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TEST REPORT

SCOPE OF WORK
FCC TESTING– CE1-CID-16-4G-011

REPORT NUMBER
210916025SZN-007

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101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community,
GuanHu Subdistrict, LongHua District, Shenzhen, P.R. China.

Tel: (86 755) 8601 6288
Fax: (86 755) 8601 6751
www.intertek.com

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SAR TEST REPORT

For

Credence ID LLC

Product Description: Rugged Handheld Device

FCC ID: 2AMBZ-CE1-16-4G-11

Model No.: CE1-CID-16-4G-011

Report No.: 210916025SZN-007

Issue Date: 25 March 2022

Prepared and Checked by:

Jeff Liang
Project Engineer

Approved by:

Peter Kang
Senior Technical Supervisor
25 March 2022

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1. GENERAL INFORMATION

Applicant:	Credence ID LLC 2335 Broadway Suite 100 Oakland California United States
Manufacturer:	Credence ID LLC 2335 Broadway Suite 100 Oakland California United States
Product Description:	Rugged Handheld Device
Model Number:	CE1-CID-16-4G-011
File Number:	210916025SZN-007
Date of Test:	25 October 2021 to 02 November 2021

The above equipment was tested by Intertek Testing Services Shenzhen Ltd. Longhua Branch. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in IEEE 1528-2013 and KDB 865664. This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in ANSI/IEEE C95.1-1992.

The test results of this report relate only to the tested sample identified in this report

2. Equipment Under Test (EUT) TECHNICAL DESCRIPTION

Characteristics	Description		
Product Name:	Rugged Handheld Device		
Device type:	Portable device		
Exposure Category:	Uncontrolled Environment/General Population		
Test Mode(s):	UMTS/TM1 (WCDMA system, QPSK modulation)		
	UMTS/TM2 (HSDPA system, QPSK modulation)		
	UMTS/TM3 (HSUPA system, QPSK modulation)		
	LTE/TM1 (LTE system, QPSK modulation)		
	LTE/TM2 (LTE system, 16QAM modulation)		
	WiFi 2.4G (DSSS/OFDM) WiFi 5G (OFDM)		
	Bluetooth (GFSK, Pi/4 DQPSK, 8DPSK)		
	NFC (ASK)		
Device Class:	B		
Antenna Type:	Internal permanent antenna		
Antenna Gain:	UMTS 850: 0.1dBm UMTS 1900: 1.2dBm LTE BAND 2: 1.2dBm LTE BAND 4: 1.2dBm LTE BAND 5: 0.1dBm LTE BAND 7: 1.6dBm LTE BAND 13: -0.3dBm LTE BAND 17: -0.4dBm LTE BAND 38: 1.5dBm LTE BAND 41: 1.6dBm 2.4 G Wi-Fi: 0.4dBi 5 G Wi-Fi: 0.9dBi		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)
	UMTS 850	824 - 849	869 - 894
	UMTS 1900	1850 - 1910	1930 - 1990
	LTE Band 2	1850 - 1910	1930 - 1990
	LTE Band 4	1710 - 1755	2110 - 2155
	LTE Band 5	824 - 849	869 - 894
	LTE Band 7	2500 - 2570	2620 - 2690
	LTE Band 13	777 - 787	746 - 756
	LTE Band 17	704 - 716	734 - 746
	LTE Band 38	2570 - 2620	2570 - 2620

Characteristics	Description		
	LTE Band 41	2555 - 2655	2555 - 2655
	BT	2400-2483.5	
	WiFi 2.4G	2412-2462	
	WiFi 5G	5150MHz~5250 MHz, 5725MHz~5850MHz	
	NFC	13.56MHz	
HSUPA UE Category:	6		
HSDPA UE Category:	14		
DC-HSDPA Category:	24		
Power Class:	UMTS Band II: 3 UMTS Band V: 3 LTE Band 2: 3 LTE Band 4: 3 LTE Band 5: 3 LTE Band 7: 3 LTE Band 12: 3 LTE Band 13: 3 LTE Band 17: 3		
Test Channels (low-mid-high):	9262-9400-9538(UMTS Band II)		
	4132-4182-4233(UMTS Band V)		
	18607-18900-19193(LTE Band 2 BW=1.4MHz)		
	18615-18900-19185(LTE Band 2 BW=3MHz)		
	18625-18900-19175(LTE Band 2 BW=5MHz)		
	18650-18900-19150(LTE Band 2 BW=10MHz)		
	18675-18900-19125(LTE Band 2 BW=15MHz)		
	18700-18900-19100(LTE Band 2 BW=20MHz)		
	19957-20175-20393(LTE Band 4 BW=1.4MHz)		
	19965-20175-20385(LTE Band 4 BW=3MHz)		
	19975-20175-20375(LTE Band 4 BW=5MHz)		
	20000-20175-20350(LTE Band 4 BW=10MHz)		
	20025-20175-20325(LTE Band 4 BW=15MHz)		
	20050-20175-20300(LTE Band 4 BW=20MHz)		
	20407-20525-20643(LTE Band 5 BW=1.4MHz)		
	20415-20525-20635(LTE Band 5 BW=3MHz)		
	20425-20525-20625(LTE Band 5 BW=5MHz)		
	20450-20525-20600(LTE Band 5 BW=10MHz)		
	20775-21100-21425(LTE Band 7 BW=5MHz)		
	20800-21100-21400(LTE Band 7 BW=10MHz)		

Characteristics	Description
	20825-21100-21375(LTE Band 7 BW=15MHz)
	20850-21100-21350(LTE Band 7 BW=20MHz)
	23205-23230-23255(LTE Band 13 BW=5MHz)
	23230-23230-23230(LTE Band 13 BW=10MHz)
	23755-23790-23825(LTE Band 17 BW=5MHz)
	23780-23790-23800(LTE Band 17 BW=10MHz)
	37775-38000-38225(LTE Band 38 BW=5MHz)
	37800-38000-38200(LTE Band 38 BW=10MHz)
	37825-38000-38175(LTE Band 38 BW=15MHz)
	37850-38000-38150(LTE Band 38 BW=20MHz)
	40265-40690-41215 (LTE Band 41 BW=5MHz)
	40290-40690-41190 (LTE Band 41 BW=10MHz)
	40315-40690-41165 (LTE Band 41 BW=15MHz)
	40340-40690-41490 (LTE Band 41 BW=20MHz)
	BT (EDR): 0-39-78
	BT (BLE): 0-19-39
	WiFi 2.4G: 802.11b/g/n 20M: 1-6-11 802.11n 40M: 3-6-9
	WiFi 5G: 802.11a/n/ac 20M: 36-40-48, 149-157-165 802.11n/ac 40M: 38-NA-46, 151-NA-159 802.11ac 80M: 42, 155 (There is only one channel per band.)
Power supply:	D.C. 3.8V with battery
	D.C. 5V or 9V with adaptor
Product Software Version:	mt6761
Product Hardware Version:	EC5D64WBE63.FEKS.HB.R0.HD.FI.211208.V0.07.DRV.TEST

Note:
1. NA is Not Applicable
2. For more details, please refer to the User's manual of the EUT.
3. The sample under test was selected by the Client.

3. Auxiliary Equipment Details

Description	Manufacturer	Description
Power Adapter	(Provided by Applicant)	MODEL: HJ-FC001K7-UK INPUT: 100-240V~50/60Hz 0.6A OUTPUT: 5.0V⎓3.0A OR 9.0V⎓2.0A OR 12.0V⎓1.5A 18W
USB cable	(Provided by Applicant)	Shielded, Length: 100cm

4. Test Facility

Site Description	
EMC Lab.	The Laboratory has been assessed and proved to be in compliance with CNAS/CL01: 2006(identical to ISO/IEC17025: 2005) The Certificate Registration Number is L0327
	Accredited by FCC The Certificate Registration Number is CN1188
Name of Firm	Intertek Testing Services Shenzhen Ltd. Longhua Branch
Site Location	101, 201, Building B, No. 308 Wuhe Avenue, Zhangkengjing Community, GuanHu Subdistrict, LongHua District, ShenZhen, P.R. China

5. Guidance Standard

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards:

☒FCC 47CFR §2.1093 Radiofrequency Radiation Exposure Evaluation: Portable Devices

☒ ANSI C95.1, 1992: Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. (IEEE Std C95.1-1991)

☒IEEE Std 1528™-2013: IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

☒KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04: SAR Measurement Requirements for 100 MHz to 6 GHz

☒KDB 865664 D02 SAR Reporting v01r02

☒KDB690783 D01 SAR Listings on Grants v01r03

☒KDB 447498 D01 Mobile Portable RF Exposure v06: Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies

☒KDB 648474 D04 Handset SAR v01r03: SAR Evaluation Considerations for Wireless Handsets.

☒KDB 941225 D01 SAR test for 3G Devices v03r01: SAR Measurement Procedures CDMA2000 1×RTT,1×Ev-Do, WCDMA, HSDPA/HSPA

☒KDB 941225 D05 SAR for LTE Devices v02r05: SAR Evaluation Considerations for LTE Devices

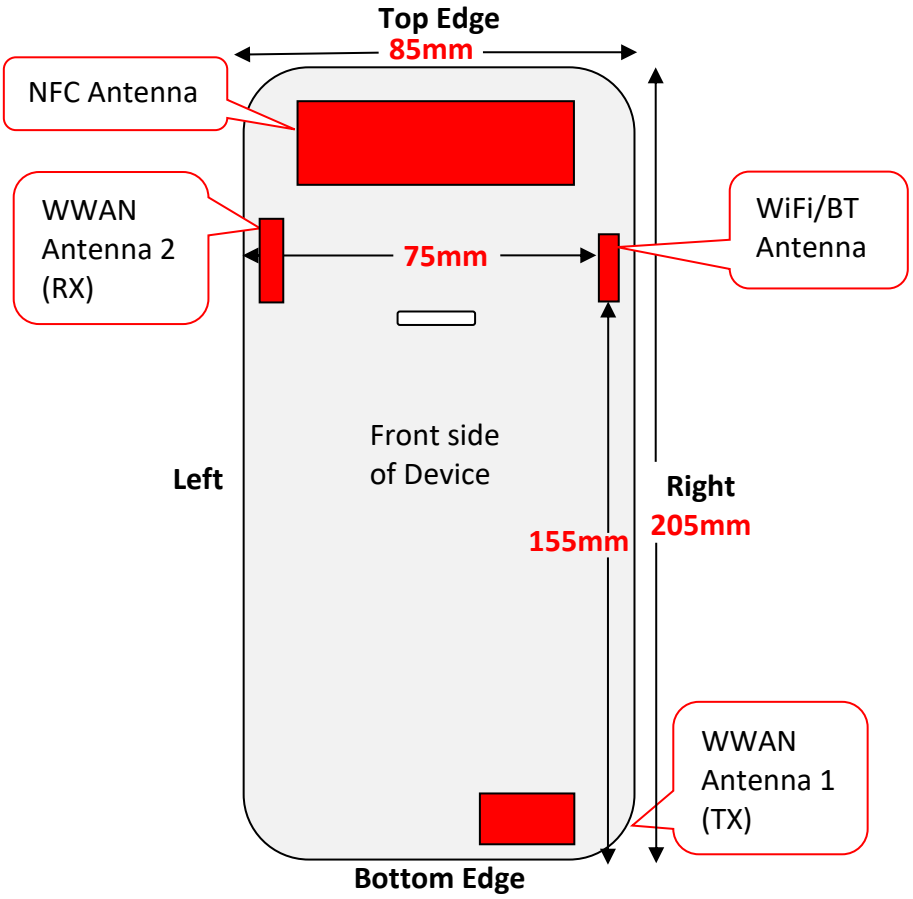
☒KDB 941225 D06 Hotspot Mode v02r01: SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities

☒KDB 248227 D01 SAR measurement for 802.11 a b g v02r02: SAR Measurement Procedures for 802.11 a/b/g Transmitters

☒KDB 616217 D04 SAR EVALUATION CONSIDERATIONS FOR LAPTOP, NOTEBOOK, NETBOOK AND TABLET COMPUTERS

Remark:
This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 11 of this test report are below limits specified in the relevant standards for the tested bands only.

6. EUT Antenna Locations



Test position consideration:

Distance of EUT antenna-to-edge/surface(mm), Test distance:10mm						
Antennas	Rear Face	Front Face	Left Side	Right Side	Top	Bottom
WWAN 1	1	15	15	48	185	5
WLAN	1	15	75	5	33	155
Bluetooth	1	15	75	5	33	155

Test distance:10mm						
Antennas	Rear Face	Front Face	Left Side	Right Side	Top	Bottom
WWAN 1	YES	YES	YES	YES	NO	YES
WLAN	YES	YES	YES	YES	YES	NO
Bluetooth	NO	NO	NO	NO	NO	NO

Note:

1. Head/Body-worn/Hotspot SAR assessments are required.
2. Referring to KDB 941225 D06v02r01, when the overall device length and width are ≥ 9cm * 5cm, the test distance is 10mm. SAR must be measured for all sides and surfaces with a transmitting antenna located within 25mm from that surface or edge.

3. Per KDB 447498 D01v06, for handsets the test separation distance is determined by the smallest distance between the outer surface of the device and the user, which is 0 mm for head SAR, 10 mm for body-worn SAR and hotspot SAR.

The Maximum reported SAR1g

Head SAR Configuration

Mode	Test Position	Channel /Frequency (MHz)	Limit SAR1g 1.6 W/kg	
			Measured SAR1g (W/kg)	Reported SAR1g (W/kg)
LTE 7	Left Cheek	21350/2560	0.42	0.42

Body SAR Configuration

Mode	Test Position	Channel /Frequency (MHz)	Limit SAR1g 1.6 W/kg	
			Measured SAR1g (W/kg)	Reported SAR1g (W/kg)
LTE 7	Bottom Side	21100/2535	1.15	1.28

7. RF Exposure

7.1 LIMITS

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.

Limits for General Population/Uncontrolled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and ankles
0.08	1.6	4.0

Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

7.2 EVALUATION

☒According to FCC KDB447498 D01 and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. Portable transmitters with output power greater than the applicable low threshold require SAR testing to qualify for TCB approval.

Mode	Frequency (GHz)	Max. Conducted Power(dBm)	Antenna Gain (dBi)	Max.ERP (mW)	ERP_{20} (mW)	Distance (cm)	Exemption Threshold (mW)	Exemption SAR
Bluetooth	2.48	8.5	0.4	4.73	3060	10.0	817.19	Yes
BLE	2.48	-7.0	0.4	0.13	3060	10.0	817.19	Yes

Result: SAR measurement for Bluetooth and BLE is not required.

8. Specific Absorption Rate (SAR)

8.1 INTRODUCTION

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

8.2 SAR DEFINITION

The SAR definition is 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 (ρ). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be either related to the temperature elevation in tissue by

$$SAR = c\left(\frac{\delta T}{\delta t}\right)$$

Where: C is the specific head capacity, δT is the temperature rise and δt is the exposure duration, or related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue ρ is the mass density of tissue and E is the RMS electrical field strength.

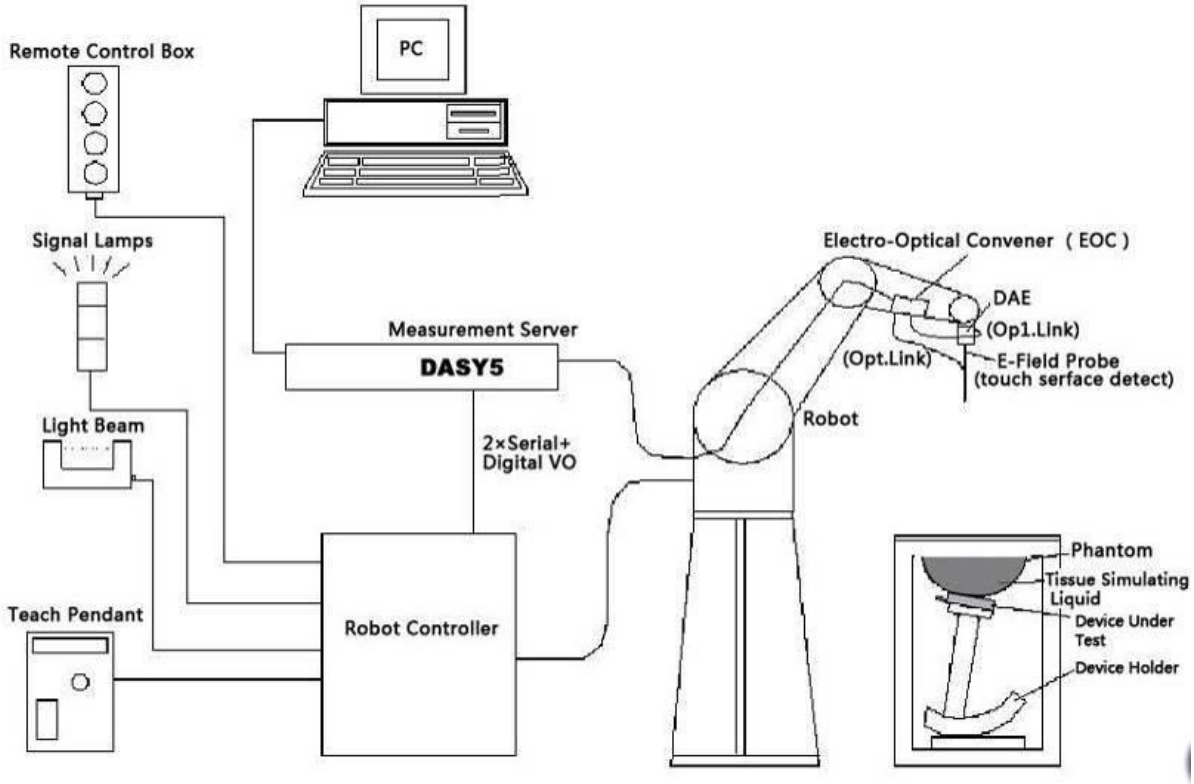
However for evaluating SAR of low power transmitter, electrical field measurement is typically applied.

9. SAR Measurements System Configuration

9.1 SAR MEASUREMENT SET-UP

The DASY5 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win 7 profesional operating system and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.



Picture 1. SAR Lab Test Measurement Set-up

9.2 DASY5 E-FIELD PROBE SYSTEM

The SAR measurements were conducted with the dosimetric probe designed in the classical triangular configuration 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 multifiber line ending at the front of the probe tip. 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 DASY5 software reads the reflection turning a software approach and looks for the maximum using 2nd ord curve fitting. The approach is stopped at reaching the maximum.

Probe Specifications:

Model:	EX3DV4
Calibration:	ISO/IEC 17025 calibration service available
Probe Length:	337 mm
Probe Tip Length:	9 mm
Body Diameter:	10 mm
Tip Diameter:	2.5 mm
Application:	High Precision dosimetric measurements in any exposure scenario (e.g., very strong Picture 2 E-field Probe gradient fields).

9.3 E-FIELD PROBE CALIBRATION

Each E-Probe/Probe Amplifier combination has unique calibration parameters. A TEM cell calibration procedure is conducted to determine the proper amplifier settings to enter in the probe parameters. The amplifier settings are determined for a given frequency by subjecting the probe to a known E-field density (1 mW/cm^2) using an RF Signal generator, TEM cell, and RF Power Meter.

The free space E-field from amplified probe outputs is determined in a test chamber. This calibration can be performed in a TEM cell if the frequency is below 1 GHz and inn a waveguide or other methodologies above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and 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 equate to 1 mw/ cm^2.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The E-field in the medium correlates with the temperature rise in the 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:
Δt = Exposure time (30 seconds),
C = Heat capacity of tissue (brain or muscle),
ΔT = Temperature increase due to RF exposure.

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

Where:
σ = Simulated tissue conductivity,
ρ = Tissue density (kg/m^3).

9.4 OTHER TEST EQUIPMENT

9.4.1 Data Acquisition Electronics (DAE)

The data acquisition electronics consist 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 with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection.

The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Picture 3: DAE

9.4.2 Robot

The SPEAG DASY system uses the high precision robots (DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability 0.02mm)
- High reliability (industrial design)
- Low maintenance costs (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements (brushless synchron motors; no stepper motors)
- Low ELF interference (motor control fields shielded via the closed metallic construction shields)

Picture 4 DASY 5

9.4.3 Measurement Server

The Measurement server is based on a PC/104 CPU broad with CPU (DASY5: 400 MHz, Intel Celeron), chip disk (DASY5: 128MB), RAM (DASY5: 128MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O broad, which is directly connected to the PC/104 bus of the CPU broad.

Picture 5 Server for DASY 5

The measurement server performs all real-time data evaluation of field measurements and surface detection, controls robot movements and handles safety operation. The PC operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with an expansion port which is reserved for future applications. Please note that this expansion port does not have a standardized pinout, and therefore only devices provided by SPEAG can be connected. Devices from any other supplier could seriously damage the measurement server.

9.4.4 Device Holder for Phantom

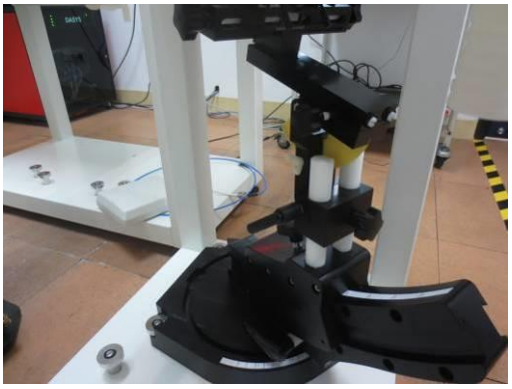
The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5mm distance, a positioning uncertainty of ±0.5mm would produce a SAR uncertainty of ±20%. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation centers for both scales are the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε =3 and loss tangent δ =0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

<Laptop Extension Kit>

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin-SAM and ELI phantoms.



Picture 6: Device Holder

9.4.5 Phantom

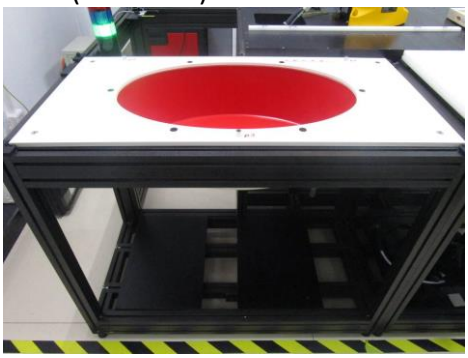
The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a table. The shape of the shell is based on data from an anatomical study designed to Represent the 90th percentile of the population. The phantom enables the dissymmetric evaluation of SAR for both left and right handed handset usage, as well as body-worn usage using the flat phantom region. 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. The shell phantom has a 2mm shell thickness (except the ear region where shell thickness increases to 6 mm).

Shell Thickness:	2 ± 0. 2 mm
Filling Volume:	Approx. 25 liters
Dimensions:	810 x l000 x 500 mm (H x L x W)
Available:	Special

Picture 7: SAM Twin Phantom

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

Shell Thickness:	2±0.2 mm
Filling Volume:	Approx. 30 liters
Dimensions:	190×600×0 mm (H x L x W)



Picture 8.ELI Phantom

9.5 SCANNING PROCEDURE

The DASY5 installation includes predefined files with recommended procedures for measurements and validation. 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 “surface check” measurement tests the optical surface detection system of the DASY5 system by repeatedly detecting the surface with the optical and mechanical surface detector and comparing the results. The output gives the detecting heights of both systems, the difference between the two systems and the standard deviation of the detection repeatability. Air bubbles or refraction in the liquid due to separation of the sugar-water mixture gives poor repeatability (above ± 0.1mm). To prevent wrong results tests are only executed when the liquid is free of air bubbles. The difference between the optical surface detection and the actual surface depends on the probe and is specified with each probe. (It does not depend on the surface reflectivity or the probe angle to the surface within ± 30°.)

Area Scan
The Area Scan is used as a fast scan in two dimensions to find the area of high field values before running a detailed measurement around the hot spot. Before starting the area scan a grid spacing is set according to FCC KDB Publication 865664. During scan the distance of the probe to the phantom remains unchanged. After finishing area scan, the field maxima within a range of 2 dB will be ascertained.

Zoom Scan
After the maximum interpolated values were calculated between the points in the cube, the SAR was averaged over the spatial volume (1g or 10g) using a 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the “Not a knot” condition (in x, y, and z directions). The volume was then integrated with the trapezoidal algorithm.

Spatial Peak Detection
The procedure for spatial peak SAR evaluation has been implemented and can determine values of masses of 1g and 10g, as well as for user-specific masses. The DASY5 system allows evaluations that combine measured data and robot positions, such as:
- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maxima searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation. Extrapolation routines require at least 10 measurement points in 3-D space.

They are used in the Zoom Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation.

A Z-axis scan measures the total SAR value at the x-and y-position of the maximum SAR value found during the cube scan. The probe is moved away in z-direction from the bottom of the SAM phantom in 5mm steps.

Table 1: Area and Zoom Scan Resolutions per FCC KDB Publication 865664 D01

Frequency	Maximum Area Scan Resolution (mm) (Δxarea, Δyarea)	Maximum Zoom Scan Resolution (mm) (Δxzoom, Δyzoom)	Maximum Zoom Scan Spatial Resolution (mm) Δzzoom(n)	Minimum Zoom Scan Volume (mm) (x,y,z)
≤2 GHz	≤15	≤8	≤5	≥ 30
2-3 GHz	≤12	≤5	≤5	≥30
3-4 GHz	≤12	≤5	≤4	≥28
4-5 GHz	≤10	≤4	≤3	≥25
5-6 GHz	≤10	≤4	≤2	≥22

9.6 DATA STORAGE AND EVALUATION

9.6.1 Data Storage

The DASY5 software stores the acquired data from the data acquisition electronics as raw data (in microvolt readings from the probe sensors), together with all necessary software parameters for the data evaluation (probe calibration data, liquid parameters and device frequency and modulation data) in measurement files with the extension ".DAE4". The software evaluates the desired unit and format for output each time the data is visualized or exported. This allows verification of the complete software setup even after the measurement and allows correction of incorrect parameter settings. For example, if a measurement has been performed with a wrong crest factor parameter in the device set up, the parameter can be corrected afterwards and the data can be re-evaluated.

The measured data can be visualized or exported in different units or formats, depending on the selected probe type ([V/m], [A/m], [°C], [mW/g], [mW/cm²], [dBrel], etc.). Some of these units are not available in certain situations or show meaningless results, e.g., a SAR output in a loss less media will always be zero. Raw data can also be exported to perform the evaluation with other software packages.

9.6.2 Data Evaluation by SEMCAD

The SEMCAD software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:
- Sensitivity $Norm_i$, a_{i0}, a_{i1}, a_{i2}
- Conversion factor $ConvF_i$
- Diode compression point Dcp_i

Device parameters:
- Frequency f
- Crest factor cf

Media parameters:
- Conductivity
- Density

These parameters must be set correctly in the software. They can be found in the component documents or they can be imported into the software from the configuration files issued for the DASY5 components. In the direct measuring mode of the multimeter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

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 as:

$\mathbf{V_i = U_i + U_i^2 \cdot c f / dcp_i}$

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

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

E-field probes: $\mathbf{E_i = (V_i / Norm_i \cdot ConvF)^{1/2}}$

H-field probes: $\mathbf{H_i = (V_i)^{1/2} \cdot (a_{i0} + a_{i1} f + a_{i2} f^2) / f}$

With $\mathbf{V_i}$ = compensated signal of channel i (i = x, y, z)
$\mathbf{Norm_i}$ = sensor sensitivity of channel i (i = x, y, z)
[mV/(V/m)2] for E-field Probes
ConvF = sensitivity enhancement in solution
$\mathbf{a_{ij}}$ = sensor sensitivity factors for H-field probes
f = carrier frequency [GHz]
$\mathbf{E_i}$ = electric field strength of channel i in V/m
$\mathbf{H_i}$ = magnetic field strength of channel i in A/m

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

$\mathbf{E_{tot} = (E_x^2 + E_Y^2 + E_z^2)^{1/2}}$

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

$\mathbf{SAR = (E_{tot}) 2 \cdot \sigma / (\rho \cdot 1000)}$

with **SAR** = local specific absorption rate in mW/g
$\mathbf{E_{tot}}$ = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid. The power flow density is calculated assuming the excitation field to be a free space field.

$\mathbf{P_{pwe} = E_{tot}^2 / 3770}$ or $\mathbf{P_{pwe} = H_{tot}^2 \cdot 37.7}$

with $\mathbf{P_{pwe}}$ = equivalent power density of a plane wave in mW/cm^2
$\mathbf{E_{tot}}$ = total electric field strength in V/m ; $\mathbf{H_{tot}}$ = total magnetic field strength in A/m

9.7 TISSUE-EQUIVALENT LIQUID

9.7.1 Tissue-equivalent Liquid Ingredients

The liquid is consisted of water, salt and Glycol etc. The liquid has previously been proven to be suited for worst-case. The Table 2 & 3 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the KDB 865664 D01.

Table 2: The following recipe(s) were used for Head (H) and Body (B) Tissue-equivalent liquid(s)

Tissue Type	Bactericide	DGBE	HEC	NaCl	Sucrose	Triton X-100	Water	Diethylene Glycol Mono- hexylether
H750	0.2	-	0.2	1.4	57.0	-	41.1	-
H835	0.1	-	1.0	1.4	57.0	-	40.5	-
H900	0.1	-	1.0	1.5	56.5	-	40.9	-
H1450	-	45.5	-	0.7	-	-	53.8	-
H1640	-	45.8	-	0.5	-	-	53.7	-
H1750	-	44.5	-	0.3	-	-	55.2	-
H1800	-	44.9	-	0.2	-	-	54.9	-
H1900	-	44.9	-	0.2	-	-	54.9	-
H2000	-	50	-	-	-	-	50	-
H2300	-	44.9	-	0.1	-	-	55.0	-
H2450	-	45.0	-	0.1	-	-	54.9	-
H2600	-	45.1	-	0.1	-	-	54.8	-
H3500	-	8.0	-	0.2	-	20.0	71.8	-
H5G	-	-	-	-	-	17.2	65.52	17.3
B750	0.2	-	0.2	0.8	48.8	-	50.0	-
B835	0.2	-	0.2	0.9	48.5	-	50.2	-
B900	0.2	-	0.2	0.9	48.2	-	50.5	-
B1450	-	34.0	-	0.3	-	-	65.7	-
B1640	-	32.5	-	0.3	-	-	67.2	-
B1750	-	29.4	-	0.4	-	-	70.2	-
B1800	-	29.5	-	0.4	-	-	70.1	-
B1900	-	29.5	-	0.3	-	-	70.2	-
B2000	-	30.0	-	0.2	-	-	69.8	-
B2300	-	31.0	-	0.1	-	-	68.9	-
B2450	-	31.4	-	0.1	-	-	68.5	-
B2600	-	31.8	-	0.1	-	-	68.1	-
B3500	-	28.8	-	0.1	-	-	71.1	-
B5G	-	-	-	-	-	10.7	78.6	10.7

Table 3: Targets of Tissue Simulating Liquid

Frequency (MHz)	Relative permittivity ε_r	Conductivity (σ) S/m
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
1750	40.1	1.37
1800	40.0	1.40
1900	40.0	1.40
2000	40.0	1.40
2300	39.5	1.67
2450	39.2	1.80
2600	39.0	1.96
5200	36.0	4.66
5300	35.9	4.76
5500	35.6	4.96
5600	35.5	5.07
5800	35.3	5.27

9.7.2 Tissue-equivalent Liquid Properties

Table 4: Dielectric Performance of Head Tissue Simulating Liquid

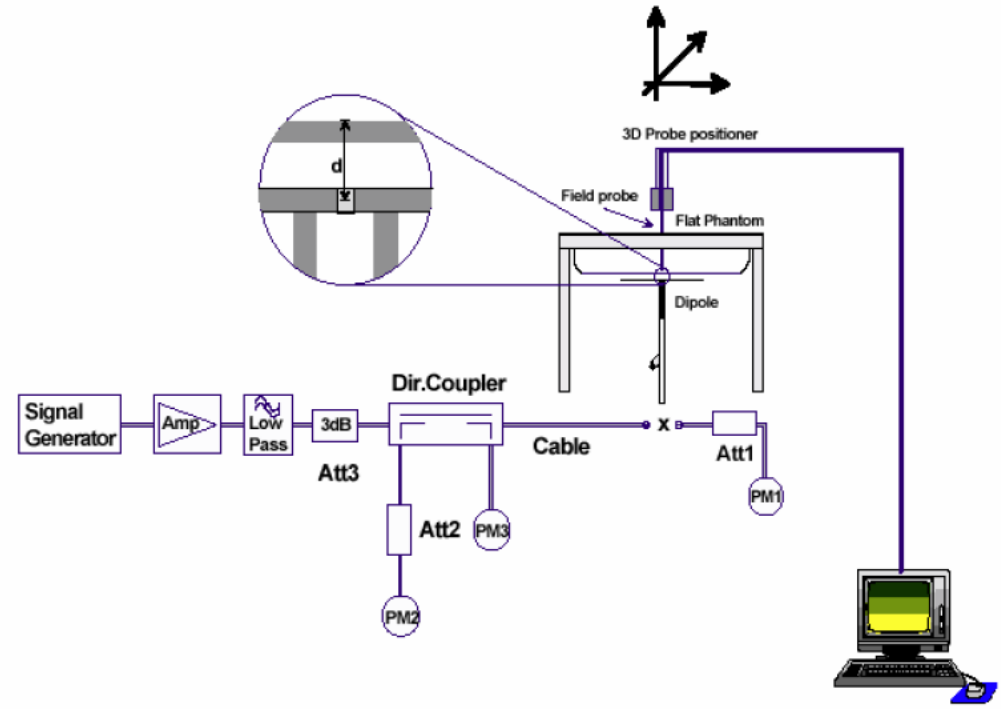
Tissue Verification								
Tissue Type	Frequency (MHz)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ)	Deviation Permittivity (εr)	Date
Head	750	0.918	43.713	0.89	41.9	3.15	4.33	2021-10-25
Head	835	0.932	43.108	0.90	41.5	3.56	3.82	2021-10-26
Head	1750	1.325	40.317	1.37	40.1	-3.28	0.54	2021-10-27
Head	1900	1.417	40.228	1.40	40.0	1.21	0.57	2021-10-28
Head	2450	1.771	39.548	1.80	39.2	-1.61	0.89	2021-10-29
Head	2600	1.889	39.393	1.96	39.0	-3.62	1.01	2021-11-01
Head	5200	4.646	36.053	4.66	36.0	-0.30	0.15	2021-11-02
Head	5800	5.319	35.433	5.27	35.3	0.93	0.38	2021-11-02

Note: The dielectric properties have been measured using the contact probe method at 22±2°C.

9.8 SYSTEM CHECK

9.8.1 Description of System Check

The manufacturer calibrates the probes annually. Dielectric parameters of the tissue simulants were measured every day using the dielectric probe kit and the network analyzer. A system check measurement was made following the determination of the dielectric parameters of the simulant, using the dipole validation kit. A power level of 250 mW was supplied to the dipole antenna, which was placed under the flat section of the twin SAM phantom. The system check results (dielectric parameters and SAR values) are given in the table 5. System check results have to be equal or near the values determined during dipole calibration with the relevant liquids and test system (±10 %). System check is performed regularly on all frequency bands where tests are performed with the DASY5 system.



Picture 10. System Check Set-up

Justification for Extended SAR Dipole Calibrations

Usage of SAR dipoles calibrated less than 3 years ago but more than 1 year ago were confirmed in maintaining return loss (< - 20 dB, within 20% of prior calibration) and impedance (within 5 ohm from prior calibration) requirements per extended calibrations in KDB 865664 D01:

9.8.2 System Check Results

Table 5: System Check for Simulating Liquid

Frequency (MHz)	Targeted SAR 10g (W/kg)	Measured SAR 1g (W/kg)	Normalized SAR 1g (W/kg)	Deviation SAR 1g (%)	Date
750	8.56	2.24	8.96	4.67	2021-10-25
835	9.64	2.55	10.20	5.81	2021-10-26
1750	36.80	9.05	36.20	-1.63	2021-10-27
1900	39.40	10.10	40.40	2.54	2021-10-28
2450	52.40	12.70	50.80	-3.05	2021-10-29
2600	56.20	13.60	54.40	-3.20	2021-11-01
5200	76.40	7.21	72.10	-5.63	2021-11-02
5800	78.20	7.55	75.50	-3.45	2021-11-02

Note: Below 5GHz system check input power: 250mW, above 5GHz system check input power: 100mW

10. Measurement Procedures

10.1 GENERAL DESCRIPTION OF TEST PROCEDURES

A communication link is set up with a System Simulator (SS) by air link, and a call is established. Then EUT is commanded to operate at maximum transmitting power.

Connection to the EUT is established via air interface with CMU 200, and the EUT is set to maximum output power. The EUT battery must be fully charged and checked periodically during the test to as certain uniform power output. The antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the EUT. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the EUT by at least 30 dB.

10.2 MEASUREMENT VARIABILITY

Per FCC KDB Publication 865664 D01, SAR measurement variability was assessed for each frequency band, which was determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media were required for SAR measurements in a frequency band, the variability measurement procedures were applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium. These additional measurements were repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device was returned to ambient conditions (normal room temperature) with the battery fully charged before it was re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

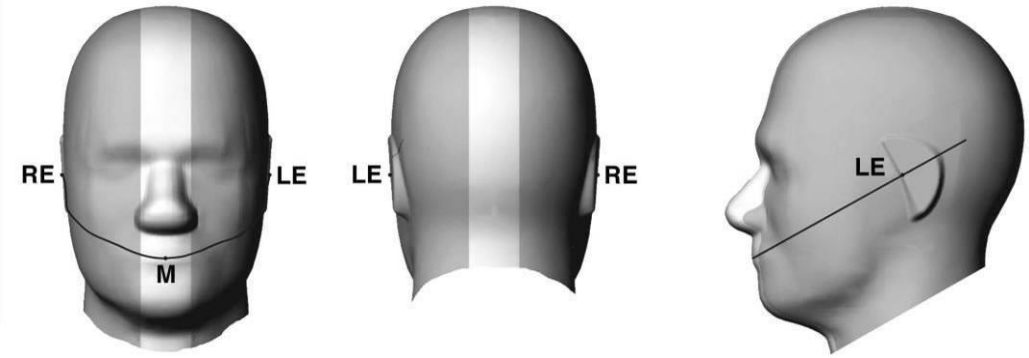
SAR Measurement Variability was assessed using the following procedures for each frequency band:

1. Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2. When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4. Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

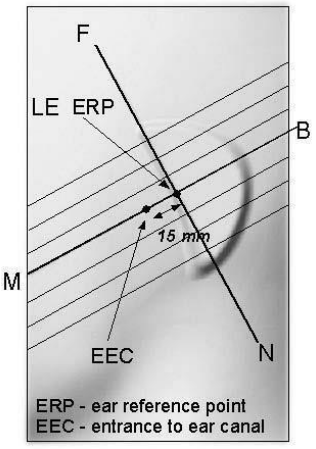
10.3 Test Positions Requirements

10.3.1 Ear and handset reference point

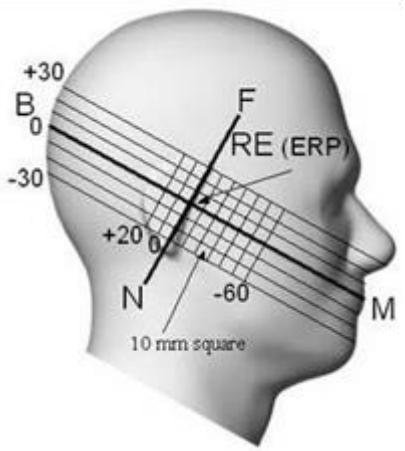
Picture11 shows the front, back, and side views of the SAM phantom. The center-of-mouth reference point is labeled “M,” the left ear reference point (ERP) is marked “LE,” and the right ERP is marked “RE.” Each ERP is 15 mm along the B-M (back-mouth) line behind the entrance-to-ear-canal (EEC) point, as shown in Picture12.The Reference Plane is defined as passing through the two ear reference points and point M. The line N-F (neck-front), also called the reference pivoting line, is normal to the Reference Plane and perpendicular to both a line passing through RE and LE and the B-M line (see Picture13). Both N-F and B-M lines should be marked on the exterior of the phantom shell to facilitate handset positioning. Posterior to the N-F line the ear shape is a flat surface with 6 mm thickness at each ERP, and forward of the N-F line the ear is truncated, as illustrated in Picture12. The ear truncation is introduced to preclude the ear lobe from interfering with handset tilt, which could lead to unstable positioning at the cheek.



Picture11 Front, back, and side views of SAM twin phantom



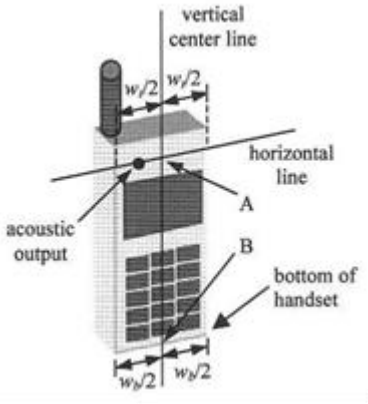
Picture12 Close-up side view of phantom showing the ear region.



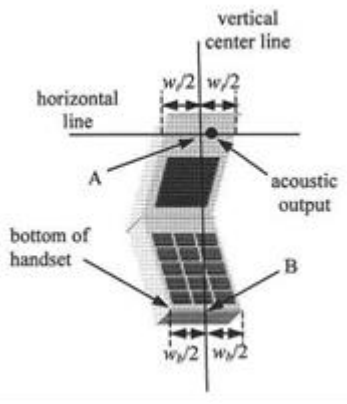
Picture13 Side view of the phantom showing relevant markings and seven cross-sectional plane locations

10.3.2 Definition of the cheek position

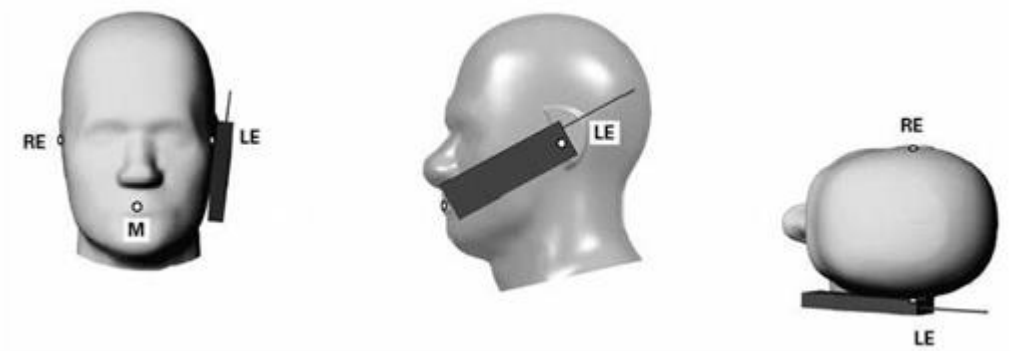
1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. Define two imaginary lines on the handset—the vertical centerline and the horizontal line. The vertical centerline passes through two points on the Phantom Side of the handset—the midpoint of the width wt of the handset at the level of the acoustic output (point A in Picture 14 and Picture 15), and the midpoint of the width wb of the bottom of the handset (point B). The horizontal line is perpendicular to the vertical centerline and passes through the center of the acoustic output (see Picture 14). The two lines intersect at point A. Note that for many handsets, point A coincides with the center of the acoustic output; however, the acoustic output may be located elsewhere on the horizontal line. Also note that the vertical centerline is not necessarily parallel to the front face of the handset (see Picture 15), especially for clamshell handsets, handsets with flip covers, and other irregularly-shaped handsets.
3. Position the handset close to the surface of the phantom such that point A is on the (virtual) extension of the line passing through points RE and LE on the phantom (see Picture 16), such that the plane defined by the vertical centerline and the horizontal line of the handset is approximately parallel to the sagittal plane of the phantom.
4. Translate the handset towards the phantom along the line passing through RE and LE until handset point A touches the pinna at the ERP.
5. While maintaining the handset in this plane, rotate it around the LE-RE line until the vertical centerline is in the plane normal to the plane containing B-M and N-F lines, i.e., the Reference Plane.
6. Rotate the handset around the vertical centerline until the handset (horizontal line) is parallel to the N-F line.
7. While maintaining the vertical centerline in the Reference Plane, keeping point A on the line passing through RE and LE, and maintaining the handset contact with the pinna, rotate the handset about the N-F line until any point on the handset is in contact with a phantom point below the pinna on the cheek. See Picture 16. The actual rotation angles should be documented in the test report.



Picture14 Handset vertical and horizontal reference lines—“fixed case



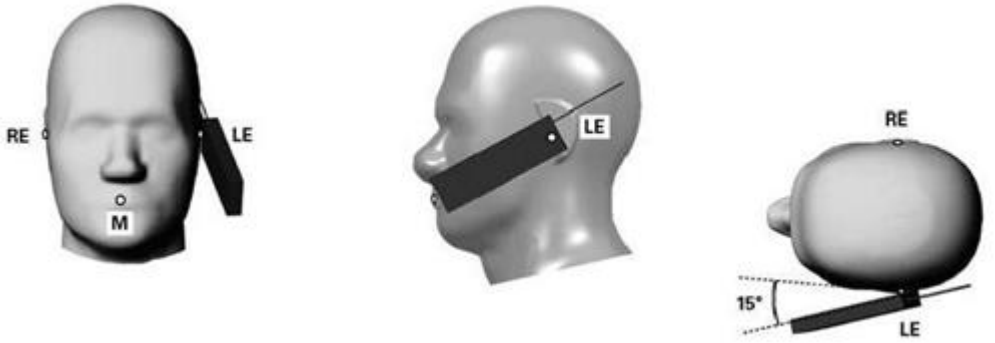
Picture15 Handset vertical and horizontal reference lines—“clam-shell case”



Picture16 cheek or touch position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which establish the Reference Plane for handset positioning, are indicated.

10.3.3 Definition of the tilt position

1. Ready the handset for talk operation, if necessary. For example, for handsets with a cover piece (flip cover), open the cover. If the handset can transmit with the cover closed, both configurations must be tested.
2. While maintaining the orientation of the handset, move the handset away from the pinna along the line passing through RE and LE far enough to allow a rotation of the handset away from the cheek by 15°.
3. Rotate the handset around the horizontal line by 15°.
4. While maintaining the orientation of the handset, move the handset towards the phantom on the line passing through RE and LE until any part of the handset touches the ear. The tilt position is obtained when the contact point is on the pinna. See Picture 17. If contact occurs at any location other than the pinna, e.g., the antenna at the back of the phantom head, the angle of the handset should be reduced. In this case, the tilt position is obtained if any point on the handset is in contact with the pinna and a second point

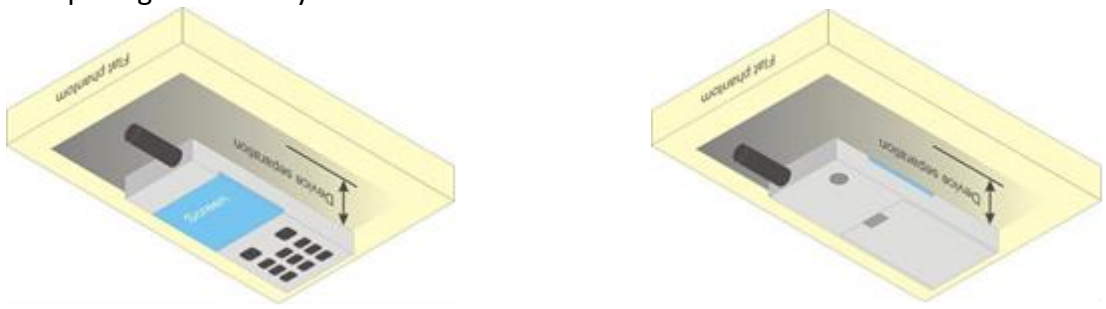


Picture17 Tilt position. The reference points for the right ear (RE), left ear (LE), and mouth (M), which define the Reference Plane for handset positioning, are indicated.

10.3.4 Body Worn Accessory

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration (see Picture 18). Per KDB 648474 D04v01r02, body-worn accessory exposure is typically related to voice mode operations when handsets are carried in body-worn accessories. The body-worn accessory procedures in FCC KDB 447498 D01v05r02 should be used to test for body-worn accessory SAR compliance, without a headset connected to it. This enables the test results for such configuration to be compatible with that required for hotspot mode when the body-worn accessory test separation distance is greater than or equal to that required for hotspot mode, when applicable. When the reported SAR for body-worn accessory, measured without a headset connected to the handset is < 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a handset attached to the handset.

Accessories for body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that do contain metallic components and those that do contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are test with the device with each accessory. If multiple accessories share an identical metallic component (i.e. the same metallic belt-chip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.



Picture18 Body Worn Position

10.3.5 Wireless Router

Some battery-operated handsets have the capability to transmit and receive user through simultaneous transmission of WIFI simultaneously with a separate licensed transmitter. The FCC has provided guidance in FCC KDB Publication 941225 D06v01r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v05r02 publication procedures. The “Portable Hotspot” feature on the handset was NOT activated during SAR assessments, to ensure the SAR measurements were evaluated for a single transmission frequency RF signal at a time.

10.4 TEST COFIGURATION

10.4.1 UMTS Test Configuration

10.4.2.1 3G SAR Test Reduction Procedure

In the following procedures, the mode tested for SAR is referred to as the primary mode. The equivalent modes considered for SAR test reduction are denoted as secondary modes. Both primary and secondary modes must be in the same frequency band. When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.3 This is referred to as the 3G SAR test reduction procedure in the following SAR test guidance, where the primary mode is identified in the applicable wireless mode test procedures and the secondary mode is wireless mode being considered for SAR test reduction by that procedure. When the 3G SAR test reduction procedure is not satisfied, it is identified as “otherwise” in the applicable procedures; SAR measurement is required for the secondary mode.

10.4.2.2 Output power Verification

Maximum output power is verified on the high, middle and low channels according to procedures described in section 5.2 of 3GPP TS 34.121, using the appropriate RMC or AMR with TPC (transmit power control) set to all “1’s” for WCDMA/HSDPA or by applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HSDPA, HSPA) are requied in the SAR report. All configurations that are not supported by the handset or cannot be measured due to technical or equipment limitations must be clearly identified.

10.4.2.3 Head SAR

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

10.4.2.4 Body-Worn Accessory SAR

SAR for body-worn accessory configurations is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode.

Otherwise, SAR is measured using an applicable RMC configuration with the corresponding spreaing code or DPDCHn, for the highest reported body-worn accessory exposure SAR configuration in 12.2 kbps RMC. When more than 2 DPDCHn are supported by the handset, it may be necessary to configure additional DPDCHn using FTM (Factory Test Mode) or other chipset based test approaches with parameters similar to those used in 384 kbps and 768 kbps RMC.

11. TEST RESULTS

11.1 Conducted Power Results

Test Condition:

1. Conducted Measurement
   EUT was set for low, mid, high channel with modulated mode and highest RF output power.
   The base station simulator was connected to the antenna terminal.

2 Conducted Emissions Measurement Uncertainty
All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2, in the range 30MHz – 40GHz is ±1.5dB.

3	Environmental Conditions	Temperature	22°C
		Relative Humidity	55%
		Atmospheric Pressure	1009mbar

4 Test Date: 25 October 2021
Tested By: Jeff Liang

Test Procedures:

Mobile Phone radio output power measurement

1. The transmitter output port was connected to base station emulator.
2. Establish communication link between emulator and EUT and set EUT to operate at maximum output power all the time.
3. Select lowest, middle, and highest channels for each band and different possible test mode.
4. Measure the conducted peak burst power and conducted average burst power from EUT antenna port.

Other radio output power measurement:

The output power was measured using power meter at low, mid, and hi channels.

RMC 12.2k

Band	Channel	Power(dBm)	Tune up Power tolerant
Band2	9262	22.19	22.0±1
Band2	9400	22.40	22.0±1
Band2	9538	22.53	22.0±1
Band5	4132	22.57	22.0±1
Band5	4182	22.57	22.0±1
Band5	4233	22.57	22.0±1

HSDPA

Band	Channel	SubTest	Power(dBm)	Tune up Power tolerant
Band2	9262	1	22.39	22.0±1
Band2	9262	2	22.38	22.0±1
Band2	9262	3	22.40	22.0±1
Band2	9262	4	22.39	22.0±1
Band2	9400	1	22.41	22.0±1
Band2	9400	2	22.36	22.0±1
Band2	9400	3	22.39	22.0±1
Band2	9400	4	22.40	22.0±1
Band2	9538	1	22.40	22.0±1
Band2	9538	2	22.41	22.0±1
Band2	9538	3	22.38	22.0±1
Band2	9538	4	22.39	22.0±1
Band5	4132	1	21.61	22.0±1
Band5	4132	2	21.11	22.0±1
Band5	4132	3	21.11	22.0±1
Band5	4132	4	21.12	22.0±1
Band5	4182	1	21.62	22.0±1
Band5	4182	2	21.11	22.0±1
Band5	4182	3	21.13	22.0±1
Band5	4182	4	21.11	22.0±1
Band5	4233	1	21.63	22.0±1
Band5	4233	2	21.12	22.0±1
Band5	4233	3	21.14	22.0±1
Band5	4233	4	21.12	22.0±1

HSUPA

Band	Channel	SubTest	Power(dBm)	Tune up Power tolerant
Band2	9262	1	19.25	20.0±1
Band2	9262	2	19.75	20.0±1
Band2	9262	3	20.24	20.0±1
Band2	9262	4	19.25	20.0±1
Band2	9262	5	21.23	21.0±1
Band2	9400	1	19.47	20.0±1
Band2	9400	2	19.94	20.0±1
Band2	9400	3	20.46	20.0±1
Band2	9400	4	19.49	20.0±1
Band2	9400	5	21.42	21.0±1
Band2	9538	1	19.54	20.0±1
Band2	9538	2	20.06	20.0±1
Band2	9538	3	20.54	20.0±1
Band2	9538	4	19.53	20.0±1
Band2	9538	5	21.50	21.0±1
Band5	4132	1	19.61	20.0±1
Band5	4132	2	20.08	20.0±1
Band5	4132	3	20.58	20.0±1
Band5	4132	4	19.58	20.0±1
Band5	4132	5	21.57	21.0±1
Band5	4182	1	19.62	20.0±1
Band5	4182	2	20.10	20.0±1
Band5	4182	3	20.57	20.0±1
Band5	4182	4	19.60	20.0±1
Band5	4182	5	21.58	21.0±1
Band5	4233	1	19.63	20.0±1
Band5	4233	2	20.08	20.0±1
Band5	4233	3	20.61	20.0±1
Band5	4233	4	19.62	20.0±1
Band5	4233	5	21.63	21.0±1

LTE Power Reduction

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (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
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of “NS_01”.

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	1.4MHz	QPSK	18607	1RB#0	22.45	21.5±1	1
Band2	1.4MHz	QPSK	18607	1RB#2	22.65	22.5±1	/
Band2	1.4MHz	QPSK	18607	1RB#5	22.44	21.5±1	1
Band2	1.4MHz	QPSK	18607	3RB#0	22.58	22.5±1	/
Band2	1.4MHz	QPSK	18607	3RB#1	22.56	22.5±1	/
Band2	1.4MHz	QPSK	18607	3RB#3	22.60	22.5±1	/
Band2	1.4MHz	QPSK	18607	6RB#0	21.53	21.5±1	1
Band2	1.4MHz	QPSK	18900	1RB#0	22.63	22.5±1	/
Band2	1.4MHz	QPSK	18900	1RB#2	22.72	22.5±1	/
Band2	1.4MHz	QPSK	18900	1RB#5	22.61	22.5±1	/
Band2	1.4MHz	QPSK	18900	3RB#0	22.74	22.5±1	/
Band2	1.4MHz	QPSK	18900	3RB#1	22.76	22.5±1	/
Band2	1.4MHz	QPSK	18900	3RB#3	22.76	22.5±1	/
Band2	1.4MHz	QPSK	18900	6RB#0	21.66	21.5±1	1
Band2	1.4MHz	QPSK	19193	1RB#0	23.29	22.5±1	/
Band2	1.4MHz	QPSK	19193	1RB#2	23.46	22.5±1	/
Band2	1.4MHz	QPSK	19193	1RB#5	23.27	22.5±1	/
Band2	1.4MHz	QPSK	19193	3RB#0	23.31	22.5±1	/
Band2	1.4MHz	QPSK	19193	3RB#1	23.30	22.5±1	/
Band2	1.4MHz	QPSK	19193	3RB#3	22.73	22.5±1	/
Band2	1.4MHz	QPSK	19193	6RB#0	23.31	22.5±1	/
Band2	1.4MHz	16QAM	18607	1RB#0	21.35	21.5±1	1
Band2	1.4MHz	16QAM	18607	1RB#2	21.56	21.5±1	1
Band2	1.4MHz	16QAM	18607	1RB#5	21.35	21.5±1	1
Band2	1.4MHz	16QAM	18607	3RB#0	21.44	21.5±1	1
Band2	1.4MHz	16QAM	18607	3RB#1	21.40	21.5±1	1
Band2	1.4MHz	16QAM	18607	3RB#3	21.41	21.5±1	1
Band2	1.4MHz	16QAM	18607	6RB#0	20.52	21.5±1	1
Band2	1.4MHz	16QAM	18900	1RB#0	21.74	21.5±1	1
Band2	1.4MHz	16QAM	18900	1RB#2	21.94	21.5±1	1
Band2	1.4MHz	16QAM	18900	1RB#5	21.80	21.5±1	1
Band2	1.4MHz	16QAM	18900	3RB#0	21.64	21.5±1	1
Band2	1.4MHz	16QAM	18900	3RB#1	21.64	21.5±1	1
Band2	1.4MHz	16QAM	18900	3RB#3	21.63	21.5±1	1
Band2	1.4MHz	16QAM	18900	6RB#0	20.71	21.5±1	1
Band2	1.4MHz	16QAM	19193	1RB#0	22.16	21.5±1	1
Band2	1.4MHz	16QAM	19193	1RB#2	22.32	21.5±1	1
Band2	1.4MHz	16QAM	19193	1RB#5	22.14	21.5±1	1
Band2	1.4MHz	16QAM	19193	3RB#0	22.11	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	1.4MHz	16QAM	19193	3RB#1	21.64	21.5±1	1
Band2	1.4MHz	16QAM	19193	3RB#3	21.64	21.5±1	1
Band2	1.4MHz	16QAM	19193	6RB#0	21.63	21.5±1	1
Band2	3MHz	QPSK	18615	1RB#0	22.57	22.5±1	/
Band2	3MHz	QPSK	18615	1RB#8	22.63	22.5±1	/
Band2	3MHz	QPSK	18615	1RB#14	22.59	22.5±1	/
Band2	3MHz	QPSK	18615	8RB#0	21.55	21.5±1	1
Band2	3MHz	QPSK	18615	8RB#4	21.54	21.5±1	1
Band2	3MHz	QPSK	18615	8RB#7	21.55	21.5±1	1
Band2	3MHz	QPSK	18615	15RB#0	21.52	21.5±1	1
Band2	3MHz	QPSK	18900	1RB#0	22.78	22.5±1	/
Band2	3MHz	QPSK	18900	1RB#8	22.72	22.5±1	/
Band2	3MHz	QPSK	18900	1RB#14	22.75	22.5±1	/
Band2	3MHz	QPSK	18900	8RB#0	21.73	21.5±1	1
Band2	3MHz	QPSK	18900	8RB#4	21.73	21.5±1	1
Band2	3MHz	QPSK	18900	8RB#7	21.75	21.5±1	1
Band2	3MHz	QPSK	18900	15RB#0	21.72	21.5±1	1
Band2	3MHz	QPSK	19185	1RB#0	22.74	22.5±1	/
Band2	3MHz	QPSK	19185	1RB#8	22.76	22.5±1	/
Band2	3MHz	QPSK	19185	1RB#14	22.77	22.5±1	/
Band2	3MHz	QPSK	19185	8RB#0	21.82	21.5±1	1
Band2	3MHz	QPSK	19185	8RB#4	21.82	21.5±1	1
Band2	3MHz	QPSK	19185	8RB#7	21.81	21.5±1	1
Band2	3MHz	QPSK	19185	15RB#0	21.71	21.5±1	1
Band2	3MHz	16QAM	18615	1RB#0	21.43	21.5±1	1
Band2	3MHz	16QAM	18615	1RB#8	21.38	21.5±1	1
Band2	3MHz	16QAM	18615	1RB#14	21.29	21.5±1	1
Band2	3MHz	16QAM	18615	8RB#0	20.50	21.5±1	1
Band2	3MHz	16QAM	18615	8RB#4	20.51	21.5±1	1
Band2	3MHz	16QAM	18615	8RB#7	20.52	21.5±1	1
Band2	3MHz	16QAM	18615	15RB#0	20.50	21.5±1	1
Band2	3MHz	16QAM	18900	1RB#0	21.42	21.5±1	1
Band2	3MHz	16QAM	18900	1RB#8	21.54	21.5±1	1
Band2	3MHz	16QAM	18900	1RB#14	21.46	21.5±1	1
Band2	3MHz	16QAM	18900	8RB#0	20.75	21.5±1	1
Band2	3MHz	16QAM	18900	8RB#4	20.73	21.5±1	1
Band2	3MHz	16QAM	18900	8RB#7	20.68	21.5±1	1
Band2	3MHz	16QAM	18900	15RB#0	20.63	21.5±1	1
Band2	3MHz	16QAM	19185	1RB#0	21.73	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	3MHz	16QAM	19185	1RB#8	21.73	21.5±1	1
Band2	3MHz	16QAM	19185	1RB#14	21.72	21.5±1	1
Band2	3MHz	16QAM	19185	8RB#0	20.77	21.5±1	1
Band2	3MHz	16QAM	19185	8RB#4	20.83	21.5±1	1
Band2	3MHz	16QAM	19185	8RB#7	20.77	21.5±1	1
Band2	3MHz	16QAM	19185	15RB#0	20.76	21.5±1	1
Band2	5MHz	QPSK	18625	1RB#0	22.49	21.5±1	1
Band2	5MHz	QPSK	18625	1RB#12	22.58	22.5±1	/
Band2	5MHz	QPSK	18625	1RB#24	22.45	21.5±1	1
Band2	5MHz	QPSK	18625	12RB#0	21.51	21.5±1	1
Band2	5MHz	QPSK	18625	12RB#6	21.56	21.5±1	1
Band2	5MHz	QPSK	18625	12RB#13	21.52	21.5±1	1
Band2	5MHz	QPSK	18625	25RB#0	21.52	21.5±1	1
Band2	5MHz	QPSK	18900	1RB#0	22.68	22.5±1	/
Band2	5MHz	QPSK	18900	1RB#12	22.87	22.5±1	/
Band2	5MHz	QPSK	18900	1RB#24	22.77	22.5±1	/
Band2	5MHz	QPSK	18900	12RB#0	21.70	21.5±1	1
Band2	5MHz	QPSK	18900	12RB#6	21.74	21.5±1	1
Band2	5MHz	QPSK	18900	12RB#13	21.70	21.5±1	1
Band2	5MHz	QPSK	18900	25RB#0	21.74	21.5±1	1
Band2	5MHz	QPSK	19175	1RB#0	22.71	22.5±1	/
Band2	5MHz	QPSK	19175	1RB#12	22.87	22.5±1	/
Band2	5MHz	QPSK	19175	1RB#24	22.74	22.5±1	/
Band2	5MHz	QPSK	19175	12RB#0	21.76	21.5±1	1
Band2	5MHz	QPSK	19175	12RB#6	21.76	21.5±1	1
Band2	5MHz	QPSK	19175	12RB#13	21.74	21.5±1	1
Band2	5MHz	QPSK	19175	25RB#0	21.77	21.5±1	1
Band2	5MHz	16QAM	18625	1RB#0	21.69	21.5±1	1
Band2	5MHz	16QAM	18625	1RB#12	21.80	21.5±1	1
Band2	5MHz	16QAM	18625	1RB#24	21.73	21.5±1	1
Band2	5MHz	16QAM	18625	12RB#0	20.63	21.5±1	1
Band2	5MHz	16QAM	18625	12RB#6	20.59	21.5±1	1
Band2	5MHz	16QAM	18625	12RB#13	20.56	21.5±1	1
Band2	5MHz	16QAM	18625	25RB#0	20.60	21.5±1	1
Band2	5MHz	16QAM	18900	1RB#0	21.71	21.5±1	1
Band2	5MHz	16QAM	18900	1RB#12	21.87	21.5±1	1
Band2	5MHz	16QAM	18900	1RB#24	21.70	21.5±1	1
Band2	5MHz	16QAM	18900	12RB#0	20.79	21.5±1	1
Band2	5MHz	16QAM	18900	12RB#6	20.80	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	5MHz	16QAM	18900	12RB#13	20.76	21.5±1	1
Band2	5MHz	16QAM	18900	25RB#0	20.80	21.5±1	1
Band2	5MHz	16QAM	19175	1RB#0	21.74	21.5±1	1
Band2	5MHz	16QAM	19175	1RB#12	21.83	21.5±1	1
Band2	5MHz	16QAM	19175	1RB#24	21.66	21.5±1	1
Band2	5MHz	16QAM	19175	12RB#0	20.76	21.5±1	1
Band2	5MHz	16QAM	19175	12RB#6	20.73	21.5±1	1
Band2	5MHz	16QAM	19175	12RB#13	20.72	21.5±1	1
Band2	5MHz	16QAM	19175	25RB#0	20.81	21.5±1	1
Band2	10MHz	QPSK	18650	1RB#0	22.54	22.5±1	/
Band2	10MHz	QPSK	18650	1RB#24	22.68	22.5±1	/
Band2	10MHz	QPSK	18650	1RB#49	22.66	22.5±1	/
Band2	10MHz	QPSK	18650	25RB#0	21.60	21.5±1	1
Band2	10MHz	QPSK	18650	25RB#12	21.65	21.5±1	1
Band2	10MHz	QPSK	18650	25RB#25	21.60	21.5±1	1
Band2	10MHz	QPSK	18650	50RB#0	21.60	21.5±1	1
Band2	10MHz	QPSK	18900	1RB#0	22.72	22.5±1	/
Band2	10MHz	QPSK	18900	1RB#24	22.81	22.5±1	/
Band2	10MHz	QPSK	18900	1RB#49	22.73	22.5±1	/
Band2	10MHz	QPSK	18900	25RB#0	21.79	21.5±1	1
Band2	10MHz	QPSK	18900	25RB#12	21.75	21.5±1	1
Band2	10MHz	QPSK	18900	25RB#25	21.80	21.5±1	1
Band2	10MHz	QPSK	18900	50RB#0	21.73	21.5±1	1
Band2	10MHz	QPSK	19150	1RB#0	22.78	22.5±1	/
Band2	10MHz	QPSK	19150	1RB#24	22.84	22.5±1	/
Band2	10MHz	QPSK	19150	1RB#49	22.81	22.5±1	/
Band2	10MHz	QPSK	19150	25RB#0	21.82	21.5±1	1
Band2	10MHz	QPSK	19150	25RB#12	21.83	21.5±1	1
Band2	10MHz	QPSK	19150	25RB#25	21.82	21.5±1	1
Band2	10MHz	QPSK	19150	50RB#0	21.75	21.5±1	1
Band2	10MHz	16QAM	18650	1RB#0	21.35	21.5±1	1
Band2	10MHz	16QAM	18650	1RB#24	21.47	21.5±1	1
Band2	10MHz	16QAM	18650	1RB#49	21.48	21.5±1	1
Band2	10MHz	16QAM	18650	25RB#0	20.67	21.5±1	1
Band2	10MHz	16QAM	18650	25RB#12	20.66	21.5±1	1
Band2	10MHz	16QAM	18650	25RB#25	20.70	21.5±1	1
Band2	10MHz	16QAM	18650	50RB#0	20.68	21.5±1	1
Band2	10MHz	16QAM	18900	1RB#0	21.47	21.5±1	1
Band2	10MHz	16QAM	18900	1RB#24	21.59	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	10MHz	16QAM	18900	1RB#49	21.47	21.5±1	1
Band2	10MHz	16QAM	18900	25RB#0	20.85	21.5±1	1
Band2	10MHz	16QAM	18900	25RB#12	20.81	21.5±1	1
Band2	10MHz	16QAM	18900	25RB#25	20.82	21.5±1	1
Band2	10MHz	16QAM	18900	50RB#0	20.77	21.5±1	1
Band2	10MHz	16QAM	19150	1RB#0	21.79	21.5±1	1
Band2	10MHz	16QAM	19150	1RB#24	22.06	21.5±1	1
Band2	10MHz	16QAM	19150	1RB#49	21.80	21.5±1	1
Band2	10MHz	16QAM	19150	25RB#0	20.86	21.5±1	1
Band2	10MHz	16QAM	19150	25RB#12	20.80	21.5±1	1
Band2	10MHz	16QAM	19150	25RB#25	20.76	21.5±1	1
Band2	10MHz	16QAM	19150	50RB#0	20.78	21.5±1	1
Band2	15MHz	QPSK	18675	1RB#0	22.38	21.5±1	1
Band2	15MHz	QPSK	18675	1RB#38	22.60	22.5±1	/
Band2	15MHz	QPSK	18675	1RB#74	22.47	21.5±1	1
Band2	15MHz	QPSK	18675	38RB#0	21.55	21.5±1	1
Band2	15MHz	QPSK	18675	38RB#18	21.79	21.5±1	1
Band2	15MHz	QPSK	18675	38RB#37	21.67	21.5±1	1
Band2	15MHz	QPSK	18675	75RB#0	21.68	21.5±1	1
Band2	15MHz	QPSK	18900	1RB#0	22.50	21.5±1	1
Band2	15MHz	QPSK	18900	1RB#38	22.66	22.5±1	/
Band2	15MHz	QPSK	18900	1RB#74	22.57	22.5±1	/
Band2	15MHz	QPSK	18900	38RB#0	21.69	21.5±1	1
Band2	15MHz	QPSK	18900	38RB#18	21.75	21.5±1	1
Band2	15MHz	QPSK	18900	38RB#37	21.67	21.5±1	1
Band2	15MHz	QPSK	18900	75RB#0	21.45	21.5±1	1
Band2	15MHz	QPSK	19125	1RB#0	22.36	21.5±1	1
Band2	15MHz	QPSK	19125	1RB#38	22.79	22.5±1	/
Band2	15MHz	QPSK	19125	1RB#74	22.46	21.5±1	1
Band2	15MHz	QPSK	19125	38RB#0	21.56	21.5±1	1
Band2	15MHz	QPSK	19125	38RB#18	21.58	21.5±1	1
Band2	15MHz	QPSK	19125	38RB#37	21.64	21.5±1	1
Band2	15MHz	QPSK	19125	75RB#0	21.38	21.5±1	1
Band2	15MHz	16QAM	18675	1RB#0	21.62	21.5±1	1
Band2	15MHz	16QAM	18675	1RB#38	21.76	21.5±1	1
Band2	15MHz	16QAM	18675	1RB#74	21.69	21.5±1	1
Band2	15MHz	16QAM	18675	38RB#0	21.61	21.5±1	1
Band2	15MHz	16QAM	18675	38RB#18	21.77	21.5±1	1
Band2	15MHz	16QAM	18675	38RB#37	21.71	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	15MHz	16QAM	18675	75RB#0	20.61	21.5±1	1
Band2	15MHz	16QAM	18900	1RB#0	21.62	21.5±1	1
Band2	15MHz	16QAM	18900	1RB#38	21.77	21.5±1	1
Band2	15MHz	16QAM	18900	1RB#74	21.67	21.5±1	1
Band2	15MHz	16QAM	18900	38RB#0	21.67	21.5±1	1
Band2	15MHz	16QAM	18900	38RB#18	21.74	21.5±1	1
Band2	15MHz	16QAM	18900	38RB#37	21.71	21.5±1	1
Band2	15MHz	16QAM	18900	75RB#0	20.61	21.5±1	1
Band2	15MHz	16QAM	19125	1RB#0	21.62	21.5±1	1
Band2	15MHz	16QAM	19125	1RB#38	21.77	21.5±1	1
Band2	15MHz	16QAM	19125	1RB#74	21.67	21.5±1	1
Band2	15MHz	16QAM	19125	38RB#0	21.22	21.5±1	1
Band2	15MHz	16QAM	19125	38RB#18	21.87	21.5±1	1
Band2	15MHz	16QAM	19125	38RB#37	21.35	21.5±1	1
Band2	15MHz	16QAM	19125	75RB#0	21.45	21.5±1	1
Band2	20MHz	QPSK	18700	1RB#0	22.36	21.5±1	1
Band2	20MHz	QPSK	18700	1RB#49	22.79	22.5±1	/
Band2	20MHz	QPSK	18700	1RB#99	22.46	21.5±1	1
Band2	20MHz	QPSK	18700	50RB#0	21.56	21.5±1	1
Band2	20MHz	QPSK	18700	50RB#25	21.58	21.5±1	1
Band2	20MHz	QPSK	18700	50RB#50	21.64	21.5±1	1
Band2	20MHz	QPSK	18700	100RB#0	21.56	21.5±1	1
Band2	20MHz	QPSK	18900	1RB#0	22.32	21.5±1	1
Band2	20MHz	QPSK	18900	1RB#49	22.80	22.5±1	/
Band2	20MHz	QPSK	18900	1RB#99	22.44	21.5±1	1
Band2	20MHz	QPSK	18900	50RB#0	21.61	21.5±1	1
Band2	20MHz	QPSK	18900	50RB#25	21.68	21.5±1	1
Band2	20MHz	QPSK	18900	50RB#50	21.71	21.5±1	1
Band2	20MHz	QPSK	18900	100RB#0	21.69	21.5±1	1
Band2	20MHz	QPSK	19100	1RB#0	22.52	22.5±1	/
Band2	20MHz	QPSK	19100	1RB#49	22.98	22.5±1	/
Band2	20MHz	QPSK	19100	1RB#99	22.62	22.5±1	/
Band2	20MHz	QPSK	19100	50RB#0	21.87	21.5±1	1
Band2	20MHz	QPSK	19100	50RB#25	21.90	21.5±1	1
Band2	20MHz	QPSK	19100	50RB#50	21.89	21.5±1	1
Band2	20MHz	QPSK	19100	100RB#0	21.89	21.5±1	1
Band2	20MHz	16QAM	18700	1RB#0	21.44	21.5±1	1
Band2	20MHz	16QAM	18700	1RB#49	22.00	21.5±1	1
Band2	20MHz	16QAM	18700	1RB#99	21.66	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band2	20MHz	16QAM	18700	50RB#0	20.68	21.5±1	1
Band2	20MHz	16QAM	18700	50RB#25	20.68	21.5±1	1
Band2	20MHz	16QAM	18700	50RB#50	20.69	21.5±1	1
Band2	20MHz	16QAM	18700	100RB#0	20.65	21.5±1	1
Band2	20MHz	16QAM	18900	1RB#0	21.44	21.5±1	1
Band2	20MHz	16QAM	18900	1RB#49	21.89	21.5±1	1
Band2	20MHz	16QAM	18900	1RB#99	21.53	21.5±1	1
Band2	20MHz	16QAM	18900	50RB#0	20.70	21.5±1	1
Band2	20MHz	16QAM	18900	50RB#25	20.73	21.5±1	1
Band2	20MHz	16QAM	18900	50RB#50	20.78	21.5±1	1
Band2	20MHz	16QAM	18900	100RB#0	20.74	21.5±1	1
Band2	20MHz	16QAM	19100	1RB#0	21.36	21.5±1	1
Band2	20MHz	16QAM	19100	1RB#49	21.69	21.5±1	1
Band2	20MHz	16QAM	19100	1RB#99	21.38	21.5±1	1
Band2	20MHz	16QAM	19100	50RB#0	20.93	21.5±1	1
Band2	20MHz	16QAM	19100	50RB#25	20.90	21.5±1	1
Band2	20MHz	16QAM	19100	50RB#50	20.91	21.5±1	1
Band2	20MHz	16QAM	19100	100RB#0	20.91	21.5±1	1
Band4	1.4MHz	QPSK	19957	1RB#0	22.37	21.5±1	/
Band4	1.4MHz	QPSK	19957	1RB#2	22.46	21.5±1	/
Band4	1.4MHz	QPSK	19957	1RB#5	22.32	21.5±1	/
Band4	1.4MHz	QPSK	19957	3RB#0	22.37	21.5±1	/
Band4	1.4MHz	QPSK	19957	3RB#1	22.38	21.5±1	/
Band4	1.4MHz	QPSK	19957	3RB#3	22.39	21.5±1	/
Band4	1.4MHz	QPSK	19957	6RB#0	21.32	20.0±1	0.5
Band4	1.4MHz	QPSK	20175	1RB#0	22.21	21.5±1	/
Band4	1.4MHz	QPSK	20175	1RB#2	22.35	21.5±1	/
Band4	1.4MHz	QPSK	20175	1RB#5	22.19	21.5±1	/
Band4	1.4MHz	QPSK	20175	3RB#0	22.25	21.5±1	/
Band4	1.4MHz	QPSK	20175	3RB#1	22.28	21.5±1	/
Band4	1.4MHz	QPSK	20175	3RB#3	22.28	21.5±1	/
Band4	1.4MHz	QPSK	20175	6RB#0	21.17	20.0±1	0.5
Band4	1.4MHz	QPSK	20393	1RB#0	22.18	21.5±1	/
Band4	1.4MHz	QPSK	20393	1RB#2	22.31	21.5±1	/
Band4	1.4MHz	QPSK	20393	1RB#5	22.19	21.5±1	/
Band4	1.4MHz	QPSK	20393	3RB#0	22.26	21.5±1	/
Band4	1.4MHz	QPSK	20393	3RB#1	22.26	21.5±1	/
Band4	1.4MHz	QPSK	20393	3RB#3	22.30	21.5±1	/
Band4	1.4MHz	QPSK	20393	6RB#0	21.13	20.0±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	1.4MHz	16QAM	19957	1RB#0	21.06	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	1RB#2	21.30	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	1RB#5	21.12	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	3RB#0	21.18	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	3RB#1	21.21	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	3RB#3	21.21	20.0±1	0.5
Band4	1.4MHz	16QAM	19957	6RB#0	20.16	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	1RB#0	21.07	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	1RB#2	21.16	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	1RB#5	21.06	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	3RB#0	21.11	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	3RB#1	21.13	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	3RB#3	21.13	20.0±1	0.5
Band4	1.4MHz	16QAM	20175	6RB#0	20.06	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	1RB#0	21.00	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	1RB#2	21.18	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	1RB#5	21.03	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	3RB#0	21.11	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	3RB#1	21.09	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	3RB#3	21.10	20.0±1	0.5
Band4	1.4MHz	16QAM	20393	6RB#0	20.06	20.0±1	0.5
Band4	3MHz	QPSK	19965	1RB#0	22.32	21.5±1	/
Band4	3MHz	QPSK	19965	1RB#8	22.26	21.5±1	/
Band4	3MHz	QPSK	19965	1RB#14	22.31	21.5±1	/
Band4	3MHz	QPSK	19965	8RB#0	21.24	20.0±1	0.5
Band4	3MHz	QPSK	19965	8RB#4	21.21	20.0±1	0.5
Band4	3MHz	QPSK	19965	8RB#7	21.18	20.0±1	0.5
Band4	3MHz	QPSK	19965	15RB#0	21.22	20.0±1	0.5
Band4	3MHz	QPSK	20175	1RB#0	22.18	21.5±1	/
Band4	3MHz	QPSK	20175	1RB#8	22.14	21.5±1	/
Band4	3MHz	QPSK	20175	1RB#14	22.17	21.5±1	/
Band4	3MHz	QPSK	20175	8RB#0	21.14	20.0±1	0.5
Band4	3MHz	QPSK	20175	8RB#4	21.17	20.0±1	0.5
Band4	3MHz	QPSK	20175	8RB#7	21.12	20.0±1	0.5
Band4	3MHz	QPSK	20175	15RB#0	21.07	20.0±1	0.5
Band4	3MHz	QPSK	20385	1RB#0	22.10	21.5±1	/
Band4	3MHz	QPSK	20385	1RB#8	22.09	21.5±1	/
Band4	3MHz	QPSK	20385	1RB#14	22.12	21.5±1	/
Band4	3MHz	QPSK	20385	8RB#0	21.14	20.0±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	3MHz	QPSK	20385	8RB#4	21.12	20.0±1	0.5
Band4	3MHz	QPSK	20385	8RB#7	21.11	20.0±1	0.5
Band4	3MHz	QPSK	20385	15RB#0	21.04	20.0±1	0.5
Band4	3MHz	16QAM	19965	1RB#0	21.10	20.0±1	0.5
Band4	3MHz	16QAM	19965	1RB#8	21.07	20.0±1	0.5
Band4	3MHz	16QAM	19965	1RB#14	21.06	20.0±1	0.5
Band4	3MHz	16QAM	19965	8RB#0	20.22	20.0±1	0.5
Band4	3MHz	16QAM	19965	8RB#4	20.26	20.0±1	0.5
Band4	3MHz	16QAM	19965	8RB#7	20.21	20.0±1	0.5
Band4	3MHz	16QAM	19965	15RB#0	20.12	20.0±1	0.5
Band4	3MHz	16QAM	20175	1RB#0	20.93	20.0±1	0.5
Band4	3MHz	16QAM	20175	1RB#8	20.89	20.0±1	0.5
Band4	3MHz	16QAM	20175	1RB#14	20.96	20.0±1	0.5
Band4	3MHz	16QAM	20175	8RB#0	20.18	20.0±1	0.5
Band4	3MHz	16QAM	20175	8RB#4	20.16	20.0±1	0.5
Band4	3MHz	16QAM	20175	8RB#7	20.22	20.0±1	0.5
Band4	3MHz	16QAM	20175	15RB#0	20.06	20.0±1	0.5
Band4	3MHz	16QAM	20385	1RB#0	21.17	20.0±1	0.5
Band4	3MHz	16QAM	20385	1RB#8	21.08	20.0±1	0.5
Band4	3MHz	16QAM	20385	1RB#14	21.14	20.0±1	0.5
Band4	3MHz	16QAM	20385	8RB#0	20.15	20.0±1	0.5
Band4	3MHz	16QAM	20385	8RB#4	20.14	20.0±1	0.5
Band4	3MHz	16QAM	20385	8RB#7	20.15	20.0±1	0.5
Band4	3MHz	16QAM	20385	15RB#0	20.11	20.0±1	0.5
Band4	5MHz	QPSK	19975	1RB#0	22.22	21.5±1	/
Band4	5MHz	QPSK	19975	1RB#12	22.20	21.5±1	/
Band4	5MHz	QPSK	19975	1RB#24	22.15	21.5±1	/
Band4	5MHz	QPSK	19975	12RB#0	21.28	20.0±1	0.5
Band4	5MHz	QPSK	19975	12RB#6	21.27	20.0±1	0.5
Band4	5MHz	QPSK	19975	12RB#13	21.20	20.0±1	0.5
Band4	5MHz	QPSK	19975	25RB#0	21.21	20.0±1	0.5
Band4	5MHz	QPSK	20175	1RB#0	22.14	21.5±1	/
Band4	5MHz	QPSK	20175	1RB#12	22.18	21.5±1	/
Band4	5MHz	QPSK	20175	1RB#24	22.14	21.5±1	/
Band4	5MHz	QPSK	20175	12RB#0	21.08	20.0±1	0.5
Band4	5MHz	QPSK	20175	12RB#6	21.09	20.0±1	0.5
Band4	5MHz	QPSK	20175	12RB#13	21.13	20.0±1	0.5
Band4	5MHz	QPSK	20175	25RB#0	21.16	20.0±1	0.5
Band4	5MHz	QPSK	20375	1RB#0	22.14	21.5±1	/

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	5MHz	QPSK	20375	1RB#12	22.20	21.5±1	/
Band4	5MHz	QPSK	20375	1RB#24	22.14	21.5±1	/
Band4	5MHz	QPSK	20375	12RB#0	21.14	20.0±1	0.5
Band4	5MHz	QPSK	20375	12RB#6	21.15	20.0±1	0.5
Band4	5MHz	QPSK	20375	12RB#13	21.12	20.0±1	0.5
Band4	5MHz	QPSK	20375	25RB#0	21.15	20.0±1	0.5
Band4	5MHz	16QAM	19975	1RB#0	21.19	20.0±1	0.5
Band4	5MHz	16QAM	19975	1RB#12	21.26	20.0±1	0.5
Band4	5MHz	16QAM	19975	1RB#24	21.20	20.0±1	0.5
Band4	5MHz	16QAM	19975	12RB#0	20.35	20.0±1	0.5
Band4	5MHz	16QAM	19975	12RB#6	20.37	20.0±1	0.5
Band4	5MHz	16QAM	19975	12RB#13	20.19	20.0±1	0.5
Band4	5MHz	16QAM	19975	25RB#0	20.25	20.0±1	0.5
Band4	5MHz	16QAM	20175	1RB#0	21.02	20.0±1	0.5
Band4	5MHz	16QAM	20175	1RB#12	21.14	20.0±1	0.5
Band4	5MHz	16QAM	20175	1RB#24	20.98	20.0±1	0.5
Band4	5MHz	16QAM	20175	12RB#0	20.11	20.0±1	0.5
Band4	5MHz	16QAM	20175	12RB#6	20.18	20.0±1	0.5
Band4	5MHz	16QAM	20175	12RB#13	20.22	20.0±1	0.5
Band4	5MHz	16QAM	20175	25RB#0	20.25	20.0±1	0.5
Band4	5MHz	16QAM	20375	1RB#0	21.05	20.0±1	0.5
Band4	5MHz	16QAM	20375	1RB#12	21.07	20.0±1	0.5
Band4	5MHz	16QAM	20375	1RB#24	21.00	20.0±1	0.5
Band4	5MHz	16QAM	20375	12RB#0	20.17	20.0±1	0.5
Band4	5MHz	16QAM	20375	12RB#6	20.12	20.0±1	0.5
Band4	5MHz	16QAM	20375	12RB#13	20.13	20.0±1	0.5
Band4	5MHz	16QAM	20375	25RB#0	20.17	20.0±1	0.5
Band4	10MHz	QPSK	20000	1RB#0	22.27	21.5±1	/
Band4	10MHz	QPSK	20000	1RB#24	22.40	21.5±1	/
Band4	10MHz	QPSK	20000	1RB#49	22.27	21.5±1	/
Band4	10MHz	QPSK	20000	25RB#0	21.32	20.0±1	0.5
Band4	10MHz	QPSK	20000	25RB#12	21.30	20.0±1	0.5
Band4	10MHz	QPSK	20000	25RB#25	21.27	20.0±1	0.5
Band4	10MHz	QPSK	20000	50RB#0	21.28	20.0±1	0.5
Band4	10MHz	QPSK	20175	1RB#0	22.19	21.5±1	/
Band4	10MHz	QPSK	20175	1RB#24	22.28	21.5±1	/
Band4	10MHz	QPSK	20175	1RB#49	22.12	21.5±1	/
Band4	10MHz	QPSK	20175	25RB#0	21.18	20.0±1	0.5
Band4	10MHz	QPSK	20175	25RB#12	21.16	20.0±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	10MHz	QPSK	20175	25RB#25	21.26	20.0±1	0.5
Band4	10MHz	QPSK	20175	50RB#0	21.20	20.0±1	0.5
Band4	10MHz	QPSK	20350	1RB#0	22.05	21.5±1	/
Band4	10MHz	QPSK	20350	1RB#24	22.27	21.5±1	/
Band4	10MHz	QPSK	20350	1RB#49	22.04	21.5±1	/
Band4	10MHz	QPSK	20350	25RB#0	21.20	20.0±1	0.5
Band4	10MHz	QPSK	20350	25RB#12	21.26	20.0±1	0.5
Band4	10MHz	QPSK	20350	25RB#25	21.20	20.0±1	0.5
Band4	10MHz	QPSK	20350	50RB#0	21.21	20.0±1	0.5
Band4	10MHz	16QAM	20000	1RB#0	21.06	20.0±1	0.5
Band4	10MHz	16QAM	20000	1RB#24	21.20	20.0±1	0.5
Band4	10MHz	16QAM	20000	1RB#49	21.08	20.0±1	0.5
Band4	10MHz	16QAM	20000	25RB#0	20.42	20.0±1	0.5
Band4	10MHz	16QAM	20000	25RB#12	20.39	20.0±1	0.5
Band4	10MHz	16QAM	20000	25RB#25	20.29	20.0±1	0.5
Band4	10MHz	16QAM	20000	50RB#0	20.30	20.0±1	0.5
Band4	10MHz	16QAM	20175	1RB#0	20.92	20.0±1	0.5
Band4	10MHz	16QAM	20175	1RB#24	21.09	20.0±1	0.5
Band4	10MHz	16QAM	20175	1RB#49	20.85	20.0±1	0.5
Band4	10MHz	16QAM	20175	25RB#0	20.24	20.0±1	0.5
Band4	10MHz	16QAM	20175	25RB#12	20.29	20.0±1	0.5
Band4	10MHz	16QAM	20175	25RB#25	20.31	20.0±1	0.5
Band4	10MHz	16QAM	20175	50RB#0	20.24	20.0±1	0.5
Band4	10MHz	16QAM	20350	1RB#0	21.06	20.0±1	0.5
Band4	10MHz	16QAM	20350	1RB#24	21.26	20.0±1	0.5
Band4	10MHz	16QAM	20350	1RB#49	21.14	20.0±1	0.5
Band4	10MHz	16QAM	20350	25RB#0	20.26	20.0±1	0.5
Band4	10MHz	16QAM	20350	25RB#12	20.26	20.0±1	0.5
Band4	10MHz	16QAM	20350	25RB#25	20.17	20.0±1	0.5
Band4	10MHz	16QAM	20350	50RB#0	20.22	20.0±1	0.5
Band4	15MHz	QPSK	20025	1RB#0	22.11	21.5±1	/
Band4	15MHz	QPSK	20025	1RB#38	22.13	21.5±1	/
Band4	15MHz	QPSK	20025	1RB#74	22.06	21.5±1	/
Band4	15MHz	QPSK	20025	38RB#0	21.20	20.0±1	0.5
Band4	15MHz	QPSK	20025	38RB#18	21.34	20.0±1	0.5
Band4	15MHz	QPSK	20025	38RB#37	21.18	20.0±1	0.5
Band4	15MHz	QPSK	20025	75RB#0	21.29	20.0±1	0.5
Band4	15MHz	QPSK	20175	1RB#0	22.06	21.5±1	/
Band4	15MHz	QPSK	20175	1RB#38	22.23	21.5±1	/

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	15MHz	QPSK	20175	1RB#74	22.02	21.5±1	/
Band4	15MHz	QPSK	20175	38RB#0	20.82	20.0±1	0.5
Band4	15MHz	QPSK	20175	38RB#18	20.96	20.0±1	0.5
Band4	15MHz	QPSK	20175	38RB#37	20.77	20.0±1	0.5
Band4	15MHz	QPSK	20175	75RB#0	21.24	20.0±1	0.5
Band4	15MHz	QPSK	20325	1RB#0	22.00	21.5±1	/
Band4	15MHz	QPSK	20325	1RB#38	22.13	21.5±1	/
Band4	15MHz	QPSK	20325	1RB#74	22.03	21.5±1	/
Band4	15MHz	QPSK	20325	38RB#0	21.01	20.0±1	0.5
Band4	15MHz	QPSK	20325	38RB#18	21.07	20.0±1	0.5
Band4	15MHz	QPSK	20325	38RB#37	21.10	20.0±1	0.5
Band4	15MHz	QPSK	20325	75RB#0	21.25	20.0±1	0.5
Band4	15MHz	16QAM	20025	1RB#0	21.20	20.0±1	0.5
Band4	15MHz	16QAM	20025	1RB#38	21.25	20.0±1	0.5
Band4	15MHz	16QAM	20025	1RB#74	21.24	20.0±1	0.5
Band4	15MHz	16QAM	20025	38RB#0	21.22	20.0±1	0.5
Band4	15MHz	16QAM	20025	38RB#18	21.30	20.0±1	0.5
Band4	15MHz	16QAM	20025	38RB#37	21.18	20.0±1	0.5
Band4	15MHz	16QAM	20025	75RB#0	20.36	20.0±1	0.5
Band4	15MHz	16QAM	20175	1RB#0	20.82	20.0±1	0.5
Band4	15MHz	16QAM	20175	1RB#38	20.92	20.0±1	0.5
Band4	15MHz	16QAM	20175	1RB#74	20.76	20.0±1	0.5
Band4	15MHz	16QAM	20175	38RB#0	20.83	20.0±1	0.5
Band4	15MHz	16QAM	20175	38RB#18	20.97	20.0±1	0.5
Band4	15MHz	16QAM	20175	38RB#37	20.79	20.0±1	0.5
Band4	15MHz	16QAM	20175	75RB#0	20.24	20.0±1	0.5
Band4	15MHz	16QAM	20325	1RB#0	21.06	20.0±1	0.5
Band4	15MHz	16QAM	20325	1RB#38	21.13	20.0±1	0.5
Band4	15MHz	16QAM	20325	1RB#74	21.07	20.0±1	0.5
Band4	15MHz	16QAM	20325	38RB#0	21.02	20.0±1	0.5
Band4	15MHz	16QAM	20325	38RB#18	21.09	20.0±1	0.5
Band4	15MHz	16QAM	20325	38RB#37	21.06	20.0±1	0.5
Band4	15MHz	16QAM	20325	75RB#0	20.16	20.0±1	0.5
Band4	20MHz	QPSK	20050	1RB#0	22.00	21.5±1	/
Band4	20MHz	QPSK	20050	1RB#49	22.38	21.5±1	/
Band4	20MHz	QPSK	20050	1RB#99	21.92	21.5±1	/
Band4	20MHz	QPSK	20050	50RB#0	21.26	20.0±1	0.5
Band4	20MHz	QPSK	20050	50RB#25	21.30	20.0±1	0.5
Band4	20MHz	QPSK	20050	50RB#50	21.21	20.0±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band4	20MHz	QPSK	20050	100RB#0	21.29	20.0±1	0.5
Band4	20MHz	QPSK	20175	1RB#0	21.98	21.5±1	/
Band4	20MHz	QPSK	20175	1RB#49	22.30	21.5±1	/
Band4	20MHz	QPSK	20175	1RB#99	21.86	21.5±1	/
Band4	20MHz	QPSK	20175	50RB#0	21.05	20.0±1	0.5
Band4	20MHz	QPSK	20175	50RB#25	21.02	20.0±1	0.5
Band4	20MHz	QPSK	20175	50RB#50	21.19	20.0±1	0.5
Band4	20MHz	QPSK	20175	100RB#0	21.11	20.0±1	0.5
Band4	20MHz	QPSK	20300	1RB#0	21.86	21.5±1	/
Band4	20MHz	QPSK	20300	1RB#49	22.28	21.5±1	/
Band4	20MHz	QPSK	20300	1RB#99	21.96	21.5±1	/
Band4	20MHz	QPSK	20300	50RB#0	21.21	20.0±1	0.5
Band4	20MHz	QPSK	20300	50RB#25	21.18	20.0±1	0.5
Band4	20MHz	QPSK	20300	50RB#50	21.08	20.0±1	0.5
Band4	20MHz	QPSK	20300	100RB#0	21.14	20.0±1	0.5
Band4	20MHz	16QAM	20050	1RB#0	21.07	20.0±1	0.5
Band4	20MHz	16QAM	20050	1RB#49	21.48	20.0±1	0.5
Band4	20MHz	16QAM	20050	1RB#99	21.13	20.0±1	0.5
Band4	20MHz	16QAM	20050	50RB#0	20.30	20.0±1	0.5
Band4	20MHz	16QAM	20050	50RB#25	20.37	20.0±1	0.5
Band4	20MHz	16QAM	20050	50RB#50	20.32	20.0±1	0.5
Band4	20MHz	16QAM	20050	100RB#0	20.34	20.0±1	0.5
Band4	20MHz	16QAM	20175	1RB#0	20.77	20.0±1	0.5
Band4	20MHz	16QAM	20175	1RB#49	21.09	20.0±1	0.5
Band4	20MHz	16QAM	20175	1RB#99	20.73	20.0±1	0.5
Band4	20MHz	16QAM	20175	50RB#0	20.20	20.0±1	0.5
Band4	20MHz	16QAM	20175	50RB#25	20.18	20.0±1	0.5
Band4	20MHz	16QAM	20175	50RB#50	20.32	20.0±1	0.5
Band4	20MHz	16QAM	20175	100RB#0	20.16	20.0±1	0.5
Band4	20MHz	16QAM	20300	1RB#0	20.78	20.0±1	0.5
Band4	20MHz	16QAM	20300	1RB#49	21.18	20.0±1	0.5
Band4	20MHz	16QAM	20300	1RB#99	20.82	20.0±1	0.5
Band4	20MHz	16QAM	20300	50RB#0	20.23	20.0±1	0.5
Band4	20MHz	16QAM	20300	50RB#25	20.19	20.0±1	0.5
Band4	20MHz	16QAM	20300	50RB#50	20.14	20.0±1	0.5
Band4	20MHz	16QAM	20300	100RB#0	20.19	20.0±1	0.5
Band5	1.4MHz	QPSK	20407	1RB#0	22.75	22.5±1	/
Band5	1.4MHz	QPSK	20407	1RB#2	22.87	22.5±1	/
Band5	1.4MHz	QPSK	20407	1RB#5	22.74	22.5±1	/

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band5	1.4MHz	QPSK	20407	3RB#0	22.77	22.5±1	/
Band5	1.4MHz	QPSK	20407	3RB#1	22.81	22.5±1	/
Band5	1.4MHz	QPSK	20407	3RB#3	22.83	22.5±1	/
Band5	1.4MHz	QPSK	20407	6RB#0	21.78	21.5±1	1
Band5	1.4MHz	QPSK	20525	1RB#0	22.75	22.5±1	/
Band5	1.4MHz	QPSK	20525	1RB#2	22.93	22.5±1	/
Band5	1.4MHz	QPSK	20525	1RB#5	22.77	22.5±1	/
Band5	1.4MHz	QPSK	20525	3RB#0	22.83	22.5±1	/
Band5	1.4MHz	QPSK	20525	3RB#1	22.84	22.5±1	/
Band5	1.4MHz	QPSK	20525	3RB#3	22.86	22.5±1	/
Band5	1.4MHz	QPSK	20525	6RB#0	21.77	21.5±1	1
Band5	1.4MHz	QPSK	20643	1RB#0	22.69	22.5±1	/
Band5	1.4MHz	QPSK	20643	1RB#2	22.76	22.5±1	/
Band5	1.4MHz	QPSK	20643	1RB#5	22.65	22.5±1	/
Band5	1.4MHz	QPSK	20643	3RB#0	22.76	22.5±1	/
Band5	1.4MHz	QPSK	20643	3RB#1	22.74	22.5±1	/
Band5	1.4MHz	QPSK	20643	3RB#3	22.72	22.5±1	/
Band5	1.4MHz	QPSK	20643	6RB#0	21.78	21.5±1	1
Band5	1.4MHz	16QAM	20407	1RB#0	21.58	21.5±1	1
Band5	1.4MHz	16QAM	20407	1RB#2	21.66	21.5±1	1
Band5	1.4MHz	16QAM	20407	1RB#5	21.56	21.5±1	1
Band5	1.4MHz	16QAM	20407	3RB#0	21.65	21.5±1	1
Band5	1.4MHz	16QAM	20407	3RB#1	21.63	21.5±1	1
Band5	1.4MHz	16QAM	20407	3RB#3	21.64	21.5±1	1
Band5	1.4MHz	16QAM	20407	6RB#0	20.61	21.5±1	1
Band5	1.4MHz	16QAM	20525	1RB#0	21.48	21.5±1	1
Band5	1.4MHz	16QAM	20525	1RB#2	21.71	21.5±1	1
Band5	1.4MHz	16QAM	20525	1RB#5	21.47	21.5±1	1
Band5	1.4MHz	16QAM	20525	3RB#0	21.64	21.5±1	1
Band5	1.4MHz	16QAM	20525	3RB#1	21.64	21.5±1	1
Band5	1.4MHz	16QAM	20525	3RB#3	21.60	21.5±1	1
Band5	1.4MHz	16QAM	20525	6RB#0	20.71	21.5±1	1
Band5	1.4MHz	16QAM	20643	1RB#0	21.55	21.5±1	1
Band5	1.4MHz	16QAM	20643	1RB#2	21.74	21.5±1	1
Band5	1.4MHz	16QAM	20643	1RB#5	21.53	21.5±1	1
Band5	1.4MHz	16QAM	20643	3RB#0	21.56	21.5±1	1
Band5	1.4MHz	16QAM	20643	3RB#1	21.55	21.5±1	1
Band5	1.4MHz	16QAM	20643	3RB#3	21.55	21.5±1	1
Band5	1.4MHz	16QAM	20643	6RB#0	20.71	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band5	3MHz	QPSK	20415	1RB#0	23.37	22.5±1	/
Band5	3MHz	QPSK	20415	1RB#8	22.95	22.5±1	/
Band5	3MHz	QPSK	20415	1RB#14	22.88	22.5±1	/
Band5	3MHz	QPSK	20415	8RB#0	21.81	21.5±1	1
Band5	3MHz	QPSK	20415	8RB#4	21.80	21.5±1	1
Band5	3MHz	QPSK	20415	8RB#7	21.80	21.5±1	1
Band5	3MHz	QPSK	20415	15RB#0	21.79	21.5±1	1
Band5	3MHz	QPSK	20525	1RB#0	22.83	22.5±1	/
Band5	3MHz	QPSK	20525	1RB#8	22.79	22.5±1	/
Band5	3MHz	QPSK	20525	1RB#14	22.80	22.5±1	/
Band5	3MHz	QPSK	20525	8RB#0	21.86	21.5±1	1
Band5	3MHz	QPSK	20525	8RB#4	21.83	21.5±1	1
Band5	3MHz	QPSK	20525	8RB#7	21.85	21.5±1	1
Band5	3MHz	QPSK	20525	15RB#0	21.77	21.5±1	1
Band5	3MHz	QPSK	20635	1RB#0	22.84	22.5±1	/
Band5	3MHz	QPSK	20635	1RB#8	22.76	22.5±1	/
Band5	3MHz	QPSK	20635	1RB#14	22.77	22.5±1	/
Band5	3MHz	QPSK	20635	8RB#0	21.84	21.5±1	1
Band5	3MHz	QPSK	20635	8RB#4	21.83	21.5±1	1
Band5	3MHz	QPSK	20635	8RB#7	21.82	21.5±1	1
Band5	3MHz	QPSK	20635	15RB#0	21.78	21.5±1	1
Band5	3MHz	16QAM	20415	1RB#0	21.98	21.5±1	1
Band5	3MHz	16QAM	20415	1RB#8	21.72	21.5±1	1
Band5	3MHz	16QAM	20415	1RB#14	21.74	21.5±1	1
Band5	3MHz	16QAM	20415	8RB#0	20.80	21.5±1	1
Band5	3MHz	16QAM	20415	8RB#4	20.78	21.5±1	1
Band5	3MHz	16QAM	20415	8RB#7	20.79	21.5±1	1
Band5	3MHz	16QAM	20415	15RB#0	20.68	21.5±1	1
Band5	3MHz	16QAM	20525	1RB#0	21.64	21.5±1	1
Band5	3MHz	16QAM	20525	1RB#8	21.63	21.5±1	1
Band5	3MHz	16QAM	20525	1RB#14	21.62	21.5±1	1
Band5	3MHz	16QAM	20525	8RB#0	20.87	21.5±1	1
Band5	3MHz	16QAM	20525	8RB#4	20.87	21.5±1	1
Band5	3MHz	16QAM	20525	8RB#7	20.84	21.5±1	1
Band5	3MHz	16QAM	20525	15RB#0	20.73	21.5±1	1
Band5	3MHz	16QAM	20635	1RB#0	21.80	21.5±1	1
Band5	3MHz	16QAM	20635	1RB#8	21.74	21.5±1	1
Band5	3MHz	16QAM	20635	1RB#14	21.76	21.5±1	1
Band5	3MHz	16QAM	20635	8RB#0	20.84	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band5	3MHz	16QAM	20635	8RB#4	20.82	21.5±1	1
Band5	3MHz	16QAM	20635	8RB#7	20.78	21.5±1	1
Band5	3MHz	16QAM	20635	15RB#0	20.82	21.5±1	1
Band5	5MHz	QPSK	20425	1RB#0	23.23	22.5±1	/
Band5	5MHz	QPSK	20425	1RB#12	23.08	22.5±1	/
Band5	5MHz	QPSK	20425	1RB#24	22.90	22.5±1	/
Band5	5MHz	QPSK	20425	12RB#0	21.77	21.5±1	1
Band5	5MHz	QPSK	20425	12RB#6	21.74	21.5±1	1
Band5	5MHz	QPSK	20425	12RB#13	21.86	21.5±1	1
Band5	5MHz	QPSK	20425	25RB#0	21.84	21.5±1	1
Band5	5MHz	QPSK	20525	1RB#0	23.25	22.5±1	/
Band5	5MHz	QPSK	20525	1RB#12	23.39	22.5±1	/
Band5	5MHz	QPSK	20525	1RB#24	22.94	22.5±1	/
Band5	5MHz	QPSK	20525	12RB#0	22.30	21.5±1	1
Band5	5MHz	QPSK	20525	12RB#6	22.06	21.5±1	1
Band5	5MHz	QPSK	20525	12RB#13	21.84	21.5±1	1
Band5	5MHz	QPSK	20525	25RB#0	21.86	21.5±1	1
Band5	5MHz	QPSK	20625	1RB#0	22.73	22.5±1	/
Band5	5MHz	QPSK	20625	1RB#12	22.87	22.5±1	/
Band5	5MHz	QPSK	20625	1RB#24	22.76	22.5±1	/
Band5	5MHz	QPSK	20625	12RB#0	21.76	21.5±1	1
Band5	5MHz	QPSK	20625	12RB#6	21.76	21.5±1	1
Band5	5MHz	QPSK	20625	12RB#13	21.82	21.5±1	1
Band5	5MHz	QPSK	20625	25RB#0	21.78	21.5±1	1
Band5	5MHz	16QAM	20425	1RB#0	21.97	21.5±1	1
Band5	5MHz	16QAM	20425	1RB#12	21.99	21.5±1	1
Band5	5MHz	16QAM	20425	1RB#24	21.99	21.5±1	1
Band5	5MHz	16QAM	20425	12RB#0	20.76	21.5±1	1
Band5	5MHz	16QAM	20425	12RB#6	20.91	21.5±1	1
Band5	5MHz	16QAM	20425	12RB#13	20.96	21.5±1	1
Band5	5MHz	16QAM	20425	25RB#0	20.82	21.5±1	1
Band5	5MHz	16QAM	20525	1RB#0	22.37	21.5±1	1
Band5	5MHz	16QAM	20525	1RB#12	22.39	21.5±1	1
Band5	5MHz	16QAM	20525	1RB#24	21.93	21.5±1	1
Band5	5MHz	16QAM	20525	12RB#0	21.15	21.5±1	1
Band5	5MHz	16QAM	20525	12RB#6	21.15	21.5±1	1
Band5	5MHz	16QAM	20525	12RB#13	20.90	21.5±1	1
Band5	5MHz	16QAM	20525	25RB#0	20.85	21.5±1	1
Band5	5MHz	16QAM	20625	1RB#0	21.66	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band5	5MHz	16QAM	20625	1RB#12	21.74	21.5±1	1
Band5	5MHz	16QAM	20625	1RB#24	21.67	21.5±1	1
Band5	5MHz	16QAM	20625	12RB#0	20.75	21.5±1	1
Band5	5MHz	16QAM	20625	12RB#6	20.74	21.5±1	1
Band5	5MHz	16QAM	20625	12RB#13	20.81	21.5±1	1
Band5	5MHz	16QAM	20625	25RB#0	20.84	21.5±1	1
Band5	10MHz	QPSK	20450	1RB#0	23.33	22.5±1	/
Band5	10MHz	QPSK	20450	1RB#24	23.40	22.5±1	/
Band5	10MHz	QPSK	20450	1RB#49	22.85	22.5±1	/
Band5	10MHz	QPSK	20450	25RB#0	21.89	21.5±1	1
Band5	10MHz	QPSK	20450	25RB#12	21.96	21.5±1	1
Band5	10MHz	QPSK	20450	25RB#25	21.98	21.5±1	1
Band5	10MHz	QPSK	20450	50RB#0	21.74	21.5±1	1
Band5	10MHz	QPSK	20525	1RB#0	22.99	22.5±1	/
Band5	10MHz	QPSK	20525	1RB#24	22.91	22.5±1	/
Band5	10MHz	QPSK	20525	1RB#49	22.76	22.5±1	/
Band5	10MHz	QPSK	20525	25RB#0	21.99	21.5±1	1
Band5	10MHz	QPSK	20525	25RB#12	21.98	21.5±1	1
Band5	10MHz	QPSK	20525	25RB#25	21.91	21.5±1	1
Band5	10MHz	QPSK	20525	50RB#0	21.90	21.5±1	1
Band5	10MHz	QPSK	20600	1RB#0	22.76	22.5±1	/
Band5	10MHz	QPSK	20600	1RB#24	22.88	22.5±1	/
Band5	10MHz	QPSK	20600	1RB#49	22.72	22.5±1	/
Band5	10MHz	QPSK	20600	25RB#0	21.86	21.5±1	1
Band5	10MHz	QPSK	20600	25RB#12	21.83	21.5±1	1
Band5	10MHz	QPSK	20600	25RB#25	21.95	21.5±1	1
Band5	10MHz	QPSK	20600	50RB#0	21.86	21.5±1	1
Band5	10MHz	16QAM	20450	1RB#0	22.04	21.5±1	1
Band5	10MHz	16QAM	20450	1RB#24	22.30	21.5±1	1
Band5	10MHz	16QAM	20450	1RB#49	21.74	21.5±1	1
Band5	10MHz	16QAM	20450	25RB#0	21.17	21.5±1	1
Band5	10MHz	16QAM	20450	25RB#12	20.93	21.5±1	1
Band5	10MHz	16QAM	20450	25RB#25	21.20	21.5±1	1
Band5	10MHz	16QAM	20450	50RB#0	20.80	21.5±1	1
Band5	10MHz	16QAM	20525	1RB#0	21.78	21.5±1	1
Band5	10MHz	16QAM	20525	1RB#24	21.80	21.5±1	1
Band5	10MHz	16QAM	20525	1RB#49	21.63	21.5±1	1
Band5	10MHz	16QAM	20525	25RB#0	21.05	21.5±1	1
Band5	10MHz	16QAM	20525	25RB#12	21.06	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band5	10MHz	16QAM	20525	25RB#25	20.92	21.5±1	1
Band5	10MHz	16QAM	20525	50RB#0	20.91	21.5±1	1
Band5	10MHz	16QAM	20600	1RB#0	21.83	21.5±1	1
Band5	10MHz	16QAM	20600	1RB#24	21.91	21.5±1	1
Band5	10MHz	16QAM	20600	1RB#49	21.73	21.5±1	1
Band5	10MHz	16QAM	20600	25RB#0	20.85	21.5±1	1
Band5	10MHz	16QAM	20600	25RB#12	20.85	21.5±1	1
Band5	10MHz	16QAM	20600	25RB#25	20.88	21.5±1	1
Band5	10MHz	16QAM	20600	50RB#0	20.84	21.5±1	1
Band7	5MHz	QPSK	20775	1RB#0	22.12	22.0±1	/
Band7	5MHz	QPSK	20775	1RB#12	22.24	22.0±1	/
Band7	5MHz	QPSK	20775	1RB#24	22.13	22.0±1	/
Band7	5MHz	QPSK	20775	12RB#0	21.22	21.0±1	1
Band7	5MHz	QPSK	20775	12RB#6	21.25	21.0±1	1
Band7	5MHz	QPSK	20775	12RB#13	21.22	21.0±1	1
Band7	5MHz	QPSK	20775	25RB#0	21.25	21.0±1	1
Band7	5MHz	QPSK	21100	1RB#0	22.45	22.0±1	/
Band7	5MHz	QPSK	21100	1RB#12	22.61	22.0±1	/
Band7	5MHz	QPSK	21100	1RB#24	22.55	22.0±1	/
Band7	5MHz	QPSK	21100	12RB#0	21.52	21.0±1	1
Band7	5MHz	QPSK	21100	12RB#6	21.55	21.0±1	1
Band7	5MHz	QPSK	21100	12RB#13	21.55	21.0±1	1
Band7	5MHz	QPSK	21100	25RB#0	21.55	21.0±1	1
Band7	5MHz	QPSK	21425	1RB#0	22.82	22.0±1	/
Band7	5MHz	QPSK	21425	1RB#12	22.95	22.0±1	/
Band7	5MHz	QPSK	21425	1RB#24	22.88	22.0±1	/
Band7	5MHz	QPSK	21425	12RB#0	21.88	21.0±1	1
Band7	5MHz	QPSK	21425	12RB#6	21.88	21.0±1	1
Band7	5MHz	QPSK	21425	12RB#13	21.74	21.0±1	1
Band7	5MHz	QPSK	21425	25RB#0	21.85	21.0±1	1
Band7	5MHz	16QAM	20775	1RB#0	21.13	21.0±1	1
Band7	5MHz	16QAM	20775	1RB#12	21.27	21.0±1	1
Band7	5MHz	16QAM	20775	1RB#24	21.19	21.0±1	1
Band7	5MHz	16QAM	20775	12RB#0	20.23	21.0±1	1
Band7	5MHz	16QAM	20775	12RB#6	20.24	21.0±1	1
Band7	5MHz	16QAM	20775	12RB#13	20.22	21.0±1	1
Band7	5MHz	16QAM	20775	25RB#0	20.22	21.0±1	1
Band7	5MHz	16QAM	21100	1RB#0	21.36	21.0±1	1
Band7	5MHz	16QAM	21100	1RB#12	21.48	21.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band7	5MHz	16QAM	21100	1RB#24	21.39	21.0±1	1
Band7	5MHz	16QAM	21100	12RB#0	20.56	21.0±1	1
Band7	5MHz	16QAM	21100	12RB#6	20.54	21.0±1	1
Band7	5MHz	16QAM	21100	12RB#13	20.53	21.0±1	1
Band7	5MHz	16QAM	21100	25RB#0	20.63	21.0±1	1
Band7	5MHz	16QAM	21425	1RB#0	21.71	21.0±1	1
Band7	5MHz	16QAM	21425	1RB#12	21.81	21.0±1	1
Band7	5MHz	16QAM	21425	1RB#24	21.71	21.0±1	1
Band7	5MHz	16QAM	21425	12RB#0	20.81	21.0±1	1
Band7	5MHz	16QAM	21425	12RB#6	20.80	21.0±1	1
Band7	5MHz	16QAM	21425	12RB#13	20.72	21.0±1	1
Band7	5MHz	16QAM	21425	25RB#0	20.80	21.0±1	1
Band7	10MHz	QPSK	20800	1RB#0	22.25	22.0±1	/
Band7	10MHz	QPSK	20800	1RB#24	22.42	22.0±1	/
Band7	10MHz	QPSK	20800	1RB#49	22.30	22.0±1	/
Band7	10MHz	QPSK	20800	25RB#0	21.28	21.0±1	1
Band7	10MHz	QPSK	20800	25RB#12	21.29	21.0±1	1
Band7	10MHz	QPSK	20800	25RB#25	21.35	21.0±1	1
Band7	10MHz	QPSK	20800	50RB#0	21.29	21.0±1	1
Band7	10MHz	QPSK	21100	1RB#0	22.46	22.0±1	/
Band7	10MHz	QPSK	21100	1RB#24	22.75	22.0±1	/
Band7	10MHz	QPSK	21100	1RB#49	22.60	22.0±1	/
Band7	10MHz	QPSK	21100	25RB#0	21.62	21.0±1	1
Band7	10MHz	QPSK	21100	25RB#12	21.59	21.0±1	1
Band7	10MHz	QPSK	21100	25RB#25	21.61	21.0±1	1
Band7	10MHz	QPSK	21100	50RB#0	21.54	21.0±1	1
Band7	10MHz	QPSK	21400	1RB#0	22.78	22.0±1	/
Band7	10MHz	QPSK	21400	1RB#24	23.00	22.0±1	/
Band7	10MHz	QPSK	21400	1RB#49	22.87	22.0±1	/
Band7	10MHz	QPSK	21400	25RB#0	21.93	21.0±1	1
Band7	10MHz	QPSK	21400	25RB#12	21.90	21.0±1	1
Band7	10MHz	QPSK	21400	25RB#25	21.80	21.0±1	1
Band7	10MHz	QPSK	21400	50RB#0	21.84	21.0±1	1
Band7	10MHz	16QAM	20800	1RB#0	20.99	21.0±1	1
Band7	10MHz	16QAM	20800	1RB#24	21.14	21.0±1	1
Band7	10MHz	16QAM	20800	1RB#49	21.12	21.0±1	1
Band7	10MHz	16QAM	20800	25RB#0	20.32	21.0±1	1
Band7	10MHz	16QAM	20800	25RB#12	20.29	21.0±1	1
Band7	10MHz	16QAM	20800	25RB#25	20.36	21.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band7	10MHz	16QAM	20800	50RB#0	20.28	21.0±1	1
Band7	10MHz	16QAM	21100	1RB#0	21.25	21.0±1	1
Band7	10MHz	16QAM	21100	1RB#24	21.33	21.0±1	1
Band7	10MHz	16QAM	21100	1RB#49	21.32	21.0±1	1
Band7	10MHz	16QAM	21100	25RB#0	20.65	21.0±1	1
Band7	10MHz	16QAM	21100	25RB#12	20.63	21.0±1	1
Band7	10MHz	16QAM	21100	25RB#25	20.62	21.0±1	1
Band7	10MHz	16QAM	21100	50RB#0	20.56	21.0±1	1
Band7	10MHz	16QAM	21400	1RB#0	21.76	21.0±1	1
Band7	10MHz	16QAM	21400	1RB#24	21.93	21.0±1	1
Band7	10MHz	16QAM	21400	1RB#49	21.81	21.0±1	1
Band7	10MHz	16QAM	21400	25RB#0	20.85	21.0±1	1
Band7	10MHz	16QAM	21400	25RB#12	20.87	21.0±1	1
Band7	10MHz	16QAM	21400	25RB#25	20.75	21.0±1	1
Band7	10MHz	16QAM	21400	50RB#0	20.84	21.0±1	1
Band7	15MHz	QPSK	20825	1RB#0	22.04	22.0±1	/
Band7	15MHz	QPSK	20825	1RB#38	22.19	22.0±1	/
Band7	15MHz	QPSK	20825	1RB#74	22.17	22.0±1	/
Band7	15MHz	QPSK	20825	38RB#0	21.13	21.0±1	1
Band7	15MHz	QPSK	20825	38RB#18	21.32	21.0±1	1
Band7	15MHz	QPSK	20825	38RB#37	21.31	21.0±1	1
Band7	15MHz	QPSK	20825	75RB#0	21.36	21.0±1	1
Band7	15MHz	QPSK	21100	1RB#0	22.37	22.0±1	/
Band7	15MHz	QPSK	21100	1RB#38	22.54	22.0±1	/
Band7	15MHz	QPSK	21100	1RB#74	22.54	22.0±1	/
Band7	15MHz	QPSK	21100	38RB#0	21.14	21.0±1	1
Band7	15MHz	QPSK	21100	38RB#18	21.33	21.0±1	1
Band7	15MHz	QPSK	21100	38RB#37	21.27	21.0±1	1
Band7	15MHz	QPSK	21100	75RB#0	21.64	21.0±1	1
Band7	15MHz	QPSK	21375	1RB#0	22.65	22.0±1	/
Band7	15MHz	QPSK	21375	1RB#38	22.78	22.0±1	/
Band7	15MHz	QPSK	21375	1RB#74	22.76	22.0±1	/
Band7	15MHz	QPSK	21375	38RB#0	21.68	21.0±1	1
Band7	15MHz	QPSK	21375	38RB#18	21.75	21.0±1	1
Band7	15MHz	QPSK	21375	38RB#37	21.69	21.0±1	1
Band7	15MHz	QPSK	21375	75RB#0	21.89	21.0±1	1
Band7	15MHz	16QAM	20825	1RB#0	21.11	21.0±1	1
Band7	15MHz	16QAM	20825	1RB#38	21.32	21.0±1	1
Band7	15MHz	16QAM	20825	1RB#74	21.29	21.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band7	15MHz	16QAM	20825	38RB#0	21.13	21.0±1	1
Band7	15MHz	16QAM	20825	38RB#18	21.31	21.0±1	1
Band7	15MHz	16QAM	20825	38RB#37	21.31	21.0±1	1
Band7	15MHz	16QAM	20825	75RB#0	20.35	21.0±1	1
Band7	15MHz	16QAM	21100	1RB#0	21.17	21.0±1	1
Band7	15MHz	16QAM	21100	1RB#38	21.30	21.0±1	1
Band7	15MHz	16QAM	21100	1RB#74	21.30	21.0±1	1
Band7	15MHz	16QAM	21100	38RB#0	21.17	21.0±1	1
Band7	15MHz	16QAM	21100	38RB#18	21.30	21.0±1	1
Band7	15MHz	16QAM	21100	38RB#37	21.29	21.0±1	1
Band7	15MHz	16QAM	21100	75RB#0	20.55	21.0±1	1
Band7	15MHz	16QAM	21375	1RB#0	21.64	21.0±1	1
Band7	15MHz	16QAM	21375	1RB#38	21.82	21.0±1	1
Band7	15MHz	16QAM	21375	1RB#74	21.70	21.0±1	1
Band7	15MHz	16QAM	21375	38RB#0	21.66	21.0±1	1
Band7	15MHz	16QAM	21375	38RB#18	21.77	21.0±1	1
Band7	15MHz	16QAM	21375	38RB#37	21.72	21.0±1	1
Band7	15MHz	16QAM	21375	75RB#0	20.82	21.0±1	1
Band7	20MHz	QPSK	20850	1RB#0	21.98	21.0±1	1
Band7	20MHz	QPSK	20850	1RB#49	**22.45**	22.0±1	/
Band7	20MHz	QPSK	20850	1RB#99	22.14	22.0±1	/
Band7	20MHz	QPSK	20850	50RB#0	21.18	21.0±1	1
Band7	20MHz	QPSK	20850	50RB#25	21.19	21.0±1	1
Band7	20MHz	QPSK	20850	50RB#50	21.34	21.0±1	1
Band7	20MHz	QPSK	20850	100RB#0	21.26	21.0±1	1
Band7	20MHz	QPSK	21100	1RB#0	22.09	22.0±1	/
Band7	20MHz	QPSK	21100	1RB#49	**22.52**	22.0±1	/
Band7	20MHz	QPSK	21100	1RB#99	22.35	22.0±1	/
Band7	20MHz	QPSK	21100	50RB#0	21.45	21.0±1	1
Band7	20MHz	QPSK	21100	50RB#25	21.47	21.0±1	1
Band7	20MHz	QPSK	21100	50RB#50	21.50	21.0±1	1
Band7	20MHz	QPSK	21100	100RB#0	21.48	21.0±1	1
Band7	20MHz	QPSK	21350	1RB#0	22.46	22.0±1	/
Band7	20MHz	QPSK	21350	1RB#49	22.96	22.0±1	/
Band7	20MHz	QPSK	21350	1RB#99	22.66	22.0±1	/
Band7	20MHz	QPSK	21350	50RB#0	21.71	21.0±1	1
Band7	20MHz	QPSK	21350	50RB#25	21.73	21.0±1	1
Band7	20MHz	QPSK	21350	50RB#50	21.72	21.0±1	1
Band7	20MHz	QPSK	21350	100RB#0	21.68	21.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band7	20MHz	16QAM	20850	1RB#0	21.02	21.0±1	1
Band7	20MHz	16QAM	20850	1RB#49	21.48	21.0±1	1
Band7	20MHz	16QAM	20850	1RB#99	21.18	21.0±1	1
Band7	20MHz	16QAM	20850	50RB#0	20.20	21.0±1	1
Band7	20MHz	16QAM	20850	50RB#25	20.18	21.0±1	1
Band7	20MHz	16QAM	20850	50RB#50	20.36	21.0±1	1
Band7	20MHz	16QAM	20850	100RB#0	20.24	21.0±1	1
Band7	20MHz	16QAM	21100	1RB#0	20.97	21.0±1	1
Band7	20MHz	16QAM	21100	1RB#49	21.45	21.0±1	1
Band7	20MHz	16QAM	21100	1RB#99	21.20	21.0±1	1
Band7	20MHz	16QAM	21100	50RB#0	20.55	21.0±1	1
Band7	20MHz	16QAM	21100	50RB#25	20.51	21.0±1	1
Band7	20MHz	16QAM	21100	50RB#50	20.56	21.0±1	1
Band7	20MHz	16QAM	21100	100RB#0	20.48	21.0±1	1
Band7	20MHz	16QAM	21350	1RB#0	21.39	21.0±1	1
Band7	20MHz	16QAM	21350	1RB#49	21.71	21.0±1	1
Band7	20MHz	16QAM	21350	1RB#99	21.50	21.0±1	1
Band7	20MHz	16QAM	21350	50RB#0	20.69	21.0±1	1
Band7	20MHz	16QAM	21350	50RB#25	20.76	21.0±1	1
Band7	20MHz	16QAM	21350	50RB#50	20.68	21.0±1	1
Band7	20MHz	16QAM	21350	100RB#0	20.70	21.0±1	1
Band13	5MHz	QPSK	23205	1RB#0	22.95	22.5±1	/
Band13	5MHz	QPSK	23205	1RB#12	23.06	22.5±1	/
Band13	5MHz	QPSK	23205	1RB#24	22.99	22.5±1	/
Band13	5MHz	QPSK	23205	12RB#0	21.98	21.5±1	1
Band13	5MHz	QPSK	23205	12RB#6	22.03	21.5±1	1
Band13	5MHz	QPSK	23205	12RB#13	22.01	21.5±1	1
Band13	5MHz	QPSK	23205	25RB#0	22.01	21.5±1	1
Band13	5MHz	QPSK	23230	1RB#0	22.91	22.5±1	/
Band13	5MHz	QPSK	23230	1RB#12	23.04	22.5±1	/
Band13	5MHz	QPSK	23230	1RB#24	22.90	22.5±1	/
Band13	5MHz	QPSK	23230	12RB#0	21.96	21.5±1	1
Band13	5MHz	QPSK	23230	12RB#6	22.02	21.5±1	1
Band13	5MHz	QPSK	23230	12RB#13	21.94	21.5±1	1
Band13	5MHz	QPSK	23230	25RB#0	22.01	21.5±1	1
Band13	5MHz	QPSK	23255	1RB#0	22.93	22.5±1	/
Band13	5MHz	QPSK	23255	1RB#12	23.06	22.5±1	/
Band13	5MHz	QPSK	23255	1RB#24	22.94	22.5±1	/
Band13	5MHz	QPSK	23255	12RB#0	21.89	21.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band13	5MHz	QPSK	23255	12RB#6	21.95	21.5±1	1
Band13	5MHz	QPSK	23255	12RB#13	21.99	21.5±1	1
Band13	5MHz	QPSK	23255	25RB#0	21.96	21.5±1	1
Band13	5MHz	16QAM	23205	1RB#0	21.87	21.5±1	1
Band13	5MHz	16QAM	23205	1RB#12	22.01	21.5±1	1
Band13	5MHz	16QAM	23205	1RB#24	21.96	21.5±1	1
Band13	5MHz	16QAM	23205	12RB#0	20.99	21.5±1	1
Band13	5MHz	16QAM	23205	12RB#6	20.99	21.5±1	1
Band13	5MHz	16QAM	23205	12RB#13	20.94	21.5±1	1
Band13	5MHz	16QAM	23205	25RB#0	21.03	21.5±1	1
Band13	5MHz	16QAM	23230	1RB#0	21.92	21.5±1	1
Band13	5MHz	16QAM	23230	1RB#12	22.05	21.5±1	1
Band13	5MHz	16QAM	23230	1RB#24	21.94	21.5±1	1
Band13	5MHz	16QAM	23230	12RB#0	20.98	21.5±1	1
Band13	5MHz	16QAM	23230	12RB#6	21.05	21.5±1	1
Band13	5MHz	16QAM	23230	12RB#13	21.02	21.5±1	1
Band13	5MHz	16QAM	23230	25RB#0	21.02	21.5±1	1
Band13	5MHz	16QAM	23255	1RB#0	21.79	21.5±1	1
Band13	5MHz	16QAM	23255	1RB#12	21.89	21.5±1	1
Band13	5MHz	16QAM	23255	1RB#24	21.76	21.5±1	1
Band13	5MHz	16QAM	23255	12RB#0	20.89	21.5±1	1
Band13	5MHz	16QAM	23255	12RB#6	20.95	21.5±1	1
Band13	5MHz	16QAM	23255	12RB#13	20.99	21.5±1	1
Band13	5MHz	16QAM	23255	25RB#0	21.01	21.5±1	1
Band13	10MHz	QPSK	23230	1RB#0	23.03	22.5±1	/
Band13	10MHz	QPSK	23230	1RB#24	23.11	22.5±1	/
Band13	10MHz	QPSK	23230	1RB#49	23.06	22.5±1	/
Band13	10MHz	QPSK	23230	25RB#0	22.09	21.5±1	1
Band13	10MHz	QPSK	23230	25RB#12	22.11	21.5±1	1
Band13	10MHz	QPSK	23230	25RB#25	22.05	21.5±1	1
Band13	10MHz	QPSK	23230	50RB#0	21.98	21.5±1	1
Band13	10MHz	16QAM	23230	1RB#0	21.76	21.5±1	1
Band13	10MHz	16QAM	23230	1RB#24	21.89	21.5±1	1
Band13	10MHz	16QAM	23230	1RB#49	21.78	21.5±1	1
Band13	10MHz	16QAM	23230	25RB#0	21.10	21.5±1	1
Band13	10MHz	16QAM	23230	25RB#12	21.10	21.5±1	1
Band13	10MHz	16QAM	23230	25RB#25	21.05	21.5±1	1
Band13	10MHz	16QAM	23230	50RB#0	21.08	21.5±1	1
Band17	5MHz	QPSK	23755	1RB#0	22.76	22.0±1	/

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band17	5MHz	QPSK	23755	1RB#12	22.88	22.0±1	/
Band17	5MHz	QPSK	23755	1RB#24	22.77	22.0±1	/
Band17	5MHz	QPSK	23755	12RB#0	21.83	21.5±1	0.5
Band17	5MHz	QPSK	23755	12RB#6	21.83	21.5±1	0.5
Band17	5MHz	QPSK	23755	12RB#13	21.84	21.5±1	0.5
Band17	5MHz	QPSK	23755	25RB#0	21.86	21.5±1	0.5
Band17	5MHz	QPSK	23790	1RB#0	22.78	22.0±1	/
Band17	5MHz	QPSK	23790	1RB#12	22.87	22.0±1	/
Band17	5MHz	QPSK	23790	1RB#24	22.74	22.0±1	/
Band17	5MHz	QPSK	23790	12RB#0	21.77	21.5±1	0.5
Band17	5MHz	QPSK	23790	12RB#6	21.78	21.5±1	0.5
Band17	5MHz	QPSK	23790	12RB#13	21.81	21.5±1	0.5
Band17	5MHz	QPSK	23790	25RB#0	21.83	21.5±1	0.5
Band17	5MHz	QPSK	23825	1RB#0	22.79	22.0±1	/
Band17	5MHz	QPSK	23825	1RB#12	22.87	22.0±1	/
Band17	5MHz	QPSK	23825	1RB#24	22.83	22.0±1	/
Band17	5MHz	QPSK	23825	12RB#0	21.81	21.5±1	0.5
Band17	5MHz	QPSK	23825	12RB#6	21.82	21.5±1	0.5
Band17	5MHz	QPSK	23825	12RB#13	21.69	21.5±1	0.5
Band17	5MHz	QPSK	23825	25RB#0	21.81	21.5±1	0.5
Band17	5MHz	16QAM	23755	1RB#0	21.83	21.5±1	0.5
Band17	5MHz	16QAM	23755	1RB#12	21.90	21.5±1	0.5
Band17	5MHz	16QAM	23755	1RB#24	21.79	21.5±1	0.5
Band17	5MHz	16QAM	23755	12RB#0	20.92	21.5±1	0.5
Band17	5MHz	16QAM	23755	12RB#6	20.91	21.5±1	0.5
Band17	5MHz	16QAM	23755	12RB#13	20.91	21.5±1	0.5
Band17	5MHz	16QAM	23755	25RB#0	20.81	21.5±1	0.5
Band17	5MHz	16QAM	23790	1RB#0	21.81	21.5±1	0.5
Band17	5MHz	16QAM	23790	1RB#12	21.86	21.5±1	0.5
Band17	5MHz	16QAM	23790	1RB#24	21.77	21.5±1	0.5
Band17	5MHz	16QAM	23790	12RB#0	20.80	21.5±1	0.5
Band17	5MHz	16QAM	23790	12RB#6	20.83	21.5±1	0.5
Band17	5MHz	16QAM	23790	12RB#13	20.89	21.5±1	0.5
Band17	5MHz	16QAM	23790	25RB#0	20.80	21.5±1	0.5
Band17	5MHz	16QAM	23825	1RB#0	21.70	21.5±1	0.5
Band17	5MHz	16QAM	23825	1RB#12	21.72	21.5±1	0.5
Band17	5MHz	16QAM	23825	1RB#24	21.63	21.5±1	0.5
Band17	5MHz	16QAM	23825	12RB#0	20.82	21.5±1	0.5
Band17	5MHz	16QAM	23825	12RB#6	20.78	21.5±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band17	5MHz	16QAM	23825	12RB#13	20.76	21.5±1	0.5
Band17	5MHz	16QAM	23825	25RB#0	20.81	21.5±1	0.5
Band17	10MHz	QPSK	23780	1RB#0	22.84	22.0±1	/
Band17	10MHz	QPSK	23780	1RB#24	22.93	22.0±1	/
Band17	10MHz	QPSK	23780	1RB#49	22.80	22.0±1	/
Band17	10MHz	QPSK	23780	25RB#0	21.88	21.5±1	0.5
Band17	10MHz	QPSK	23780	25RB#12	21.89	21.5±1	0.5
Band17	10MHz	QPSK	23780	25RB#25	22.00	21.5±1	0.5
Band17	10MHz	QPSK	23780	50RB#0	21.89	21.5±1	0.5
Band17	10MHz	QPSK	23790	1RB#0	22.85	22.0±1	/
Band17	10MHz	QPSK	23790	1RB#24	22.96	22.0±1	/
Band17	10MHz	QPSK	23790	1RB#49	22.83	22.0±1	/
Band17	10MHz	QPSK	23790	25RB#0	21.84	21.5±1	0.5
Band17	10MHz	QPSK	23790	25RB#12	21.82	21.5±1	0.5
Band17	10MHz	QPSK	23790	25RB#25	21.85	21.5±1	0.5
Band17	10MHz	QPSK	23790	50RB#0	21.76	21.5±1	0.5
Band17	10MHz	QPSK	23800	1RB#0	22.91	22.0±1	/
Band17	10MHz	QPSK	23800	1RB#24	22.99	22.0±1	/
Band17	10MHz	QPSK	23800	1RB#49	22.96	22.0±1	/
Band17	10MHz	QPSK	23800	25RB#0	21.85	21.5±1	0.5
Band17	10MHz	QPSK	23800	25RB#12	21.81	21.5±1	0.5
Band17	10MHz	QPSK	23800	25RB#25	21.75	21.5±1	0.5
Band17	10MHz	QPSK	23800	50RB#0	21.81	21.5±1	0.5
Band17	10MHz	16QAM	23780	1RB#0	21.86	21.5±1	0.5
Band17	10MHz	16QAM	23780	1RB#24	21.95	21.5±1	0.5
Band17	10MHz	16QAM	23780	1RB#49	21.81	21.5±1	0.5
Band17	10MHz	16QAM	23780	25RB#0	20.89	21.5±1	0.5
Band17	10MHz	16QAM	23780	25RB#12	20.87	21.5±1	0.5
Band17	10MHz	16QAM	23780	25RB#25	20.99	21.5±1	0.5
Band17	10MHz	16QAM	23780	50RB#0	20.97	21.5±1	0.5
Band17	10MHz	16QAM	23790	1RB#0	21.64	21.5±1	0.5
Band17	10MHz	16QAM	23790	1RB#24	21.73	21.5±1	0.5
Band17	10MHz	16QAM	23790	1RB#49	21.62	21.5±1	0.5
Band17	10MHz	16QAM	23790	25RB#0	20.91	21.5±1	0.5
Band17	10MHz	16QAM	23790	25RB#12	20.89	21.5±1	0.5
Band17	10MHz	16QAM	23790	25RB#25	20.92	21.5±1	0.5
Band17	10MHz	16QAM	23790	50RB#0	20.83	21.5±1	0.5
Band17	10MHz	16QAM	23800	1RB#0	21.70	21.5±1	0.5
Band17	10MHz	16QAM	23800	1RB#24	21.74	21.5±1	0.5

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band17	10MHz	16QAM	23800	1RB#49	21.65	21.5±1	0.5
Band17	10MHz	16QAM	23800	25RB#0	20.88	21.5±1	0.5
Band17	10MHz	16QAM	23800	25RB#12	20.85	21.5±1	0.5
Band17	10MHz	16QAM	23800	25RB#25	20.82	21.5±1	0.5
Band17	10MHz	16QAM	23800	50RB#0	20.82	21.5±1	0.5
Band38	5MHz	QPSK	37775	1RB#0	23.49	23.0±1	/
Band38	5MHz	QPSK	37775	1RB#12	23.61	23.0±1	/
Band38	5MHz	QPSK	37775	1RB#24	23.45	23.0±1	/
Band38	5MHz	QPSK	37775	12RB#0	22.53	22.0±1	1
Band38	5MHz	QPSK	37775	12RB#6	22.54	22.0±1	1
Band38	5MHz	QPSK	37775	12RB#13	22.45	22.0±1	1
Band38	5MHz	QPSK	37775	25RB#0	22.47	22.0±1	1
Band38	5MHz	QPSK	38000	1RB#0	23.60	23.0±1	/
Band38	5MHz	QPSK	38000	1RB#12	23.71	23.0±1	/
Band38	5MHz	QPSK	38000	1RB#24	23.62	23.0±1	/
Band38	5MHz	QPSK	38000	12RB#0	22.65	22.0±1	1
Band38	5MHz	QPSK	38000	12RB#6	22.65	22.0±1	1
Band38	5MHz	QPSK	38000	12RB#13	22.59	22.0±1	1
Band38	5MHz	QPSK	38000	25RB#0	22.59	22.0±1	1
Band38	5MHz	QPSK	38225	1RB#0	23.64	23.0±1	/
Band38	5MHz	QPSK	38225	1RB#12	23.76	23.0±1	/
Band38	5MHz	QPSK	38225	1RB#24	23.68	23.0±1	/
Band38	5MHz	QPSK	38225	12RB#0	22.72	22.0±1	1
Band38	5MHz	QPSK	38225	12RB#6	22.70	22.0±1	1
Band38	5MHz	QPSK	38225	12RB#13	22.68	22.0±1	1
Band38	5MHz	QPSK	38225	25RB#0	22.68	22.0±1	1
Band38	5MHz	16QAM	37775	1RB#0	22.44	22.0±1	1
Band38	5MHz	16QAM	37775	1RB#12	22.57	22.0±1	1
Band38	5MHz	16QAM	37775	1RB#24	22.47	22.0±1	1
Band38	5MHz	16QAM	37775	12RB#0	21.53	22.0±1	1
Band38	5MHz	16QAM	37775	12RB#6	21.53	22.0±1	1
Band38	5MHz	16QAM	37775	12RB#13	21.46	22.0±1	1
Band38	5MHz	16QAM	37775	25RB#0	21.45	22.0±1	1
Band38	5MHz	16QAM	38000	1RB#0	22.44	22.0±1	1
Band38	5MHz	16QAM	38000	1RB#12	22.54	22.0±1	1
Band38	5MHz	16QAM	38000	1RB#24	22.43	22.0±1	1
Band38	5MHz	16QAM	38000	12RB#0	21.60	22.0±1	1
Band38	5MHz	16QAM	38000	12RB#6	21.61	22.0±1	1
Band38	5MHz	16QAM	38000	12RB#13	21.59	22.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band38	5MHz	16QAM	38000	25RB#0	21.59	22.0±1	1
Band38	5MHz	16QAM	38225	1RB#0	22.55	22.0±1	1
Band38	5MHz	16QAM	38225	1RB#12	22.65	22.0±1	1
Band38	5MHz	16QAM	38225	1RB#24	22.55	22.0±1	1
Band38	5MHz	16QAM	38225	12RB#0	21.58	22.0±1	1
Band38	5MHz	16QAM	38225	12RB#6	21.62	22.0±1	1
Band38	5MHz	16QAM	38225	12RB#13	21.60	22.0±1	1
Band38	5MHz	16QAM	38225	25RB#0	21.67	22.0±1	1
Band38	10MHz	QPSK	37800	1RB#0	23.59	23.0±1	/
Band38	10MHz	QPSK	37800	1RB#24	23.90	23.0±1	/
Band38	10MHz	QPSK	37800	1RB#49	23.60	23.0±1	/
Band38	10MHz	QPSK	37800	25RB#0	22.59	22.0±1	1
Band38	10MHz	QPSK	37800	25RB#12	22.59	22.0±1	1
Band38	10MHz	QPSK	37800	25RB#25	22.56	22.0±1	1
Band38	10MHz	QPSK	37800	50RB#0	22.55	22.0±1	1
Band38	10MHz	QPSK	38000	1RB#0	23.56	23.0±1	/
Band38	10MHz	QPSK	38000	1RB#24	23.90	23.0±1	/
Band38	10MHz	QPSK	38000	1RB#49	23.68	23.0±1	/
Band38	10MHz	QPSK	38000	25RB#0	22.70	22.0±1	1
Band38	10MHz	QPSK	38000	25RB#12	22.72	22.0±1	1
Band38	10MHz	QPSK	38000	25RB#25	22.69	22.0±1	1
Band38	10MHz	QPSK	38000	50RB#0	22.69	22.0±1	1
Band38	10MHz	QPSK	38200	1RB#0	23.68	23.0±1	/
Band38	10MHz	QPSK	38200	1RB#24	23.95	23.0±1	/
Band38	10MHz	QPSK	38200	1RB#49	23.69	23.0±1	/
Band38	10MHz	QPSK	38200	25RB#0	22.75	22.0±1	1
Band38	10MHz	QPSK	38200	25RB#12	22.78	22.0±1	1
Band38	10MHz	QPSK	38200	25RB#25	22.70	22.0±1	1
Band38	10MHz	QPSK	38200	50RB#0	22.73	22.0±1	1
Band38	10MHz	16QAM	37800	1RB#0	22.30	22.0±1	1
Band38	10MHz	16QAM	37800	1RB#24	22.58	22.0±1	1
Band38	10MHz	16QAM	37800	1RB#49	22.34	22.0±1	1
Band38	10MHz	16QAM	37800	25RB#0	21.58	22.0±1	1
Band38	10MHz	16QAM	37800	25RB#12	21.57	22.0±1	1
Band38	10MHz	16QAM	37800	25RB#25	21.54	22.0±1	1
Band38	10MHz	16QAM	37800	50RB#0	21.55	22.0±1	1
Band38	10MHz	16QAM	38000	1RB#0	22.34	22.0±1	1
Band38	10MHz	16QAM	38000	1RB#24	22.63	22.0±1	1
Band38	10MHz	16QAM	38000	1RB#49	22.41	22.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band38	10MHz	16QAM	38000	25RB#0	21.69	22.0±1	1
Band38	10MHz	16QAM	38000	25RB#12	21.67	22.0±1	1
Band38	10MHz	16QAM	38000	25RB#25	21.65	22.0±1	1
Band38	10MHz	16QAM	38000	50RB#0	21.67	22.0±1	1
Band38	10MHz	16QAM	38200	1RB#0	22.67	22.0±1	1
Band38	10MHz	16QAM	38200	1RB#24	22.88	22.0±1	1
Band38	10MHz	16QAM	38200	1RB#49	22.66	22.0±1	1
Band38	10MHz	16QAM	38200	25RB#0	21.71	22.0±1	1
Band38	10MHz	16QAM	38200	25RB#12	21.70	22.0±1	1
Band38	10MHz	16QAM	38200	25RB#25	21.64	22.0±1	1
Band38	10MHz	16QAM	38200	50RB#0	21.71	22.0±1	1
Band38	15MHz	QPSK	37825	1RB#0	23.40	23.0±1	/
Band38	15MHz	QPSK	37825	1RB#38	23.48	23.0±1	/
Band38	15MHz	QPSK	37825	1RB#74	23.43	23.0±1	/
Band38	15MHz	QPSK	37825	38RB#0	22.38	22.0±1	1
Band38	15MHz	QPSK	37825	38RB#18	22.48	22.0±1	1
Band38	15MHz	QPSK	37825	38RB#37	22.38	22.0±1	1
Band38	15MHz	QPSK	37825	75RB#0	22.67	22.0±1	1
Band38	15MHz	QPSK	38000	1RB#0	23.37	23.0±1	/
Band38	15MHz	QPSK	38000	1RB#38	23.56	23.0±1	/
Band38	15MHz	QPSK	38000	1RB#74	23.49	23.0±1	/
Band38	15MHz	QPSK	38000	38RB#0	22.45	22.0±1	1
Band38	15MHz	QPSK	38000	38RB#18	22.61	22.0±1	1
Band38	15MHz	QPSK	38000	38RB#37	22.61	22.0±1	1
Band38	15MHz	QPSK	38000	75RB#0	22.75	22.0±1	1
Band38	15MHz	QPSK	38175	1RB#0	23.57	23.0±1	/
Band38	15MHz	QPSK	38175	1RB#38	23.67	23.0±1	/
Band38	15MHz	QPSK	38175	1RB#74	23.57	23.0±1	/
Band38	15MHz	QPSK	38175	38RB#0	22.34	22.0±1	1
Band38	15MHz	QPSK	38175	38RB#18	22.43	22.0±1	1
Band38	15MHz	QPSK	38175	38RB#37	22.30	22.0±1	1
Band38	15MHz	QPSK	38175	75RB#0	22.77	22.0±1	1
Band38	15MHz	16QAM	37825	1RB#0	22.37	22.0±1	1
Band38	15MHz	16QAM	37825	1RB#38	22.46	22.0±1	1
Band38	15MHz	16QAM	37825	1RB#74	22.40	22.0±1	1
Band38	15MHz	16QAM	37825	38RB#0	22.37	22.0±1	1
Band38	15MHz	16QAM	37825	38RB#18	22.51	22.0±1	1
Band38	15MHz	16QAM	37825	38RB#37	22.38	22.0±1	1
Band38	15MHz	16QAM	37825	75RB#0	21.52	22.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band38	15MHz	16QAM	38000	1RB#0	22.45	22.0±1	1
Band38	15MHz	16QAM	38000	1RB#38	22.64	22.0±1	1
Band38	15MHz	16QAM	38000	1RB#74	22.60	22.0±1	1
Band38	15MHz	16QAM	38000	38RB#0	22.45	22.0±1	1
Band38	15MHz	16QAM	38000	38RB#18	22.64	22.0±1	1
Band38	15MHz	16QAM	38000	38RB#37	22.60	22.0±1	1
Band38	15MHz	16QAM	38000	75RB#0	21.63	22.0±1	1
Band38	15MHz	16QAM	38175	1RB#0	22.33	22.0±1	1
Band38	15MHz	16QAM	38175	1RB#38	22.43	22.0±1	1
Band38	15MHz	16QAM	38175	1RB#74	22.31	22.0±1	1
Band38	15MHz	16QAM	38175	38RB#0	22.34	22.0±1	1
Band38	15MHz	16QAM	38175	38RB#18	22.42	22.0±1	1
Band38	15MHz	16QAM	38175	38RB#37	22.32	22.0±1	1
Band38	15MHz	16QAM	38175	75RB#0	21.71	22.0±1	1
Band38	20MHz	QPSK	37850	1RB#0	23.23	23.0±1	/
Band38	20MHz	QPSK	37850	1RB#49	23.72	23.0±1	/
Band38	20MHz	QPSK	37850	1RB#99	23.30	23.0±1	/
Band38	20MHz	QPSK	37850	50RB#0	22.50	22.0±1	1
Band38	20MHz	QPSK	37850	50RB#25	22.57	22.0±1	1
Band38	20MHz	QPSK	37850	50RB#50	22.43	22.0±1	1
Band38	20MHz	QPSK	37850	100RB#0	22.52	22.0±1	1
Band38	20MHz	QPSK	38000	1RB#0	23.21	23.0±1	/
Band38	20MHz	QPSK	38000	1RB#49	23.82	23.0±1	/
Band38	20MHz	QPSK	38000	1RB#99	23.38	23.0±1	/
Band38	20MHz	QPSK	38000	50RB#0	22.61	22.0±1	1
Band38	20MHz	QPSK	38000	50RB#25	22.59	22.0±1	1
Band38	20MHz	QPSK	38000	50RB#50	22.54	22.0±1	1
Band38	20MHz	QPSK	38000	100RB#0	22.60	22.0±1	1
Band38	20MHz	QPSK	38150	1RB#0	23.44	23.0±1	/
Band38	20MHz	QPSK	38150	1RB#49	23.96	23.0±1	/
Band38	20MHz	QPSK	38150	1RB#99	23.49	23.0±1	/
Band38	20MHz	QPSK	38150	50RB#0	22.66	22.0±1	1
Band38	20MHz	QPSK	38150	50RB#25	22.67	22.0±1	1
Band38	20MHz	QPSK	38150	50RB#50	22.63	22.0±1	1
Band38	20MHz	QPSK	38150	100RB#0	22.65	22.0±1	1
Band38	20MHz	16QAM	37850	1RB#0	22.34	22.0±1	1
Band38	20MHz	16QAM	37850	1RB#49	22.77	22.0±1	1
Band38	20MHz	16QAM	37850	1RB#99	22.39	22.0±1	1
Band38	20MHz	16QAM	37850	50RB#0	21.53	22.0±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band38	20MHz	16QAM	37850	50RB#25	21.58	22.0±1	1
Band38	20MHz	16QAM	37850	50RB#50	21.42	22.0±1	1
Band38	20MHz	16QAM	37850	100RB#0	21.50	22.0±1	1
Band38	20MHz	16QAM	38000	1RB#0	22.05	22.0±1	1
Band38	20MHz	16QAM	38000	1RB#49	22.63	22.0±1	1
Band38	20MHz	16QAM	38000	1RB#99	22.21	22.0±1	1
Band38	20MHz	16QAM	38000	50RB#0	21.63	22.0±1	1
Band38	20MHz	16QAM	38000	50RB#25	21.66	22.0±1	1
Band38	20MHz	16QAM	38000	50RB#50	21.60	22.0±1	1
Band38	20MHz	16QAM	38000	100RB#0	21.58	22.0±1	1
Band38	20MHz	16QAM	38150	1RB#0	22.28	22.0±1	1
Band38	20MHz	16QAM	38150	1RB#49	22.81	22.0±1	1
Band38	20MHz	16QAM	38150	1RB#99	22.31	22.0±1	1
Band38	20MHz	16QAM	38150	50RB#0	21.67	22.0±1	1
Band38	20MHz	16QAM	38150	50RB#25	21.68	22.0±1	1
Band38	20MHz	16QAM	38150	50RB#50	21.62	22.0±1	1
Band38	20MHz	16QAM	38150	100RB#0	21.69	22.0±1	1
Band41	5MHz	QPSK	40265	1RB#0	22.78	22.5±1	1
Band41	5MHz	QPSK	40265	1RB#12	23.68	23.5±1	/
Band41	5MHz	QPSK	40265	1RB#24	23.61	23.5±1	/
Band41	5MHz	QPSK	40265	12RB#0	22.59	22.5±1	1
Band41	5MHz	QPSK	40265	12RB#6	22.59	22.5±1	1
Band41	5MHz	QPSK	40265	12RB#13	22.59	22.5±1	1
Band41	5MHz	QPSK	40265	25RB#0	22.60	22.5±1	1
Band41	5MHz	QPSK	40620	1RB#0	23.62	23.5±1	/
Band41	5MHz	QPSK	40620	1RB#12	23.78	23.5±1	/
Band41	5MHz	QPSK	40620	1RB#24	23.67	23.5±1	/
Band41	5MHz	QPSK	40620	12RB#0	22.80	22.5±1	1
Band41	5MHz	QPSK	40620	12RB#6	22.77	22.5±1	1
Band41	5MHz	QPSK	40620	12RB#13	22.75	22.5±1	1
Band41	5MHz	QPSK	40620	25RB#0	22.79	22.5±1	1
Band41	5MHz	QPSK	40690	1RB#0	23.65	23.5±1	/
Band41	5MHz	QPSK	40690	1RB#12	23.83	23.5±1	/
Band41	5MHz	QPSK	40690	1RB#24	23.72	23.5±1	/
Band41	5MHz	QPSK	40690	12RB#0	22.82	22.5±1	1
Band41	5MHz	QPSK	40690	12RB#6	22.83	22.5±1	1
Band41	5MHz	QPSK	40690	12RB#13	22.80	22.5±1	1
Band41	5MHz	QPSK	40690	25RB#0	22.85	22.5±1	1
Band41	5MHz	QPSK	41215	1RB#0	23.69	23.5±1	/

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band41	5MHz	QPSK	41215	1RB#12	23.81	23.5±1	/
Band41	5MHz	QPSK	41215	1RB#24	23.70	23.5±1	/
Band41	5MHz	QPSK	41215	12RB#0	22.73	22.5±1	1
Band41	5MHz	QPSK	41215	12RB#6	22.72	22.5±1	1
Band41	5MHz	QPSK	41215	12RB#13	22.62	22.5±1	1
Band41	5MHz	QPSK	41215	25RB#0	22.65	22.5±1	1
Band41	5MHz	16QAM	40265	1RB#0	22.59	22.5±1	1
Band41	5MHz	16QAM	40265	1RB#12	22.70	22.5±1	1
Band41	5MHz	16QAM	40265	1RB#24	22.62	22.5±1	1
Band41	5MHz	16QAM	40265	12RB#0	21.56	22.5±1	1
Band41	5MHz	16QAM	40265	12RB#6	21.55	22.5±1	1
Band41	5MHz	16QAM	40265	12RB#13	21.54	22.5±1	1
Band41	5MHz	16QAM	40265	25RB#0	21.58	22.5±1	1
Band41	5MHz	16QAM	40620	1RB#0	22.93	22.5±1	1
Band41	5MHz	16QAM	40620	1RB#12	23.03	22.5±1	1
Band41	5MHz	16QAM	40620	1RB#24	22.93	22.5±1	1
Band41	5MHz	16QAM	40620	12RB#0	21.75	22.5±1	1
Band41	5MHz	16QAM	40620	12RB#6	21.79	22.5±1	1
Band41	5MHz	16QAM	40620	12RB#13	21.74	22.5±1	1
Band41	5MHz	16QAM	40620	25RB#0	21.77	22.5±1	1
Band41	5MHz	16QAM	40690	1RB#0	22.97	22.5±1	1
Band41	5MHz	16QAM	40690	1RB#12	23.10	22.5±1	1
Band41	5MHz	16QAM	40690	1RB#24	23.02	22.5±1	1
Band41	5MHz	16QAM	40690	12RB#0	21.86	22.5±1	1
Band41	5MHz	16QAM	40690	12RB#6	21.82	22.5±1	1
Band41	5MHz	16QAM	40690	12RB#13	21.82	22.5±1	1
Band41	5MHz	16QAM	40690	25RB#0	21.81	22.5±1	1
Band41	5MHz	16QAM	41215	1RB#0	22.88	22.5±1	1
Band41	5MHz	16QAM	41215	1RB#12	23.00	22.5±1	1
Band41	5MHz	16QAM	41215	1RB#24	22.86	22.5±1	1
Band41	5MHz	16QAM	41215	12RB#0	21.63	22.5±1	1
Band41	5MHz	16QAM	41215	12RB#6	21.64	22.5±1	1
Band41	5MHz	16QAM	41215	12RB#13	21.56	22.5±1	1
Band41	5MHz	16QAM	41215	25RB#0	21.66	22.5±1	1
Band41	10MHz	QPSK	40290	1RB#0	23.65	23.5±1	/
Band41	10MHz	QPSK	40290	1RB#24	23.92	23.5±1	/
Band41	10MHz	QPSK	40290	1RB#49	23.72	23.5±1	/
Band41	10MHz	QPSK	40290	25RB#0	22.62	22.5±1	1
Band41	10MHz	QPSK	40290	25RB#12	22.66	22.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band41	10MHz	QPSK	40290	25RB#25	22.71	22.5±1	1
Band41	10MHz	QPSK	40290	50RB#0	22.64	22.5±1	1
Band41	10MHz	QPSK	40620	1RB#0	23.78	23.5±1	/
Band41	10MHz	QPSK	40620	1RB#24	24.05	23.5±1	/
Band41	10MHz	QPSK	40620	1RB#49	23.86	23.5±1	/
Band41	10MHz	QPSK	40620	25RB#0	22.91	22.5±1	1
Band41	10MHz	QPSK	40620	25RB#12	22.88	22.5±1	1
Band41	10MHz	QPSK	40620	25RB#25	22.79	22.5±1	1
Band41	10MHz	QPSK	40620	50RB#0	22.84	22.5±1	1
Band41	10MHz	QPSK	40690	1RB#0	23.83	23.5±1	/
Band41	10MHz	QPSK	40690	1RB#24	24.12	23.5±1	/
Band41	10MHz	QPSK	40690	1RB#49	23.89	23.5±1	/
Band41	10MHz	QPSK	40690	25RB#0	22.95	22.5±1	1
Band41	10MHz	QPSK	40690	25RB#12	22.94	22.5±1	1
Band41	10MHz	QPSK	40690	25RB#25	22.90	22.5±1	1
Band41	10MHz	QPSK	40690	50RB#0	22.89	22.5±1	1
Band41	10MHz	QPSK	41190	1RB#0	23.81	23.5±1	/
Band41	10MHz	QPSK	41190	1RB#24	24.01	23.5±1	/
Band41	10MHz	QPSK	41190	1RB#49	23.80	23.5±1	/
Band41	10MHz	QPSK	41190	25RB#0	22.79	22.5±1	1
Band41	10MHz	QPSK	41190	25RB#12	22.75	22.5±1	1
Band41	10MHz	QPSK	41190	25RB#25	22.64	22.5±1	1
Band41	10MHz	QPSK	41190	50RB#0	22.69	22.5±1	1
Band41	10MHz	16QAM	40290	1RB#0	22.82	22.5±1	1
Band41	10MHz	16QAM	40290	1RB#24	23.06	22.5±1	1
Band41	10MHz	16QAM	40290	1RB#49	22.87	22.5±1	1
Band41	10MHz	16QAM	40290	25RB#0	21.73	22.5±1	1
Band41	10MHz	16QAM	40290	25RB#12	21.73	22.5±1	1
Band41	10MHz	16QAM	40290	25RB#25	21.79	22.5±1	1
Band41	10MHz	16QAM	40290	50RB#0	21.69	22.5±1	1
Band41	10MHz	16QAM	40620	1RB#0	22.79	22.5±1	1
Band41	10MHz	16QAM	40620	1RB#24	23.02	22.5±1	1
Band41	10MHz	16QAM	40620	1RB#49	22.86	22.5±1	1
Band41	10MHz	16QAM	40620	25RB#0	21.86	22.5±1	1
Band41	10MHz	16QAM	40620	25RB#12	21.87	22.5±1	1
Band41	10MHz	16QAM	40620	25RB#25	21.83	22.5±1	1
Band41	10MHz	16QAM	40620	50RB#0	21.78	22.5±1	1
Band41	10MHz	16QAM	40690	1RB#0	22.84	22.5±1	1
Band41	10MHz	16QAM	40690	1RB#24	23.06	22.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band41	10MHz	16QAM	40690	1RB#49	22.90	22.5±1	1
Band41	10MHz	16QAM	40690	25RB#0	21.93	22.5±1	1
Band41	10MHz	16QAM	40690	25RB#12	21.94	22.5±1	1
Band41	10MHz	16QAM	40690	25RB#25	21.91	22.5±1	1
Band41	10MHz	16QAM	40690	50RB#0	21.88	22.5±1	1
Band41	10MHz	16QAM	41190	1RB#0	22.58	22.5±1	1
Band41	10MHz	16QAM	41190	1RB#24	22.75	22.5±1	1
Band41	10MHz	16QAM	41190	1RB#49	22.55	22.5±1	1
Band41	10MHz	16QAM	41190	25RB#0	21.73	22.5±1	1
Band41	10MHz	16QAM	41190	25RB#12	21.71	22.5±1	1
Band41	10MHz	16QAM	41190	25RB#25	21.60	22.5±1	1
Band41	10MHz	16QAM	41190	50RB#0	21.72	22.5±1	1
Band41	15MHz	QPSK	40315	1RB#0	23.55	23.5±1	/
Band41	15MHz	QPSK	40315	1RB#38	23.75	23.5±1	/
Band41	15MHz	QPSK	40315	1RB#74	23.63	23.5±1	/
Band41	15MHz	QPSK	40315	38RB#0	22.86	22.5±1	1
Band41	15MHz	QPSK	40315	38RB#18	22.88	22.5±1	1
Band41	15MHz	QPSK	40315	38RB#37	22.88	22.5±1	1
Band41	15MHz	QPSK	40315	75RB#0	22.86	22.5±1	1
Band41	15MHz	QPSK	40620	1RB#0	22.35	22.5±1	1
Band41	15MHz	QPSK	40690	1RB#0	23.77	23.5±1	/
Band41	15MHz	QPSK	40690	1RB#38	23.94	23.5±1	/
Band41	15MHz	QPSK	40690	1RB#74	23.79	23.5±1	/
Band41	15MHz	QPSK	40690	38RB#0	23.04	22.5±1	1
Band41	15MHz	QPSK	40690	38RB#18	23.02	22.5±1	1
Band41	15MHz	QPSK	40690	38RB#37	23.08	22.5±1	1
Band41	15MHz	QPSK	40690	75RB#0	23.05	22.5±1	1
Band41	15MHz	QPSK	41165	1RB#0	23.90	23.5±1	/
Band41	15MHz	QPSK	41165	1RB#38	23.98	23.5±1	/
Band41	15MHz	QPSK	41165	1RB#74	23.80	23.5±1	/
Band41	15MHz	QPSK	41165	38RB#0	22.94	22.5±1	1
Band41	15MHz	QPSK	41165	38RB#18	22.93	22.5±1	1
Band41	15MHz	QPSK	41165	38RB#37	22.93	22.5±1	1
Band41	15MHz	QPSK	41165	75RB#0	22.93	22.5±1	1
Band41	15MHz	16QAM	40315	1RB#0	22.80	22.5±1	1
Band41	15MHz	16QAM	40315	1RB#38	22.94	22.5±1	1
Band41	15MHz	16QAM	40315	1RB#74	22.83	22.5±1	1
Band41	15MHz	16QAM	40315	38RB#0	22.86	22.5±1	1
Band41	15MHz	16QAM	40315	38RB#18	22.86	22.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band41	15MHz	16QAM	40315	38RB#37	22.85	22.5±1	1
Band41	15MHz	16QAM	40315	75RB#0	21.81	22.5±1	1
Band41	15MHz	16QAM	40690	1RB#0	22.75	22.5±1	1
Band41	15MHz	16QAM	40690	1RB#38	22.92	22.5±1	1
Band41	15MHz	16QAM	40690	1RB#74	22.79	22.5±1	1
Band41	15MHz	16QAM	40690	38RB#0	23.03	22.5±1	1
Band41	15MHz	16QAM	40690	38RB#18	23.03	22.5±1	1
Band41	15MHz	16QAM	40690	38RB#37	23.05	22.5±1	1
Band41	15MHz	16QAM	40690	75RB#0	21.94	22.5±1	1
Band41	15MHz	16QAM	41165	1RB#0	22.75	22.5±1	1
Band41	15MHz	16QAM	41165	1RB#38	22.80	22.5±1	1
Band41	15MHz	16QAM	41165	1RB#74	22.60	22.5±1	1
Band41	15MHz	16QAM	41165	38RB#0	22.93	22.5±1	1
Band41	15MHz	16QAM	41165	38RB#18	22.93	22.5±1	1
Band41	15MHz	16QAM	41165	38RB#37	22.92	22.5±1	1
Band41	15MHz	16QAM	41165	75RB#0	21.88	22.5±1	1
Band41	20MHz	QPSK	40340	1RB#0	23.42	22.5±1	1
Band41	20MHz	QPSK	40340	1RB#49	23.99	23.5±1	/
Band41	20MHz	QPSK	40340	1RB#99	23.58	23.5±1	/
Band41	20MHz	QPSK	40340	50RB#0	22.58	22.5±1	1
Band41	20MHz	QPSK	40340	50RB#25	22.65	22.5±1	1
Band41	20MHz	QPSK	40340	50RB#50	22.64	22.5±1	1
Band41	20MHz	QPSK	40340	100RB#0	22.64	22.5±1	1
Band41	20MHz	QPSK	40690	1RB#0	23.64	23.5±1	/
Band41	20MHz	QPSK	40690	1RB#49	24.17	23.5±1	/
Band41	20MHz	QPSK	40690	1RB#99	23.73	23.5±1	/
Band41	20MHz	QPSK	40690	50RB#0	22.88	22.5±1	1
Band41	20MHz	QPSK	40690	50RB#25	22.92	22.5±1	1
Band41	20MHz	QPSK	40690	50RB#50	22.86	22.5±1	1
Band41	20MHz	QPSK	40690	100RB#0	22.87	22.5±1	1
Band41	20MHz	QPSK	41140	1RB#0	23.66	23.5±1	/
Band41	20MHz	QPSK	41140	1RB#49	24.11	23.5±1	/
Band41	20MHz	QPSK	41140	1RB#99	23.56	23.5±1	/
Band41	20MHz	QPSK	41140	50RB#0	22.86	22.5±1	1
Band41	20MHz	QPSK	41140	50RB#25	22.85	22.5±1	1
Band41	20MHz	QPSK	41140	50RB#50	22.67	22.5±1	1
Band41	20MHz	QPSK	41140	100RB#0	22.79	22.5±1	1
Band41	20MHz	16QAM	40340	1RB#0	22.47	22.5±1	1
Band41	20MHz	16QAM	40340	1RB#49	22.96	22.5±1	1

Band	Bandwidth	Modulation	Channel	RB Configuration	Result (dBm)	Tune up limited (dBm)	MPR (dB)
Band41	20MHz	16QAM	40340	1RB#99	22.63	22.5±1	1
Band41	20MHz	16QAM	40340	50RB#0	21.65	22.5±1	1
Band41	20MHz	16QAM	40340	50RB#25	21.67	22.5±1	1
Band41	20MHz	16QAM	40340	50RB#50	21.70	22.5±1	1
Band41	20MHz	16QAM	40340	100RB#0	21.66	22.5±1	1
Band41	20MHz	16QAM	40690	1RB#0	22.47	22.5±1	1
Band41	20MHz	16QAM	40690	1RB#49	22.97	22.5±1	1
Band41	20MHz	16QAM	40690	1RB#99	22.61	22.5±1	1
Band41	20MHz	16QAM	40690	50RB#0	21.85	22.5±1	1
Band41	20MHz	16QAM	40690	50RB#25	21.90	22.5±1	1
Band41	20MHz	16QAM	40690	50RB#50	21.83	22.5±1	1
Band41	20MHz	16QAM	40690	100RB#0	21.90	22.5±1	1
Band41	20MHz	16QAM	41140	1RB#0	22.24	22.5±1	1
Band41	20MHz	16QAM	41140	1RB#49	22.61	22.5±1	1
Band41	20MHz	16QAM	41140	1RB#99	22.10	22.5±1	1
Band41	20MHz	16QAM	41140	50RB#0	21.84	22.5±1	1
Band41	20MHz	16QAM	41140	50RB#25	21.87	22.5±1	1
Band41	20MHz	16QAM	41140	50RB#50	21.71	22.5±1	1
Band41	20MHz	16QAM	41140	100RB#0	21.75	22.5±1	1

WIFI Mode (2.4G)

Mode	Channel number	Frequency (MHz)	Data rate (Mbps)	Average Output Power(dBm)	Average Tune up limited(dBm)
802.11b	1	2412	1	14.87	13.5±2
	6	2437	1	15.33	13.5±2
	11	2462	1	15.21	13.5±2
802.11g	1	2412	6	12.43	13.5±2
	6	2437	6	13.30	13.5±2
	11	2462	6	12.89	13.5±2
802.11n(HT20)	1	2412	MCS0	12.35	13.5±2
	6	2437	MCS0	13.22	13.5±2
	11	2462	MCS0	12.86	13.5±2
802.11n(HT40)	3	2422	MCS0	11.85	13.5±2
	6	2437	MCS0	12.18	13.5±2
	9	2452	MCS0	12.47	13.5±2

WIFI Mode (5G)

Mode	Frequency (MHz)	Data rate (Mbps)	Output Power(dBm)	Tune up limited(dBm)
11A	5180	MCS0	7.94	8.0±1
	5200	MCS0	8.09	8.0±1
	5240	MCS0	8.12	8.0±1
	5745	MCS0	6.45	6.0±1
	5785	MCS0	6.01	6.0±1
	5825	MCS0	5.65	6.0±1
11N20	5180	MCS0	7.68	8.0±1
	5200	MCS0	7.69	8.0±1
	5240	MCS0	8.41	8.0±1
	5745	MCS0	6.29	6.0±1
	5785	MCS0	5.95	6.0±1
	5825	MCS0	5.88	6.0±1
11N40	5190	MCS0	8.23	8.0±1
	5230	MCS0	8.52	8.0±1
	5755	MCS0	6.11	6.0±1
	5795	MCS0	6.2	6.0±1
11AC20	5180	MCS0	8.07	8.0±1
	5200	MCS0	8.51	8.0±1
	5240	MCS0	8.64	8.0±1
	5745	MCS0	6.98	6.0±1
	5785	MCS0	6.87	6.0±1
	5825	MCS0	6.41	6.0±1
11AC40	5190	MCS0	8.37	8.0±1
	5230	MCS0	8.4	8.0±1
	5755	MCS0	6.54	6.0±1
	5795	MCS0	6.06	6.0±1
11AC80	5210	MCS0	8.35	8.0±1
	5775	MCS0	6.52	6.0±1

Bluetooth Measurement Result

Mode	Frequency (MHz)	Output Power(dBm)	Tune up limited(dBm)
GFSK	2402	8.18	7.5±1
	2441	7.79	7.5±1
	2480	6.61	7.5±1
π/4DQPSK	2402	7.69	7.0±1
	2441	7.15	7.0±1
	2480	6.27	7.0±1
8DPSK	2402	7.33	6.5±1
	2441	6.81	6.5±1
	2480	5.94	6.5±1

BLE Measurement Result

Channel number	Frequency (MHz)	Output Power(dBm)	Tune up limited(dBm)
0	2402	-8.79	-8.0±1
19	2440	-7.30	-8.0±1
39	2480	-7.88	-8.0±1

NFC Measurement Result

Frequency (MHz)	Output Power(dBm)	Tune up limited(dBm)
13.56	-30.93	-31.0±1

11.2 SAR TEST RESULTS

Band	Mode	Test Position	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
WCDMA II	RMC12.2K	Right Cheek	9538	-	-	23.0	22.53	0.1170	0.13
WCDMA II	RMC12.2K	Right Tilted	9538	-	-	23.0	22.53	0.1050	0.12
WCDMA II	RMC12.2K	Left Cheek	9538	-	-	23.0	22.53	0.2260	**0.25**
WCDMA II	RMC12.2K	Left Tilted	9538	-	-	23.0	22.53	0.0697	0.08
WCDMA V	RMC12.2K	Right Cheek	4182	-	-	23.0	22.57	0.1900	**0.21**
WCDMA V	RMC12.2K	Right Tilted	4182	-	-	23.0	22.57	0.1190	0.13
WCDMA V	RMC12.2K	Left Cheek	4182	-	-	23.0	22.57	0.1840	0.20
WCDMA V	RMC12.2K	Left Tilted	4182	-	-	23.0	22.57	0.1300	0.14
LTE 2	QPSK20M	Right Cheek	19100	1	49	23.0	22.98	0.117	0.12
LTE 2	QPSK20M	Right Tilted	19100	1	49	23.0	22.98	0.069	0.07
LTE 2	QPSK20M	Left Cheek	19100	1	49	23.0	22.98	0.261	0.26
LTE 2	QPSK20M	Left Tilted	19100	1	49	23.0	22.98	0.056	0.06
LTE 2	QPSK20M	Right Cheek	19100	50	25	22.0	21.90	0.111	0.11
LTE 2	QPSK20M	Right Tilted	19100	50	25	22.0	21.90	0.062	0.06
LTE 2	QPSK20M	Left Cheek	19100	50	25	22.0	21.90	0.249	0.25
LTE 2	QPSK20M	Left Tilted	19100	50	25	22.0	21.90	0.051	0.05
LTE 4	QPSK20M	Right Cheek	20050	1	49	22.5	22.38	0.128	0.13
LTE 4	QPSK20M	Right Tilted	20050	1	49	22.5	22.38	0.045	0.05
LTE 4	QPSK20M	Left Cheek	20050	1	49	22.5	22.38	0.121	0.12
LTE 4	QPSK20M	Left Tilted	20050	1	49	22.5	22.38	0.053	0.05
LTE 4	QPSK20M	Right Cheek	20050	50	25	21.5	21.30	0.117	0.12
LTE 4	QPSK20M	Right Tilted	20050	50	25	21.5	21.30	0.041	0.04
LTE 4	QPSK20M	Left Cheek	20050	50	25	21.5	21.30	0.108	0.11
LTE 4	QPSK20M	Left Tilted	20050	50	25	21.5	21.30	0.044	0.05
LTE 5	QPSK10M	Right Cheek	20450	1	24	23.5	23.40	0.148	0.15
LTE 5	QPSK10M	Right Tilted	20450	1	24	23.5	23.40	0.130	0.13
LTE 5	QPSK10M	Left Cheek	20450	1	24	23.5	23.40	0.145	0.15
LTE 5	QPSK10M	Left Tilted	20450	1	24	23.5	23.40	0.129	0.13
LTE 5	QPSK10M	Right Cheek	20525	50	0	22.0	21.90	0.131	0.13
LTE 5	QPSK10M	Right Tilted	20525	50	0	22.0	21.90	0.124	0.13
LTE 5	QPSK10M	Left Cheek	20525	50	0	22.0	21.90	0.128	0.13
LTE 5	QPSK10M	Left Tilted	20525	50	0	22.0	21.90	0.111	0.11
LTE 7	QPSK20M	Right Cheek	21350	1	49	23.0	22.96	0.205	0.21
LTE 7	QPSK20M	Right Tilted	21350	1	49	23.0	22.96	0.144	0.15
LTE 7	QPSK20M	Left Cheek	21350	1	49	23.0	22.96	0.420	0.42
LTE 7	QPSK20M	Left Tilted	21350	1	49	23.0	22.96	0.077	0.08
LTE 7	QPSK20M	Right Cheek	21350	50	25	22.0	21.73	0.189	0.20
LTE 7	QPSK20M	Right Tilted	21350	50	25	22.0	21.73	0.132	0.14
LTE 7	QPSK20M	Left Cheek	21350	50	25	22.0	21.73	0.396	0.42
LTE 7	QPSK20M	Left Tilted	21350	50	25	22.0	21.73	0.061	0.06

Band	Mode	Test Position	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
LTE 13	QPSK10M	Right Cheek	23230	1	24	23.5	23.11	0.117	0.13
LTE 13	QPSK10M	Right Tilted	23230	1	24	23.5	23.11	0.077	0.08
LTE 13	QPSK10M	Left Cheek	23230	1	24	23.5	23.11	0.124	0.14
LTE 13	QPSK10M	Left Tilted	23230	1	24	23.5	23.11	0.091	0.10
LTE 13	QPSK10M	Right Cheek	23230	50	0	22.0	21.98	0.101	0.10
LTE 13	QPSK10M	Right Tilted	23230	50	0	22.0	21.98	0.064	0.06
LTE 13	QPSK10M	Left Cheek	23230	50	0	22.0	21.98	0.112	0.11
LTE 13	QPSK10M	Left Tilted	23230	50	0	22.0	21.98	0.078	0.08
LTE 17	QPSK10M	Right Cheek	23800	1	24	23.0	22.99	0.099	0.10
LTE 17	QPSK10M	Right Tilted	23800	1	24	23.0	22.99	0.067	0.07
LTE 17	QPSK10M	Left Cheek	23800	1	24	23.0	22.99	0.101	0.10
LTE 17	QPSK10M	Left Tilted	23800	1	24	23.0	22.99	0.070	0.07
LTE 17	QPSK10M	Right Cheek	23780	50	0	22.0	21.89	0.084	0.09
LTE 17	QPSK10M	Right Tilted	23780	50	0	22.0	21.89	0.051	0.05
LTE 17	QPSK10M	Left Cheek	23780	50	0	22.0	21.89	0.088	0.09
LTE 17	QPSK10M	Left Tilted	23780	50	0	22.0	21.89	0.059	0.06
LTE 38	QPSK20M	Right Cheek	37850	1	49	24.0	23.96	0.095	0.10
LTE 38	QPSK20M	Right Tilted	37850	1	49	24.0	23.96	0.044	0.04
LTE 38	QPSK20M	Left Cheek	37850	1	49	24.0	23.96	0.019	0.02
LTE 38	QPSK20M	Left Tilted	37850	1	49	24.0	23.96	0.021	0.02
LTE 38	QPSK20M	Right Cheek	38150	50	25	23.0	22.67	0.081	0.09
LTE 38	QPSK20M	Right Tilted	38150	50	25	23.0	22.67	0.034	0.04
LTE 38	QPSK20M	Left Cheek	38150	50	25	23.0	22.67	0.011	0.01
LTE 38	QPSK20M	Left Tilted	38150	50	25	23.0	22.67	0.010	0.01
LTE 41	QPSK20M	Right Cheek	40690	1	49	24.5	24.17	0.075	0.08
LTE 41	QPSK20M	Right Tilted	40690	1	49	24.5	24.17	0.044	0.05
LTE 41	QPSK20M	Left Cheek	40690	1	49	24.5	24.17	0.019	0.02
LTE 41	QPSK20M	Left Tilted	40690	1	49	24.5	24.17	0.022	0.02
LTE 41	QPSK20M	Right Cheek	40690	50	25	23.0	22.92	0.068	0.07
LTE 41	QPSK20M	Right Tilted	40690	50	25	23.0	22.92	0.037	0.04
LTE 41	QPSK20M	Left Cheek	40690	50	25	23.0	22.92	0.011	0.01
LTE 41	QPSK20M	Left Tilted	40690	50	25	23.0	22.92	0.014	0.01
2.4G WIFI	802.11b	Right Cheek	6	-	-	15.5	15.33	0.136	0.14
2.4G WIFI	802.11b	Right Tilted	6	-	-	15.5	15.33	0.118	0.12
2.4G WIFI	802.11b	Left Cheek	6	-	-	15.5	15.33	0.319	**0.33**
2.4G WIFI	802.11b	Left Tilted	6	-	-	15.5	15.33	0.279	0.29
5.2G WIFI	802.11ac	Right Cheek	48	-	-	9.0	8.64	0.318	0.35
5.2G WIFI	802.11ac	Right Tilted	48	-	-	9.0	8.64	0.341	0.37
5.2G WIFI	802.11ac	Left Cheek	48	-	-	9.0	8.64	0.359	**0.39**
5.2G WIFI	802.11ac	Left Tilted	48	-	-	9.0	8.64	0.316	0.34
5.8G WIFI	802.11ac	Right Cheek	149	-	-	7.0	6.98	0.300	0.30
5.8G WIFI	802.11ac	Right Tilted	149	-	-	7.0	6.98	0.321	0.32
5.8G WIFI	802.11ac	Left Cheek	149	-	-	7.0	6.98	0.323	**0.32**

Band	Mode	Test Position	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
5.8G WIFI	802.11ac	Left Tilted	149	-	-	7.0	6.98	0.249	0.25

Table 6: Head SAR test results

Band	Mode	Test Position	Separation Distance (mm)	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
WCDMA II	RMC12.2K	Front Face	10	9538	-	-	23.0	22.53	0.378	0.42
WCDMA II	RMC12.2K	Rear Face	10	9538	-	-	23.0	22.53	0.622	**0.69**
WCDMA II	RMC12.2K	Left Side	10	9538	-	-	23.0	22.53	0.294	0.33
WCDMA II	RMC12.2K	Right Side	10	9538	-	-	23.0	22.53	0.079	0.09
WCDMA II	RMC12.2K	Bottom Side	10	9538	-	-	23.0	22.53	0.382	0.43
WCDMA V	RMC12.2K	Front Face	10	4182	-	-	23.0	22.57	0.317	0.35
WCDMA V	RMC12.2K	Rear Face	10	4182	-	-	23.0	22.57	0.391	**0.43**
WCDMA V	RMC12.2K	Left Side	10	4182	-	-	23.0	22.57	0.135	0.15
WCDMA V	RMC12.2K	Right Side	10	4182	-	-	23.0	22.57	0.070	0.15
WCDMA V	RMC12.2K	Bottom Side	10	4182	-	-	23.0	22.57	0.239	0.26
LTE 2	QPSK20M	Front Face	10	19100	1	49	23.0	22.98	0.328	0.33
LTE 2	QPSK20M	Rear Face	10	19100	1	49	23.0	22.98	0.584	0.59
LTE 2	QPSK20M	Left Side	10	19100	1	49	23.0	22.98	0.260	0.26
LTE 2	QPSK20M	Right Side	10	19100	1	49	23.0	22.98	0.072	0.07
LTE 2	QPSK20M	Bottom Side	10	19100	1	49	23.0	22.98	0.359	0.36
LTE 2	QPSK20M	Front Face	10	19100	50	25	22.0	21.90	0.313	0.32
LTE 2	QPSK20M	Rear Face	10	19100	50	25	22.0	21.90	0.566	0.58
LTE 2	QPSK20M	Left Side	10	19100	50	25	22.0	21.90	0.241	0.25
LTE 2	QPSK20M	Right Side	10	19100	50	25	22.0	21.90	0.065	0.07
LTE 2	QPSK20M	Bottom Side	10	19100	50	25	22.0	21.90	0.338	0.35
LTE 4	QPSK20M	Front Face	10	20050	1	49	22.5	22.38	0.232	0.24
LTE 4	QPSK20M	Rear Face	10	20050	1	49	22.5	22.38	0.439	0.45
LTE 4	QPSK20M	Left Side	10	20050	1	49	22.5	22.38	0.2	0.21
LTE 4	QPSK20M	Right Side	10	20050	1	49	22.5	22.38	0.0306	0.03
LTE 4	QPSK20M	Bottom Side	10	20050	1	49	22.5	22.38	0.194	0.20
LTE 4	QPSK20M	Front Face	10	20050	50	25	21.5	21.30	0.211	0.22
LTE 4	QPSK20M	Rear Face	10	20050	50	25	21.5	21.30	0.41	0.43
LTE 4	QPSK20M	Left Side	10	20050	50	25	21.5	21.30	0.179	0.19
LTE 4	QPSK20M	Right Side	10	20050	50	25	21.5	21.30	0.0274	0.03
LTE 4	QPSK20M	Bottom Side	10	20050	50	25	21.5	21.30	0.179	0.19
LTE 5	QPSK10M	Front Face	10	20450	1	24	23.5	23.40	0.299	0.31
LTE 5	QPSK10M	Rear Face	10	20450	1	24	23.5	23.40	0.313	0.32
LTE 5	QPSK10M	Left Side	10	20450	1	24	23.5	23.40	0.106	0.11
LTE 5	QPSK10M	Right Side	10	20450	1	24	23.5	23.40	0.071	0.07
LTE 5	QPSK10M	Bottom Side	10	20450	1	24	23.5	23.40	0.235	0.24
LTE 5	QPSK10M	Front Face	10	20525	50	0	22.0	21.90	0.282	0.29
LTE 5	QPSK10M	Rear Face	10	20525	50	0	22.0	21.90	0.301	0.31
LTE 5	QPSK10M	Left Side	10	20525	50	0	22.0	21.90	0.091	0.09
LTE 5	QPSK10M	Right Side	10	20525	50	0	22.0	21.90	0.058	0.06
LTE 5	QPSK10M	Bottom Side	10	20525	50	0	22.0	21.90	0.221	0.23

Band	Mode	Test Position	Separation Distance (mm)	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
LTE 7	QPSK20M	Front Face	10	21350	1	49	23.0	22.96	0.060	0.06
LTE 7	QPSK20M	Rear Face	10	21350	1	49	23.0	22.96	0.856	0.86
LTE 7	QPSK20M	Rear Face	10	20850	1	49	23.0	22.96	0.818	0.83
LTE 7	QPSK20M	Rear Face	10	21100	1	49	23.0	22.96	0.942	0.95
LTE 7	QPSK20M	Left Side	10	21350	1	49	23.0	22.96	0.666	0.67
LTE 7	QPSK20M	Right Side	10	21350	1	49	23.0	22.96	0.007	0.01
LTE 7	QPSK20M	Bottom Side	10	21350	1	49	23.0	22.96	0.955	0.96
LTE 7	QPSK20M	Bottom Side	10	20850	1	49	23.0	22.45	0.869	0.99
LTE 7	QPSK20M	Bottom Side	10	21100	1	49	23.0	22.52	1.150	1.28
LTE 7	QPSK20M	Front Face	10	21350	50	25	22.0	21.73	0.052	0.06
LTE 7	QPSK20M	Rear Face	10	21350	50	25	22.0	21.73	0.731	0.78
LTE 7	QPSK20M	Rear Face	10	20850	50	25	22.0	21.19	0.697	0.84
LTE 7	QPSK20M	Rear Face	10	21100	50	25	22.0	21.47	0.824	0.93
LTE 7	QPSK20M	Left Side	10	21350	50	25	22.0	21.73	0.545	0.58
LTE 7	QPSK20M	Right Side	10	21350	50	25	22.0	21.73	0.005	0.01
LTE 7	QPSK20M	Bottom Side	10	21350	50	25	22.0	21.73	0.847	0.90
LTE 7	QPSK20M	Bottom Side	10	20850	50	25	22.0	21.19	0.738	0.89
LTE 7	QPSK20M	Bottom Side	10	21100	50	25	22.0	21.47	1.084	1.22
LTE 7	QPSK20M	Rear Face	10	21350	100	0	22.0	21.68	0.711	0.77
LTE 7	QPSK20M	Rear Face	10	20850	100	0	22.0	21.26	0.686	0.81
LTE 7	QPSK20M	Rear Face	10	21100	100	0	22.0	21.48	0.821	0.93
LTE 7	QPSK20M	Bottom Side	10	21350	100	0	22.0	21.68	0.836	0.90
LTE 7	QPSK20M	Bottom Side	10	20850	100	0	22.0	21.26	0.734	0.87
LTE 7	QPSK20M	Bottom Side	10	21100	100	0	22.0	21.48	1.072	1.21
LTE 13	QPSK10M	Front Face	10	23230	1	24	23.5	23.11	0.153	0.17
LTE 13	QPSK10M	Rear Face	10	23230	1	24	23.5	23.11	0.152	0.17
LTE 13	QPSK10M	Left Side	10	23230	1	24	23.5	23.11	0.105	0.11
LTE 13	QPSK10M	Right Side	10	23230	1	24	23.5	23.11	0.054	0.06
LTE 13	QPSK10M	Bottom Side	10	23230	1	24	23.5	23.11	0.116	0.13
LTE 13	QPSK10M	Front Face	10	23230	50	0	22.0	21.98	0.148	0.15
LTE 13	QPSK10M	Rear Face	10	23230	50	0	22.0	21.98	0.145	0.15
LTE 13	QPSK10M	Left Side	10	23230	50	0	22.0	21.98	0.091	0.09
LTE 13	QPSK10M	Right Side	10	23230	50	0	22.0	21.98	0.046	0.05
LTE 13	QPSK10M	Bottom Side	10	23230	50	0	22.0	21.98	0.102	0.10
LTE 17	QPSK10M	Front Face	10	23800	1	24	23.0	22.99	0.088	0.09
LTE 17	QPSK10M	Rear Face	10	23800	1	24	23.0	22.99	0.113	0.11
LTE 17	QPSK10M	Left Side	10	23800	1	24	23.0	22.99	0.081	0.08
LTE 17	QPSK10M	Right Side	10	23800	1	24	23.0	22.99	0.047	0.05
LTE 17	QPSK10M	Bottom Side	10	23800	1	24	23.0	22.99	0.060	0.06
LTE 17	QPSK10M	Front Face	10	23800	50	0	22.0	21.89	0.081	0.08
LTE 17	QPSK10M	Rear Face	10	23800	50	0	22.0	21.89	0.108	0.11
LTE 17	QPSK10M	Left Side	10	23800	50	0	22.0	21.89	0.068	0.07
LTE 17	QPSK10M	Right Side	10	23800	50	0	22.0	21.89	0.041	0.04
LTE 17	QPSK10M	Bottom Side	10	23800	50	0	22.0	21.89	0.052	0.05
LTE 38	QPSK20M	Front Face	10	37850	1	49	24.0	23.96	0.220	0.22
LTE 38	QPSK20M	Rear Face	10	37850	1	49	24.0	23.96	0.262	0.26

Band	Mode	Test Position	Separation Distance (mm)	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
LTE 38	QPSK20M	Left Side	10	37850	1	49	24.0	23.96	0.282	0.28
LTE 38	QPSK20M	Right Side	10	37850	1	49	24.0	23.96	0.009	0.01
LTE 38	QPSK20M	Bottom Side	10	37850	1	49	24.0	23.96	0.5	0.50
LTE 38	QPSK20M	Front Face	10	37850	50	25	23.0	22.67	0.204	0.22
LTE 38	QPSK20M	Rear Face	10	37850	50	25	23.0	22.67	0.241	0.26
LTE 38	QPSK20M	Left Side	10	37850	50	25	23.0	22.67	0.261	0.28
LTE 38	QPSK20M	Right Side	10	37850	50	25	23.0	22.67	0.007	0.01
LTE 38	QPSK20M	Bottom Side	10	37850	50	25	23.0	22.67	0.468	0.50
LTE 41	QPSK20M	Front Face	10	40690	1	49	24.5	24.17	0.240	0.26
LTE 41	QPSK20M	Rear Face	10	40690	1	49	24.5	24.17	0.203	0.22
LTE 41	QPSK20M	Left Side	10	40690	1	49	24.5	24.17	0.245	0.26
LTE 41	QPSK20M	Right Side	10	40690	1	49	24.5	24.17	0.009	0.01
LTE 41	QPSK20M	Bottom Side	10	40690	1	49	24.5	24.17	0.346	0.37
LTE 41	QPSK20M	Front Face	10	40690	50	25	23.0	22.92	0.233	0.24
LTE 41	QPSK20M	Rear Face	10	40690	50	25	23.0	22.92	0.176	0.18
LTE 41	QPSK20M	Left Side	10	40690	50	25	23.0	22.92	0.237	0.24
LTE 41	QPSK20M	Right Side	10	40690	50	25	23.0	22.92	0.007	0.01
LTE 41	QPSK20M	Bottom Side	10	40690	50	25	23.0	22.92	0.312	0.32
2.4G WIFI	802.11b	Front Face	10	6	-	-	15.5	15.33	0.133	0.14
2.4G WIFI	802.11b	Rear Face	10	6	-	-	15.5	15.33	0.252	**0.26**
2.4G WIFI	802.11b	Left Side	10	6	-	-	15.5	15.33	0.003	0.00
2.4G WIFI	802.11b	Right Side	10	6	-	-	15.5	15.33	0.185	0.19
2.4G WIFI	802.11b	Top Side	10	6	-	-	15.5	15.33	0.016	0.02
5.2G WIFI	802.11ac	Front Face	10	48	-	-	9.0	8.64	0.048	0.05
5.2G WIFI	802.11ac	Rear Face	10	48	-	-	9.0	8.64	0.082	0.09
5.2G WIFI	802.11ac	Left Side	10	48	-	-	9.0	8.64	0.004	0.00
5.2G WIFI	802.11ac	Right Side	10	48	-	-	9.0	8.64	0.125	**0.14**
5.2G WIFI	802.11ac	Top Side	10	48	-	-	9.0	8.64	0.023	0.03
5.8G WIFI	802.11ac	Front Face	10	149	-	-	7.0	6.98	0.116	**0.12**
5.8G WIFI	802.11ac	Rear Face	10	149	-	-	7.0	6.98	0.064	0.06
5.8G WIFI	802.11ac	Left Side	10	149	-	-	7.0	6.98	0.013	0.01
5.8G WIFI	802.11ac	Right Side	10	149	-	-	7.0	6.98	0.108	0.11
5.8G WIFI	802.11ac	Top Side	10	149	-	-	7.0	6.98	0.011	0.01

Table 7: Body worn and Hotspot SAR test results

Note:

1. Due to both Body-worn and Hotspot are measured with the separation distance of 10mm, the test data is shared.
2. According to FCC KDB 2484227 D01v02r02 section 5.2.2, DSSS SAR value*(OFDM power/DSSS power)=0.33*(10^(15.5/10)/10^(15.5/10))=0.33W/kg≤1.2W/kg, SAR for OFDM is not required.

11.3 Measurement variability consideration

According to KDB 865664 D01v01r04 section 2.8.1, repeated measurements are required following the procedures as below:

1. Repeated measurement is not required when the original highest measured SAR is < 0.80W/kg; steps 2) through 4) do not apply.
2. When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3. Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4. Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

11.3.1 Repeated SAR

Band	Mode	Test Position	Separation Distance (mm)	Channel	RB	offset	Maximum Tune-up (dBm)	Conducted Power (dBm)	Measurement 1g SAR	Report 1g SAR
LTE 7	QPSK20M	Rear Face	10	21350	1	49	23.0	22.96	0.851	0.86
LTE 7	QPSK20M	Rear Face	10	20850	1	49	23.0	22.96	0.813	0.82
LTE 7	QPSK20M	Rear Face	10	21100	1	49	23.0	22.96	0.939	0.95
LTE 7	QPSK20M	Bottom Side	10	21350	1	49	23.0	22.96	0.954	0.96
LTE 7	QPSK20M	Bottom Side	10	20850	1	49	23.0	22.45	0.867	0.98
LTE 7	QPSK20M	Bottom Side	10	21100	1	49	23.0	22.52	1.148	1.28
LTE 7	QPSK20M	Rear Face	10	21350	50	25	22.0	21.73	0.728	0.77
LTE 7	QPSK20M	Rear Face	10	20850	50	25	22.0	21.19	0.698	0.84
LTE 7	QPSK20M	Rear Face	10	21100	50	25	22.0	21.47	0.823	0.93
LTE 7	QPSK20M	Bottom Side	10	21350	50	25	22.0	21.73	0.847	0.90
LTE 7	QPSK20M	Bottom Side	10	20850	50	25	22.0	21.19	0.732	0.88
LTE 7	QPSK20M	Bottom Side	10	21100	50	25	22.0	21.47	1.080	1.22
LTE 7	QPSK20M	Rear Face	10	21350	100	0	22.0	21.68	0.714	0.77
LTE 7	QPSK20M	Rear Face	10	20850	100	0	22.0	21.26	0.681	0.81
LTE 7	QPSK20M	Rear Face	10	21100	100	0	22.0	21.48	0.819	0.92
LTE 7	QPSK20M	Bottom Side	10	21350	100	0	22.0	21.68	0.833	0.90
LTE 7	QPSK20M	Bottom Side	10	20850	100	0	22.0	21.26	0.732	0.87
LTE 7	QPSK20M	Bottom Side	10	21100	100	0	22.0	21.48	1.071	1.21

11.4 Simultaneous Transmission SAR Analysis.

List of Mode for Simultaneous Multi-band Transmission:

Simultaneous TX Combination
WWAN + WIFI 5GHz + BT + NFC
WWAN + WIFI 5GHz + WIFI 2.4GHz + NFC

Remark:

1. WCDMA/LTE share the same antenna and cannot transmit simultaneously.
2. VOIP is not supported at 3G data mode.
3. WIFI 2.4GHz and Bluetooth share the same antenna and cannot transmit simultaneously.
4. According to the KDB 447498 D01, when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
   (max. power of channel, including tune-up tolerance, mW)/ (min. test separation distance, mm)] ·[√f(GHz)/x] W/kg for test separation distances ≤50 mm;
   where x = 7.5 for 1-g SAR, and x = 18.75 for 10-g SAR.
5. The maximum SAR summation is calculated based on the same configuration and test position

For simultaneous transmission analysis, SAR is estimated per KDB 447498 D01 as below:

Bluetooth:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g)
8.5	7.08	10	2.48	7.5	0.15

NFC:

Tune-Up Power (dBm)	Max. Power (mW)	Distance (mm)	Frequency (GHz)	X	SAR(1g)
-30	0.001	10	13.56	7.5	0.00005

11.5 Simultaneous Transmission SAR Value

Position / SAR 1g(W/Kg)	Right Cheek	Right Tilted	Left Cheek	Left Tilted	Front Face	Rear Face	Left Side	Right Side	Bottom Side	Top Side
UMTS B2	0.13	0.12	0.25	0.08	0.42	0.69	0.33	0.09	0.43	-
UMTS B5	0.21	0.13	0.20	0.14	0.35	0.43	0.15	0.15	0.26	-
LTE B2	0.12	0.07	0.26	0.06	0.33	0.59	0.26	0.07	0.36	-
LTE B4	0.13	0.05	0.12	0.05	0.24	0.45	0.21	0.03	0.20	-
LTE B5	0.15	0.13	0.15	0.13	0.31	0.32	0.11	0.07	0.24	-
LTE B7	0.21	0.15	0.42	0.08	0.06	0.86	0.67	0.01	1.28	-
LTE B13	0.13	0.08	0.14	0.10	0.17	0.17	0.11	0.06	0.13	-
LTE B17	0.10	0.07	0.10	0.07	0.09	0.11	0.08	0.05	0.06	-
LTE B38	0.10	0.04	0.02	0.02	0.22	0.26	0.28	0.01	0.50	-
LTE B41	0.08	0.05	0.02	0.02	0.26	0.22	0.26	0.01	0.37	-
WiFi 2.4G	0.14	0.12	0.33	0.29	0.14	0.26	0.00	0.19	-	0.02
WiFi 5.2G	0.35	0.37	0.39	0.34	0.05	0.09	0.00	0.14	-	0.03
WiFi 5.8G	0.30	0.32	0.32	0.25	0.12	0.06	0.01	0.11	-	0.01
BT	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
NFC	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005	0.00005
WWAN + WIFI 5GHz + BT + NFC	0.71	0.67	0.96	0.63	0.69	1.1	0.83	0.44	1.43	0.18
WWAN + WIFI 5GHz + WIFI 2.4GHz + NFC	0.7	0.64	1.14	0.77	0.68	1.21	0.68	0.48	1.28	0.05

Remark: BT the 1g SAR value is not being captured by the measurement system, the 1g-SAR value is conservatively used for simultaneous transmission analysis.

11.6 MAXIMUM GRAPH RESULTS

The graph results see ANNEX C.

12. Measurement Uncertainty

When the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

13. Main Test Instrument

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
SZ060-01	SAR Test System	SPEAG	DASY52 SAR TX90XL	F14/5YJ0B1/A/01	10/22/2019	1 year
SZ060-01-01	E-Field Probe	SPEAG	EX3DV4	7322	10/22/2019	1 year
SZ060-01-03	System Validation Dipole	SPEAG	D750V3	1141	09/23/2019	3 year
SZ060-01-04	System Validation Dipole	SPEAG	D835V2	4d196	9/6/2018	3 year
SZ060-01-06	System Validation Dipole	SPEAG	D1750V2	1138	9/13/2018	3 year
SZ060-01-07	System Validation Dipole	SPEAG	D1900V2	5d203	9/11/2018	3 year
SZ060-01-11	System Validation Dipole	SPEAG	D2600V2	1108	8/31/2018	3 year
SZ060-01-12	System Validation Dipole	SPEAG	D5GHzV2	1218	8/31/2018	3 year
SZ060-01-13	Data Acquisition Unit	SPEAG	DAE4	1473	9/24/2019	1 year
SZ060-01-14	Dielectric Assessment Kit	SPEAG	DAKS 3.5	1056	N/A	N/A
SZ060-01-15	Vector Reflectometer	Copper Mountain Technologies	Planar R140	0090614	N/A	N/A
SZ060-01-16	Thermometer	LKM electronics GmbH	DTM3000	3477	8/6/2020	1 year
SZ060-01-17	Power Amplifier	Mini Circuits	ZHL-42W+	QA1449003	5/7/2020	1 year
SZ060-01-18	Power Amplifier	Mini Circuits	ZVE-8G+	111701437	5/7/2020	1 year
SZ060-01-19	SAM Twin Phantom	SPEAG	SAM Twin Phantom V5.0	1888	N/A	N/A
SZ060-01-20	SAM Twin Phantom	SPEAG	SAM Twin Phantom V5.0	1891	N/A	N/A
SZ060-01-21	ELI Phantom	SPEAG	ELI Phantom V6.0	2033	N/A	N/A
SZ180-13	MXG Vector Signal Generator	Keysight	N5182B	MY53051328	10/29/2019	1 year
SZ070-04	Directional Bridge	Agilent	86205A	MY31402141	12/24/2019	1 year
SZ182-02	RF Power Meter	Anritsu	ML2496A	1302005	5/27/2020	1 year
SZ182-03	Average power sensor	R&S	NRP-Z22	101689	5/27/2020	1 year
SZ065-06	Wideband Radio Communication Tester	R&S	CMU200	112012	5/27/2020	1 year
N/A	Device Holder	SPEAG	N/A	N/A	N/A	N/A

ANNEX A: TEST LAYOUT AND SETUP

The graph results see ANNEX A of 210916025SZN-007-Appendix A.

ANNEX B: SYSTEM CHECK RESULTS

The graph results see ANNEX B of 210916025SZN-007-Appendix A.

ANNEX C: MAXIMUM GRAPH RESULTS

The graph results see ANNEX C of 210916025SZN-007-Appendix A.

ANNEX D: SYSTEM VALIDATION

The graph results see ANNEX D of 210916025SZN-007-Appendix A.

ANNEX E: EUT PHOTO

The EUT photos are saved with filename: external photos.pdf & internal photos.pdf.

ANNEX F: PROBE CALIBRATION CERTIFICATE

The graph results see ANNEX F of 210916025SZN-007-Appendix B.

ANNEX G: DIPOLE CALIBRATION CERTIFICATE

The graph results see ANNEX G of 210916025SZN-007-Appendix B.

ANNEX H: DAE CALIBRATION CERTIFICATE

The graph results see ANNEX H of 210916025SZN-007-Appendix B.

**********End the Report**********