       | 20.7          |         |                | 13°       | 20.4          |
|         |                | 12°       | 20.7          |         |                | 12°       | 0.0           |
|         |                | 11°       | 0.0           |         |                | 11°       | 0.0           |
|         | Lid Close      | 11°       | 0.0           |         | Lid Close      | 11°       | 0.0           |
|         |                | 10°       | 0.0           |         |                | 10°       | 0.0           |
|         |                | 9°        | 0.0           |         |                | 9°        | 0.0           |
|         |                | 8°        | 0.0           |         |                | 8°        | 0.0           |
|         |                | 7°        | 0.0           |         |                | 7°        | 0.0           |
|         |                | 6°        | 0.0           |         |                | 6°        | 0.0           |
|         |                | 5°        | 0.0           |         |                | 5°        | 0.0           |
|         |                | 4°        | 0.0           |         |                | 4°        | 0.0           |
|         |                | 3°        | 0.0           |         |                | 3°        | 0.0           |
|         |                | 2°        | 0.0           |         |                | 2°        | 0.0           |
|         |                | 1°        | 0.0           |         |                | 1°        | 0.0           |

**Figure 10.1 Test Reduction Table – 2.4 GHz Main Inpaq**

| Mode    | Side             | Required Channel | Tested/Reduced       |
|---------|------------------|------------------|----------------------|
| 802.11b | Back             | 1 – 2412 MHz     | Reduced <sup>5</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Reduced <sup>5</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>2</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Tested               |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>5</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Reduced <sup>5</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>4</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>4</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>4</sup> |
| 802.11g | Back             | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
| 802.11n | Back             | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required per KDB 248227 D01 v02r02 section 5.2.2 2) page 10.

Reduced<sup>4</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>5</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

#### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{2.462})] * 50 \text{ mm}\} + \{[76.5 - 50 \text{ mm}] * 10\} = 360 \text{ mW}$  which is greater than 125.9 mW

**Figure 10.2 Test Reduction Table – 2.4 GHz Aux Inpaq**

| Mode    | Side             | Required Channel | Tested/Reduced       |
|---------|------------------|------------------|----------------------|
| 802.11b | Back             | 1 – 2412 MHz     | Reduced <sup>5</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Reduced <sup>5</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>2</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Tested               |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>5</sup> |
|         |                  | 6 – 2437 MHz     | Tested               |
|         |                  | 11 – 2462 MHz    | Reduced <sup>5</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>4</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>4</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>4</sup> |
| 802.11g | Back             | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
| 802.11n | Back             | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Bottom           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Laptop           | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |
|         | Left, Right, Top | 1 – 2412 MHz     | Reduced <sup>3</sup> |
|         |                  | 6 – 2437 MHz     | Reduced <sup>3</sup> |
|         |                  | 11 – 2462 MHz    | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required per KDB 248227 D01 v02r02 section 5.2.2 2) page 10.

Reduced<sup>4</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>5</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$\{[(3.0)/(\sqrt{2.462})]*50\text{ mm}\} + \{[118.2-50\text{ mm}]*10\} = 777\text{ mW}$  which is greater than 125.9 mW

**Figure 10.3 Test Reduction Table – 5.1 GHz Main Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5150 MHz  | Back             | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 36 – 5180 MHz    | Reduced <sup>2</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>2</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>2</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>2</sup> |
| 802.11n<br>5150 MHz  | Back             | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 36 – 5180 MHz    | Reduced <sup>3</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>3</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>3</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>3</sup> |
|                      | Left, Right, Top | 36 – 5180 MHz    | Reduced <sup>2</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>2</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>2</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>2</sup> |
| 802.11ac<br>5210 MHz | Back             | 42 – 5210 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 42 – 5210 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 42 – 5210 MHz    | Reduced <sup>3</sup> |
|                      | Left, Right, Top | 42 – 5210 MHz    | Reduced <sup>2</sup> |

Reduced<sup>1</sup> – When the adjusted SAR is  $\leq 1.2$  W/kg, SAR is not required for the UNII-1 with the same or lower maximum output power in that test configuration per KDB 248227 D01 v02r02 section 5.3.1 1) page 11.

Reduced<sup>2</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{5.24})]*50\text{ mm}\} + \{[76.5-50\text{ mm}]*10\} = 330\text{ mW}$  which is greater than 125.9 mW

**Figure 10.4 Test Reduction Table – 5.1 GHz Aux Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5150 MHz  | Back             | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 36 – 5180 MHz    | Reduced <sup>2</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>2</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>2</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>2</sup> |
| 802.11n<br>5150 MHz  | Back             | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 36 – 5180 MHz    | Reduced <sup>1</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>1</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>1</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 36 – 5180 MHz    | Reduced <sup>2</sup> |
|                      |                  | 40 – 5200 MHz    | Reduced <sup>2</sup> |
|                      |                  | 44 – 5220 MHz    | Reduced <sup>2</sup> |
|                      |                  | 48 – 5240 MHz    | Reduced <sup>2</sup> |
| 802.11ac<br>5210 MHz | Back             | 42 – 5210 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 42 – 5210 MHz    | Reduced <sup>1</sup> |
|                      | Laptop           | 42 – 5210 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 42 – 5210 MHz    | Reduced <sup>2</sup> |

Reduced<sup>1</sup> – When the adjusted SAR is  $\leq 1.2$  W/kg, SAR is not required for the UNII-1 with the same or lower maximum output power in that test configuration per KDB 248227 D01 v02r02 section 5.3.1 1) page 11.

Reduced<sup>2</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$(((3.0)/(\sqrt{5.24})) * 50 \text{ mm}) + [(118.2 - 50 \text{ mm}) * 10] = 747 \text{ mW}$  which is greater than 125.9 mW

**Figure 10.5 Test Reduction Table – 5.2 GHz Main Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5250 MHz  | Back             | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 52 – 5260 MHz    | Reduced <sup>3</sup> |
|                      |                  | 56 – 5280 MHz    | Tested               |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>3</sup> |
|                      | Laptop           | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 52 – 5260 MHz    | Reduced <sup>2</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>2</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>2</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>2</sup> |
| 802.11n<br>5250 MHz  | Back             | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>1</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 52 – 5260 MHz    | Reduced <sup>3</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>3</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>3</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>3</sup> |
|                      | Laptop           | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>1</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 52 – 5260 MHz    | Reduced <sup>2</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>2</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>2</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>2</sup> |
| 802.11ac<br>5210 MHz | Back             | 58 – 5290 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 58 – 5290 MHz    | Reduced <sup>3</sup> |
|                      | Laptop           | 58 – 5290 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 58 – 5290 MHz    | Reduced <sup>2</sup> |

Reduced<sup>1</sup> – When the reported SAR is  $\leq 0.4$  W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

Reduced<sup>2</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>3</sup> – When the reported SAR is  $>0.8$  W/kg, test the next highest configuration until the SAR value is  $\leq 1.2$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>4</sup> – When the reported SAR is  $>0.4$  W/kg, test the next highest configuration until the SAR value is  $\leq 0.8$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{5.32})]*50\text{ mm}\} + \{[76.5-50\text{ mm}]*10\} = 330\text{ mW}$  which is greater than 125.9 mW

**Figure 10.6 Test Reduction Table – 5.2 GHz Aux Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5250 MHz  | Back             | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 52 – 5260 MHz    | Reduced <sup>4</sup> |
|                      |                  | 56 – 5280 MHz    | Tested               |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>4</sup> |
|                      | Laptop           | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Tested               |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 52 – 5260 MHz    | Reduced <sup>2</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>2</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>2</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>2</sup> |
| 802.11n<br>5250 MHz  | Back             | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>1</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 52 – 5260 MHz    | Reduced <sup>4</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>4</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>4</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>4</sup> |
|                      | Laptop           | 52 – 5260 MHz    | Reduced <sup>1</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>1</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>1</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 52 – 5260 MHz    | Reduced <sup>2</sup> |
|                      |                  | 56 – 5280 MHz    | Reduced <sup>2</sup> |
|                      |                  | 60 – 5300 MHz    | Reduced <sup>2</sup> |
|                      |                  | 64 – 5320 MHz    | Reduced <sup>2</sup> |
| 802.11ac<br>5210 MHz | Back             | 58 – 5290 MHz    | Reduced <sup>1</sup> |
|                      | Bottom           | 58 – 5290 MHz    | Reduced <sup>4</sup> |
|                      | Laptop           | 58 – 5290 MHz    | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 58 – 5290 MHz    | Reduced <sup>2</sup> |

Reduced<sup>1</sup> – When the reported SAR is  $\leq 0.4$  W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

Reduced<sup>2</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>3</sup> – When the reported SAR is  $>0.8$  W/kg, test the next highest configuration until the SAR value is  $\leq 1.2$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>4</sup> – When the reported SAR is  $>0.4$  W/kg, test the next highest configuration until the SAR value is  $\leq 0.8$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

#### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$\{[(3.0)/(\sqrt{5.32})]*50\text{ mm}\} + \{[118.2-50\text{ mm}]*10\} = 747\text{ mW}$  which is greater than 125.9 mW

**Figure 10.7 Test Reduction Table – 5.6 GHz Main Inpaq**

| Mode                | Side             | Required Channel | Tested/Reduced       |
|---------------------|------------------|------------------|----------------------|
| 802.11a<br>5600 MHz | Back             | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Bottom           | 100 – 5500 MHz   | Reduced <sup>1</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>1</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>1</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>1</sup> |
|                     |                  | 116 – 5580 MHz   | Tested               |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>1</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>1</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>1</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>1</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>1</sup> |
|                     | Laptop           | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Left, Right, Top | 100 – 5500 MHz   | Reduced <sup>3</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>3</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>3</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>3</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>3</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>3</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>3</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>3</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>3</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>3</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{5.70})]*50\text{ mm}\}+[(76.5-50\text{ mm})*10]=327\text{ mW}$  which is greater than 125.9 mW

**Figure 10.8 Test Reduction Table – 5.6 GHz Main Inpaq**

| Mode                | Side             | Required Channel | Tested/Reduced       |
|---------------------|------------------|------------------|----------------------|
| 802.11a<br>5600 MHz | Back             | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>4</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Bottom           | 100 – 5500 MHz   | Reduced <sup>1</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>1</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>1</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>1</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>1</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>1</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>1</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>1</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>1</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>1</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>1</sup> |
|                     | Laptop           | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>4</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Left, Right, Top | 100 – 5500 MHz   | Reduced <sup>3</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>3</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>3</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>3</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>3</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>3</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>3</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>3</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>3</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>3</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{5.70})]*50\text{ mm}\}+[(76.5-50\text{ mm})*10]=327\text{ mW}$  which is greater than 125.9 mW

**Figure 10.9 Test Reduction Table – 5.6 GHz Main Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11ac<br>5600 MHz | Back             | 106 – 5530 MHz   | Reduced <sup>4</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>4</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>4</sup> |
|                      | Bottom           | 106 – 5530 MHz   | Reduced <sup>1</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>1</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>1</sup> |
|                      | Laptop           | 106 – 5530 MHz   | Reduced <sup>4</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>4</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>4</sup> |
|                      | Left, Right, Top | 106 – 5530 MHz   | Reduced <sup>3</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>3</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

#### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$\{[(3.0)/(\sqrt{5.70})]*50\text{ mm}\} + \{[76.5-50\text{ mm}]*10\} = 327\text{ mW}$  which is greater than 125.9 mW

**Figure 10.10 Test Reduction Table – 5.6 GHz Aux Inpaq**

| Mode                | Side             | Required Channel | Tested/Reduced       |
|---------------------|------------------|------------------|----------------------|
| 802.11a<br>5600 MHz | Back             | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Bottom           | 100 – 5500 MHz   | Reduced <sup>1</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>1</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>1</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>1</sup> |
|                     |                  | 116 – 5580 MHz   | Tested               |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>1</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>1</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>1</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>1</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>1</sup> |
|                     | Laptop           | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Tested               |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Left, Right, Top | 100 – 5500 MHz   | Reduced <sup>3</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>3</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>3</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>3</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>3</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>3</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>3</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>3</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>3</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>3</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$$[[(3.0)/(\sqrt{5.70})]*50\text{ mm}]+[(118.2-50\text{ mm})*10]=744\text{ mW which is greater than }125.9\text{ mW}$$

**Figure 10.11 Test Reduction Table – 5.6 GHz Aux Inpaq**

| Mode                | Side             | Required Channel | Tested/Reduced       |
|---------------------|------------------|------------------|----------------------|
| 802.11a<br>5600 MHz | Back             | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>4</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Bottom           | 100 – 5500 MHz   | Reduced <sup>1</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>1</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>1</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>1</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>1</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>1</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>1</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>1</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>1</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>1</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>1</sup> |
|                     | Laptop           | 100 – 5500 MHz   | Reduced <sup>4</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>4</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>4</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>4</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>4</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>4</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>4</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>4</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>4</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>4</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>4</sup> |
|                     | Left, Right, Top | 100 – 5500 MHz   | Reduced <sup>3</sup> |
|                     |                  | 104 – 5520 MHz   | Reduced <sup>3</sup> |
|                     |                  | 108 – 5540 MHz   | Reduced <sup>3</sup> |
|                     |                  | 112 – 5560 MHz   | Reduced <sup>3</sup> |
|                     |                  | 116 – 5580 MHz   | Reduced <sup>3</sup> |
|                     |                  | 120 – 5600 MHz   | Reduced <sup>3</sup> |
|                     |                  | 124 – 5620 MHz   | Reduced <sup>3</sup> |
|                     |                  | 128 – 5640 MHz   | Reduced <sup>3</sup> |
|                     |                  | 132 – 5660 MHz   | Reduced <sup>3</sup> |
|                     |                  | 136 – 5680 MHz   | Reduced <sup>3</sup> |
|                     |                  | 140 – 5700 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$$[[(3.0)/(\sqrt{5.70})]*50\text{ mm}]+[(118.2-50\text{ mm})*10]=744\text{ mW which is greater than }125.9\text{ mW}$$

**Figure 10.12 Test Reduction Table – 5.6 GHz Aux Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11ac<br>5600 MHz | Back             | 106 – 5530 MHz   | Reduced <sup>4</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>4</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>4</sup> |
|                      | Bottom           | 106 – 5530 MHz   | Reduced <sup>1</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>1</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>1</sup> |
|                      | Laptop           | 106 – 5530 MHz   | Reduced <sup>4</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>4</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>4</sup> |
|                      | Left, Right, Top | 106 – 5530 MHz   | Reduced <sup>3</sup> |
|                      |                  | 122 – 5610 MHz   | Reduced <sup>3</sup> |
|                      |                  | 138 – 5690 MHz   | Reduced <sup>3</sup> |

Reduced<sup>1</sup> – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 0.8 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>2</sup> – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>3</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Reduced<sup>4</sup> – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$\{[(3.0)/(\sqrt{5.70})]*50\text{ mm}\} + \{[118.2-50\text{ mm}]*10\} = 744\text{ mW}$  which is greater than 125.9 mW

**Figure 10.13 Test Reduction Table – 5.8 GHz Main Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5800 MHz  | Back             | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      |                  | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      | Bottom           | 149 – 5745 MHz   | Reduced <sup>3</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>3</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>3</sup> |
|                      |                  | 165 – 5825 MHz   | Tested               |
|                      | Laptop           | 149 – 5745 MHz   | Reduced <sup>2</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>2</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>2</sup> |
|                      | Left, Right, Top | 165 – 5825 MHz   | Tested               |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>4</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>4</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>4</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>4</sup> |
| 802.11n<br>5800 MHz  | Back             | 165 – 5825 MHz   | Reduced <sup>4</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>1</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      | Bottom           | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>3</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>3</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>3</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>3</sup> |
|                      | Laptop           | 165 – 5825 MHz   | Reduced <sup>3</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>2</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>2</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>2</sup> |
|                      | Left, Right, Top | 161 – 5805 MHz   | Reduced <sup>2</sup> |
|                      |                  | 165 – 5825 MHz   | Reduced <sup>2</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>2</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>2</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>2</sup> |
| 802.11ac<br>5800 MHz | Back             | 149 – 5745 MHz   | Reduced <sup>4</sup> |
|                      | Bottom           | 155 – 5775 MHz   | Reduced <sup>4</sup> |
|                      | Laptop           | 155 – 5775 MHz   | Reduced <sup>4</sup> |
|                      | Left, Right, Top | 155 – 5775 MHz   | Reduced <sup>4</sup> |

Reduced<sup>1</sup> – When the reported SAR is  $\leq 0.4$  W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

Reduced<sup>2</sup> – When the reported SAR is  $> 0.4$  W/kg, test next highest output power channel until SAR  $\leq 0.8$  W/kg then all remaining test configurations are not required per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>3</sup> – When the reported SAR is  $> 0.8$  W/kg, test the next highest configuration until the SAR value is  $\leq 1.2$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>4</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 76.5 mm  
Left Side distance: 167.2 mm

The closest distance is from the right side. Therefore, if the right side is excluded the top and left would also be excluded.

$$[(3.0)/(\sqrt{5.825})] * 50 \text{ mm}] + [(76.5 - 50 \text{ mm}) * 10] = 327 \text{ mW which is greater than } 125.9 \text{ mW}$$

**Figure 10.14 Test Reduction Table – 5.8 GHz Aux Inpaq**

| Mode                 | Side             | Required Channel | Tested/Reduced       |
|----------------------|------------------|------------------|----------------------|
| 802.11a<br>5800 MHz  | Back             | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      |                  | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      | Bottom           | 149 – 5745 MHz   | Reduced <sup>2</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>2</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>2</sup> |
|                      |                  | 165 – 5825 MHz   | Tested               |
|                      | Laptop           | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Tested               |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>4</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>4</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>4</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>4</sup> |
| 802.11n<br>5800 MHz  | Back             | 165 – 5825 MHz   | Reduced <sup>4</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>1</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      | Bottom           | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>2</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>2</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>2</sup> |
|                      |                  | 161 – 5805 MHz   | Reduced <sup>2</sup> |
|                      | Laptop           | 165 – 5825 MHz   | Reduced <sup>2</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>1</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>1</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 161 – 5805 MHz   | Reduced <sup>1</sup> |
|                      |                  | 165 – 5825 MHz   | Reduced <sup>1</sup> |
|                      |                  | 149 – 5745 MHz   | Reduced <sup>4</sup> |
|                      |                  | 153 – 5765 MHz   | Reduced <sup>4</sup> |
|                      |                  | 157 – 5785 MHz   | Reduced <sup>4</sup> |
| 802.11ac<br>5800 MHz | Back             | 161 – 5805 MHz   | Reduced <sup>4</sup> |
|                      | Bottom           | 165 – 5825 MHz   | Reduced <sup>4</sup> |
|                      | Laptop           | 155 – 5775 MHz   | Reduced <sup>1</sup> |
|                      | Left, Right, Top | 155 – 5775 MHz   | Reduced <sup>2</sup> |

Reduced<sup>1</sup> – When the reported SAR is  $\leq 0.4$  W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

Reduced<sup>2</sup> – When the reported SAR is  $> 0.4$  W/kg, test next highest output power channel until SAR  $\leq 0.8$  W/kg then all remaining test configurations are not required per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.

Reduced<sup>3</sup> – When the reported SAR is  $> 0.8$  W/kg, test the next highest configuration until the SAR value is  $\leq 1.2$  W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced<sup>4</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

### Calculations for test exclusion for Top, Right and Left side.

Maximum power: 125.9 mW  
Top Edge distance: 183.9 mm  
Right Side distance: 125.5 mm  
Left Side distance: 118.2 mm

The closest distance is from the left side. Therefore, if the left side is excluded the top and right would also be excluded.

$$[(3.0)/(\sqrt{5.825})] * 50 \text{ mm}] + [(118.2 - 50 \text{ mm}) * 10] = 744 \text{ mW which is greater than 125.9 mW}$$

**Figure 10.15 Test Reduction Table – 3G**

| Band/<br>Frequency (MHz) | Technology | Side            | Required<br>Channel | Tested/<br>Reduced   |
|--------------------------|------------|-----------------|---------------------|----------------------|
| Band 5<br>824-849 MHz    | WCDMA      | Back            | 4132                | Tested               |
|                          |            |                 | 4183                | Tested               |
|                          |            |                 | 4233                | Tested               |
|                          |            | Top             | 4132                | Reduced <sup>1</sup> |
|                          |            |                 | 4183                | Tested               |
|                          |            |                 | 4233                | Reduced <sup>1</sup> |
|                          |            | Left            | 4132                | Tested               |
|                          |            |                 | 4183                | Tested               |
|                          |            |                 | 4233                | Tested               |
|                          |            | Laptop          | 4132                | Tested               |
|                          |            |                 | 4183                | Tested               |
|                          |            |                 | 4233                | Tested               |
|                          |            | Remaining Sides |                     |                      |
| Band 4<br>1710-1755 MHz  |            | Back            | 1312                | Tested               |
|                          |            |                 | 1413                | Tested               |
|                          |            |                 | 1513                | Tested               |
|                          |            | Top             | 1312                | Reduced <sup>1</sup> |
|                          |            |                 | 1413                | Tested               |
|                          |            |                 | 1513                | Reduced <sup>1</sup> |
|                          |            | Left            | 1312                | Reduced <sup>1</sup> |
|                          |            |                 | 1413                | Tested               |
|                          |            |                 | 1513                | Reduced <sup>1</sup> |
|                          |            | Laptop          | 1312                | Tested               |
|                          |            |                 | 1413                | Tested               |
|                          |            |                 | 1513                | Tested               |
|                          |            | Remaining Sides |                     |                      |
| Band 2<br>1850-1910 MHz  |            | Back            | 9262                | Tested               |
|                          |            |                 | 9400                | Tested               |
|                          |            |                 | 9538                | Tested               |
|                          |            | Top             | 9262                | Reduced <sup>1</sup> |
|                          |            |                 | 9400                | Tested               |
|                          |            |                 | 9538                | Reduced <sup>1</sup> |
|                          |            | Left            | 9262                | Tested               |
|                          |            |                 | 9400                | Tested               |
|                          |            |                 | 9538                | Tested               |
|                          |            | Laptop          | 9262                | Tested               |
|                          |            |                 | 9400                | Tested               |
|                          |            |                 | 9538                | Tested               |
|                          |            | Remaining Sides |                     |                      |

Reduced<sup>1</sup> – When the mid channel is 3 dB below the limit, the remaining channels are not required per KDB 447498 D01 v06 section 4.3.3 page 14.

Reduced<sup>2</sup> – When the antenna is more than 25 mm from a side, the test can be reduced per KDB447498 D01 v06 section 4.3.1 1) page 11. See below for calculations.

Maximum power: 281.8 mW

Closest Distance to Right: 290 mm

Closest Distance to Bottom: 140 mm

$\{[(3.0)/(\sqrt{0.849})]*50 \text{ mm}\} + \{[140-50 \text{ mm}]*10\} = 1062 \text{ mW}$  which is greater than 281.8 mW

$\{[(3.0)/(\sqrt{1.755})]*50 \text{ mm}\} + \{[140-50 \text{ mm}]*10\} = 1013 \text{ mW}$  which is greater than 281.8 mW

$\{[(3.0)/(\sqrt{1.910})]*50 \text{ mm}\} + \{[140-50 \text{ mm}]*10\} = 1008 \text{ mW}$  which is greater than 281.8 mW

## 10.5 SAR Measurement Conditions for LTE Bands

### 10.5.1 LTE Functionality

The follow table identifies all the channel bandwidths in each frequency band supported by this device.

| LTE Operating Band | Uplink (transmit) | Downlink (Receive) | Duplex mode (FDD/TDD) |
|--------------------|-------------------|--------------------|-----------------------|
|                    | Low - high        | Low - high         |                       |
| 4 & 66             | 1710-1780         | 2110-2200          | FDD                   |
| 5 & 26             | 814-849           | 859-894            | FDD                   |
| 13                 | 777-787           | 746-756            | FDD                   |
| 14                 | 788-798           | 758-768            | FDD                   |
| 12 & 17            | 699-716           | 729-746            | FDD                   |
| 2 & 25             | 1850-1915         | 1930-1995          | FDD                   |
| 30                 | 2305-2315         | 2350-2360          | FDD                   |
| 7                  | 2500-2570         | 2620-2690          | FDD                   |
| 38 & 41            | 2496-2690         | 2496-2690          | TDD                   |

### 10.5.2 Test Conditions

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. The Figure 11.1 table indicates all the test reduction utilized for this report.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

**Notebook Mode**

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | QPSK       | 1.4 MHz   | 6       | 0         | 19957   | 1710.7    | 19.1  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20393   | 1754.3    | 19.1  |
|      |            |           | 3       | 1         | 19957   | 1710.7    | 18.6  |
|      |            |           |         |           | 20175   | 1732.5    | 18.5  |
|      |            |           |         |           | 20393   | 1754.3    | 18.9  |
|      |            |           | 1       | 0         | 19957   | 1710.7    | 20.0  |
|      |            |           |         |           | 20175   | 1732.5    | 19.9  |
|      |            |           |         |           | 20393   | 1754.3    | 19.8  |
|      |            |           | 1       | 5         | 19957   | 1710.7    | 19.8  |
|      |            |           |         |           | 20175   | 1732.5    | 19.9  |
|      |            |           |         |           | 20393   | 1754.3    | 19.8  |
|      |            | 3 MHz     | 15      | 0         | 19965   | 1711.5    | 18.8  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20385   | 1753.5    | 18.6  |
|      |            |           | 8       | 3         | 19965   | 1711.5    | 18.9  |
|      |            |           |         |           | 20175   | 1732.5    | 18.7  |
|      |            |           |         |           | 20385   | 1753.5    | 18.9  |
|      |            |           | 1       | 0         | 19965   | 1711.5    | 20.0  |
|      |            |           |         |           | 20175   | 1732.5    | 19.9  |
|      |            |           |         |           | 20385   | 1753.5    | 19.6  |
|      |            |           | 1       | 14        | 19965   | 1711.5    | 19.6  |
|      |            |           |         |           | 20175   | 1732.5    | 20.1  |
|      |            |           |         |           | 20385   | 1753.5    | 19.9  |
|      |            | 5 MHz     | 25      | 0         | 19975   | 1712.5    | 19.2  |
|      |            |           |         |           | 20175   | 1732.5    | 18.5  |
|      |            |           |         |           | 20375   | 1752.5    | 18.7  |
|      |            |           | 12      | 6         | 19975   | 1712.5    | 19.0  |
|      |            |           |         |           | 20175   | 1732.5    | 19.0  |
|      |            |           |         |           | 20375   | 1752.5    | 19.1  |
|      |            |           | 1       | 0         | 19975   | 1712.5    | 19.7  |
|      |            |           |         |           | 20175   | 1732.5    | 19.7  |
|      |            |           |         |           | 20375   | 1752.5    | 20.0  |
|      |            |           | 1       | 24        | 19975   | 1712.5    | 20.0  |
|      |            |           |         |           | 20175   | 1732.5    | 19.8  |
|      |            |           |         |           | 20375   | 1752.5    | 19.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | QPSK       | 10 MHz    | 50      | 0         | 20000   | 1715      | 18.6  |
|      |            |           |         |           | 20175   | 1732.5    | 18.9  |
|      |            |           |         |           | 20350   | 1750      | 18.6  |
|      |            |           | 25      | 12        | 20000   | 1715      | 19.1  |
|      |            |           |         |           | 20175   | 1732.5    | 18.9  |
|      |            |           |         |           | 20350   | 1750      | 19.2  |
|      |            |           | 1       | 0         | 20000   | 1715      | 19.5  |
|      |            |           |         |           | 20175   | 1732.5    | 19.5  |
|      |            |           |         |           | 20350   | 1750      | 19.5  |
|      |            |           | 1       | 24        | 20000   | 1715      | 19.6  |
|      |            |           |         |           | 20175   | 1732.5    | 20.0  |
|      |            |           |         |           | 20350   | 1750      | 20.0  |
|      |            | 15 MHz    | 75      | 0         | 20025   | 1717.5    | 19.0  |
|      |            |           |         |           | 20175   | 1732.5    | 18.8  |
|      |            |           |         |           | 20325   | 1747.5    | 19.0  |
|      |            |           | 36      | 19        | 20025   | 1717.5    | 18.8  |
|      |            |           |         |           | 20175   | 1732.5    | 18.5  |
|      |            |           |         |           | 20325   | 1747.5    | 18.8  |
|      |            |           | 1       | 0         | 20025   | 1717.5    | 19.6  |
|      |            |           |         |           | 20175   | 1732.5    | 19.9  |
|      |            |           |         |           | 20325   | 1747.5    | 19.8  |
|      |            |           | 1       | 74        | 20025   | 1717.5    | 20.0  |
|      |            |           |         |           | 20175   | 1732.5    | 20.0  |
|      |            |           |         |           | 20325   | 1747.5    | 19.7  |
|      |            | 20 MHz    | 100     | 0         | 20050   | 1720      | 18.8  |
|      |            |           |         |           | 20175   | 1732.5    | 19.2  |
|      |            |           |         |           | 20300   | 1745      | 19.0  |
|      |            |           | 50      | 25        | 20050   | 1720      | 19.1  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20300   | 1745      | 19.1  |
|      |            |           | 1       | 49        | 20050   | 1720      | 19.6  |
|      |            |           |         |           | 20175   | 1732.5    | 19.9  |
|      |            |           |         |           | 20300   | 1745      | 20.2  |
|      |            |           | 1       | 99        | 20050   | 1720      | 19.6  |
|      |            |           |         |           | 20175   | 1732.5    | 19.7  |
|      |            |           |         |           | 20300   | 1745      | 20.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | 16QAM      | 1.4 MHz   | 6       | 0         | 19957   | 1710.7    | 17.7  |
|      |            |           |         |           | 20175   | 1732.5    | 17.7  |
|      |            |           |         |           | 20393   | 1754.3    | 17.6  |
|      |            |           | 3       | 1         | 19957   | 1710.7    | 18.2  |
|      |            |           |         |           | 20175   | 1732.5    | 17.6  |
|      |            |           |         |           | 20393   | 1754.3    | 18.1  |
|      |            |           | 1       | 0         | 19957   | 1710.7    | 18.6  |
|      |            |           |         |           | 20175   | 1732.5    | 18.9  |
|      |            |           |         |           | 20393   | 1754.3    | 19.0  |
|      |            |           | 1       | 5         | 19957   | 1710.7    | 18.7  |
|      |            |           |         |           | 20175   | 1732.5    | 18.7  |
|      |            |           |         |           | 20393   | 1754.3    | 19.0  |
|      |            | 3 MHz     | 15      | 0         | 19965   | 1711.5    | 18.2  |
|      |            |           |         |           | 20175   | 1732.5    | 17.8  |
|      |            |           |         |           | 20385   | 1753.5    | 17.8  |
|      |            |           | 8       | 3         | 19965   | 1711.5    | 17.8  |
|      |            |           |         |           | 20175   | 1732.5    | 17.8  |
|      |            |           |         |           | 20385   | 1753.5    | 17.5  |
|      |            |           | 1       | 0         | 19965   | 1711.5    | 18.7  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20385   | 1753.5    | 18.5  |
|      |            |           | 1       | 14        | 19965   | 1711.5    | 18.6  |
|      |            |           |         |           | 20175   | 1732.5    | 18.7  |
|      |            |           |         |           | 20385   | 1753.5    | 18.6  |
|      |            | 5 MHz     | 25      | 0         | 19975   | 1712.5    | 17.8  |
|      |            |           |         |           | 20175   | 1732.5    | 18.0  |
|      |            |           |         |           | 20375   | 1752.5    | 17.5  |
|      |            |           | 12      | 6         | 19975   | 1712.5    | 17.9  |
|      |            |           |         |           | 20175   | 1732.5    | 17.5  |
|      |            |           |         |           | 20375   | 1752.5    | 18.0  |
|      |            |           | 1       | 0         | 19975   | 1712.5    | 19.1  |
|      |            |           |         |           | 20175   | 1732.5    | 18.9  |
|      |            |           |         |           | 20375   | 1752.5    | 19.1  |
|      |            |           | 1       | 24        | 19975   | 1712.5    | 19.0  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20375   | 1752.5    | 18.8  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | 16QAM      | 10 MHz    | 50      | 0         | 20000   | 1715      | 17.9  |
|      |            |           |         |           | 20175   | 1732.5    | 17.6  |
|      |            |           |         |           | 20350   | 1750      | 17.8  |
|      |            |           | 25      | 12        | 20000   | 1715      | 18.0  |
|      |            |           |         |           | 20175   | 1732.5    | 17.6  |
|      |            |           |         |           | 20350   | 1750      | 17.7  |
|      |            |           | 1       | 0         | 20000   | 1715      | 19.2  |
|      |            |           |         |           | 20175   | 1732.5    | 19.0  |
|      |            |           |         |           | 20350   | 1750      | 18.8  |
|      |            |           | 1       | 24        | 20000   | 1715      | 19.0  |
|      |            |           |         |           | 20175   | 1732.5    | 18.6  |
|      |            |           |         |           | 20350   | 1750      | 18.8  |
|      |            | 15 MHz    | 75      | 0         | 20025   | 1717.5    | 17.9  |
|      |            |           |         |           | 20175   | 1732.5    | 17.7  |
|      |            |           |         |           | 20325   | 1747.5    | 17.6  |
|      |            |           | 36      | 19        | 20025   | 1717.5    | 17.7  |
|      |            |           |         |           | 20175   | 1732.5    | 17.7  |
|      |            |           |         |           | 20325   | 1747.5    | 17.9  |
|      |            |           | 1       | 0         | 20025   | 1717.5    | 18.7  |
|      |            |           |         |           | 20175   | 1732.5    | 18.6  |
|      |            |           |         |           | 20325   | 1747.5    | 19.1  |
|      |            |           | 1       | 74        | 20025   | 1717.5    | 18.6  |
|      |            |           |         |           | 20175   | 1732.5    | 18.7  |
|      |            |           |         |           | 20325   | 1747.5    | 18.6  |
|      |            | 20 MHz    | 100     | 0         | 20050   | 1720      | 17.7  |
|      |            |           |         |           | 20175   | 1732.5    | 17.6  |
|      |            |           |         |           | 20300   | 1745      | 17.6  |
|      |            |           | 50      | 25        | 20050   | 1720      | 17.6  |
|      |            |           |         |           | 20175   | 1732.5    | 17.7  |
|      |            |           |         |           | 20300   | 1745      | 17.9  |
|      |            |           | 1       | 0         | 20050   | 1720      | 18.8  |
|      |            |           |         |           | 20175   | 1732.5    | 18.5  |
|      |            |           |         |           | 20300   | 1745      | 18.8  |
|      |            |           | 1       | 99        | 20050   | 1720      | 18.9  |
|      |            |           |         |           | 20175   | 1732.5    | 19.1  |
|      |            |           |         |           | 20300   | 1745      | 18.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | QPSK       | 1.4 MHz   | 6       | 0         | 20407   | 824.7     | 22.2  |
|      |            |           |         |           | 20525   | 836.5     | 22.7  |
|      |            |           |         |           | 20643   | 848.3     | 22.1  |
|      |            |           | 3       | 1         | 20407   | 824.7     | 22.4  |
|      |            |           |         |           | 20525   | 836.5     | 22.5  |
|      |            |           |         |           | 20643   | 848.3     | 22.7  |
|      |            |           | 1       | 0         | 20407   | 824.7     | 23.2  |
|      |            |           |         |           | 20525   | 836.5     | 23.3  |
|      |            |           |         |           | 20643   | 848.3     | 23.2  |
|      |            |           | 1       | 5         | 20407   | 824.7     | 23.0  |
|      |            |           |         |           | 20525   | 836.5     | 23.3  |
|      |            |           |         |           | 20643   | 848.3     | 23.4  |
|      |            | 3 MHz     | 15      | 0         | 20415   | 825.5     | 22.4  |
|      |            |           |         |           | 20525   | 836.5     | 22.4  |
|      |            |           |         |           | 20635   | 847.5     | 22.6  |
|      |            |           | 8       | 3         | 20415   | 825.5     | 22.3  |
|      |            |           |         |           | 20525   | 836.5     | 22.1  |
|      |            |           |         |           | 20635   | 847.5     | 22.1  |
|      |            |           | 1       | 0         | 20415   | 825.5     | 23.2  |
|      |            |           |         |           | 20525   | 836.5     | 23.4  |
|      |            |           |         |           | 20635   | 847.5     | 23.3  |
|      |            |           | 1       | 14        | 20415   | 825.5     | 23.4  |
|      |            |           |         |           | 20525   | 836.5     | 23.4  |
|      |            |           |         |           | 20635   | 847.5     | 23.3  |
|      |            | 5 MHz     | 25      | 0         | 20425   | 826.5     | 22.6  |
|      |            |           |         |           | 20525   | 836.5     | 22.3  |
|      |            |           |         |           | 20625   | 846.5     | 22.2  |
|      |            |           | 12      | 6         | 20425   | 826.5     | 22.0  |
|      |            |           |         |           | 20525   | 836.5     | 22.0  |
|      |            |           |         |           | 20625   | 846.5     | 22.3  |
|      |            |           | 1       | 0         | 20425   | 826.5     | 23.2  |
|      |            |           |         |           | 20525   | 836.5     | 23.2  |
|      |            |           |         |           | 20625   | 846.5     | 23.7  |
|      |            |           | 1       | 24        | 20425   | 826.5     | 23.4  |
|      |            |           |         |           | 20525   | 836.5     | 23.1  |
|      |            |           |         |           | 20625   | 846.5     | 23.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | QPSK       | 10 MHz    | 50      | 0         | 20450   | 829       | 22.7  |
|      |            |           |         |           | 20525   | 836.5     | 22.1  |
|      |            |           |         |           | 20600   | 844       | 22.6  |
|      |            |           | 25      | 12        | 20450   | 829       | 22.6  |
|      |            |           |         |           | 20525   | 836.5     | 22.3  |
|      |            |           |         |           | 20600   | 844       | 22.4  |
|      |            |           | 1       | 0         | 20450   | 829       | 23.5  |
|      |            |           |         |           | 20525   | 836.5     | 23.6  |
|      |            |           |         |           | 20600   | 844       | 23.1  |
|      |            |           | 1       | 24        | 20450   | 829       | 23.0  |
|      |            |           |         |           | 20525   | 836.5     | 23.6  |
|      |            |           |         |           | 20600   | 844       | 23.1  |
|      | 16QAM      | 1.4 MHz   | 6       | 0         | 20407   | 824.7     | 21.3  |
|      |            |           |         |           | 20525   | 836.5     | 21.5  |
|      |            |           |         |           | 20643   | 848.3     | 21.3  |
|      |            |           | 3       | 1         | 20407   | 824.7     | 21.6  |
|      |            |           |         |           | 20525   | 836.5     | 21.6  |
|      |            |           |         |           | 20643   | 848.3     | 21.5  |
|      |            |           | 1       | 0         | 20407   | 824.7     | 22.3  |
|      |            |           |         |           | 20525   | 836.5     | 22.5  |
|      |            |           |         |           | 20643   | 848.3     | 22.6  |
|      |            |           | 1       | 5         | 20407   | 824.7     | 22.6  |
|      |            |           |         |           | 20525   | 836.5     | 22.6  |
|      |            |           |         |           | 20643   | 848.3     | 22.4  |
|      |            | 3 MHz     | 15      | 0         | 20415   | 825.5     | 21.0  |
|      |            |           |         |           | 20525   | 836.5     | 21.3  |
|      |            |           |         |           | 20635   | 847.5     | 21.6  |
|      |            |           | 8       | 3         | 20415   | 825.5     | 21.3  |
|      |            |           |         |           | 20525   | 836.5     | 21.1  |
|      |            |           |         |           | 20635   | 847.5     | 21.4  |
|      |            |           | 1       | 0         | 20415   | 825.5     | 22.6  |
|      |            |           |         |           | 20525   | 836.5     | 22.4  |
|      |            |           |         |           | 20635   | 847.5     | 22.2  |
|      |            |           | 1       | 14        | 20415   | 825.5     | 22.7  |
|      |            |           |         |           | 20525   | 836.5     | 22.4  |
|      |            |           |         |           | 20635   | 847.5     | 22.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | 16QAM      | 5 MHz     | 25      | 0         | 20425   | 826.5     | 21.4  |
|      |            |           |         |           | 20525   | 836.5     | 21.2  |
|      |            |           |         |           | 20625   | 846.5     | 21.4  |
|      |            |           | 12      | 6         | 20425   | 826.5     | 21.5  |
|      |            |           |         |           | 20525   | 836.5     | 21.6  |
|      |            |           |         |           | 20625   | 846.5     | 21.6  |
|      |            |           | 1       | 0         | 20425   | 826.5     | 22.4  |
|      |            |           |         |           | 20525   | 836.5     | 22.3  |
|      |            |           |         |           | 20625   | 846.5     | 22.6  |
|      |            |           | 1       | 24        | 20425   | 826.5     | 22.2  |
|      |            |           |         |           | 20525   | 836.5     | 22.6  |
|      |            |           |         |           | 20625   | 846.5     | 22.4  |
|      |            | 10 MHz    | 50      | 0         | 20450   | 829       | 21.3  |
|      |            |           |         |           | 20525   | 836.5     | 21.2  |
|      |            |           |         |           | 20600   | 844       | 21.5  |
|      |            |           | 25      | 12        | 20450   | 829       | 21.3  |
|      |            |           |         |           | 20525   | 836.5     | 21.2  |
|      |            |           |         |           | 20600   | 844       | 21.2  |
|      |            |           | 1       | 0         | 20450   | 829       | 22.5  |
|      |            |           |         |           | 20525   | 836.5     | 22.4  |
|      |            |           |         |           | 20600   | 844       | 22.6  |
|      |            |           | 1       | 24        | 20450   | 829       | 22.4  |
|      |            |           |         |           | 20525   | 836.5     | 22.5  |
|      |            |           |         |           | 20600   | 844       | 22.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 13   | QPSK       | 5 MHz     | 25      | 0         | 23205   | 779.5     | 22.1  |
|      |            |           |         |           | 23255   | 784.5     | 22.5  |
|      |            |           | 12      | 6         | 23205   | 779.5     | 22.1  |
|      |            |           |         |           | 23255   | 784.5     | 22.0  |
|      |            |           | 1       | 0         | 23205   | 779.5     | 23.0  |
|      |            |           |         |           | 23255   | 784.5     | 23.4  |
|      |            |           | 1       | 24        | 23205   | 779.5     | 23.1  |
|      |            |           |         |           | 23255   | 784.5     | 23.6  |
|      |            | 10 MHz    | 50      | 0         | 23230   | 782.0     | 22.3  |
|      |            |           | 25      | 13        | 23230   | 782.0     | 22.3  |
|      |            |           | 1       | 0         | 23230   | 782.0     | 23.5  |
|      |            |           | 1       | 49        | 23230   | 782.0     | 23.7  |
|      | 16QAM      | 5 MHz     | 25      | 0         | 23205   | 779.5     | 21.7  |
|      |            |           |         |           | 23255   | 784.5     | 21.1  |
|      |            |           | 12      | 6         | 23205   | 779.5     | 21.4  |
|      |            |           |         |           | 23255   | 784.5     | 21.3  |
|      |            |           | 1       | 0         | 23205   | 779.5     | 22.3  |
|      |            |           |         |           | 23255   | 784.5     | 22.2  |
|      |            |           | 1       | 24        | 23205   | 779.5     | 22.3  |
|      |            |           |         |           | 23255   | 784.5     | 22.2  |
|      |            | 10 MHz    | 50      | 0         | 23230   | 782.0     | 21.3  |
|      |            |           | 25      | 13        | 23230   | 782.0     | 21.3  |
|      |            |           | 1       | 0         | 23230   | 782.0     | 22.5  |
|      |            |           | 1       | 49        | 23230   | 782.0     | 22.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 14   | QPSK       | 5 MHz     | 25      | 0         | 23305   | 790.5     | 22.1  |
|      |            |           |         |           | 23355   | 795.5     | 22.5  |
|      |            |           | 12      | 6         | 23305   | 790.5     | 22.6  |
|      |            |           |         |           | 23355   | 795.5     | 22.3  |
|      |            |           | 1       | 0         | 23305   | 790.5     | 23.2  |
|      |            |           |         |           | 23355   | 795.5     | 23.1  |
|      |            |           | 1       | 24        | 23305   | 790.5     | 23.3  |
|      |            |           |         |           | 23355   | 795.5     | 23.3  |
|      |            | 10 MHz    | 50      | 0         | 23330   | 793.0     | 22.1  |
|      |            |           | 25      | 13        | 23330   | 793.0     | 22.4  |
|      |            |           | 1       | 0         | 23330   | 793.0     | 23.0  |
|      |            |           | 1       | 49        | 23330   | 793.0     | 23.2  |
|      | 16QAM      | 5 MHz     | 25      | 0         | 23305   | 790.5     | 21.1  |
|      |            |           |         |           | 23355   | 795.5     | 21.6  |
|      |            |           | 12      | 6         | 23305   | 790.5     | 21.4  |
|      |            |           |         |           | 23355   | 795.5     | 21.5  |
|      |            |           | 1       | 0         | 23305   | 790.5     | 22.4  |
|      |            |           |         |           | 23355   | 795.5     | 22.3  |
|      |            |           | 1       | 24        | 23305   | 790.5     | 22.7  |
|      |            |           |         |           | 23355   | 795.5     | 22.5  |
|      |            | 10 MHz    | 50      | 0         | 23330   | 793.0     | 21.0  |
|      |            |           | 25      | 13        | 23330   | 793.0     | 21.2  |
|      |            |           | 1       | 0         | 23330   | 793.0     | 22.6  |
|      |            |           | 1       | 49        | 23330   | 793.0     | 22.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | QPSK       | 1.4 MHz   | 6       | 0         | 26697   | 814.7     | 22.0  |
|      |            |           |         |           | 26865   | 831.5     | 22.4  |
|      |            |           |         |           | 27033   | 848.3     | 22.1  |
|      |            |           | 3       | 1         | 26697   | 814.7     | 22.2  |
|      |            |           |         |           | 26865   | 831.5     | 22.3  |
|      |            |           |         |           | 27033   | 848.3     | 22.0  |
|      |            |           | 1       | 0         | 26697   | 814.7     | 23.3  |
|      |            |           |         |           | 26865   | 831.5     | 23.3  |
|      |            |           |         |           | 27033   | 848.3     | 23.1  |
|      |            |           | 1       | 5         | 26697   | 814.7     | 23.5  |
|      |            |           |         |           | 26865   | 831.5     | 23.1  |
|      |            |           |         |           | 27033   | 848.3     | 23.3  |
|      |            | 3 MHz     | 15      | 0         | 26705   | 815.5     | 22.2  |
|      |            |           |         |           | 26865   | 831.5     | 22.1  |
|      |            |           |         |           | 27025   | 847.5     | 22.6  |
|      |            |           | 8       | 3         | 26705   | 815.5     | 22.7  |
|      |            |           |         |           | 26865   | 831.5     | 22.3  |
|      |            |           |         |           | 27025   | 847.5     | 22.7  |
|      |            |           | 1       | 0         | 26705   | 815.5     | 23.5  |
|      |            |           |         |           | 26865   | 831.5     | 23.1  |
|      |            |           |         |           | 27025   | 847.5     | 23.6  |
|      |            |           | 1       | 14        | 26705   | 815.5     | 23.2  |
|      |            |           |         |           | 26865   | 831.5     | 23.3  |
|      |            |           |         |           | 27025   | 847.5     | 23.4  |
|      |            | 5 MHz     | 25      | 0         | 26715   | 816.5     | 22.3  |
|      |            |           |         |           | 26865   | 831.5     | 22.4  |
|      |            |           |         |           | 27015   | 846.5     | 22.5  |
|      |            |           | 12      | 6         | 26715   | 816.5     | 22.5  |
|      |            |           |         |           | 26865   | 831.5     | 22.5  |
|      |            |           |         |           | 27015   | 846.5     | 22.4  |
|      |            |           | 1       | 0         | 26715   | 816.5     | 23.6  |
|      |            |           |         |           | 26865   | 831.5     | 23.2  |
|      |            |           |         |           | 27015   | 846.5     | 23.6  |
|      |            |           | 1       | 24        | 26715   | 816.5     | 23.1  |
|      |            |           |         |           | 26865   | 831.5     | 23.2  |
|      |            |           |         |           | 27015   | 846.5     | 23.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | QPSK       | 10 MHz    | 50      | 0         | 26740   | 819.0     | 22.3  |
|      |            |           |         |           | 26865   | 831.5     | 22.7  |
|      |            |           |         |           | 26990   | 844.0     | 22.5  |
|      |            |           | 25      | 12        | 26740   | 819.0     | 22.5  |
|      |            |           |         |           | 26865   | 831.5     | 22.6  |
|      |            |           |         |           | 26990   | 844.0     | 22.4  |
|      |            |           | 1       | 0         | 26740   | 819.0     | 23.4  |
|      |            |           |         |           | 26865   | 831.5     | 23.1  |
|      |            |           |         |           | 26990   | 844.0     | 23.4  |
|      |            |           | 1       | 24        | 26740   | 819.0     | 23.3  |
|      |            |           |         |           | 26865   | 831.5     | 23.4  |
|      |            |           |         |           | 26990   | 844.0     | 23.4  |
|      |            | 15 MHz    | 75      | 0         | 24765   | 821.5     | 22.2  |
|      |            |           |         |           | 26865   | 831.5     | 22.6  |
|      |            |           |         |           | 26995   | 841.5     | 22.4  |
|      |            |           | 36      | 19        | 24765   | 821.5     | 22.6  |
|      |            |           |         |           | 26865   | 831.5     | 22.1  |
|      |            |           |         |           | 26995   | 841.5     | 22.7  |
|      |            |           | 1       | 0         | 24765   | 821.5     | 23.2  |
|      |            |           |         |           | 26865   | 831.5     | 23.5  |
|      |            |           |         |           | 26995   | 841.5     | 23.5  |
|      |            |           | 1       | 74        | 24765   | 821.5     | 23.5  |
|      |            |           |         |           | 26865   | 831.5     | 23.5  |
|      |            |           |         |           | 26995   | 841.5     | 23.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | 16QAM      | 1.4 MHz   | 6       | 0         | 26697   | 814.7     | 21.3  |
|      |            |           |         |           | 26865   | 831.5     | 21.3  |
|      |            |           |         |           | 27033   | 848.3     | 21.7  |
|      |            |           | 3       | 1         | 26697   | 814.7     | 21.3  |
|      |            |           |         |           | 26865   | 831.5     | 21.5  |
|      |            |           |         |           | 27033   | 848.3     | 21.3  |
|      |            |           | 1       | 0         | 26697   | 814.7     | 22.4  |
|      |            |           |         |           | 26865   | 831.5     | 22.5  |
|      |            |           |         |           | 27033   | 848.3     | 22.4  |
|      |            |           | 1       | 5         | 26697   | 814.7     | 22.0  |
|      |            |           |         |           | 26865   | 831.5     | 22.6  |
|      |            |           |         |           | 27033   | 848.3     | 22.5  |
|      |            | 3 MHz     | 15      | 0         | 26705   | 815.5     | 21.4  |
|      |            |           |         |           | 26865   | 831.5     | 21.1  |
|      |            |           |         |           | 27025   | 847.5     | 21.4  |
|      |            |           | 8       | 3         | 26705   | 815.5     | 21.6  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 27025   | 847.5     | 21.2  |
|      |            |           | 1       | 0         | 26705   | 815.5     | 22.5  |
|      |            |           |         |           | 26865   | 831.5     | 22.4  |
|      |            |           |         |           | 27025   | 847.5     | 22.5  |
|      |            |           | 1       | 14        | 26705   | 815.5     | 22.5  |
|      |            |           |         |           | 26865   | 831.5     | 22.4  |
|      |            |           |         |           | 27025   | 847.5     | 22.2  |
|      |            | 5 MHz     | 25      | 0         | 26715   | 816.5     | 21.0  |
|      |            |           |         |           | 26865   | 831.5     | 21.1  |
|      |            |           |         |           | 27015   | 846.5     | 21.3  |
|      |            |           | 12      | 6         | 26715   | 816.5     | 21.5  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 27015   | 846.5     | 21.4  |
|      |            |           | 1       | 0         | 26715   | 816.5     | 22.0  |
|      |            |           |         |           | 26865   | 831.5     | 22.2  |
|      |            |           |         |           | 27015   | 846.5     | 22.4  |
|      |            |           | 1       | 24        | 26715   | 816.5     | 22.5  |
|      |            |           |         |           | 26865   | 831.5     | 22.2  |
|      |            |           |         |           | 27015   | 846.5     | 22.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | 16QAM      | 10 MHz    | 50      | 0         | 26740   | 819.0     | 21.1  |
|      |            |           |         |           | 26865   | 831.5     | 21.1  |
|      |            |           |         |           | 26990   | 844.0     | 21.1  |
|      |            |           | 25      | 12        | 26740   | 819.0     | 21.6  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 26990   | 844.0     | 21.4  |
|      |            |           | 1       | 0         | 26740   | 819.0     | 22.4  |
|      |            |           |         |           | 26865   | 831.5     | 22.2  |
|      |            |           |         |           | 26990   | 844.0     | 22.7  |
|      |            |           | 1       | 24        | 26740   | 819.0     | 22.2  |
|      |            |           |         |           | 26865   | 831.5     | 22.3  |
|      |            |           |         |           | 26990   | 844.0     | 22.3  |
|      |            | 15 MHz    | 75      | 0         | 24765   | 821.5     | 21.2  |
|      |            |           |         |           | 26865   | 831.5     | 21.4  |
|      |            |           |         |           | 26995   | 841.5     | 21.0  |
|      |            |           | 36      | 19        | 24765   | 821.5     | 21.3  |
|      |            |           |         |           | 26865   | 831.5     | 21.6  |
|      |            |           |         |           | 26995   | 841.5     | 21.5  |
|      |            |           | 1       | 0         | 24765   | 821.5     | 22.3  |
|      |            |           |         |           | 26865   | 831.5     | 22.0  |
|      |            |           |         |           | 26995   | 841.5     | 22.3  |
|      |            |           | 1       | 74        | 24765   | 821.5     | 22.2  |
|      |            |           |         |           | 26865   | 831.5     | 22.0  |
|      |            |           |         |           | 26995   | 841.5     | 22.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | QPSK       | 1.4 MHz   | 6       | 0         | 23017   | 699.7     | 21.5  |
|      |            |           |         |           | 23095   | 707.5     | 21.3  |
|      |            |           |         |           | 23173   | 715.3     | 21.1  |
|      |            |           | 3       | 1         | 23017   | 699.7     | 21.3  |
|      |            |           |         |           | 23095   | 707.5     | 21.5  |
|      |            |           |         |           | 23173   | 715.3     | 21.0  |
|      |            |           | 1       | 0         | 23017   | 699.7     | 22.7  |
|      |            |           |         |           | 23095   | 707.5     | 22.2  |
|      |            |           |         |           | 23173   | 715.3     | 22.2  |
|      |            |           | 1       | 5         | 23017   | 699.7     | 22.4  |
|      |            |           |         |           | 23095   | 707.5     | 22.2  |
|      |            |           |         |           | 23173   | 715.3     | 22.5  |
|      |            | 3 MHz     | 15      | 0         | 23025   | 700.5     | 21.1  |
|      |            |           |         |           | 23095   | 707.5     | 21.3  |
|      |            |           |         |           | 23165   | 714.5     | 21.5  |
|      |            |           | 8       | 3         | 23025   | 700.5     | 21.5  |
|      |            |           |         |           | 23095   | 707.5     | 21.6  |
|      |            |           |         |           | 23165   | 714.5     | 21.1  |
|      |            |           | 1       | 0         | 23025   | 700.5     | 22.2  |
|      |            |           |         |           | 23095   | 707.5     | 22.6  |
|      |            |           |         |           | 23165   | 714.5     | 22.3  |
|      |            |           | 1       | 14        | 23025   | 700.5     | 22.4  |
|      |            |           |         |           | 23095   | 707.5     | 22.4  |
|      |            |           |         |           | 23165   | 714.5     | 22.7  |
|      |            | 5 MHz     | 25      | 0         | 23035   | 701.5     | 21.0  |
|      |            |           |         |           | 23095   | 707.5     | 21.1  |
|      |            |           |         |           | 23155   | 713.5     | 21.6  |
|      |            |           | 12      | 6         | 23035   | 701.5     | 21.5  |
|      |            |           |         |           | 23095   | 707.5     | 21.0  |
|      |            |           |         |           | 23155   | 713.5     | 21.5  |
|      |            |           | 1       | 0         | 23035   | 701.5     | 22.7  |
|      |            |           |         |           | 23095   | 707.5     | 22.4  |
|      |            |           |         |           | 23155   | 713.5     | 22.0  |
|      |            |           | 1       | 24        | 23035   | 701.5     | 22.2  |
|      |            |           |         |           | 23095   | 707.5     | 22.3  |
|      |            |           |         |           | 23155   | 713.5     | 22.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | QPSK       | 10 MHz    | 50      | 0         | 23060   | 704.0     | 21.6  |
|      |            |           |         |           | 23095   | 707.5     | 21.4  |
|      |            |           |         |           | 23130   | 711.0     | 21.6  |
|      |            |           | 25      | 12        | 23060   | 704.0     | 21.6  |
|      |            |           |         |           | 23095   | 707.5     | 21.5  |
|      |            |           |         |           | 23130   | 711.0     | 21.6  |
|      |            |           | 1       | 0         | 23060   | 704.0     | 22.7  |
|      |            |           |         |           | 23095   | 707.5     | 22.5  |
|      |            |           |         |           | 23130   | 711.0     | 22.5  |
|      |            |           | 1       | 24        | 23060   | 704.0     | 22.4  |
|      |            |           |         |           | 23095   | 707.5     | 22.4  |
|      |            |           |         |           | 23130   | 711.0     | 22.5  |
|      | 16QAM      | 1.4 MHz   | 6       | 0         | 23017   | 699.7     | 20.3  |
|      |            |           |         |           | 23095   | 707.5     | 20.3  |
|      |            |           |         |           | 23173   | 715.3     | 20.1  |
|      |            |           | 3       | 1         | 23017   | 699.7     | 20.1  |
|      |            |           |         |           | 23095   | 707.5     | 20.3  |
|      |            |           |         |           | 23173   | 715.3     | 20.6  |
|      |            |           | 1       | 0         | 23017   | 699.7     | 21.4  |
|      |            |           |         |           | 23095   | 707.5     | 21.6  |
|      |            |           |         |           | 23173   | 715.3     | 21.2  |
|      |            |           | 1       | 5         | 23017   | 699.7     | 21.1  |
|      |            |           |         |           | 23095   | 707.5     | 21.4  |
|      |            |           |         |           | 23173   | 715.3     | 21.6  |
|      |            | 3 MHz     | 15      | 0         | 23025   | 700.5     | 20.1  |
|      |            |           |         |           | 23095   | 707.5     | 20.3  |
|      |            |           |         |           | 23165   | 714.5     | 20.1  |
|      |            |           | 8       | 3         | 23025   | 700.5     | 20.3  |
|      |            |           |         |           | 23095   | 707.5     | 20.4  |
|      |            |           |         |           | 23165   | 714.5     | 20.7  |
|      |            |           | 1       | 0         | 23025   | 700.5     | 21.5  |
|      |            |           |         |           | 23095   | 707.5     | 21.1  |
|      |            |           |         |           | 23165   | 714.5     | 21.2  |
|      |            |           | 1       | 14        | 23025   | 700.5     | 21.1  |
|      |            |           |         |           | 23095   | 707.5     | 21.0  |
|      |            |           |         |           | 23165   | 714.5     | 21.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | 16QAM      | 5 MHz     | 25      | 0         | 23035   | 701.5     | 20.1  |
|      |            |           |         |           | 23095   | 707.5     | 20.1  |
|      |            |           |         |           | 23155   | 713.5     | 20.0  |
|      |            |           | 12      | 6         | 23035   | 701.5     | 20.2  |
|      |            |           |         |           | 23095   | 707.5     | 20.5  |
|      |            |           |         |           | 23155   | 713.5     | 20.1  |
|      |            |           | 1       | 0         | 23035   | 701.5     | 21.0  |
|      |            |           |         |           | 23095   | 707.5     | 21.5  |
|      |            |           |         |           | 23155   | 713.5     | 21.2  |
|      |            |           | 1       | 24        | 23035   | 701.5     | 21.2  |
|      |            |           |         |           | 23095   | 707.5     | 21.2  |
|      |            |           |         |           | 23155   | 713.5     | 21.7  |
|      |            | 10 MHz    | 50      | 0         | 23060   | 704.0     | 20.7  |
|      |            |           |         |           | 23095   | 707.5     | 20.4  |
|      |            |           |         |           | 23130   | 711.0     | 20.6  |
|      |            |           | 25      | 12        | 23060   | 704.0     | 20.6  |
|      |            |           |         |           | 23095   | 707.5     | 20.2  |
|      |            |           |         |           | 23130   | 711.0     | 20.6  |
|      |            |           | 1       | 0         | 23060   | 704.0     | 21.6  |
|      |            |           |         |           | 23095   | 707.5     | 21.3  |
|      |            |           |         |           | 23130   | 711.0     | 21.2  |
|      |            |           | 1       | 24        | 23060   | 704.0     | 21.7  |
|      |            |           |         |           | 23095   | 707.5     | 21.4  |
|      |            |           |         |           | 23130   | 711.0     | 21.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 7    | QPSK       | 5 MHz     | 25      | 0         | 20775   | 2502.5    | 15.1  |
|      |            |           |         |           | 21100   | 2535.0    | 15.4  |
|      |            |           |         |           | 21425   | 2567.5    | 15.3  |
|      |            |           | 12      | 6         | 20775   | 2502.5    | 15.7  |
|      |            |           |         |           | 21100   | 2535.0    | 15.7  |
|      |            |           |         |           | 21425   | 2567.5    | 15.1  |
|      |            |           | 1       | 0         | 20775   | 2502.5    | 16.4  |
|      |            |           |         |           | 21100   | 2535.0    | 16.4  |
|      |            |           |         |           | 21425   | 2567.5    | 16.7  |
|      |            |           | 1       | 24        | 20775   | 2502.5    | 16.5  |
|      |            |           |         |           | 21100   | 2535.0    | 16.1  |
|      |            |           |         |           | 21425   | 2567.5    | 16.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 7    | QPSK       | 10 MHz    | 50      | 0         | 20800   | 2505.0    | 15.3  |
|      |            |           |         |           | 21100   | 2535.0    | 15.4  |
|      |            |           |         |           | 21400   | 2565.0    | 15.1  |
|      |            |           | 25      | 12        | 20800   | 2505.0    | 15.2  |
|      |            |           |         |           | 21100   | 2535.0    | 15.2  |
|      |            |           |         |           | 21400   | 2565.0    | 15.7  |
|      |            |           | 1       | 0         | 20800   | 2505.0    | 16.2  |
|      |            |           |         |           | 21100   | 2535.0    | 16.2  |
|      |            |           |         |           | 21400   | 2565.0    | 16.1  |
|      |            |           | 1       | 24        | 20800   | 2505.0    | 16.3  |
|      |            |           |         |           | 21100   | 2535.0    | 16.6  |
|      |            |           |         |           | 21400   | 2565.0    | 16.3  |
|      |            | 15 MHz    | 75      | 0         | 20825   | 2507.5    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.2  |
|      |            |           |         |           | 21375   | 2562.5    | 15.5  |
|      |            |           | 36      | 19        | 20825   | 2507.5    | 15.1  |
|      |            |           |         |           | 21100   | 2535.0    | 15.4  |
|      |            |           |         |           | 21375   | 2562.5    | 15.3  |
|      |            |           | 1       | 0         | 20825   | 2507.5    | 16.0  |
|      |            |           |         |           | 21100   | 2535.0    | 16.3  |
|      |            |           |         |           | 21375   | 2562.5    | 16.5  |
|      |            |           | 1       | 74        | 20825   | 2507.5    | 16.2  |
|      |            |           |         |           | 21100   | 2535.0    | 16.6  |
|      |            |           |         |           | 21375   | 2562.5    | 16.1  |
|      |            | 20 MHz    | 100     | 0         | 20850   | 2510.0    | 15.7  |
|      |            |           |         |           | 21100   | 2535.0    | 15.2  |
|      |            |           |         |           | 21350   | 2560.0    | 15.2  |
|      |            |           | 50      | 25        | 20850   | 2510.0    | 15.1  |
|      |            |           |         |           | 21100   | 2535.0    | 15.3  |
|      |            |           |         |           | 21350   | 2560.0    | 15.0  |
|      |            |           | 1       | 0         | 20850   | 2510.0    | 16.3  |
|      |            |           |         |           | 21100   | 2535.0    | 16.1  |
|      |            |           |         |           | 21350   | 2560.0    | 16.1  |
|      |            |           | 1       | 99        | 20850   | 2510.0    | 16.7  |
|      |            |           |         |           | 21100   | 2535.0    | 16.4  |
|      |            |           |         |           | 21350   | 2560.0    | 16.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 7    | 16QAM      | 5 MHz     | 25      | 0         | 20775   | 2502.5    | 14.4  |
|      |            |           |         |           | 21100   | 2535.0    | 14.6  |
|      |            |           |         |           | 21425   | 2567.5    | 14.3  |
|      |            |           | 12      | 6         | 20775   | 2502.5    | 14.4  |
|      |            |           |         |           | 21100   | 2535.0    | 14.0  |
|      |            |           |         |           | 21425   | 2567.5    | 14.0  |
|      |            |           | 1       | 0         | 20775   | 2502.5    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.1  |
|      |            |           |         |           | 21425   | 2567.5    | 15.6  |
|      |            |           | 1       | 24        | 20775   | 2502.5    | 15.1  |
|      |            |           |         |           | 21100   | 2535.0    | 15.5  |
|      |            |           |         |           | 21425   | 2567.5    | 15.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 7    | 16QAM      | 10 MHz    | 50      | 0         | 20800   | 2505.0    | 14.5  |
|      |            |           |         |           | 21100   | 2535.0    | 14.5  |
|      |            |           |         |           | 21400   | 2565.0    | 14.6  |
|      |            |           | 25      | 12        | 20800   | 2505.0    | 14.0  |
|      |            |           |         |           | 21100   | 2535.0    | 14.2  |
|      |            |           |         |           | 21400   | 2565.0    | 14.6  |
|      |            |           | 1       | 0         | 20800   | 2505.0    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.2  |
|      |            |           |         |           | 21400   | 2565.0    | 15.5  |
|      |            |           | 1       | 24        | 20800   | 2505.0    | 15.2  |
|      |            |           |         |           | 21100   | 2535.0    | 15.3  |
|      |            |           |         |           | 21400   | 2565.0    | 15.6  |
|      |            | 15 MHz    | 75      | 0         | 20825   | 2507.5    | 14.3  |
|      |            |           |         |           | 21100   | 2535.0    | 14.7  |
|      |            |           |         |           | 21375   | 2562.5    | 14.1  |
|      |            |           | 36      | 19        | 20825   | 2507.5    | 14.4  |
|      |            |           |         |           | 21100   | 2535.0    | 14.2  |
|      |            |           |         |           | 21375   | 2562.5    | 14.2  |
|      |            |           | 1       | 0         | 20825   | 2507.5    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.3  |
|      |            |           |         |           | 21375   | 2562.5    | 15.5  |
|      |            |           | 1       | 74        | 20825   | 2507.5    | 15.2  |
|      |            |           |         |           | 21100   | 2535.0    | 15.1  |
|      |            |           |         |           | 21375   | 2562.5    | 15.5  |
|      |            | 20 MHz    | 100     | 0         | 20850   | 2510.0    | 14.5  |
|      |            |           |         |           | 21100   | 2535.0    | 14.5  |
|      |            |           |         |           | 21350   | 2560.0    | 14.1  |
|      |            |           | 50      | 25        | 20850   | 2510.0    | 14.4  |
|      |            |           |         |           | 21100   | 2535.0    | 14.5  |
|      |            |           |         |           | 21350   | 2560.0    | 14.0  |
|      |            |           | 1       | 0         | 20850   | 2510.0    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.7  |
|      |            |           |         |           | 21350   | 2560.0    | 15.3  |
|      |            |           | 1       | 99        | 20850   | 2510.0    | 15.6  |
|      |            |           |         |           | 21100   | 2535.0    | 15.1  |
|      |            |           |         |           | 21350   | 2560.0    | 15.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 41   | QPSK       | 5 MHz     | 25      | 0         | 39675   | 2498.5    | 17.2  |
|      |            |           |         |           | 40620   | 2593.0    | 17.3  |
|      |            |           |         |           | 41565   | 2687.5    | 17.4  |
|      |            |           | 12      | 6         | 39675   | 2498.5    | 17.5  |
|      |            |           |         |           | 40620   | 2593.0    | 17.3  |
|      |            |           |         |           | 41565   | 2687.5    | 17.3  |
|      |            |           | 1       | 0         | 39675   | 2498.5    | 18.4  |
|      |            |           |         |           | 40620   | 2593.0    | 18.0  |
|      |            |           |         |           | 41565   | 2687.5    | 18.4  |
|      |            |           | 1       | 24        | 39675   | 2498.5    | 18.6  |
|      |            |           |         |           | 40620   | 2593.0    | 18.2  |
|      |            |           |         |           | 41565   | 2687.5    | 18.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 41   | QPSK       | 10 MHz    | 50      | 0         | 39700   | 2501.0    | 17.2  |
|      |            |           |         |           | 40620   | 2593.0    | 17.0  |
|      |            |           |         |           | 41540   | 2685.0    | 17.1  |
|      |            |           | 25      | 12        | 39700   | 2501.0    | 17.3  |
|      |            |           |         |           | 40620   | 2593.0    | 17.5  |
|      |            |           |         |           | 41540   | 2685.0    | 17.5  |
|      |            |           | 1       | 0         | 39700   | 2501.0    | 18.6  |
|      |            |           |         |           | 40620   | 2593.0    | 18.4  |
|      |            |           |         |           | 41540   | 2685.0    | 18.3  |
|      |            |           | 1       | 24        | 39700   | 2501.0    | 18.3  |
|      |            |           |         |           | 40620   | 2593.0    | 18.6  |
|      |            |           |         |           | 41540   | 2685.0    | 18.6  |
|      |            | 15 MHz    | 75      | 0         | 39725   | 2503.5    | 17.6  |
|      |            |           |         |           | 40620   | 2593.0    | 17.5  |
|      |            |           |         |           | 41515   | 2682.5    | 17.2  |
|      |            |           | 36      | 19        | 39725   | 2503.5    | 17.7  |
|      |            |           |         |           | 40620   | 2593.0    | 17.3  |
|      |            |           |         |           | 41515   | 2682.5    | 17.5  |
|      |            |           | 1       | 0         | 39725   | 2503.5    | 18.2  |
|      |            |           |         |           | 40620   | 2593.0    | 18.5  |
|      |            |           |         |           | 41515   | 2682.5    | 18.7  |
|      |            |           | 1       | 74        | 39725   | 2503.5    | 18.1  |
|      |            |           |         |           | 40620   | 2593.0    | 18.3  |
|      |            |           |         |           | 41515   | 2682.5    | 18.2  |
|      |            | 20 MHz    | 100     | 0         | 39750   | 2506.0    | 17.7  |
|      |            |           |         |           | 40620   | 2593.0    | 17.1  |
|      |            |           |         |           | 41490   | 2680.0    | 17.6  |
|      |            |           | 50      | 25        | 39750   | 2506.0    | 17.0  |
|      |            |           |         |           | 40620   | 2593.0    | 17.5  |
|      |            |           |         |           | 41490   | 2680.0    | 17.6  |
|      |            |           | 1       | 0         | 39750   | 2506.0    | 18.0  |
|      |            |           |         |           | 40620   | 2593.0    | 18.5  |
|      |            |           |         |           | 41490   | 2680.0    | 18.5  |
|      |            |           | 1       | 99        | 39750   | 2506.0    | 18.1  |
|      |            |           |         |           | 40620   | 2593.0    | 18.0  |
|      |            |           |         |           | 41490   | 2680.0    | 18.0  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 41   | 16QAM      | 5 MHz     | 25      | 0         | 39675   | 2498.5    | 16.1  |
|      |            |           |         |           | 40620   | 2593.0    | 16.2  |
|      |            |           |         |           | 41565   | 2687.5    | 16.1  |
|      |            |           | 12      | 6         | 39675   | 2498.5    | 16.1  |
|      |            |           |         |           | 40620   | 2593.0    | 16.1  |
|      |            |           |         |           | 41565   | 2687.5    | 16.0  |
|      |            |           | 1       | 0         | 39675   | 2498.5    | 17.5  |
|      |            |           |         |           | 40620   | 2593.0    | 17.5  |
|      |            |           |         |           | 41565   | 2687.5    | 17.2  |
|      |            |           | 1       | 24        | 39675   | 2498.5    | 17.6  |
|      |            |           |         |           | 40620   | 2593.0    | 17.1  |
|      |            |           |         |           | 41565   | 2687.5    | 17.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 41   | 16QAM      | 10 MHz    | 50      | 0         | 39700   | 2501.0    | 16.5  |
|      |            |           |         |           | 40620   | 2593.0    | 16.3  |
|      |            |           |         |           | 41540   | 2685.0    | 16.0  |
|      |            |           | 25      | 12        | 39700   | 2501.0    | 16.1  |
|      |            |           |         |           | 40620   | 2593.0    | 16.5  |
|      |            |           |         |           | 41540   | 2685.0    | 16.6  |
|      |            |           | 1       | 0         | 39700   | 2501.0    | 17.5  |
|      |            |           |         |           | 40620   | 2593.0    | 17.6  |
|      |            |           |         |           | 41540   | 2685.0    | 17.6  |
|      |            |           | 1       | 24        | 39700   | 2501.0    | 17.7  |
|      |            |           |         |           | 40620   | 2593.0    | 17.2  |
|      |            |           |         |           | 41540   | 2685.0    | 17.2  |
|      |            | 15 MHz    | 75      | 0         | 39725   | 2503.5    | 16.4  |
|      |            |           |         |           | 40620   | 2593.0    | 16.4  |
|      |            |           |         |           | 41515   | 2682.5    | 16.1  |
|      |            |           | 36      | 19        | 39725   | 2503.5    | 16.5  |
|      |            |           |         |           | 40620   | 2593.0    | 16.4  |
|      |            |           |         |           | 41515   | 2682.5    | 16.6  |
|      |            |           | 1       | 0         | 39725   | 2503.5    | 17.0  |
|      |            |           |         |           | 40620   | 2593.0    | 17.5  |
|      |            |           |         |           | 41515   | 2682.5    | 17.4  |
|      |            |           | 1       | 74        | 39725   | 2503.5    | 17.4  |
|      |            |           |         |           | 40620   | 2593.0    | 17.2  |
|      |            |           |         |           | 41515   | 2682.5    | 17.1  |
|      |            | 20 MHz    | 100     | 0         | 39750   | 2506.0    | 16.5  |
|      |            |           |         |           | 40620   | 2593.0    | 16.4  |
|      |            |           |         |           | 41490   | 2680.0    | 16.5  |
|      |            |           | 50      | 25        | 39750   | 2506.0    | 16.7  |
|      |            |           |         |           | 40620   | 2593.0    | 16.7  |
|      |            |           |         |           | 41490   | 2680.0    | 16.4  |
|      |            |           | 1       | 0         | 39750   | 2506.0    | 17.5  |
|      |            |           |         |           | 40620   | 2593.0    | 17.3  |
|      |            |           |         |           | 41490   | 2680.0    | 17.7  |
|      |            |           | 1       | 99        | 39750   | 2506.0    | 17.7  |
|      |            |           |         |           | 40620   | 2593.0    | 17.3  |
|      |            |           |         |           | 41490   | 2680.0    | 17.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 2    | QPSK       | 1.4 MHz   | 6       | 0         | 18607   | 1850.7    | 18.4  |
|      |            |           |         |           | 18900   | 1880.0    | 18.1  |
|      |            |           |         |           | 19193   | 1909.3    | 18.3  |
|      |            |           | 3       | 1         | 18607   | 1850.7    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.6  |
|      |            |           |         |           | 19193   | 1909.3    | 18.1  |
|      |            |           | 1       | 0         | 18607   | 1850.7    | 19.7  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19193   | 1909.3    | 19.4  |
|      |            |           | 1       | 5         | 18607   | 1850.7    | 19.6  |
|      |            |           |         |           | 18900   | 1880.0    | 19.3  |
|      |            |           |         |           | 19193   | 1909.3    | 19.2  |
|      |            | 3 MHz     | 15      | 0         | 18615   | 1851.5    | 18.5  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19185   | 1908.5    | 18.3  |
|      |            |           | 8       | 3         | 18615   | 1851.5    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19185   | 1908.5    | 18.3  |
|      |            |           | 1       | 0         | 18615   | 1851.5    | 19.4  |
|      |            |           |         |           | 18900   | 1880.0    | 19.2  |
|      |            |           |         |           | 19185   | 1908.5    | 19.1  |
|      |            |           | 1       | 14        | 18615   | 1851.5    | 19.5  |
|      |            |           |         |           | 18900   | 1880.0    | 19.0  |
|      |            |           |         |           | 19185   | 1908.5    | 19.2  |
|      |            | 5 MHz     | 25      | 0         | 18625   | 1852.5    | 18.4  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19175   | 1907.5    | 18.0  |
|      |            |           | 12      | 6         | 18625   | 1852.5    | 18.4  |
|      |            |           |         |           | 18900   | 1880.0    | 18.1  |
|      |            |           |         |           | 19175   | 1907.5    | 18.6  |
|      |            |           | 1       | 0         | 18625   | 1852.5    | 19.3  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19175   | 1907.5    | 19.5  |
|      |            |           | 1       | 24        | 18625   | 1852.5    | 19.6  |
|      |            |           |         |           | 18900   | 1880.0    | 19.7  |
|      |            |           |         |           | 19175   | 1907.5    | 19.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 2    | QPSK       | 10 MHz    | 50      | 0         | 18650   | 1855.0    | 18.2  |
|      |            |           |         |           | 18900   | 1880.0    | 18.6  |
|      |            |           |         |           | 19150   | 1905.0    | 18.1  |
|      |            |           | 25      | 12        | 18650   | 1855.0    | 18.4  |
|      |            |           |         |           | 18900   | 1880.0    | 18.0  |
|      |            |           |         |           | 19150   | 1905.0    | 18.6  |
|      |            |           | 1       | 0         | 18650   | 1855.0    | 19.5  |
|      |            |           |         |           | 18900   | 1880.0    | 19.3  |
|      |            |           |         |           | 19150   | 1905.0    | 19.2  |
|      |            |           | 1       | 24        | 18650   | 1855.0    | 19.3  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19150   | 1905.0    | 19.5  |
|      |            | 15 MHz    | 75      | 0         | 18675   | 1857.5    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.3  |
|      |            |           |         |           | 19125   | 1902.5    | 18.1  |
|      |            |           | 36      | 19        | 18675   | 1857.5    | 18.1  |
|      |            |           |         |           | 18900   | 1880.0    | 18.1  |
|      |            |           |         |           | 19125   | 1902.5    | 18.4  |
|      |            |           | 1       | 0         | 18675   | 1857.5    | 19.4  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19125   | 1902.5    | 19.2  |
|      |            |           | 1       | 74        | 18675   | 1857.5    | 19.4  |
|      |            |           |         |           | 18900   | 1880.0    | 19.5  |
|      |            |           |         |           | 19125   | 1902.5    | 19.7  |
|      |            | 20 MHz    | 100     | 0         | 18700   | 1860.0    | 18.6  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19100   | 1900.0    | 18.2  |
|      |            |           | 50      | 25        | 18700   | 1860.0    | 18.6  |
|      |            |           |         |           | 18900   | 1880.0    | 18.3  |
|      |            |           |         |           | 19100   | 1900.0    | 18.2  |
|      |            |           | 1       | 0         | 18700   | 1860.0    | 19.2  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19100   | 1900.0    | 19.5  |
|      |            |           | 1       | 99        | 18700   | 1860.0    | 19.2  |
|      |            |           |         |           | 18900   | 1880.0    | 19.6  |
|      |            |           |         |           | 19100   | 1900.0    | 19.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 2    | 16QAM      | 1.4 MHz   | 6       | 0         | 18607   | 1850.7    | 17.2  |
|      |            |           |         |           | 18900   | 1880.0    | 17.7  |
|      |            |           |         |           | 19193   | 1909.3    | 17.3  |
|      |            |           | 3       | 1         | 18607   | 1850.7    | 17.0  |
|      |            |           |         |           | 18900   | 1880.0    | 17.3  |
|      |            |           |         |           | 19193   | 1909.3    | 17.7  |
|      |            |           | 1       | 0         | 18607   | 1850.7    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.5  |
|      |            |           |         |           | 19193   | 1909.3    | 18.1  |
|      |            |           | 1       | 5         | 18607   | 1850.7    | 18.3  |
|      |            |           |         |           | 18900   | 1880.0    | 18.3  |
|      |            |           |         |           | 19193   | 1909.3    | 18.3  |
|      |            | 3 MHz     | 15      | 0         | 18615   | 1851.5    | 17.2  |
|      |            |           |         |           | 18900   | 1880.0    | 17.5  |
|      |            |           |         |           | 19185   | 1908.5    | 17.1  |
|      |            |           | 8       | 3         | 18615   | 1851.5    | 17.1  |
|      |            |           |         |           | 18900   | 1880.0    | 17.4  |
|      |            |           |         |           | 19185   | 1908.5    | 17.2  |
|      |            |           | 1       | 0         | 18615   | 1851.5    | 18.6  |
|      |            |           |         |           | 18900   | 1880.0    | 18.2  |
|      |            |           |         |           | 19185   | 1908.5    | 18.1  |
|      |            |           | 1       | 14        | 18615   | 1851.5    | 18.3  |
|      |            |           |         |           | 18900   | 1880.0    | 18.7  |
|      |            |           |         |           | 19185   | 1908.5    | 18.0  |
|      |            | 5 MHz     | 25      | 0         | 18625   | 1852.5    | 17.7  |
|      |            |           |         |           | 18900   | 1880.0    | 17.7  |
|      |            |           |         |           | 19175   | 1907.5    | 17.3  |
|      |            |           | 12      | 6         | 18625   | 1852.5    | 17.3  |
|      |            |           |         |           | 18900   | 1880.0    | 17.2  |
|      |            |           |         |           | 19175   | 1907.5    | 17.2  |
|      |            |           | 1       | 0         | 18625   | 1852.5    | 18.2  |
|      |            |           |         |           | 18900   | 1880.0    | 18.7  |
|      |            |           |         |           | 19175   | 1907.5    | 18.4  |
|      |            |           | 1       | 24        | 18625   | 1852.5    | 18.3  |
|      |            |           |         |           | 18900   | 1880.0    | 18.2  |
|      |            |           |         |           | 19175   | 1907.5    | 18.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 2    | 16QAM      | 10 MHz    | 50      | 0         | 18650   | 1855.0    | 17.2  |
|      |            |           |         |           | 18900   | 1880.0    | 17.4  |
|      |            |           |         |           | 19150   | 1905.0    | 17.3  |
|      |            |           | 25      | 12        | 18650   | 1855.0    | 17.1  |
|      |            |           |         |           | 18900   | 1880.0    | 17.4  |
|      |            |           |         |           | 19150   | 1905.0    | 17.3  |
|      |            |           | 1       | 0         | 18650   | 1855.0    | 18.3  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19150   | 1905.0    | 18.2  |
|      |            |           | 1       | 24        | 18650   | 1855.0    | 18.2  |
|      |            |           |         |           | 18900   | 1880.0    | 18.2  |
|      |            |           |         |           | 19150   | 1905.0    | 18.5  |
|      |            | 15 MHz    | 75      | 0         | 18675   | 1857.5    | 17.1  |
|      |            |           |         |           | 18900   | 1880.0    | 17.2  |
|      |            |           |         |           | 19125   | 1902.5    | 17.6  |
|      |            |           | 36      | 19        | 18675   | 1857.5    | 17.2  |
|      |            |           |         |           | 18900   | 1880.0    | 17.4  |
|      |            |           |         |           | 19125   | 1902.5    | 17.3  |
|      |            |           | 1       | 0         | 18675   | 1857.5    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.4  |
|      |            |           |         |           | 19125   | 1902.5    | 18.6  |
|      |            |           | 1       | 74        | 18675   | 1857.5    | 18.6  |
|      |            |           |         |           | 18900   | 1880.0    | 18.2  |
|      |            |           |         |           | 19125   | 1902.5    | 18.5  |
|      |            | 20 MHz    | 100     | 0         | 18700   | 1860.0    | 17.4  |
|      |            |           |         |           | 18900   | 1880.0    | 17.7  |
|      |            |           |         |           | 19100   | 1900.0    | 17.4  |
|      |            |           | 50      | 25        | 18700   | 1860.0    | 17.3  |
|      |            |           |         |           | 18900   | 1880.0    | 17.6  |
|      |            |           |         |           | 19100   | 1900.0    | 17.4  |
|      |            |           | 1       | 0         | 18700   | 1860.0    | 18.2  |
|      |            |           |         |           | 18900   | 1880.0    | 18.0  |
|      |            |           |         |           | 19100   | 1900.0    | 18.4  |
|      |            |           | 1       | 99        | 18700   | 1860.0    | 18.7  |
|      |            |           |         |           | 18900   | 1880.0    | 18.3  |
|      |            |           |         |           | 19100   | 1900.0    | 18.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 25   | QPSK       | 1.4 MHz   | 6       | 0         | 26047   | 1850.7    | 18.3  |
|      |            |           |         |           | 26365   | 1882.5    | 18.4  |
|      |            |           |         |           | 26683   | 1914.3    | 18.5  |
|      |            |           | 3       | 1         | 26047   | 1850.7    | 18.5  |
|      |            |           |         |           | 26365   | 1882.5    | 18.2  |
|      |            |           |         |           | 26683   | 1914.3    | 18.6  |
|      |            |           | 1       | 0         | 26047   | 1850.7    | 19.5  |
|      |            |           |         |           | 26365   | 1882.5    | 19.5  |
|      |            |           |         |           | 26683   | 1914.3    | 19.3  |
|      |            |           | 1       | 5         | 26047   | 1850.7    | 19.2  |
|      |            |           |         |           | 26365   | 1882.5    | 19.7  |
|      |            |           |         |           | 26683   | 1914.3    | 19.3  |
|      |            | 3 MHz     | 15      | 0         | 26055   | 1851.5    | 18.2  |
|      |            |           |         |           | 26365   | 1882.5    | 18.4  |
|      |            |           |         |           | 26675   | 1913.5    | 18.0  |
|      |            |           | 8       | 3         | 26055   | 1851.5    | 18.3  |
|      |            |           |         |           | 26365   | 1882.5    | 18.1  |
|      |            |           |         |           | 26675   | 1913.5    | 18.2  |
|      |            |           | 1       | 0         | 26055   | 1851.5    | 19.6  |
|      |            |           |         |           | 26365   | 1882.5    | 19.2  |
|      |            |           |         |           | 26675   | 1913.5    | 19.4  |
|      |            |           | 1       | 14        | 26055   | 1851.5    | 19.4  |
|      |            |           |         |           | 26365   | 1882.5    | 19.4  |
|      |            |           |         |           | 26675   | 1913.5    | 19.6  |
|      |            | 5 MHz     | 25      | 0         | 26065   | 1852.5    | 18.4  |
|      |            |           |         |           | 26365   | 1882.5    | 18.4  |
|      |            |           |         |           | 26665   | 1912.5    | 18.2  |
|      |            |           | 12      | 6         | 26065   | 1852.5    | 18.1  |
|      |            |           |         |           | 26365   | 1882.5    | 18.2  |
|      |            |           |         |           | 26665   | 1912.5    | 18.2  |
|      |            |           | 1       | 0         | 26065   | 1852.5    | 19.5  |
|      |            |           |         |           | 26365   | 1882.5    | 19.2  |
|      |            |           |         |           | 26665   | 1912.5    | 19.2  |
|      |            |           | 1       | 24        | 26065   | 1852.5    | 19.4  |
|      |            |           |         |           | 26365   | 1882.5    | 19.3  |
|      |            |           |         |           | 26665   | 1912.5    | 19.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 25   | QPSK       | 10 MHz    | 50      | 0         | 26090   | 1855.0    | 18.5  |
|      |            |           |         |           | 26365   | 1882.5    | 18.1  |
|      |            |           |         |           | 26640   | 1910.0    | 18.4  |
|      |            |           | 25      | 12        | 26090   | 1855.0    | 18.6  |
|      |            |           |         |           | 26365   | 1882.5    | 18.1  |
|      |            |           |         |           | 26640   | 1910.0    | 18.2  |
|      |            |           | 1       | 0         | 26090   | 1855.0    | 19.2  |
|      |            |           |         |           | 26365   | 1882.5    | 19.3  |
|      |            |           |         |           | 26640   | 1910.0    | 19.1  |
|      |            |           | 1       | 24        | 26090   | 1855.0    | 19.4  |
|      |            |           |         |           | 26365   | 1882.5    | 19.4  |
|      |            |           |         |           | 26640   | 1910.0    | 19.6  |
|      |            | 15 MHz    | 75      | 0         | 26115   | 1857.5    | 18.2  |
|      |            |           |         |           | 26365   | 1882.5    | 18.0  |
|      |            |           |         |           | 26615   | 1907.5    | 18.6  |
|      |            |           | 36      | 19        | 26115   | 1857.5    | 18.7  |
|      |            |           |         |           | 26365   | 1882.5    | 18.5  |
|      |            |           |         |           | 26615   | 1907.5    | 18.3  |
|      |            |           | 1       | 0         | 26115   | 1857.5    | 19.4  |
|      |            |           |         |           | 26365   | 1882.5    | 19.4  |
|      |            |           |         |           | 26615   | 1907.5    | 19.4  |
|      |            |           | 1       | 74        | 26115   | 1857.5    | 19.3  |
|      |            |           |         |           | 26365   | 1882.5    | 19.0  |
|      |            |           |         |           | 26615   | 1907.5    | 19.6  |
|      |            | 20 MHz    | 100     | 0         | 26140   | 1860.0    | 18.4  |
|      |            |           |         |           | 26365   | 1882.5    | 18.5  |
|      |            |           |         |           | 26590   | 1905.0    | 18.4  |
|      |            |           | 50      | 25        | 26140   | 1860.0    | 18.0  |
|      |            |           |         |           | 26365   | 1882.5    | 18.1  |
|      |            |           |         |           | 26590   | 1905.0    | 18.4  |
|      |            |           | 1       | 0         | 26140   | 1860.0    | 19.5  |
|      |            |           |         |           | 26365   | 1882.5    | 19.5  |
|      |            |           |         |           | 26590   | 1905.0    | 19.3  |
|      |            |           | 1       | 99        | 26140   | 1860.0    | 19.3  |
|      |            |           |         |           | 26365   | 1882.5    | 19.7  |
|      |            |           |         |           | 26590   | 1905.0    | 19.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 25   | 16QAM      | 1.4 MHz   | 6       | 0         | 26047   | 1850.7    | 17.0  |
|      |            |           |         |           | 26365   | 1882.5    | 17.1  |
|      |            |           |         |           | 26683   | 1914.3    | 17.2  |
|      |            |           | 3       | 1         | 26047   | 1850.7    | 17.2  |
|      |            |           |         |           | 26365   | 1882.5    | 17.4  |
|      |            |           |         |           | 26683   | 1914.3    | 17.6  |
|      |            |           | 1       | 0         | 26047   | 1850.7    | 18.6  |
|      |            |           |         |           | 26365   | 1882.5    | 18.5  |
|      |            |           |         |           | 26683   | 1914.3    | 18.1  |
|      |            |           | 1       | 5         | 26047   | 1850.7    | 18.1  |
|      |            |           |         |           | 26365   | 1882.5    | 18.4  |
|      |            |           |         |           | 26683   | 1914.3    | 18.1  |
|      |            | 3 MHz     | 15      | 0         | 26055   | 1851.5    | 17.2  |
|      |            |           |         |           | 26365   | 1882.5    | 17.5  |
|      |            |           |         |           | 26675   | 1913.5    | 17.0  |
|      |            |           | 8       | 3         | 26055   | 1851.5    | 17.7  |
|      |            |           |         |           | 26365   | 1882.5    | 17.1  |
|      |            |           |         |           | 26675   | 1913.5    | 17.2  |
|      |            |           | 1       | 0         | 26055   | 1851.5    | 18.3  |
|      |            |           |         |           | 26365   | 1882.5    | 18.6  |
|      |            |           |         |           | 26675   | 1913.5    | 18.3  |
|      |            |           | 1       | 14        | 26055   | 1851.5    | 18.2  |
|      |            |           |         |           | 26365   | 1882.5    | 18.2  |
|      |            |           |         |           | 26675   | 1913.5    | 18.6  |
|      |            | 5 MHz     | 25      | 0         | 26065   | 1852.5    | 17.3  |
|      |            |           |         |           | 26365   | 1882.5    | 17.3  |
|      |            |           |         |           | 26665   | 1912.5    | 17.3  |
|      |            |           | 12      | 6         | 26065   | 1852.5    | 17.3  |
|      |            |           |         |           | 26365   | 1882.5    | 17.6  |
|      |            |           |         |           | 26665   | 1912.5    | 17.4  |
|      |            |           | 1       | 0         | 26065   | 1852.5    | 18.6  |
|      |            |           |         |           | 26365   | 1882.5    | 18.6  |
|      |            |           |         |           | 26665   | 1912.5    | 18.3  |
|      |            |           | 1       | 24        | 26065   | 1852.5    | 18.4  |
|      |            |           |         |           | 26365   | 1882.5    | 18.7  |
|      |            |           |         |           | 26665   | 1912.5    | 18.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 25   | 16QAM      | 10 MHz    | 50      | 0         | 26090   | 1855.0    | 17.4  |
|      |            |           |         |           | 26365   | 1882.5    | 17.5  |
|      |            |           |         |           | 26640   | 1910.0    | 17.2  |
|      |            |           | 25      | 12        | 26090   | 1855.0    | 17.5  |
|      |            |           |         |           | 26365   | 1882.5    | 17.3  |
|      |            |           |         |           | 26640   | 1910.0    | 17.3  |
|      |            |           | 1       | 0         | 26090   | 1855.0    | 18.5  |
|      |            |           |         |           | 26365   | 1882.5    | 18.2  |
|      |            |           |         |           | 26640   | 1910.0    | 18.5  |
|      |            |           | 1       | 24        | 26090   | 1855.0    | 18.2  |
|      |            |           |         |           | 26365   | 1882.5    | 18.6  |
|      |            |           |         |           | 26640   | 1910.0    | 18.1  |
|      |            | 15 MHz    | 75      | 0         | 26115   | 1857.5    | 17.1  |
|      |            |           |         |           | 26365   | 1882.5    | 17.6  |
|      |            |           |         |           | 26615   | 1907.5    | 17.2  |
|      |            |           | 36      | 19        | 26115   | 1857.5    | 17.2  |
|      |            |           |         |           | 26365   | 1882.5    | 17.2  |
|      |            |           |         |           | 26615   | 1907.5    | 17.5  |
|      |            |           | 1       | 0         | 26115   | 1857.5    | 18.3  |
|      |            |           |         |           | 26365   | 1882.5    | 18.3  |
|      |            |           |         |           | 26615   | 1907.5    | 18.3  |
|      |            |           | 1       | 74        | 26115   | 1857.5    | 18.6  |
|      |            |           |         |           | 26365   | 1882.5    | 18.5  |
|      |            |           |         |           | 26615   | 1907.5    | 18.5  |
|      |            | 20 MHz    | 100     | 0         | 26140   | 1860.0    | 17.2  |
|      |            |           |         |           | 26365   | 1882.5    | 17.1  |
|      |            |           |         |           | 26590   | 1905.0    | 17.3  |
|      |            |           | 50      | 25        | 26140   | 1860.0    | 17.1  |
|      |            |           |         |           | 26365   | 1882.5    | 17.1  |
|      |            |           |         |           | 26590   | 1905.0    | 17.1  |
|      |            |           | 1       | 0         | 26140   | 1860.0    | 18.2  |
|      |            |           |         |           | 26365   | 1882.5    | 18.6  |
|      |            |           |         |           | 26590   | 1905.0    | 18.1  |
|      |            |           | 1       | 99        | 26140   | 1860.0    | 18.4  |
|      |            |           |         |           | 26365   | 1882.5    | 18.2  |
|      |            |           |         |           | 26590   | 1905.0    | 18.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 17   | QPSK       | 5 MHz     | 25      | 0         | 23755   | 706.5     | 21.5  |
|      |            |           |         |           | 23790   | 710.0     | 21.3  |
|      |            |           |         |           | 23824   | 713.5     | 21.2  |
|      |            |           | 12      | 6         | 23755   | 706.5     | 21.6  |
|      |            |           |         |           | 23790   | 710.0     | 21.4  |
|      |            |           |         |           | 23824   | 713.5     | 21.0  |
|      |            |           | 1       | 0         | 23755   | 706.5     | 22.6  |
|      |            |           |         |           | 23790   | 710.0     | 22.1  |
|      |            |           |         |           | 23824   | 713.5     | 22.5  |
|      |            |           | 1       | 24        | 23755   | 706.5     | 22.0  |
|      |            |           |         |           | 23790   | 710.0     | 22.7  |
|      |            |           |         |           | 23824   | 713.5     | 22.6  |
|      |            | 10 MHz    | 50      | 0         | 23780   | 709.0     | 21.2  |
|      |            |           |         |           | 23790   | 710.0     | 21.0  |
|      |            |           |         |           | 23800   | 711.0     | 21.0  |
|      |            |           | 25      | 12        | 23780   | 709.0     | 21.3  |
|      |            |           |         |           | 23790   | 710.0     | 21.0  |
|      |            |           |         |           | 23800   | 711.0     | 21.1  |
|      |            |           | 1       | 0         | 23780   | 709.0     | 22.3  |
|      |            |           |         |           | 23790   | 710.0     | 22.3  |
|      |            |           |         |           | 23800   | 711.0     | 22.3  |
|      |            |           | 1       | 24        | 23780   | 709.0     | 22.1  |
|      |            |           |         |           | 23790   | 710.0     | 22.1  |
|      |            |           |         |           | 23800   | 711.0     | 22.7  |
|      | 16QAM      | 5 MHz     | 25      | 0         | 23755   | 706.5     | 20.3  |
|      |            |           |         |           | 23790   | 710.0     | 20.2  |
|      |            |           |         |           | 23824   | 713.5     | 20.2  |
|      |            |           | 12      | 6         | 23755   | 706.5     | 20.4  |
|      |            |           |         |           | 23790   | 710.0     | 20.4  |
|      |            |           |         |           | 23824   | 713.5     | 20.5  |
|      |            |           | 1       | 0         | 23755   | 706.5     | 21.5  |
|      |            |           |         |           | 23790   | 710.0     | 21.4  |
|      |            |           |         |           | 23824   | 713.5     | 21.4  |
|      |            |           | 1       | 24        | 23755   | 706.5     | 21.1  |
|      |            |           |         |           | 23790   | 710.0     | 21.1  |
|      |            |           |         |           | 23824   | 713.5     | 21.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 17   | 16QAM      | 10 MHz    | 50      | 0         | 23780   | 709.0     | 20.6  |
|      |            |           |         |           | 23790   | 710.0     | 20.1  |
|      |            |           |         |           | 23800   | 711.0     | 20.7  |
|      |            |           | 25      | 12        | 23780   | 709.0     | 20.1  |
|      |            |           |         |           | 23790   | 710.0     | 20.3  |
|      |            |           |         |           | 23800   | 711.0     | 20.5  |
|      |            |           | 1       | 0         | 23780   | 709.0     | 21.3  |
|      |            |           |         |           | 23790   | 710.0     | 21.3  |
|      |            |           |         |           | 23800   | 711.0     | 21.7  |
|      |            |           | 1       | 24        | 23780   | 709.0     | 21.6  |
|      |            |           |         |           | 23790   | 710.0     | 21.2  |
|      |            |           |         |           | 23800   | 711.0     | 21.0  |
| 30   | QPSK       | 5 MHz     | 25      | 0         | 27685   | 2307.5    | 17.0  |
|      |            |           |         |           | 27710   | 2310.0    | 16.6  |
|      |            |           |         |           | 27735   | 2312.5    | 17.1  |
|      |            |           | 12      | 6         | 27685   | 2307.5    | 16.8  |
|      |            |           |         |           | 27710   | 2310.0    | 16.7  |
|      |            |           |         |           | 27735   | 2312.5    | 16.6  |
|      |            |           | 1       | 0         | 27685   | 2307.5    | 17.9  |
|      |            |           |         |           | 27710   | 2310.0    | 17.6  |
|      |            |           |         |           | 27735   | 2312.5    | 17.6  |
|      |            |           | 1       | 24        | 27685   | 2307.5    | 17.6  |
|      |            |           |         |           | 27710   | 2310.0    | 17.6  |
|      |            |           |         |           | 27735   | 2312.5    | 17.5  |
|      |            | 10 MHz    | 50      | 0         | 27710   | 2310.0    | 16.7  |
|      |            |           | 25      | 12        | 27710   | 2310.0    | 16.6  |
|      |            |           | 1       | 0         | 27710   | 2310.0    | 17.5  |
|      |            |           | 1       | 24        | 27710   | 2310.0    | 18.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 30   | 16QAM      | 5 MHz     | 25      | 0         | 27685   | 2307.5    | 16.1  |
|      |            |           |         |           | 27710   | 2310.0    | 15.6  |
|      |            |           |         |           | 27735   | 2312.5    | 15.9  |
|      |            |           | 12      | 6         | 27685   | 2307.5    | 16.2  |
|      |            |           |         |           | 27710   | 2310.0    | 15.5  |
|      |            |           |         |           | 27735   | 2312.5    | 16.0  |
|      |            |           | 1       | 0         | 27685   | 2307.5    | 17.0  |
|      |            |           |         |           | 27710   | 2310.0    | 16.8  |
|      |            |           |         |           | 27735   | 2312.5    | 17.2  |
|      |            |           | 1       | 24        | 27685   | 2307.5    | 17.1  |
|      |            |           |         |           | 27710   | 2310.0    | 16.6  |
|      |            |           |         |           | 27735   | 2312.5    | 16.7  |
|      |            | 10 MHz    | 50      | 0         | 27710   | 2310.0    | 15.8  |
|      |            |           | 25      | 12        | 27710   | 2310.0    | 16.1  |
|      |            |           | 1       | 0         | 27710   | 2310.0    | 16.6  |
|      |            |           | 1       | 24        | 27710   | 2310.0    | 16.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 66   | QPSK       | 1.4 MHz   | 6       | 0         | 131979  | 1710.7    | 18.7  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132665  | 1779.3    | 18.5  |
|      |            |           | 3       | 1         | 131979  | 1710.7    | 19.2  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132665  | 1779.3    | 18.6  |
|      |            |           | 1       | 0         | 131979  | 1710.7    | 20.0  |
|      |            |           |         |           | 132322  | 1745.0    | 20.2  |
|      |            |           |         |           | 132665  | 1779.3    | 20.2  |
|      |            |           | 1       | 5         | 131979  | 1710.7    | 20.1  |
|      |            |           |         |           | 132322  | 1745.0    | 19.5  |
|      |            |           |         |           | 132665  | 1779.3    | 19.6  |
|      |            | 3 MHz     | 15      | 0         | 131987  | 1711.5    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132657  | 1778.5    | 19.0  |
|      |            |           | 8       | 3         | 131987  | 1711.5    | 19.1  |
|      |            |           |         |           | 132322  | 1745.0    | 18.5  |
|      |            |           |         |           | 132657  | 1778.5    | 18.5  |
|      |            |           | 1       | 0         | 131987  | 1711.5    | 19.9  |
|      |            |           |         |           | 132322  | 1745.0    | 19.8  |
|      |            |           |         |           | 132657  | 1778.5    | 19.6  |
|      |            |           | 1       | 14        | 131987  | 1711.5    | 19.9  |
|      |            |           |         |           | 132322  | 1745.0    | 20.1  |
|      |            |           |         |           | 132657  | 1778.5    | 19.9  |
|      |            | 5 MHz     | 25      | 0         | 131997  | 1712.5    | 19.0  |
|      |            |           |         |           | 132322  | 1745.0    | 18.6  |
|      |            |           |         |           | 132647  | 1777.5    | 18.6  |
|      |            |           | 12      | 6         | 131997  | 1712.5    | 18.6  |
|      |            |           |         |           | 132322  | 1745.0    | 18.7  |
|      |            |           |         |           | 132647  | 1777.5    | 18.6  |
|      |            |           | 1       | 0         | 131997  | 1712.5    | 19.6  |
|      |            |           |         |           | 132322  | 1745.0    | 20.1  |
|      |            |           |         |           | 132647  | 1777.5    | 19.9  |
|      |            |           | 1       | 24        | 131997  | 1712.5    | 19.7  |
|      |            |           |         |           | 132322  | 1745.0    | 19.6  |
|      |            |           |         |           | 132647  | 1777.5    | 19.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 66   | QPSK       | 10 MHz    | 50      | 0         | 132022  | 1715.0    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 18.6  |
|      |            |           |         |           | 132622  | 1775.0    | 18.5  |
|      |            |           | 25      | 12        | 132022  | 1715.0    | 18.7  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132622  | 1775.0    | 18.7  |
|      |            |           | 1       | 0         | 132022  | 1715.0    | 19.8  |
|      |            |           |         |           | 132322  | 1745.0    | 19.9  |
|      |            |           |         |           | 132622  | 1775.0    | 20.2  |
|      |            |           | 1       | 24        | 132022  | 1715.0    | 20.2  |
|      |            |           |         |           | 132322  | 1745.0    | 20.2  |
|      |            |           |         |           | 132622  | 1775.0    | 19.9  |
|      |            | 15 MHz    | 75      | 0         | 132047  | 1717.5    | 18.5  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132597  | 1772.5    | 19.2  |
|      |            |           | 36      | 19        | 132047  | 1717.5    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132597  | 1772.5    | 18.9  |
|      |            |           | 1       | 0         | 132047  | 1717.5    | 19.5  |
|      |            |           |         |           | 132322  | 1745.0    | 19.5  |
|      |            |           |         |           | 132597  | 1772.5    | 19.9  |
|      |            |           | 1       | 74        | 132047  | 1717.5    | 19.5  |
|      |            |           |         |           | 132322  | 1745.0    | 20.0  |
|      |            |           |         |           | 132597  | 1772.5    | 19.7  |
|      |            | 20 MHz    | 100     | 0         | 132072  | 1720.0    | 18.9  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132572  | 1770.0    | 19.1  |
|      |            |           | 50      | 25        | 132072  | 1720.0    | 18.7  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132572  | 1770.0    | 18.5  |
|      |            |           | 1       | 49        | 132072  | 1720.0    | 19.9  |
|      |            |           |         |           | 132322  | 1745.0    | 19.5  |
|      |            |           |         |           | 132572  | 1770.0    | 20.1  |
|      |            |           | 1       | 99        | 132072  | 1720.0    | 19.8  |
|      |            |           |         |           | 132322  | 1745.0    | 20.0  |
|      |            |           |         |           | 132572  | 1770.0    | 19.9  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 66   | 16QAM      | 1.4 MHz   | 6       | 0         | 131979  | 1710.7    | 17.7  |
|      |            |           |         |           | 132322  | 1745.0    | 17.5  |
|      |            |           |         |           | 132665  | 1779.3    | 17.7  |
|      |            |           | 3       | 1         | 131979  | 1710.7    | 17.6  |
|      |            |           |         |           | 132322  | 1745.0    | 17.9  |
|      |            |           |         |           | 132665  | 1779.3    | 17.6  |
|      |            |           | 1       | 0         | 131979  | 1710.7    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132665  | 1779.3    | 19.1  |
|      |            |           | 1       | 5         | 131979  | 1710.7    | 18.6  |
|      |            |           |         |           | 132322  | 1745.0    | 19.1  |
|      |            |           |         |           | 132665  | 1779.3    | 18.5  |
|      |            | 3 MHz     | 15      | 0         | 131987  | 1711.5    | 17.9  |
|      |            |           |         |           | 132322  | 1745.0    | 17.6  |
|      |            |           |         |           | 132657  | 1778.5    | 17.9  |
|      |            |           | 8       | 3         | 131987  | 1711.5    | 17.9  |
|      |            |           |         |           | 132322  | 1745.0    | 18.1  |
|      |            |           |         |           | 132657  | 1778.5    | 17.9  |
|      |            |           | 1       | 0         | 131987  | 1711.5    | 19.1  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132657  | 1778.5    | 18.6  |
|      |            |           | 1       | 14        | 131987  | 1711.5    | 18.6  |
|      |            |           |         |           | 132322  | 1745.0    | 18.9  |
|      |            |           |         |           | 132657  | 1778.5    | 19.1  |
|      |            | 5 MHz     | 25      | 0         | 131997  | 1712.5    | 18.0  |
|      |            |           |         |           | 132322  | 1745.0    | 18.1  |
|      |            |           |         |           | 132647  | 1777.5    | 18.1  |
|      |            |           | 12      | 6         | 131997  | 1712.5    | 17.9  |
|      |            |           |         |           | 132322  | 1745.0    | 17.7  |
|      |            |           |         |           | 132647  | 1777.5    | 17.6  |
|      |            |           | 1       | 0         | 131997  | 1712.5    | 19.2  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132647  | 1777.5    | 18.6  |
|      |            |           | 1       | 24        | 131997  | 1712.5    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 18.6  |
|      |            |           |         |           | 132647  | 1777.5    | 19.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 66   | 16QAM      | 10 MHz    | 50      | 0         | 132022  | 1715.0    | 17.7  |
|      |            |           |         |           | 132322  | 1745.0    | 17.7  |
|      |            |           |         |           | 132622  | 1775.0    | 18.2  |
|      |            |           | 25      | 12        | 132022  | 1715.0    | 18.0  |
|      |            |           |         |           | 132322  | 1745.0    | 17.6  |
|      |            |           |         |           | 132622  | 1775.0    | 17.5  |
|      |            |           | 1       | 0         | 132022  | 1715.0    | 18.9  |
|      |            |           |         |           | 132322  | 1745.0    | 19.1  |
|      |            |           |         |           | 132622  | 1775.0    | 19.1  |
|      |            |           | 1       | 24        | 132022  | 1715.0    | 18.5  |
|      |            |           |         |           | 132322  | 1745.0    | 18.6  |
|      |            |           |         |           | 132622  | 1775.0    | 19.0  |
|      |            | 15 MHz    | 75      | 0         | 132047  | 1717.5    | 17.5  |
|      |            |           |         |           | 132322  | 1745.0    | 18.1  |
|      |            |           |         |           | 132597  | 1772.5    | 17.9  |
|      |            |           | 36      | 19        | 132047  | 1717.5    | 17.8  |
|      |            |           |         |           | 132322  | 1745.0    | 17.8  |
|      |            |           |         |           | 132597  | 1772.5    | 17.8  |
|      |            |           | 1       | 0         | 132047  | 1717.5    | 18.9  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132597  | 1772.5    | 18.6  |
|      |            |           | 1       | 74        | 132047  | 1717.5    | 18.8  |
|      |            |           |         |           | 132322  | 1745.0    | 18.6  |
|      |            |           |         |           | 132597  | 1772.5    | 19.1  |
|      |            | 20 MHz    | 100     | 0         | 132072  | 1720.0    | 18.0  |
|      |            |           |         |           | 132322  | 1745.0    | 18.0  |
|      |            |           |         |           | 132572  | 1770.0    | 17.6  |
|      |            |           | 50      | 25        | 132072  | 1720.0    | 18.2  |
|      |            |           |         |           | 132322  | 1745.0    | 18.1  |
|      |            |           |         |           | 132572  | 1770.0    | 17.9  |
|      |            |           | 1       | 0         | 132072  | 1720.0    | 18.6  |
|      |            |           |         |           | 132322  | 1745.0    | 18.8  |
|      |            |           |         |           | 132572  | 1770.0    | 18.6  |
|      |            |           | 1       | 99        | 132072  | 1720.0    | 19.0  |
|      |            |           |         |           | 132322  | 1745.0    | 19.0  |
|      |            |           |         |           | 132572  | 1770.0    | 19.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 38   | QPSK       | 5 MHz     | 25      | 0         | 37775   | 2572.5    | 17.6  |
|      |            |           |         |           | 38000   | 2595.0    | 17.5  |
|      |            |           |         |           | 38225   | 2617.5    | 17.0  |
|      |            |           | 12      | 6         | 37775   | 2572.5    | 17.2  |
|      |            |           |         |           | 38000   | 2595.0    | 17.3  |
|      |            |           |         |           | 38225   | 2617.5    | 17.1  |
|      |            |           | 1       | 0         | 37775   | 2572.5    | 18.3  |
|      |            |           |         |           | 38000   | 2595.0    | 18.1  |
|      |            |           |         |           | 38225   | 2617.5    | 18.6  |
|      |            |           | 1       | 24        | 37775   | 2572.5    | 18.3  |
|      |            |           |         |           | 38000   | 2595.0    | 18.7  |
|      |            |           |         |           | 38225   | 2617.5    | 18.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 38   | QPSK       | 10 MHz    | 50      | 0         | 37800   | 2575.0    | 17.4  |
|      |            |           |         |           | 38000   | 2595.0    | 17.1  |
|      |            |           |         |           | 38200   | 2615.0    | 17.4  |
|      |            |           | 25      | 12        | 37800   | 2575.0    | 17.1  |
|      |            |           |         |           | 38000   | 2595.0    | 17.5  |
|      |            |           |         |           | 38200   | 2615.0    | 17.5  |
|      |            |           | 1       | 0         | 37800   | 2575.0    | 18.3  |
|      |            |           |         |           | 38000   | 2595.0    | 18.0  |
|      |            |           |         |           | 38200   | 2615.0    | 18.2  |
|      |            |           | 1       | 24        | 37800   | 2575.0    | 18.2  |
|      |            |           |         |           | 38000   | 2595.0    | 18.2  |
|      |            |           |         |           | 38200   | 2615.0    | 18.6  |
|      |            | 15 MHz    | 75      | 0         | 37825   | 2577.5    | 17.5  |
|      |            |           |         |           | 38000   | 2595.0    | 17.5  |
|      |            |           |         |           | 38175   | 2612.5    | 17.7  |
|      |            |           | 36      | 19        | 37825   | 2577.5    | 17.3  |
|      |            |           |         |           | 38000   | 2595.0    | 17.4  |
|      |            |           |         |           | 38175   | 2612.5    | 17.2  |
|      |            |           | 1       | 0         | 37825   | 2577.5    | 18.1  |
|      |            |           |         |           | 38000   | 2595.0    | 18.5  |
|      |            |           |         |           | 38175   | 2612.5    | 18.0  |
|      |            |           | 1       | 74        | 37825   | 2577.5    | 18.2  |
|      |            |           |         |           | 38000   | 2595.0    | 18.5  |
|      |            |           |         |           | 38175   | 2612.5    | 18.3  |
|      |            | 20 MHz    | 100     | 0         | 37850   | 2580.0    | 17.4  |
|      |            |           |         |           | 38000   | 2595.0    | 17.1  |
|      |            |           |         |           | 38150   | 2610.0    | 17.2  |
|      |            |           | 50      | 25        | 37850   | 2580.0    | 17.7  |
|      |            |           |         |           | 38000   | 2595.0    | 17.0  |
|      |            |           |         |           | 38150   | 2610.0    | 17.0  |
|      |            |           | 1       | 0         | 37850   | 2580.0    | 18.0  |
|      |            |           |         |           | 38000   | 2595.0    | 18.0  |
|      |            |           |         |           | 38150   | 2610.0    | 18.3  |
|      |            |           | 1       | 99        | 37850   | 2580.0    | 18.6  |
|      |            |           |         |           | 38000   | 2595.0    | 18.4  |
|      |            |           |         |           | 38150   | 2610.0    | 18.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 38   | 16QAM      | 5 MHz     | 25      | 0         | 37775   | 2572.5    | 16.7  |
|      |            |           |         |           | 38000   | 2595.0    | 16.1  |
|      |            |           |         |           | 38225   | 2617.5    | 16.2  |
|      |            |           | 12      | 6         | 37775   | 2572.5    | 16.3  |
|      |            |           |         |           | 38000   | 2595.0    | 16.5  |
|      |            |           |         |           | 38225   | 2617.5    | 16.1  |
|      |            |           | 1       | 0         | 37775   | 2572.5    | 17.6  |
|      |            |           |         |           | 38000   | 2595.0    | 17.2  |
|      |            |           |         |           | 38225   | 2617.5    | 17.5  |
|      |            |           | 1       | 24        | 37775   | 2572.5    | 17.0  |
|      |            |           |         |           | 38000   | 2595.0    | 17.4  |
|      |            |           |         |           | 38225   | 2617.5    | 17.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 38   | 16QAM      | 10 MHz    | 50      | 0         | 37800   | 2575.0    | 16.1  |
|      |            |           |         |           | 38000   | 2595.0    | 16.4  |
|      |            |           |         |           | 38200   | 2615.0    | 16.1  |
|      |            |           | 25      | 12        | 37800   | 2575.0    | 16.2  |
|      |            |           |         |           | 38000   | 2595.0    | 16.1  |
|      |            |           |         |           | 38200   | 2615.0    | 16.2  |
|      |            |           | 1       | 0         | 37800   | 2575.0    | 17.5  |
|      |            |           |         |           | 38000   | 2595.0    | 17.7  |
|      |            |           |         |           | 38200   | 2615.0    | 17.4  |
|      |            |           | 1       | 24        | 37800   | 2575.0    | 17.7  |
|      |            |           |         |           | 38000   | 2595.0    | 17.4  |
|      |            |           |         |           | 38200   | 2615.0    | 17.3  |
|      |            | 15 MHz    | 75      | 0         | 37825   | 2577.5    | 16.1  |
|      |            |           |         |           | 38000   | 2595.0    | 16.5  |
|      |            |           |         |           | 38175   | 2612.5    | 16.4  |
|      |            |           | 36      | 19        | 37825   | 2577.5    | 16.1  |
|      |            |           |         |           | 38000   | 2595.0    | 16.2  |
|      |            |           |         |           | 38175   | 2612.5    | 16.1  |
|      |            |           | 1       | 0         | 37825   | 2577.5    | 17.3  |
|      |            |           |         |           | 38000   | 2595.0    | 17.4  |
|      |            |           |         |           | 38175   | 2612.5    | 17.2  |
|      |            |           | 1       | 74        | 37825   | 2577.5    | 17.0  |
|      |            |           |         |           | 38000   | 2595.0    | 17.3  |
|      |            |           |         |           | 38175   | 2612.5    | 17.6  |
|      |            | 20 MHz    | 100     | 0         | 37850   | 2580.0    | 16.3  |
|      |            |           |         |           | 38000   | 2595.0    | 16.2  |
|      |            |           |         |           | 38150   | 2610.0    | 16.3  |
|      |            |           | 50      | 25        | 37850   | 2580.0    | 16.4  |
|      |            |           |         |           | 38000   | 2595.0    | 16.2  |
|      |            |           |         |           | 38150   | 2610.0    | 16.2  |
|      |            |           | 1       | 0         | 37850   | 2580.0    | 17.3  |
|      |            |           |         |           | 38000   | 2595.0    | 17.1  |
|      |            |           |         |           | 38150   | 2610.0    | 17.2  |
|      |            |           | 1       | 99        | 37850   | 2580.0    | 17.3  |
|      |            |           |         |           | 38000   | 2595.0    | 17.2  |
|      |            |           |         |           | 38150   | 2610.0    | 17.2  |

### Tablet Mode

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | QPSK       | 1.4 MHz   | 6       | 0         | 19957   | 1710.7    | 14.4  |
|      |            |           |         |           | 20175   | 1732.5    | 14.4  |
|      |            |           |         |           | 20393   | 1754.3    | 14.4  |
|      |            |           | 3       | 1         | 19957   | 1710.7    | 14.0  |
|      |            |           |         |           | 20175   | 1732.5    | 14.0  |
|      |            |           |         |           | 20393   | 1754.3    | 14.2  |
|      |            |           | 1       | 0         | 19957   | 1710.7    | 15.1  |
|      |            |           |         |           | 20175   | 1732.5    | 15.6  |
|      |            |           |         |           | 20393   | 1754.3    | 15.4  |
|      |            |           | 1       | 5         | 19957   | 1710.7    | 15.1  |
|      |            |           |         |           | 20175   | 1732.5    | 15.7  |
|      |            |           |         |           | 20393   | 1754.3    | 15.6  |
|      |            | 3 MHz     | 15      | 0         | 19965   | 1711.5    | 14.7  |
|      |            |           |         |           | 20175   | 1732.5    | 14.1  |
|      |            |           |         |           | 20385   | 1753.5    | 14.7  |
|      |            |           | 8       | 3         | 19965   | 1711.5    | 14.5  |
|      |            |           |         |           | 20175   | 1732.5    | 14.4  |
|      |            |           |         |           | 20385   | 1753.5    | 14.1  |
|      |            |           | 1       | 0         | 19965   | 1711.5    | 15.5  |
|      |            |           |         |           | 20175   | 1732.5    | 15.2  |
|      |            |           |         |           | 20385   | 1753.5    | 15.7  |
|      |            |           | 1       | 14        | 19965   | 1711.5    | 15.1  |
|      |            |           |         |           | 20175   | 1732.5    | 15.4  |
|      |            |           |         |           | 20385   | 1753.5    | 15.2  |
|      |            | 5 MHz     | 25      | 0         | 19975   | 1712.5    | 14.6  |
|      |            |           |         |           | 20175   | 1732.5    | 14.5  |
|      |            |           |         |           | 20375   | 1752.5    | 14.5  |
|      |            |           | 12      | 6         | 19975   | 1712.5    | 14.2  |
|      |            |           |         |           | 20175   | 1732.5    | 14.1  |
|      |            |           |         |           | 20375   | 1752.5    | 14.2  |
|      |            |           | 1       | 0         | 19975   | 1712.5    | 15.2  |
|      |            |           |         |           | 20175   | 1732.5    | 15.6  |
|      |            |           |         |           | 20375   | 1752.5    | 15.3  |
|      |            |           | 1       | 24        | 19975   | 1712.5    | 15.0  |
|      |            |           |         |           | 20175   | 1732.5    | 15.0  |
|      |            |           |         |           | 20375   | 1752.5    | 15.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | QPSK       | 10 MHz    | 50      | 0         | 20000   | 1715      | 14.2  |
|      |            |           |         |           | 20175   | 1732.5    | 14.5  |
|      |            |           |         |           | 20350   | 1750      | 14.4  |
|      |            |           | 25      | 12        | 20000   | 1715      | 14.6  |
|      |            |           |         |           | 20175   | 1732.5    | 14.6  |
|      |            |           |         |           | 20350   | 1750      | 14.5  |
|      |            |           | 1       | 0         | 20000   | 1715      | 15.2  |
|      |            |           |         |           | 20175   | 1732.5    | 15.0  |
|      |            |           |         |           | 20350   | 1750      | 15.0  |
|      |            |           | 1       | 24        | 20000   | 1715      | 15.4  |
|      |            |           |         |           | 20175   | 1732.5    | 15.4  |
|      |            |           |         |           | 20350   | 1750      | 15.1  |
|      |            | 15 MHz    | 75      | 0         | 20025   | 1717.5    | 14.6  |
|      |            |           |         |           | 20175   | 1732.5    | 14.1  |
|      |            |           |         |           | 20325   | 1747.5    | 14.4  |
|      |            |           | 36      | 19        | 20025   | 1717.5    | 14.0  |
|      |            |           |         |           | 20175   | 1732.5    | 14.3  |
|      |            |           |         |           | 20325   | 1747.5    | 14.6  |
|      |            |           | 1       | 0         | 20025   | 1717.5    | 15.1  |
|      |            |           |         |           | 20175   | 1732.5    | 15.4  |
|      |            |           |         |           | 20325   | 1747.5    | 15.6  |
|      |            |           | 1       | 74        | 20025   | 1717.5    | 15.3  |
|      |            |           |         |           | 20175   | 1732.5    | 15.3  |
|      |            |           |         |           | 20325   | 1747.5    | 15.1  |
|      |            | 20 MHz    | 100     | 0         | 20050   | 1720      | 14.4  |
|      |            |           |         |           | 20175   | 1732.5    | 14.6  |
|      |            |           |         |           | 20300   | 1745      | 14.3  |
|      |            |           | 50      | 25        | 20050   | 1720      | 14.6  |
|      |            |           |         |           | 20175   | 1732.5    | 14.2  |
|      |            |           |         |           | 20300   | 1745      | 14.2  |
|      |            |           | 1       | 49        | 20050   | 1720      | 15.3  |
|      |            |           |         |           | 20175   | 1732.5    | 15.3  |
|      |            |           |         |           | 20300   | 1745      | 15.6  |
|      |            |           | 1       | 99        | 20050   | 1720      | 15.6  |
|      |            |           |         |           | 20175   | 1732.5    | 15.4  |
|      |            |           |         |           | 20300   | 1745      | 15.3  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | 16QAM      | 1.4 MHz   | 6       | 0         | 19957   | 1710.7    | 13.0  |
|      |            |           |         |           | 20175   | 1732.5    | 13.6  |
|      |            |           |         |           | 20393   | 1754.3    | 13.5  |
|      |            |           | 3       | 1         | 19957   | 1710.7    | 13.0  |
|      |            |           |         |           | 20175   | 1732.5    | 13.2  |
|      |            |           |         |           | 20393   | 1754.3    | 13.2  |
|      |            |           | 1       | 0         | 19957   | 1710.7    | 14.7  |
|      |            |           |         |           | 20175   | 1732.5    | 14.0  |
|      |            |           |         |           | 20393   | 1754.3    | 14.2  |
|      |            |           | 1       | 5         | 19957   | 1710.7    | 14.3  |
|      |            |           |         |           | 20175   | 1732.5    | 14.4  |
|      |            |           |         |           | 20393   | 1754.3    | 14.5  |
|      |            | 3 MHz     | 15      | 0         | 19965   | 1711.5    | 13.4  |
|      |            |           |         |           | 20175   | 1732.5    | 13.6  |
|      |            |           |         |           | 20385   | 1753.5    | 13.7  |
|      |            |           | 8       | 3         | 19965   | 1711.5    | 13.5  |
|      |            |           |         |           | 20175   | 1732.5    | 13.3  |
|      |            |           |         |           | 20385   | 1753.5    | 13.4  |
|      |            |           | 1       | 0         | 19965   | 1711.5    | 14.1  |
|      |            |           |         |           | 20175   | 1732.5    | 14.4  |
|      |            |           |         |           | 20385   | 1753.5    | 14.6  |
|      |            |           | 1       | 14        | 19965   | 1711.5    | 14.2  |
|      |            |           |         |           | 20175   | 1732.5    | 14.1  |
|      |            |           |         |           | 20385   | 1753.5    | 14.7  |
|      |            | 5 MHz     | 25      | 0         | 19975   | 1712.5    | 13.7  |
|      |            |           |         |           | 20175   | 1732.5    | 13.3  |
|      |            |           |         |           | 20375   | 1752.5    | 13.5  |
|      |            |           | 12      | 6         | 19975   | 1712.5    | 13.3  |
|      |            |           |         |           | 20175   | 1732.5    | 13.2  |
|      |            |           |         |           | 20375   | 1752.5    | 13.6  |
|      |            |           | 1       | 0         | 19975   | 1712.5    | 14.1  |
|      |            |           |         |           | 20175   | 1732.5    | 14.0  |
|      |            |           |         |           | 20375   | 1752.5    | 14.4  |
|      |            |           | 1       | 24        | 19975   | 1712.5    | 14.2  |
|      |            |           |         |           | 20175   | 1732.5    | 14.6  |
|      |            |           |         |           | 20375   | 1752.5    | 14.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 4    | 16QAM      | 10 MHz    | 50      | 0         | 20000   | 1715      | 13.1  |
|      |            |           |         |           | 20175   | 1732.5    | 13.5  |
|      |            |           |         |           | 20350   | 1750      | 13.4  |
|      |            |           | 25      | 12        | 20000   | 1715      | 13.5  |
|      |            |           |         |           | 20175   | 1732.5    | 13.4  |
|      |            |           |         |           | 20350   | 1750      | 13.7  |
|      |            |           | 1       | 0         | 20000   | 1715      | 14.6  |
|      |            |           |         |           | 20175   | 1732.5    | 14.2  |
|      |            |           |         |           | 20350   | 1750      | 14.2  |
|      |            |           | 1       | 24        | 20000   | 1715      | 14.5  |
|      |            |           |         |           | 20175   | 1732.5    | 14.5  |
|      |            |           |         |           | 20350   | 1750      | 14.6  |
|      |            | 15 MHz    | 75      | 0         | 20025   | 1717.5    | 13.4  |
|      |            |           |         |           | 20175   | 1732.5    | 13.1  |
|      |            |           |         |           | 20325   | 1747.5    | 13.5  |
|      |            |           | 36      | 19        | 20025   | 1717.5    | 13.4  |
|      |            |           |         |           | 20175   | 1732.5    | 13.0  |
|      |            |           |         |           | 20325   | 1747.5    | 13.6  |
|      |            |           | 1       | 0         | 20025   | 1717.5    | 14.3  |
|      |            |           |         |           | 20175   | 1732.5    | 14.6  |
|      |            |           |         |           | 20325   | 1747.5    | 14.2  |
|      |            |           | 1       | 74        | 20025   | 1717.5    | 14.3  |
|      |            |           |         |           | 20175   | 1732.5    | 14.3  |
|      |            |           |         |           | 20325   | 1747.5    | 14.6  |
|      |            | 20 MHz    | 100     | 0         | 20050   | 1720      | 13.1  |
|      |            |           |         |           | 20175   | 1732.5    | 13.3  |
|      |            |           |         |           | 20300   | 1745      | 13.0  |
|      |            |           | 50      | 25        | 20050   | 1720      | 13.4  |
|      |            |           |         |           | 20175   | 1732.5    | 13.1  |
|      |            |           |         |           | 20300   | 1745      | 13.2  |
|      |            |           | 1       | 0         | 20050   | 1720      | 14.0  |
|      |            |           |         |           | 20175   | 1732.5    | 14.5  |
|      |            |           |         |           | 20300   | 1745      | 14.5  |
|      |            |           | 1       | 99        | 20050   | 1720      | 14.2  |
|      |            |           |         |           | 20175   | 1732.5    | 14.2  |
|      |            |           |         |           | 20300   | 1745      | 14.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 13   | QPSK       | 5 MHz     | 25      | 0         | 23205   | 779.5     | 19.4  |
|      |            |           |         |           | 23255   | 784.5     | 19.0  |
|      |            |           | 12      | 6         | 23205   | 779.5     | 19.3  |
|      |            |           |         |           | 23255   | 784.5     | 19.7  |
|      |            |           | 1       | 0         | 23205   | 779.5     | 20.6  |
|      |            |           |         |           | 23255   | 784.5     | 20.4  |
|      |            |           | 1       | 24        | 23205   | 779.5     | 20.0  |
|      |            |           |         |           | 23255   | 784.5     | 20.1  |
|      |            | 10 MHz    | 50      | 0         | 23230   | 782.0     | 19.4  |
|      |            |           | 25      | 13        | 23230   | 782.0     | 19.6  |
|      |            |           | 1       | 0         | 23230   | 782.0     | 20.3  |
|      |            |           | 1       | 49        | 23230   | 782.0     | 20.5  |
|      | 16QAM      | 5 MHz     | 25      | 0         | 23205   | 779.5     | 18.3  |
|      |            |           |         |           | 23255   | 784.5     | 18.7  |
|      |            |           | 12      | 6         | 23205   | 779.5     | 18.5  |
|      |            |           |         |           | 23255   | 784.5     | 18.5  |
|      |            |           | 1       | 0         | 23205   | 779.5     | 19.4  |
|      |            |           |         |           | 23255   | 784.5     | 19.2  |
|      |            |           | 1       | 24        | 23205   | 779.5     | 19.5  |
|      |            |           |         |           | 23255   | 784.5     | 19.1  |
|      |            | 10 MHz    | 50      | 0         | 23230   | 782.0     | 18.6  |
|      |            |           | 25      | 13        | 23230   | 782.0     | 18.1  |
|      |            |           | 1       | 0         | 23230   | 782.0     | 19.6  |
|      |            |           | 1       | 49        | 23230   | 782.0     | 19.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 14   | QPSK       | 5 MHz     | 25      | 0         | 23305   | 790.5     | 19.2  |
|      |            |           |         |           | 23355   | 795.5     | 19.5  |
|      |            |           | 12      | 6         | 23305   | 790.5     | 19.7  |
|      |            |           |         |           | 23355   | 795.5     | 19.6  |
|      |            |           | 1       | 0         | 23305   | 790.5     | 20.2  |
|      |            |           |         |           | 23355   | 795.5     | 20.0  |
|      |            |           | 1       | 24        | 23305   | 790.5     | 20.0  |
|      |            |           |         |           | 23355   | 795.5     | 20.3  |
|      |            | 10 MHz    | 50      | 0         | 23330   | 793.0     | 19.6  |
|      |            |           | 25      | 13        | 23330   | 793.0     | 19.6  |
|      |            |           | 1       | 0         | 23330   | 793.0     | 20.2  |
|      |            |           | 1       | 49        | 23330   | 793.0     | 20.2  |
|      | 16QAM      | 5 MHz     | 25      | 0         | 23305   | 790.5     | 18.4  |
|      |            |           |         |           | 23355   | 795.5     | 18.2  |
|      |            |           | 12      | 6         | 23305   | 790.5     | 18.6  |
|      |            |           |         |           | 23355   | 795.5     | 18.0  |
|      |            |           | 1       | 0         | 23305   | 790.5     | 19.3  |
|      |            |           |         |           | 23355   | 795.5     | 19.3  |
|      |            |           | 1       | 24        | 23305   | 790.5     | 19.2  |
|      |            |           |         |           | 23355   | 795.5     | 19.5  |
|      |            | 10 MHz    | 50      | 0         | 23330   | 793.0     | 18.1  |
|      |            |           | 25      | 13        | 23330   | 793.0     | 18.4  |
|      |            |           | 1       | 0         | 23330   | 793.0     | 19.6  |
|      |            |           | 1       | 49        | 23330   | 793.0     | 19.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | QPSK       | 1.4 MHz   | 6       | 0         | 20407   | 824.7     | 20.7  |
|      |            |           |         |           | 20525   | 836.5     | 20.6  |
|      |            |           |         |           | 20643   | 848.3     | 20.2  |
|      |            |           | 3       | 1         | 20407   | 824.7     | 20.1  |
|      |            |           |         |           | 20525   | 836.5     | 20.0  |
|      |            |           |         |           | 20643   | 848.3     | 20.4  |
|      |            |           | 1       | 0         | 20407   | 824.7     | 21.7  |
|      |            |           |         |           | 20525   | 836.5     | 21.3  |
|      |            |           |         |           | 20643   | 848.3     | 21.4  |
|      |            |           | 1       | 5         | 20407   | 824.7     | 21.1  |
|      |            |           |         |           | 20525   | 836.5     | 21.5  |
|      |            |           |         |           | 20643   | 848.3     | 21.5  |
|      |            | 3 MHz     | 15      | 0         | 20415   | 825.5     | 20.5  |
|      |            |           |         |           | 20525   | 836.5     | 20.4  |
|      |            |           |         |           | 20635   | 847.5     | 20.6  |
|      |            |           | 8       | 3         | 20415   | 825.5     | 20.6  |
|      |            |           |         |           | 20525   | 836.5     | 20.5  |
|      |            |           |         |           | 20635   | 847.5     | 20.2  |
|      |            |           | 1       | 0         | 20415   | 825.5     | 21.2  |
|      |            |           |         |           | 20525   | 836.5     | 21.1  |
|      |            |           |         |           | 20635   | 847.5     | 21.5  |
|      |            |           | 1       | 14        | 20415   | 825.5     | 21.1  |
|      |            |           |         |           | 20525   | 836.5     | 21.3  |
|      |            |           |         |           | 20635   | 847.5     | 21.3  |
|      |            | 5 MHz     | 25      | 0         | 20425   | 826.5     | 20.4  |
|      |            |           |         |           | 20525   | 836.5     | 20.4  |
|      |            |           |         |           | 20625   | 846.5     | 20.3  |
|      |            |           | 12      | 6         | 20425   | 826.5     | 20.2  |
|      |            |           |         |           | 20525   | 836.5     | 20.4  |
|      |            |           |         |           | 20625   | 846.5     | 20.2  |
|      |            |           | 1       | 0         | 20425   | 826.5     | 21.6  |
|      |            |           |         |           | 20525   | 836.5     | 21.4  |
|      |            |           |         |           | 20625   | 846.5     | 21.1  |
|      |            |           | 1       | 24        | 20425   | 826.5     | 21.1  |
|      |            |           |         |           | 20525   | 836.5     | 21.1  |
|      |            |           |         |           | 20625   | 846.5     | 21.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | QPSK       | 10 MHz    | 50      | 0         | 20450   | 829       | 20.1  |
|      |            |           |         |           | 20525   | 836.5     | 20.0  |
|      |            |           |         |           | 20600   | 844       | 20.7  |
|      |            |           | 25      | 12        | 20450   | 829       | 20.1  |
|      |            |           |         |           | 20525   | 836.5     | 20.3  |
|      |            |           |         |           | 20600   | 844       | 20.5  |
|      |            |           | 1       | 0         | 20450   | 829       | 21.5  |
|      |            |           |         |           | 20525   | 836.5     | 21.0  |
|      |            |           |         |           | 20600   | 844       | 21.1  |
|      |            |           | 1       | 24        | 20450   | 829       | 21.7  |
|      |            |           |         |           | 20525   | 836.5     | 21.2  |
|      |            |           |         |           | 20600   | 844       | 21.5  |
|      | 16QAM      | 1.4 MHz   | 6       | 0         | 20407   | 824.7     | 19.6  |
|      |            |           |         |           | 20525   | 836.5     | 19.0  |
|      |            |           |         |           | 20643   | 848.3     | 19.5  |
|      |            |           | 3       | 1         | 20407   | 824.7     | 19.6  |
|      |            |           |         |           | 20525   | 836.5     | 19.3  |
|      |            |           |         |           | 20643   | 848.3     | 19.5  |
|      |            |           | 1       | 0         | 20407   | 824.7     | 20.6  |
|      |            |           |         |           | 20525   | 836.5     | 20.7  |
|      |            |           |         |           | 20643   | 848.3     | 20.5  |
|      |            |           | 1       | 5         | 20407   | 824.7     | 20.4  |
|      |            |           |         |           | 20525   | 836.5     | 20.5  |
|      |            |           |         |           | 20643   | 848.3     | 20.6  |
|      |            | 3 MHz     | 15      | 0         | 20415   | 825.5     | 19.5  |
|      |            |           |         |           | 20525   | 836.5     | 19.3  |
|      |            |           |         |           | 20635   | 847.5     | 19.6  |
|      |            |           | 8       | 3         | 20415   | 825.5     | 19.3  |
|      |            |           |         |           | 20525   | 836.5     | 19.1  |
|      |            |           |         |           | 20635   | 847.5     | 19.4  |
|      |            |           | 1       | 0         | 20415   | 825.5     | 20.4  |
|      |            |           |         |           | 20525   | 836.5     | 20.5  |
|      |            |           |         |           | 20635   | 847.5     | 20.3  |
|      |            |           | 1       | 14        | 20415   | 825.5     | 20.4  |
|      |            |           |         |           | 20525   | 836.5     | 20.7  |
|      |            |           |         |           | 20635   | 847.5     | 20.4  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 5    | 16QAM      | 5 MHz     | 25      | 0         | 20425   | 826.5     | 19.4  |
|      |            |           |         |           | 20525   | 836.5     | 19.6  |
|      |            |           |         |           | 20625   | 846.5     | 19.6  |
|      |            |           | 12      | 6         | 20425   | 826.5     | 19.3  |
|      |            |           |         |           | 20525   | 836.5     | 19.4  |
|      |            |           |         |           | 20625   | 846.5     | 19.1  |
|      |            |           | 1       | 0         | 20425   | 826.5     | 20.3  |
|      |            |           |         |           | 20525   | 836.5     | 20.5  |
|      |            |           |         |           | 20625   | 846.5     | 20.1  |
|      |            |           | 1       | 24        | 20425   | 826.5     | 20.6  |
|      |            |           |         |           | 20525   | 836.5     | 20.1  |
|      |            |           |         |           | 20625   | 846.5     | 20.6  |
|      |            | 10 MHz    | 50      | 0         | 20450   | 829       | 19.5  |
|      |            |           |         |           | 20525   | 836.5     | 19.0  |
|      |            |           |         |           | 20600   | 844       | 19.3  |
|      |            |           | 25      | 12        | 20450   | 829       | 19.3  |
|      |            |           |         |           | 20525   | 836.5     | 19.3  |
|      |            |           |         |           | 20600   | 844       | 19.5  |
|      |            |           | 1       | 0         | 20450   | 829       | 20.4  |
|      |            |           |         |           | 20525   | 836.5     | 20.6  |
|      |            |           |         |           | 20600   | 844       | 20.6  |
|      |            |           | 1       | 24        | 20450   | 829       | 20.7  |
|      |            |           |         |           | 20525   | 836.5     | 20.4  |
|      |            |           |         |           | 20600   | 844       | 20.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | QPSK       | 1.4 MHz   | 6       | 0         | 26697   | 814.7     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.5  |
|      |            |           |         |           | 27033   | 848.3     | 20.5  |
|      |            |           | 3       | 1         | 26697   | 814.7     | 20.1  |
|      |            |           |         |           | 26865   | 831.5     | 20.0  |
|      |            |           |         |           | 27033   | 848.3     | 20.1  |
|      |            |           | 1       | 0         | 26697   | 814.7     | 21.7  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 27033   | 848.3     | 21.7  |
|      |            |           | 1       | 5         | 26697   | 814.7     | 21.6  |
|      |            |           |         |           | 26865   | 831.5     | 21.3  |
|      |            |           |         |           | 27033   | 848.3     | 21.3  |
|      |            | 3 MHz     | 15      | 0         | 26705   | 815.5     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.7  |
|      |            |           |         |           | 27025   | 847.5     | 20.6  |
|      |            |           | 8       | 3         | 26705   | 815.5     | 20.6  |
|      |            |           |         |           | 26865   | 831.5     | 20.6  |
|      |            |           |         |           | 27025   | 847.5     | 20.1  |
|      |            |           | 1       | 0         | 26705   | 815.5     | 21.6  |
|      |            |           |         |           | 26865   | 831.5     | 21.5  |
|      |            |           |         |           | 27025   | 847.5     | 21.1  |
|      |            |           | 1       | 14        | 26705   | 815.5     | 21.5  |
|      |            |           |         |           | 26865   | 831.5     | 21.1  |
|      |            |           |         |           | 27025   | 847.5     | 21.2  |
|      |            | 5 MHz     | 25      | 0         | 26715   | 816.5     | 20.7  |
|      |            |           |         |           | 26865   | 831.5     | 20.6  |
|      |            |           |         |           | 27015   | 846.5     | 20.3  |
|      |            |           | 12      | 6         | 26715   | 816.5     | 20.4  |
|      |            |           |         |           | 26865   | 831.5     | 20.5  |
|      |            |           |         |           | 27015   | 846.5     | 20.4  |
|      |            |           | 1       | 0         | 26715   | 816.5     | 21.2  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 27015   | 846.5     | 21.0  |
|      |            |           | 1       | 24        | 26715   | 816.5     | 21.0  |
|      |            |           |         |           | 26865   | 831.5     | 21.4  |
|      |            |           |         |           | 27015   | 846.5     | 21.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | QPSK       | 10 MHz    | 50      | 0         | 26740   | 819.0     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.1  |
|      |            |           |         |           | 26990   | 844.0     | 20.2  |
|      |            |           | 25      | 12        | 26740   | 819.0     | 20.1  |
|      |            |           |         |           | 26865   | 831.5     | 20.3  |
|      |            |           |         |           | 26990   | 844.0     | 20.4  |
|      |            |           | 1       | 0         | 26740   | 819.0     | 21.3  |
|      |            |           |         |           | 26865   | 831.5     | 21.2  |
|      |            |           |         |           | 26990   | 844.0     | 21.0  |
|      |            |           | 1       | 24        | 26740   | 819.0     | 21.2  |
|      |            |           |         |           | 26865   | 831.5     | 21.7  |
|      |            |           |         |           | 26990   | 844.0     | 21.4  |
|      |            | 15 MHz    | 75      | 0         | 24765   | 821.5     | 20.5  |
|      |            |           |         |           | 26865   | 831.5     | 20.4  |
|      |            |           |         |           | 26995   | 841.5     | 20.2  |
|      |            |           | 36      | 19        | 24765   | 821.5     | 20.5  |
|      |            |           |         |           | 26865   | 831.5     | 20.6  |
|      |            |           |         |           | 26995   | 841.5     | 20.2  |
|      |            |           | 1       | 0         | 24765   | 821.5     | 21.4  |
|      |            |           |         |           | 26865   | 831.5     | 21.3  |
|      |            |           |         |           | 26995   | 841.5     | 21.2  |
|      |            |           | 1       | 74        | 24765   | 821.5     | 21.2  |
|      |            |           |         |           | 26865   | 831.5     | 21.4  |
|      |            |           |         |           | 26995   | 841.5     | 21.5  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | 16QAM      | 1.4 MHz   | 6       | 0         | 26697   | 814.7     | 19.0  |
|      |            |           |         |           | 26865   | 831.5     | 19.5  |
|      |            |           |         |           | 27033   | 848.3     | 19.4  |
|      |            |           | 3       | 1         | 26697   | 814.7     | 19.2  |
|      |            |           |         |           | 26865   | 831.5     | 19.1  |
|      |            |           |         |           | 27033   | 848.3     | 19.5  |
|      |            |           | 1       | 0         | 26697   | 814.7     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.4  |
|      |            |           |         |           | 27033   | 848.3     | 20.5  |
|      |            |           | 1       | 5         | 26697   | 814.7     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.0  |
|      |            |           |         |           | 27033   | 848.3     | 20.7  |
|      |            | 3 MHz     | 15      | 0         | 26705   | 815.5     | 19.5  |
|      |            |           |         |           | 26865   | 831.5     | 19.6  |
|      |            |           |         |           | 27025   | 847.5     | 19.4  |
|      |            |           | 8       | 3         | 26705   | 815.5     | 19.5  |
|      |            |           |         |           | 26865   | 831.5     | 19.6  |
|      |            |           |         |           | 27025   | 847.5     | 19.2  |
|      |            |           | 1       | 0         | 26705   | 815.5     | 20.5  |
|      |            |           |         |           | 26865   | 831.5     | 20.2  |
|      |            |           |         |           | 27025   | 847.5     | 20.4  |
|      |            |           | 1       | 14        | 26705   | 815.5     | 20.3  |
|      |            |           |         |           | 26865   | 831.5     | 20.0  |
|      |            |           |         |           | 27025   | 847.5     | 20.2  |
|      |            | 5 MHz     | 25      | 0         | 26715   | 816.5     | 19.3  |
|      |            |           |         |           | 26865   | 831.5     | 19.5  |
|      |            |           |         |           | 27015   | 846.5     | 19.3  |
|      |            |           | 12      | 6         | 26715   | 816.5     | 19.4  |
|      |            |           |         |           | 26865   | 831.5     | 19.2  |
|      |            |           |         |           | 27015   | 846.5     | 19.7  |
|      |            |           | 1       | 0         | 26715   | 816.5     | 20.7  |
|      |            |           |         |           | 26865   | 831.5     | 20.7  |
|      |            |           |         |           | 27015   | 846.5     | 20.7  |
|      |            |           | 1       | 24        | 26715   | 816.5     | 20.7  |
|      |            |           |         |           | 26865   | 831.5     | 20.3  |
|      |            |           |         |           | 27015   | 846.5     | 20.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 26   | 16QAM      | 10 MHz    | 50      | 0         | 26740   | 819.0     | 19.3  |
|      |            |           |         |           | 26865   | 831.5     | 19.5  |
|      |            |           |         |           | 26990   | 844.0     | 19.1  |
|      |            |           | 25      | 12        | 26740   | 819.0     | 19.3  |
|      |            |           |         |           | 26865   | 831.5     | 19.5  |
|      |            |           |         |           | 26990   | 844.0     | 19.0  |
|      |            |           | 1       | 0         | 26740   | 819.0     | 20.3  |
|      |            |           |         |           | 26865   | 831.5     | 20.5  |
|      |            |           |         |           | 26990   | 844.0     | 20.2  |
|      |            |           | 1       | 24        | 26740   | 819.0     | 20.3  |
|      |            |           |         |           | 26865   | 831.5     | 20.7  |
|      |            |           |         |           | 26990   | 844.0     | 20.6  |
|      |            | 15 MHz    | 75      | 0         | 24765   | 821.5     | 19.3  |
|      |            |           |         |           | 26865   | 831.5     | 19.4  |
|      |            |           |         |           | 26995   | 841.5     | 19.2  |
|      |            |           | 36      | 19        | 24765   | 821.5     | 19.4  |
|      |            |           |         |           | 26865   | 831.5     | 19.1  |
|      |            |           |         |           | 26995   | 841.5     | 19.6  |
|      |            |           | 1       | 0         | 24765   | 821.5     | 20.6  |
|      |            |           |         |           | 26865   | 831.5     | 20.5  |
|      |            |           |         |           | 26995   | 841.5     | 20.3  |
|      |            |           | 1       | 74        | 24765   | 821.5     | 20.2  |
|      |            |           |         |           | 26865   | 831.5     | 20.6  |
|      |            |           |         |           | 26995   | 841.5     | 20.7  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | QPSK       | 1.4 MHz   | 6       | 0         | 23017   | 699.7     | 19.0  |
|      |            |           |         |           | 23095   | 707.5     | 18.9  |
|      |            |           |         |           | 23173   | 715.3     | 19.2  |
|      |            |           | 3       | 1         | 23017   | 699.7     | 18.6  |
|      |            |           |         |           | 23095   | 707.5     | 18.8  |
|      |            |           |         |           | 23173   | 715.3     | 18.7  |
|      |            |           | 1       | 0         | 23017   | 699.7     | 19.5  |
|      |            |           |         |           | 23095   | 707.5     | 19.9  |
|      |            |           |         |           | 23173   | 715.3     | 20.0  |
|      |            |           | 1       | 5         | 23017   | 699.7     | 19.8  |
|      |            |           |         |           | 23095   | 707.5     | 19.8  |
|      |            |           |         |           | 23173   | 715.3     | 19.6  |
|      |            | 3 MHz     | 15      | 0         | 23025   | 700.5     | 18.7  |
|      |            |           |         |           | 23095   | 707.5     | 19.2  |
|      |            |           |         |           | 23165   | 714.5     | 19.0  |
|      |            |           | 8       | 3         | 23025   | 700.5     | 19.1  |
|      |            |           |         |           | 23095   | 707.5     | 18.6  |
|      |            |           |         |           | 23165   | 714.5     | 18.6  |
|      |            |           | 1       | 0         | 23025   | 700.5     | 19.8  |
|      |            |           |         |           | 23095   | 707.5     | 19.7  |
|      |            |           |         |           | 23165   | 714.5     | 19.8  |
|      |            |           | 1       | 14        | 23025   | 700.5     | 19.6  |
|      |            |           |         |           | 23095   | 707.5     | 20.2  |
|      |            |           |         |           | 23165   | 714.5     | 20.1  |
|      |            | 5 MHz     | 25      | 0         | 23035   | 701.5     | 19.0  |
|      |            |           |         |           | 23095   | 707.5     | 18.9  |
|      |            |           |         |           | 23155   | 713.5     | 18.6  |
|      |            |           | 12      | 6         | 23035   | 701.5     | 18.8  |
|      |            |           |         |           | 23095   | 707.5     | 19.0  |
|      |            |           |         |           | 23155   | 713.5     | 18.9  |
|      |            |           | 1       | 0         | 23035   | 701.5     | 19.8  |
|      |            |           |         |           | 23095   | 707.5     | 19.7  |
|      |            |           |         |           | 23155   | 713.5     | 19.9  |
|      |            |           | 1       | 24        | 23035   | 701.5     | 19.7  |
|      |            |           |         |           | 23095   | 707.5     | 19.9  |
|      |            |           |         |           | 23155   | 713.5     | 20.2  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | QPSK       | 10 MHz    | 50      | 0         | 23060   | 704.0     | 18.6  |
|      |            |           |         |           | 23095   | 707.5     | 18.8  |
|      |            |           |         |           | 23130   | 711.0     | 18.6  |
|      |            |           | 25      | 12        | 23060   | 704.0     | 19.1  |
|      |            |           |         |           | 23095   | 707.5     | 18.9  |
|      |            |           |         |           | 23130   | 711.0     | 18.6  |
|      |            |           | 1       | 0         | 23060   | 704.0     | 19.8  |
|      |            |           |         |           | 23095   | 707.5     | 19.7  |
|      |            |           |         |           | 23130   | 711.0     | 19.9  |
|      |            |           | 1       | 24        | 23060   | 704.0     | 19.9  |
|      |            |           |         |           | 23095   | 707.5     | 19.7  |
|      |            |           |         |           | 23130   | 711.0     | 19.9  |
|      | 16QAM      | 1.4 MHz   | 6       | 0         | 23017   | 699.7     | 17.6  |
|      |            |           |         |           | 23095   | 707.5     | 17.6  |
|      |            |           |         |           | 23173   | 715.3     | 17.7  |
|      |            |           | 3       | 1         | 23017   | 699.7     | 17.5  |
|      |            |           |         |           | 23095   | 707.5     | 18.1  |
|      |            |           |         |           | 23173   | 715.3     | 18.2  |
|      |            |           | 1       | 0         | 23017   | 699.7     | 18.6  |
|      |            |           |         |           | 23095   | 707.5     | 19.1  |
|      |            |           |         |           | 23173   | 715.3     | 19.0  |
|      |            |           | 1       | 5         | 23017   | 699.7     | 18.6  |
|      |            |           |         |           | 23095   | 707.5     | 18.8  |
|      |            |           |         |           | 23173   | 715.3     | 18.7  |
|      |            | 3 MHz     | 15      | 0         | 23025   | 700.5     | 18.1  |
|      |            |           |         |           | 23095   | 707.5     | 18.1  |
|      |            |           |         |           | 23165   | 714.5     | 17.8  |
|      |            |           | 8       | 3         | 23025   | 700.5     | 18.2  |
|      |            |           |         |           | 23095   | 707.5     | 17.7  |
|      |            |           |         |           | 23165   | 714.5     | 18.1  |
|      |            |           | 1       | 0         | 23025   | 700.5     | 18.7  |
|      |            |           |         |           | 23095   | 707.5     | 18.9  |
|      |            |           |         |           | 23165   | 714.5     | 18.8  |
|      |            |           | 1       | 14        | 23025   | 700.5     | 18.7  |
|      |            |           |         |           | 23095   | 707.5     | 18.7  |
|      |            |           |         |           | 23165   | 714.5     | 19.1  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 12   | 16QAM      | 5 MHz     | 25      | 0         | 23035   | 701.5     | 17.5  |
|      |            |           |         |           | 23095   | 707.5     | 17.8  |
|      |            |           |         |           | 23155   | 713.5     | 18.0  |
|      |            |           | 12      | 6         | 23035   | 701.5     | 17.9  |
|      |            |           |         |           | 23095   | 707.5     | 17.6  |
|      |            |           |         |           | 23155   | 713.5     | 17.6  |
|      |            |           | 1       | 0         | 23035   | 701.5     | 18.6  |
|      |            |           |         |           | 23095   | 707.5     | 19.0  |
|      |            |           |         |           | 23155   | 713.5     | 18.5  |
|      |            |           | 1       | 24        | 23035   | 701.5     | 18.7  |
|      |            |           |         |           | 23095   | 707.5     | 18.9  |
|      |            |           |         |           | 23155   | 713.5     | 18.9  |
|      |            | 10 MHz    | 50      | 0         | 23060   | 704.0     | 17.6  |
|      |            |           |         |           | 23095   | 707.5     | 18.0  |
|      |            |           |         |           | 23130   | 711.0     | 18.1  |
|      |            |           | 25      | 12        | 23060   | 704.0     | 17.9  |
|      |            |           |         |           | 23095   | 707.5     | 17.7  |
|      |            |           |         |           | 23130   | 711.0     | 17.7  |
|      |            |           | 1       | 0         | 23060   | 704.0     | 19.2  |
|      |            |           |         |           | 23095   | 707.5     | 19.0  |
|      |            |           |         |           | 23130   | 711.0     | 19.1  |
|      |            |           | 1       | 24        | 23060   | 704.0     | 19.0  |
|      |            |           |         |           | 23095   | 707.5     | 19.0  |
|      |            |           |         |           | 23130   | 711.0     | 18.6  |

| Band | Modulation | Bandwidth | RB Size | RB Offset | Channel | Frequency | Power |
|------|------------|-----------|---------|-----------|---------|-----------|-------|
| 7    | QPSK       | 5 MHz     | 25      | 0         | 20775   | 2502.5    | 13.2  |
|      |            |           |         |           | 21100   | 2535.0    | 12.5  |
|      |            |           |         |           | 21425   | 2567.5    | 12.7  |
|      |            |           | 12      | 6         | 20775   | 2502.5    | 13.0  |
|      |            |           |         |           | 21100   | 2535.0    | 12.9  |
|      |            |           |         |           | 21425   | 2567.5    | 12.6  |
|      |            |           | 1       | 0         | 20775   | 2502.5    | 13.9  |
|      |            |           |         |           | 21100   | 2535.0    | 14.0  |
|      |            |           |         |           | 21425   | 2567.5    | 13.8  |
|      |            |           | 1       | 24        | 20775   | 2502.5    | 13.9  |
|      |            |           |         |           | 21100   | 2535.0    | 13.8  |
|      |            |           |         |           | 21425   | 2567.5    | 14.1  |