



# TESTREPORT

Applicant Name : ITEL MOBILE LIMITED  
Address : FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25  
SHAN MEI STREET FOTAN NT Hong Kong  
Report Number : RA230103-00224E-RF-00C  
FCC ID: 2AJMN-A662L

## Test Standard (s)

FCC PART 27; FCC PART 22H; FCC PART 24E; FCC PART 90

## Sample Description

Product Type: Mobile phone  
Model No.: A662L  
Multiple Model(s) No.: N/A  
Trade Mark: itel  
Date Received: 2023/01/03  
Report Date: 2023/02/13

|              |       |
|--------------|-------|
| Test Result: | Pass* |
|--------------|-------|

\* In the configuration tested, the EUT complied with the standards above.

## Prepared and Checked By:

## Approved By:

Andy Yu  
EMC Engineer

Candy Li  
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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DOCUMENT REVISION HISTORY

| Revision Number | Report Number          | Description of Revision | Date of Revision |
|-----------------|------------------------|-------------------------|------------------|
| 0               | RA230103-00224E-RF-00C | Original Report         | 2023/02/13       |

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range        | GSM 850: 824-849MHz(TX); 869-894MHz(RX)<br>PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX)<br>WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX)<br>WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX)<br>WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX)<br>LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX)<br>LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX)<br>LTE Band 5: 824-849MHz(TX); 869-894MHz(RX)<br>LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX)<br>LTE Band 12: 699-716MHz(TX); 729-746MHz(RX)<br>LTE Band 13: 777-787MHz(TX); 746-756MHz(RX)<br>LTE Band 17: 704-716MHz(TX); 734-746MHz(RX)<br>LTE Band 26(Part 22): 824-849MHz(TX); 869-894MHz(RX)<br>LTE Band 26(Part 90): 814-824MHz(TX); 859-869MHz(RX)<br>LTE Band 38: 2570-2620MHz(TX/RX)<br>LTE Band 41: 2535-2655MHz(TX/RX)<br>LTE Band 66: 1710-1780MHz(TX), 2110-2180MHz(RX) |
| Modulation Technique   | 2G: GMSK, 8PSK<br>3G: BPSK, QPSK, 16QAM<br>4G: QPSK, 16QAM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Antenna Specification* | GSM850/WCDMA Band5/LTE Band 5/LTE Band 26: -2.21dBi<br>PCS1900/WCDMA Band 2/ LTE Band 2: 1.14dBi<br>WCDMA Band 4/LTE Band 4/LTE Band 66: 1.31dBi<br>LTE Band 7/ LTE Band 38/ LTE Band 41: 0.93dBi<br>LTE Band 12/LTE Band 13/LTE Band 17: -2.71dBi<br>(provided by the applicant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Voltage Range          | DC 3.85V from battery or DC 5V from adapter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Sample serial number   | 1XEW-5 for Radiated Emissions Test<br>1XAZ-1 for RF Conducted Test<br>(Assigned by ATC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Sample/EUT Status      | Good condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Extreme condition*     | L.V.: Low Voltage 3.45V <sub>DC</sub><br>N.V.: Normal Voltage 3.85V <sub>DC</sub><br>H.V.: High Voltage 4.4V <sub>DC</sub><br>(provided by the applicant)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Adapter information    | Model: U100ISA<br>Input: AC 100-240V, 50/60Hz, 0.3A<br>Output: DC 5.0V, 2.0A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

### Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E, Part 27 and Part 90 of the Federal Communication Commissions rules.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services  
 Part 24 Subpart E - Personal Communication Services  
 Part 27 – Miscellaneous wireless communications services  
 Part 90 – Private Land Mobile Radio Service

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

## Measurement Uncertainty

| Parameter                          |                 | Uncertainty            |
|------------------------------------|-----------------|------------------------|
| Occupied Channel Bandwidth         |                 | 5%                     |
| RF Frequency                       |                 | $0.082 \times 10^{-7}$ |
| RF output power, conducted         |                 | 0.73dB                 |
| Unwanted Emission, conducted       |                 | 1.6dB                  |
| AC Power Lines Conducted Emissions |                 | 2.72dB                 |
| Emissions,<br>Radiated             | 9kHz - 30MHz    | 2.66dB                 |
|                                    | 30MHz - 1GHz    | 4.28dB                 |
|                                    | 1GHz - 18GHz    | 4.98dB                 |
|                                    | 18GHz - 26.5GHz | 5.06dB                 |
|                                    | 26.5GHz - 40GHz | 4.72dB                 |
| Temperature                        |                 | 1°C                    |
| Humidity                           |                 | 6%                     |
| Supply voltages                    |                 | 0.4%                   |

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## **Test Facility**

The Test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The final qualification test was performed with the EUT operating at normal mode.

Test was performed as below table:

| Frequency band               | Bandwidth (MHz)  | Test Frequency(MHz) |        |        |
|------------------------------|------------------|---------------------|--------|--------|
|                              |                  | Low                 | Middle | High   |
| GSM850                       | 0.25             | 824.2               | 836.6  | 848.8  |
| PCS1900                      | 0.25             | 1850.2              | 1880   | 1909.8 |
| WCDMA B2                     | 4.2              | 1852.4              | 1880   | 1907.6 |
| WCDMA B4                     | 4.2              | 1712.4              | 1732.6 | 1752.6 |
| WCDMA B5                     | 4.2              | 826.4               | 836.6  | 846.6  |
| LTE B2                       | 1.4              | 1850.7              | 1880   | 1909.3 |
|                              | 3                | 1851.5              | 1880   | 1908.5 |
|                              | 5                | 1852.5              | 1880   | 1907.5 |
|                              | 10               | 1855                | 1880   | 1905   |
|                              | 15               | 1857.5              | 1880   | 1902.5 |
|                              | 20               | 1860                | 1880   | 1900   |
| LTE B4                       | 1.4              | 1710.7              | 1732.5 | 1754.3 |
|                              | 3                | 1711.5              | 1732.5 | 1753.5 |
|                              | 5                | 1712.5              | 1732.5 | 1752.5 |
|                              | 10               | 1715                | 1732.5 | 1750   |
|                              | 15               | 1717.5              | 1732.5 | 1747.5 |
|                              | 20               | 1720                | 1732.5 | 1745   |
| LTE B5&<br>LTE B26(Part 22H) | 1.4              | 824.7               | 836.5  | 848.3  |
|                              | 3                | 825.5               | 836.5  | 847.5  |
|                              | 5                | 826.5               | 836.5  | 846.5  |
|                              | 10               | 829                 | 836.5  | 844    |
|                              | 15(only for B26) | 831.5               | 836.5  | 841.5  |
| LTE B7                       | 5                | 2502.5              | 2535   | 2567.5 |
|                              | 10               | 2505                | 2535   | 2565   |
|                              | 15               | 2507.5              | 2535   | 2562.5 |
|                              | 20               | 2510                | 2535   | 2560   |
| LTE B12                      | 1.4              | 699.7               | 707.5  | 715.3  |
|                              | 3                | 700.5               | 707.5  | 714.5  |
|                              | 5                | 701.5               | 707.5  | 713.5  |
|                              | 10               | 704                 | 707.5  | 711    |
| LTE B13                      | 5                | 779.5               | 782    | 784.5  |
|                              | 10               | /                   | 782    | /      |
| LTE B17                      | 5                | 706.5               | 710    | 713.5  |
|                              | 10               | 709                 | 710    | 711    |

| Frequency band    | Bandwidth (MHz) | Test Frequency(MHz) |        |        |
|-------------------|-----------------|---------------------|--------|--------|
|                   |                 | Low                 | Middle | High   |
| LTE B26(Part 90S) | 1.4             | 814.7               | 819    | 823.3  |
|                   | 3               | 815.5               | 819    | 822.5  |
|                   | 5               | 816.5               | 819    | 821.5  |
|                   | 10              | /                   | 819    | /      |
| LTE B38           | 5               | 2572.5              | 2595   | 2617.5 |
|                   | 10              | 2575                | 2595   | 2615   |
|                   | 15              | 2577.5              | 2595   | 2612.5 |
|                   | 20              | 2580                | 2595   | 2610   |
| LTE B41           | 5               | 2537.5              | 2595   | 2652.5 |
|                   | 10              | 2540                | 2595   | 2650   |
|                   | 15              | 2542.5              | 2595   | 2647.5 |
|                   | 20              | 2545                | 2595   | 2645   |
| LTE B66           | 1.4             | 1710.7              | 1745   | 1779.3 |
|                   | 3               | 1711.5              | 1745   | 1778.5 |
|                   | 5               | 1712.5              | 1745   | 1777.5 |
|                   | 10              | 1715                | 1745   | 1775   |
|                   | 15              | 1717.5              | 1745   | 1772.5 |
|                   | 20              | 1720                | 1745   | 1770   |

### Equipment Modifications

No modification was made to the EUT.

### Support Equipment List and Details

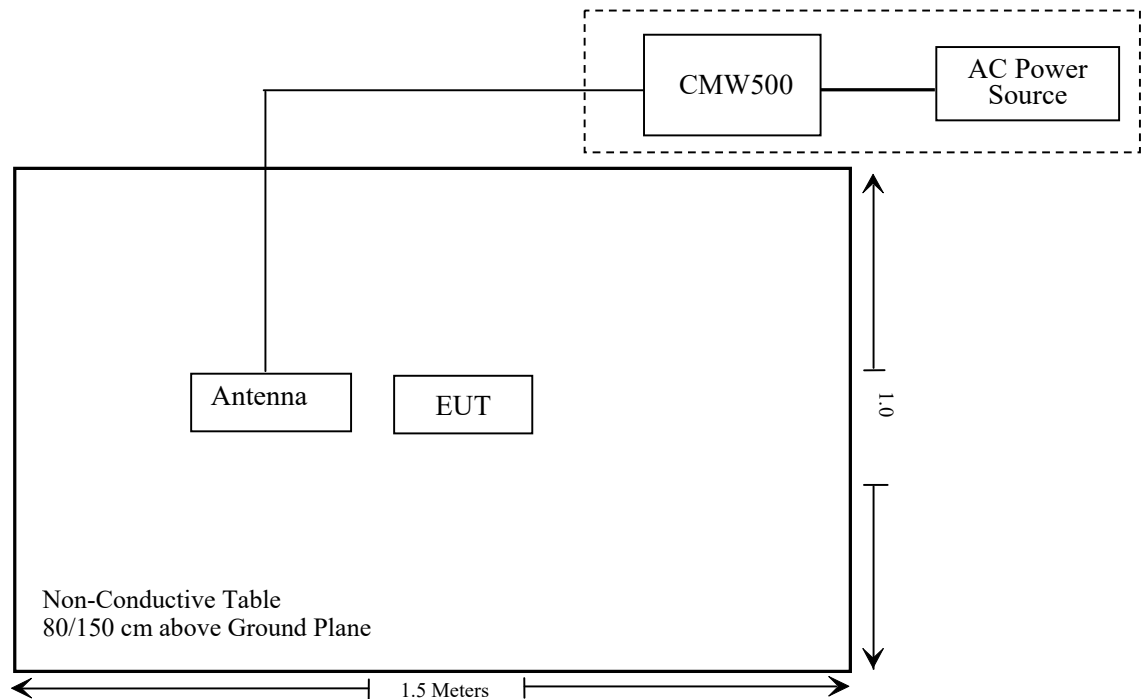
| Manufacturer    | Description                         | Model  | Serial Number |
|-----------------|-------------------------------------|--------|---------------|
| Rohde & Schwarz | Wideband Radio Communication Tester | CMW500 | 154606        |

### Support Cable Description

| Cable Description                 | Length (m) | From / Port | To     |
|-----------------------------------|------------|-------------|--------|
| Unshielded Un-detachable AC cable | 1.2        | AC Power    | CMW500 |



Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

| FCC Rules                                                                         | Description of Test                    | Result         |
|-----------------------------------------------------------------------------------|----------------------------------------|----------------|
| § 1.1307 ,§2.1093                                                                 | RF Exposure (SAR)                      | Compliant*     |
| §2.1046; § 22.913 (a) (d);<br>§ 24.232 (c) (d); §27.50(b) (c) (d) (h);<br>§90.635 | RF Output Power                        | Compliant      |
| § 2.1047                                                                          | Modulation Characteristics             | Not Applicable |
| § 2.1049; § 22.905;<br>§ 22.917; § 24.238; §27.53<br>§90.209                      | Occupied Bandwidth                     | Compliant      |
| § 2.1051; §22.917 (a);<br>§ 24.238 (a); §27.53;<br>§90.691                        | Spurious Emissions at Antenna Terminal | Compliant      |
| § 2.1053; § 22.917 (a);<br>§ 24.238 (a); §27.53<br>§90.691                        | Field Strength of Spurious Radiation   | Compliant      |
| § 22.917 (a);<br>§ 24.238 (a); §27.53(c)(g) (h) (m)<br>§90.691                    | Band Edge                              | Compliant      |
| § 2.1055; § 22.355;<br>§ 24.235; §27.54;<br>§90.213                               | Frequency stability                    | Compliant      |

Note: \* Please refer to SAR report number: RA230103-00224E-SA.

**TEST EQUIPMENT LIST**

| Manufacturer                                    | Description       | Model               | Serial Number          | Calibration Date | Calibration Due Date |
|-------------------------------------------------|-------------------|---------------------|------------------------|------------------|----------------------|
| Radiated Emission Test                          |                   |                     |                        |                  |                      |
| Rohde& Schwarz                                  | Test Receiver     | ESR                 | 102725                 | 2022/11/25       | 2023/11/24           |
| Rohde&Schwarz                                   | Spectrum Analyzer | FSV40               | 101949                 | 2022/11/25       | 2023/11/24           |
| SONOMA INSTRUMENT                               | Amplifier         | 310 N               | 186131                 | 2022/11/08       | 2023/11/07           |
| A.H. Systems, inc.                              | Preamplifier      | PAM-0118P           | 135                    | 2022/11/08       | 2023/11/07           |
| Quinstar                                        | Amplifier         | QLW-184055<br>36-J0 | 15964001002            | 2022/11/08       | 2023/11/07           |
| Radiated Emission Test Software: e3 19821b (V9) |                   |                     |                        |                  |                      |
| Unknown                                         | RF Coaxial Cable  | No.10               | N050                   | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.11               | N1000                  | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.12               | N040                   | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.13               | N300                   | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.14               | N800                   | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.15               | N600                   | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.16               | N650                   | 2022/11/25       | 2023/11/24           |
| Schwarzbeck                                     | Bilog Antenna     | VULB9163            | 9163-194               | 2022/11/30       | 2025/11/29           |
| Schwarzbeck                                     | Bilog Antenna     | VULB9163            | 9163-323               | 2021/07/06       | 2024/07/05           |
| Schwarzbeck                                     | Horn Antenna      | BBHA9120D           | 9120D-655              | 2022/12/26       | 2025/12/25           |
| Schwarzbeck                                     | Horn Antenna      | BBHA9120D           | 9120D-1067             | 2022/11/30       | 2025/11/29           |
| PASTERNAK                                       | Horn Antenna      | PE9852/2F-20        | 1120<br>(ATC-BA-024-1) | 2023/01/04       | 2026/01/03           |
| PASTERNAK                                       | Horn Antenna      | PE9852/2F-20        | 1120<br>(ATC-BA-025-1) | 2023/01/04       | 2026/01/03           |
| PASTERNAK                                       | Horn Antenna      | PE9850/2F-20        | 720<br>(ATC-BA-024)    | 2023/01/04       | 2026/01/03           |
| PASTERNAK                                       | Horn Antenna      | PE9850/2F-20        | 720<br>(ATC-BA-025)    | 2023/01/04       | 2026/01/03           |
| Unknown                                         | RF Coaxial Cable  | No.16               | N200                   | 2022/11/25       | 2023/11/24           |
| Agilent                                         | Signal Generator  | N5183A              | MY51040755             | 2022/11/25       | 2023/11/24           |
| CD                                              | High Pass Filter  | HPM-1.2/18G<br>-60  | 110                    | 2022/11/25       | 2023/11/24           |
| Unknown                                         | RF Coaxial Cable  | No.16               | N200                   | 2022/11/25       | 2023/11/24           |

| Manufacturer      | Description                         | Model       | Serial Number | Calibration Date | Calibration Due Date |
|-------------------|-------------------------------------|-------------|---------------|------------------|----------------------|
| RF Conducted Test |                                     |             |               |                  |                      |
| Rohde&Schwarz     | Spectrum Analyzer                   | FSV-40      | 101948        | 2022/11/25       | 2023/11/24           |
| SPECTRUM ANALYZER | Rohde & Schwarz                     | FSU26       | 200982        | 2022/07/04       | 2023/07/03           |
| Rohde & Schwarz   | Wideband Radio Communication Tester | CMW500      | 154606        | 2022/11/25       | 2023/11/24           |
| Mini-Circuits     | Power Splitter                      | DC-18000MHz | SF10944151S   | 2022/11/25       | 2023/11/24           |
| REALE             | Temp. & Humid. Chamber              | RHP-800BT   | R20170318310  | 2022/11/23       | 2023/11/22           |
| Fluke             | Multi Meter                         | 45          | 7664009       | 2022/11/23       | 2023/11/22           |
| Manson            | DC Power Source                     | KPS-6604    | ATCS-205      | NCR              | NCR                  |
| Unknown           | RF Coaxial Cable                    | No.33       | RF-03         | Each time        |                      |

\* Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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## **FCC §1.1307(b)&§2.1093 - RF EXPOSURE INFORMATION**

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### **Applicable Standard**

FCC§1.1310 and §2.1093.

### **Test Result**

Compliant, please refer to the SAR report: RA230103-00224E-SA.

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## **FCC§2.1047 - MODULATION CHARACTERISTIC**

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According to FCC § 2.1047(d), Part 22H & 24E & 27 & Part 90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

## FCC § 2.1046,§ 22.913 (a) (d)&§ 24.232(c) (d); §27.50(b)(c)(d)(h) ; §90.635- RF OUTPUT POWER

### Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

According to §27.50(b), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

According to §27.50(c), Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

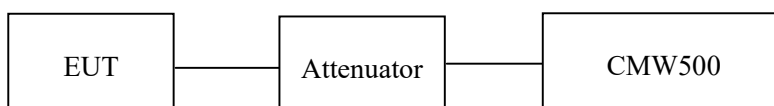
According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2496-2690MHz.

According to §90.635, the maximum ERP must not exceed 100Watts (50dBm) for 814-824MHz.

### Test Procedure

*Conducted method:*

The RF output of the transmitter was connected to the CMW500 through sufficient attenuation.



Note: the path loss (cable loss and attenuator) has including in the test result.

### Test Data

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20~25 °C  |
| Relative Humidity: | 50~56.8 % |
| ATM Pressure:      | 101.0 kPa |

*The testing was performed by Glenn Jiang from 2023-01-07 to 2023-01-14.*

## Cellular Band (Part 22H)

| Mode | Channel | Frequency (MHz) | Average Output Power (dBm) | ERP(dBm)     | Limit (dBm) |
|------|---------|-----------------|----------------------------|--------------|-------------|
| GSM  | 128     | 824.2           | 32.71                      | 28.35        | 38.45       |
|      | 190     | 836.6           | 32.80                      | <b>28.44</b> | 38.45       |
|      | 251     | 848.8           | 32.73                      | 28.37        | 38.45       |

| Mode | Channel | Frequency (MHz) | Average Output Power (dBm) |         |         |         | ERP(dBm) |         |         |         | Limit (dBm) |
|------|---------|-----------------|----------------------------|---------|---------|---------|----------|---------|---------|---------|-------------|
|      |         |                 | 1 slot                     | 2 slots | 3 slots | 4 slots | 1 slot   | 2 slots | 3 slots | 4 slots |             |
| GPRS | 128     | 824.2           | 32.68                      | 31.17   | 29.26   | 27.27   | 28.32    | 26.81   | 24.90   | 22.91   | 38.45       |
|      | 190     | 836.6           | 32.72                      | 31.21   | 29.35   | 27.30   | 28.36    | 26.85   | 24.99   | 22.94   | 38.45       |
|      | 251     | 848.8           | 32.71                      | 31.22   | 29.35   | 27.32   | 28.35    | 26.86   | 24.99   | 22.96   | 38.45       |

| Mode  | Channel | Frequency (MHz) | Average Output Power (dBm) |         |         |         | ERP(dBm)     |         |         |         | Limit (dBm) |
|-------|---------|-----------------|----------------------------|---------|---------|---------|--------------|---------|---------|---------|-------------|
|       |         |                 | 1 slot                     | 2 slots | 3 slots | 4 slots | 1 slot       | 2 slots | 3 slots | 4 slots |             |
| EGPRS | 128     | 824.2           | 25.56                      | 23.96   | 22.45   | 20.07   | 21.20        | 19.60   | 18.09   | 15.71   | 38.45       |
|       | 190     | 836.6           | 25.70                      | 24.07   | 22.56   | 20.14   | <b>21.34</b> | 19.71   | 18.20   | 15.78   | 38.45       |
|       | 251     | 848.8           | 25.55                      | 23.91   | 22.39   | 20.39   | 21.19        | 19.55   | 18.03   | 16.03   | 38.45       |

| Mode              | Test Mode | 3GPP Sub Test | Average Output Power (dBm) |       |       | ERP(dBm) |              |       |
|-------------------|-----------|---------------|----------------------------|-------|-------|----------|--------------|-------|
|                   |           |               | Low                        | Mid   | High  | Low      | Mid          | High  |
| WCDMA<br>(Band 5) | RMC12.2k  |               | 22.79                      | 22.81 | 22.59 | 18.43    | <b>18.45</b> | 18.23 |
|                   | HSDPA     | 1             | 22.33                      | 22.14 | 21.94 | 17.97    | 17.78        | 17.58 |
|                   |           | 2             | 22.15                      | 22.11 | 21.88 | 17.79    | 17.75        | 17.52 |
|                   |           | 3             | 22.21                      | 22.10 | 21.87 | 17.85    | 17.74        | 17.51 |
|                   |           | 4             | 22.25                      | 22.06 | 21.92 | 17.89    | 17.70        | 17.56 |
|                   | HSUPA     | 1             | 22.38                      | 21.98 | 22.09 | 18.02    | 17.62        | 17.73 |
|                   |           | 2             | 22.25                      | 21.88 | 22.05 | 17.89    | 17.52        | 17.69 |
|                   |           | 3             | 22.36                      | 21.34 | 22.04 | 18.00    | 16.98        | 17.68 |
|                   |           | 4             | 22.24                      | 21.87 | 22.01 | 17.88    | 17.51        | 17.65 |
|                   |           | 5             | 22.26                      | 21.64 | 22.05 | 17.90    | 17.28        | 17.69 |
|                   | HSPA+     | 1             | 22.15                      | 21.59 | 22.04 | 17.79    | 17.23        | 17.68 |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)

For GSM850 / WCDMA Band5: Antenna Gain = -2.21 dBi = -4.36dBd (0dBd=2.15dBi)

Limit: ERP≤38.45dBm



## PCS Band (Part 24E)

| Mode | Channel | Frequency (MHz) | Average Output Power (dBm) | EIRP(dBm) | Limit (dBm) |
|------|---------|-----------------|----------------------------|-----------|-------------|
| GSM  | 512     | 1850.2          | 29.80                      | 30.94     | 33          |
|      | 661     | 1880.0          | 30.00                      | 31.14     | 33          |
|      | 810     | 1909.8          | 29.90                      | 31.04     | 33          |

| Mode | Channel | Frequency (MHz) | Average Output Power (dBm) |         |         |         | EIRP(dBm)    |         |         |         | Limit (dBm) |
|------|---------|-----------------|----------------------------|---------|---------|---------|--------------|---------|---------|---------|-------------|
|      |         |                 | 1 slot                     | 2 slots | 3 slots | 4 slots | 1 slot       | 2 slots | 3 slots | 4 slots |             |
| GPRS | 512     | 1850.2          | 30.05                      | 28.20   | 26.55   | 24.57   | <b>31.19</b> | 29.34   | 27.69   | 25.71   | 33          |
|      | 661     | 1880.0          | 29.90                      | 28.27   | 26.62   | 24.62   | 31.04        | 29.41   | 27.76   | 25.76   | 33          |
|      | 810     | 1909.8          | 29.76                      | 28.01   | 26.43   | 24.47   | 30.90        | 29.15   | 27.57   | 25.61   | 33          |

| Mode  | Channel | Frequency (MHz) | Average Output Power (dBm) |         |         |         | EIRP(dBm)    |         |         |         | Limit (dBm) |
|-------|---------|-----------------|----------------------------|---------|---------|---------|--------------|---------|---------|---------|-------------|
|       |         |                 | 1 slot                     | 2 slots | 3 slots | 4 slots | 1 slot       | 2 slots | 3 slots | 4 slots |             |
| EGPRS | 512     | 1850.2          | 24.89                      | 24.75   | 22.26   | 20.58   | 26.03        | 25.89   | 23.40   | 21.72   | 33          |
|       | 661     | 1880.0          | 25.72                      | 25.06   | 22.63   | 19.99   | <b>26.86</b> | 26.20   | 23.77   | 21.13   | 33          |
|       | 810     | 1909.8          | 25.06                      | 24.32   | 22.59   | 20.36   | 26.20        | 25.46   | 23.73   | 21.50   | 33          |

| Mode            | Test Mode | 3GPP Sub Test | Average Output Power (dBm) |       |       | EIRP(dBm) |       |       |
|-----------------|-----------|---------------|----------------------------|-------|-------|-----------|-------|-------|
|                 |           |               | Low                        | Mid   | High  | Low       | Mid   | High  |
| 0WCDMA (Band 2) | RMC12.2k  |               | 22.59                      | 22.66 | 22.94 | 23.73     | 23.80 | 24.08 |
|                 | HSDPA     | 1             | 22.47                      | 21.87 | 22.13 | 23.61     | 23.01 | 23.27 |
|                 |           | 2             | 22.33                      | 21.85 | 22.10 | 23.47     | 22.99 | 23.24 |
|                 |           | 3             | 22.24                      | 21.64 | 22.12 | 23.38     | 22.78 | 23.26 |
|                 |           | 4             | 22.26                      | 21.67 | 22.15 | 23.40     | 22.81 | 23.29 |
|                 | HSUPA     | 1             | 22.55                      | 21.83 | 22.16 | 23.69     | 22.97 | 23.30 |
|                 |           | 2             | 22.34                      | 21.64 | 22.14 | 23.48     | 22.78 | 23.28 |
|                 |           | 3             | 22.46                      | 21.58 | 22.12 | 23.60     | 22.72 | 23.26 |
|                 |           | 4             | 22.38                      | 21.77 | 22.08 | 23.52     | 22.91 | 23.22 |
|                 |           | 5             | 22.37                      | 21.67 | 22.06 | 23.51     | 22.81 | 23.20 |
|                 | HSPA+     | 1             | 22.26                      | 21.84 | 22.04 | 23.40     | 22.98 | 23.18 |

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

For PCS1900 / WCDMA Band2: Antenna Gain = 1.14dBi

Limit: EIRP ≤ 33dBm

**AWS Band**

| Mode           | Test Mode | 3GPP Sub Test | Average Output Power (dBm) |       |       | EIRP(dBm) |       |       |
|----------------|-----------|---------------|----------------------------|-------|-------|-----------|-------|-------|
|                |           |               | Low                        | Mid   | High  | Low       | Mid   | High  |
| WCDMA (Band 4) | RMC12.2k  |               | 22.74                      | 22.67 | 22.52 | 24.05     | 23.98 | 23.83 |
|                | HSDPA     | 1             | 21.93                      | 22.76 | 21.98 | 23.24     | 24.07 | 23.29 |
|                |           | 2             | 21.88                      | 22.53 | 21.88 | 23.19     | 23.84 | 23.19 |
|                |           | 3             | 21.67                      | 22.47 | 21.76 | 22.98     | 23.78 | 23.07 |
|                |           | 4             | 21.85                      | 22.39 | 21.54 | 23.16     | 23.70 | 22.85 |
|                | HSUPA     | 1             | 21.87                      | 22.62 | 21.95 | 23.18     | 23.93 | 23.26 |
|                |           | 2             | 21.78                      | 22.58 | 21.85 | 23.09     | 23.89 | 23.16 |
|                |           | 3             | 21.64                      | 22.46 | 21.74 | 22.95     | 23.77 | 23.05 |
|                |           | 4             | 21.69                      | 22.59 | 21.88 | 23.00     | 23.90 | 23.19 |
|                |           | 5             | 21.58                      | 22.47 | 21.69 | 22.89     | 23.78 | 23.00 |
|                | HSPA+     | 1             | 21.49                      | 22.31 | 21.75 | 22.80     | 23.62 | 23.06 |

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

For Band4: Antenna Gain = 1.31dBi

Limit: EIRP ≤ 30dBm

**LTE Band 2**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 1.4                | QPSK       | RB1#0                 | 21.31                                   | 21.41 | 21.40 | 22.45     | 22.55 | 22.54 |
|                    |            | RB1#3                 | 21.30                                   | 21.36 | 21.37 | 22.44     | 22.50 | 22.51 |
|                    |            | RB1#5                 | 21.29                                   | 21.46 | 21.41 | 22.43     | 22.60 | 22.55 |
|                    |            | RB3#0                 | 21.42                                   | 21.55 | 21.47 | 22.56     | 22.69 | 22.61 |
|                    |            | RB3#3                 | 21.38                                   | 21.55 | 21.49 | 22.52     | 22.69 | 22.63 |
|                    |            | RB6#0                 | 20.38                                   | 20.58 | 20.50 | 21.52     | 21.72 | 21.64 |
|                    | 16QAM      | RB1#0                 | 21.12                                   | 21.04 | 20.22 | 22.26     | 22.18 | 21.36 |
|                    |            | RB1#3                 | 21.17                                   | 20.98 | 20.24 | 22.31     | 22.12 | 21.38 |
|                    |            | RB1#5                 | 21.10                                   | 21.03 | 20.25 | 22.24     | 22.17 | 21.39 |
|                    |            | RB3#0                 | 20.42                                   | 20.51 | 20.74 | 21.56     | 21.65 | 21.88 |
|                    |            | RB3#3                 | 20.41                                   | 20.52 | 20.63 | 21.55     | 21.66 | 21.77 |
|                    |            | RB6#0                 | 19.64                                   | 19.72 | 19.85 | 20.78     | 20.86 | 20.99 |
| 3.0                | QPSK       | RB1#0                 | 21.48                                   | 21.42 | 21.48 | 22.62     | 22.56 | 22.62 |
|                    |            | RB1#8                 | 21.51                                   | 21.38 | 21.43 | 22.65     | 22.52 | 22.57 |
|                    |            | RB1#14                | 21.52                                   | 21.45 | 21.46 | 22.66     | 22.59 | 22.60 |
|                    |            | RB6#0                 | 20.43                                   | 20.55 | 20.46 | 21.57     | 21.69 | 21.60 |
|                    |            | RB6#9                 | 20.38                                   | 20.57 | 20.46 | 21.52     | 21.71 | 21.60 |
|                    |            | RB15#0                | 20.34                                   | 20.51 | 20.53 | 21.48     | 21.65 | 21.67 |
|                    | 16QAM      | RB1#0                 | 20.52                                   | 20.32 | 20.90 | 21.66     | 21.46 | 22.04 |
|                    |            | RB1#8                 | 20.52                                   | 20.34 | 20.94 | 21.66     | 21.48 | 22.08 |
|                    |            | RB1#14                | 20.55                                   | 20.45 | 20.96 | 21.69     | 21.59 | 22.10 |
|                    |            | RB6#0                 | 19.55                                   | 19.82 | 19.50 | 20.69     | 20.96 | 20.64 |
|                    |            | RB6#9                 | 19.59                                   | 19.66 | 19.53 | 20.73     | 20.80 | 20.67 |
|                    |            | RB15#0                | 19.49                                   | 19.64 | 19.70 | 20.63     | 20.78 | 20.84 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 5.0                | QPSK       | RB1#0                 | 21.47                                   | 21.43 | 21.58 | 22.61     | 22.57 | 22.72 |
|                    |            | RB1#13                | 21.50                                   | 21.44 | 21.49 | 22.64     | 22.58 | 22.63 |
|                    |            | RB1#24                | 21.60                                   | 21.46 | 21.40 | 22.74     | 22.60 | 22.54 |
|                    |            | RB15#0                | 20.33                                   | 20.50 | 20.48 | 21.47     | 21.64 | 21.62 |
|                    |            | RB15#10               | 20.36                                   | 20.55 | 20.44 | 21.50     | 21.69 | 21.58 |
|                    |            | RB25#0                | 20.39                                   | 20.63 | 20.46 | 21.53     | 21.77 | 21.60 |
|                    | 16QAM      | RB1#0                 | 20.37                                   | 20.23 | 19.57 | 21.51     | 21.37 | 20.71 |
|                    |            | RB1#13                | 20.41                                   | 20.21 | 19.62 | 21.55     | 21.35 | 20.76 |
|                    |            | RB1#24                | 20.48                                   | 20.31 | 19.57 | 21.62     | 21.45 | 20.71 |
|                    |            | RB15#0                | 19.27                                   | 19.72 | 19.74 | 20.41     | 20.86 | 20.88 |
|                    |            | RB15#10               | 19.31                                   | 19.68 | 19.66 | 20.45     | 20.82 | 20.80 |
|                    |            | RB25#0                | 19.41                                   | 19.51 | 19.68 | 20.55     | 20.65 | 20.82 |
| 10.0               | QPSK       | RB1#0                 | 21.47                                   | 21.50 | 21.56 | 22.61     | 22.64 | 22.70 |
|                    |            | RB1#25                | 21.53                                   | 21.60 | 21.43 | 22.67     | 22.74 | 22.57 |
|                    |            | RB1#49                | 21.57                                   | 21.64 | 21.38 | 22.71     | 22.78 | 22.52 |
|                    |            | RB25#0                | 20.44                                   | 20.61 | 20.60 | 21.58     | 21.75 | 21.74 |
|                    |            | RB25#25               | 20.52                                   | 20.51 | 20.57 | 21.66     | 21.65 | 21.71 |
|                    |            | RB50#0                | 20.53                                   | 20.65 | 20.63 | 21.67     | 21.79 | 21.77 |
|                    | 16QAM      | RB1#0                 | 20.50                                   | 20.01 | 20.83 | 21.64     | 21.15 | 21.97 |
|                    |            | RB1#25                | 20.59                                   | 20.00 | 20.82 | 21.73     | 21.14 | 21.96 |
|                    |            | RB1#49                | 20.61                                   | 20.02 | 20.78 | 21.75     | 21.16 | 21.92 |
|                    |            | RB25#0                | 19.51                                   | 19.73 | 19.71 | 20.65     | 20.87 | 20.85 |
|                    |            | RB25#25               | 19.60                                   | 20.23 | 19.63 | 20.74     | 21.37 | 20.77 |
|                    |            | RB50#0                | 19.55                                   | 19.58 | 20.02 | 20.69     | 20.72 | 21.16 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid          | High  |
| 15.0               | QPSK       | RB1#0                 | 21.43                                   | 21.40 | 21.55 | 22.57     | 22.54        | 22.69 |
|                    |            | RB1#38                | 21.46                                   | 21.44 | 21.51 | 22.60     | 22.58        | 22.65 |
|                    |            | RB1#74                | 21.52                                   | 21.48 | 21.38 | 22.66     | 22.62        | 22.52 |
|                    |            | RB36#0                | 20.51                                   | 20.56 | 20.56 | 21.65     | 21.70        | 21.70 |
|                    |            | RB36#39               | 20.54                                   | 20.61 | 20.47 | 21.68     | 21.75        | 21.61 |
|                    |            | RB75#0                | 20.50                                   | 20.53 | 20.60 | 21.64     | 21.67        | 21.74 |
|                    | 16QAM      | RB1#0                 | 21.16                                   | 20.83 | 20.90 | 22.30     | 21.97        | 22.04 |
|                    |            | RB1#38                | 21.21                                   | 20.88 | 20.86 | 22.35     | 22.02        | 22.00 |
|                    |            | RB1#74                | 21.27                                   | 20.98 | 20.73 | 22.41     | 22.12        | 21.87 |
|                    |            | RB36#0                | 19.50                                   | 19.69 | 19.82 | 20.64     | 20.83        | 20.96 |
|                    |            | RB36#39               | 19.95                                   | 20.02 | 19.77 | 21.09     | 21.16        | 20.91 |
|                    |            | RB75#0                | 19.55                                   | 19.72 | 19.80 | 20.69     | 20.86        | 20.94 |
| 20.0               | QPSK       | RB1#0                 | 21.50                                   | 21.60 | 21.75 | 22.64     | 22.74        | 22.89 |
|                    |            | RB1#50                | 21.58                                   | 21.72 | 21.74 | 22.72     | 22.86        | 22.88 |
|                    |            | RB1#99                | 21.68                                   | 21.82 | 21.67 | 22.82     | <b>22.96</b> | 22.81 |
|                    |            | RB50#0                | 20.50                                   | 20.60 | 20.70 | 21.64     | 21.74        | 21.84 |
|                    |            | RB50#50               | 20.40                                   | 20.54 | 20.62 | 21.54     | 21.68        | 21.76 |
|                    |            | RB100#0               | 20.43                                   | 20.65 | 20.74 | 21.57     | 21.79        | 21.88 |
|                    | 16QAM      | RB1#0                 | 20.46                                   | 21.47 | 20.60 | 21.60     | 22.61        | 21.74 |
|                    |            | RB1#50                | 20.54                                   | 21.56 | 20.67 | 21.68     | 22.70        | 21.81 |
|                    |            | RB1#99                | 20.60                                   | 21.65 | 20.74 | 21.74     | <b>22.79</b> | 21.88 |
|                    |            | RB50#0                | 19.53                                   | 19.60 | 20.23 | 20.67     | 20.74        | 21.37 |
|                    |            | RB50#50               | 19.55                                   | 19.67 | 20.12 | 20.69     | 20.81        | 21.26 |
|                    |            | RB100#0               | 19.94                                   | 19.65 | 19.70 | 21.08     | 20.79        | 20.84 |

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

For Band2: Antenna Gain =1.14dB

Limit: EIRP ≤ 33dBm

**LTE Band 4**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 1.4                | QPSK       | RB1#0                 | 21.50                                   | 21.04 | 21.26 | 22.81     | 22.35 | 22.57 |
|                    |            | RB1#3                 | 21.53                                   | 21.04 | 21.23 | 22.84     | 22.35 | 22.54 |
|                    |            | RB1#5                 | 21.47                                   | 21.05 | 21.23 | 22.78     | 22.36 | 22.54 |
|                    |            | RB3#0                 | 21.50                                   | 21.31 | 21.16 | 22.81     | 22.62 | 22.47 |
|                    |            | RB3#3                 | 21.48                                   | 21.33 | 21.15 | 22.79     | 22.64 | 22.46 |
|                    |            | RB6#0                 | 20.48                                   | 20.26 | 20.00 | 21.79     | 21.57 | 21.31 |
|                    | 16QAM      | RB1#0                 | 21.26                                   | 19.89 | 21.01 | 22.57     | 21.20 | 22.32 |
|                    |            | RB1#3                 | 21.26                                   | 20.01 | 21.06 | 22.57     | 21.32 | 22.37 |
|                    |            | RB1#5                 | 21.27                                   | 19.95 | 21.01 | 22.58     | 21.26 | 22.32 |
|                    |            | RB3#0                 | 20.38                                   | 20.43 | 20.30 | 21.69     | 21.74 | 21.61 |
|                    |            | RB3#3                 | 20.32                                   | 20.39 | 20.36 | 21.63     | 21.70 | 21.67 |
|                    |            | RB6#0                 | 19.84                                   | 19.38 | 19.35 | 21.15     | 20.69 | 20.66 |
| 3.0                | QPSK       | RB1#0                 | 21.53                                   | 21.09 | 21.07 | 22.84     | 22.40 | 22.38 |
|                    |            | RB1#8                 | 21.51                                   | 21.16 | 21.04 | 22.82     | 22.47 | 22.35 |
|                    |            | RB1#14                | 21.35                                   | 21.12 | 21.05 | 22.66     | 22.43 | 22.36 |
|                    |            | RB6#0                 | 20.49                                   | 20.28 | 20.17 | 21.80     | 21.59 | 21.48 |
|                    |            | RB6#9                 | 20.34                                   | 20.32 | 20.03 | 21.65     | 21.63 | 21.34 |
|                    |            | RB15#0                | 20.36                                   | 20.20 | 20.23 | 21.67     | 21.51 | 21.54 |
|                    | 16QAM      | RB1#0                 | 21.30                                   | 19.93 | 20.22 | 22.61     | 21.24 | 21.53 |
|                    |            | RB1#8                 | 21.27                                   | 19.84 | 20.17 | 22.58     | 21.15 | 21.48 |
|                    |            | RB1#14                | 21.14                                   | 19.96 | 20.17 | 22.45     | 21.27 | 21.48 |
|                    |            | RB6#0                 | 19.84                                   | 19.40 | 19.08 | 21.15     | 20.71 | 20.39 |
|                    |            | RB6#9                 | 19.50                                   | 19.44 | 19.10 | 20.81     | 20.75 | 20.41 |
|                    |            | RB15#0                | 19.69                                   | 19.28 | 19.16 | 21.00     | 20.59 | 20.47 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 5.0                | QPSK       | RB1#0                 | 21.53                                   | 21.11 | 21.19 | 22.84     | 22.42 | 22.50 |
|                    |            | RB1#13                | 21.32                                   | 21.14 | 21.17 | 22.63     | 22.45 | 22.48 |
|                    |            | RB1#24                | 21.39                                   | 21.19 | 21.11 | 22.70     | 22.50 | 22.42 |
|                    |            | RB15#0                | 20.40                                   | 20.10 | 20.13 | 21.71     | 21.41 | 21.44 |
|                    |            | RB15#10               | 20.35                                   | 20.15 | 20.17 | 21.66     | 21.46 | 21.48 |
|                    |            | RB25#0                | 20.28                                   | 20.09 | 20.10 | 21.59     | 21.40 | 21.41 |
|                    | 16QAM      | RB1#0                 | 20.61                                   | 19.80 | 19.15 | 21.92     | 21.11 | 20.46 |
|                    |            | RB1#13                | 20.47                                   | 19.86 | 19.25 | 21.78     | 21.17 | 20.56 |
|                    |            | RB1#24                | 20.44                                   | 19.93 | 19.21 | 21.75     | 21.24 | 20.52 |
|                    |            | RB15#0                | 19.64                                   | 19.28 | 19.22 | 20.95     | 20.59 | 20.53 |
|                    |            | RB15#10               | 19.26                                   | 19.26 | 19.15 | 20.57     | 20.57 | 20.46 |
|                    |            | RB25#0                | 19.39                                   | 19.19 | 19.23 | 20.70     | 20.50 | 20.54 |
| 10.0               | QPSK       | RB1#0                 | 21.59                                   | 21.26 | 21.07 | 22.90     | 22.57 | 22.38 |
|                    |            | RB1#25                | 21.50                                   | 21.27 | 21.04 | 22.81     | 22.58 | 22.35 |
|                    |            | RB1#49                | 21.40                                   | 21.17 | 21.06 | 22.71     | 22.48 | 22.37 |
|                    |            | RB25#0                | 20.26                                   | 20.20 | 20.03 | 21.57     | 21.51 | 21.34 |
|                    |            | RB25#25               | 20.20                                   | 20.16 | 20.02 | 21.51     | 21.47 | 21.33 |
|                    |            | RB50#0                | 20.31                                   | 20.12 | 20.08 | 21.62     | 21.43 | 21.39 |
|                    | 16QAM      | RB1#0                 | 20.66                                   | 19.64 | 20.38 | 21.97     | 20.95 | 21.69 |
|                    |            | RB1#25                | 20.51                                   | 19.71 | 20.41 | 21.82     | 21.02 | 21.72 |
|                    |            | RB1#49                | 20.42                                   | 19.61 | 20.37 | 21.73     | 20.92 | 21.68 |
|                    |            | RB25#0                | 19.52                                   | 19.43 | 19.23 | 20.83     | 20.74 | 20.54 |
|                    |            | RB25#25               | 19.50                                   | 19.42 | 19.15 | 20.81     | 20.73 | 20.46 |
|                    |            | RB50#0                | 19.46                                   | 19.29 | 19.17 | 20.77     | 20.60 | 20.48 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 15.0               | QPSK       | RB1#0                 | 21.60                                   | 21.15 | 21.15 | 22.91     | 22.46 | 22.46 |
|                    |            | RB1#38                | 21.50                                   | 21.00 | 21.11 | 22.81     | 22.31 | 22.42 |
|                    |            | RB1#74                | 21.39                                   | 21.12 | 21.11 | 22.70     | 22.43 | 22.42 |
|                    |            | RB36#0                | 20.43                                   | 20.14 | 20.13 | 21.74     | 21.45 | 21.44 |
|                    |            | RB36#39               | 20.40                                   | 20.31 | 20.12 | 21.71     | 21.62 | 21.43 |
|                    |            | RB75#0                | 20.36                                   | 20.24 | 20.08 | 21.67     | 21.55 | 21.39 |
|                    | 16QAM      | RB1#0                 | 20.61                                   | 20.55 | 20.43 | 21.92     | 21.86 | 21.74 |
|                    |            | RB1#38                | 20.54                                   | 20.53 | 20.43 | 21.85     | 21.84 | 21.74 |
|                    |            | RB1#74                | 20.42                                   | 20.45 | 20.36 | 21.73     | 21.76 | 21.67 |
|                    |            | RB36#0                | 19.46                                   | 19.29 | 19.25 | 20.77     | 20.60 | 20.56 |
|                    |            | RB36#39               | 19.87                                   | 19.25 | 19.22 | 21.18     | 20.56 | 20.53 |
|                    |            | RB75#0                | 19.36                                   | 19.25 | 19.30 | 20.67     | 20.56 | 20.61 |
| 20.0               | QPSK       | RB1#0                 | 21.52                                   | 21.25 | 21.50 | 22.83     | 22.56 | 22.81 |
|                    |            | RB1#50                | 21.30                                   | 21.37 | 21.42 | 22.61     | 22.68 | 22.73 |
|                    |            | RB1#99                | 21.24                                   | 21.26 | 21.40 | 22.55     | 22.57 | 22.71 |
|                    |            | RB50#0                | 20.24                                   | 20.32 | 20.28 | 21.55     | 21.63 | 21.59 |
|                    |            | RB50#50               | 20.32                                   | 20.20 | 20.18 | 21.63     | 21.51 | 21.49 |
|                    |            | RB100#0               | 20.22                                   | 20.20 | 20.11 | 21.53     | 21.51 | 21.42 |
|                    | 16QAM      | RB1#0                 | 20.84                                   | 21.16 | 19.56 | 22.15     | 22.47 | 20.87 |
|                    |            | RB1#50                | 20.62                                   | 21.05 | 19.60 | 21.93     | 22.36 | 20.91 |
|                    |            | RB1#99                | 20.69                                   | 20.99 | 19.56 | 22.00     | 22.30 | 20.87 |
|                    |            | RB50#0                | 19.46                                   | 19.21 | 19.35 | 20.77     | 20.52 | 20.66 |
|                    |            | RB50#50               | 19.85                                   | 19.13 | 19.29 | 21.16     | 20.44 | 20.60 |
|                    |            | RB100#0               | 19.37                                   | 19.26 | 19.20 | 20.68     | 20.57 | 20.51 |

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band4: Antenna Gain = 1.31dBi

Limit: EIRP ≤ 30dBm



**LTE Band 5&LTE Band 26(Part 22H)**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm)     |       |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|-------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid   | High         |
| 1.4                | QPSK       | RB1#0                 | 22.17                                   | 22.28 | 22.23 | 17.81        | 17.92 | 17.87        |
|                    |            | RB1#3                 | 22.18                                   | 22.35 | 22.23 | 17.82        | 17.99 | 17.87        |
|                    |            | RB1#5                 | 22.27                                   | 22.30 | 22.23 | 17.91        | 17.94 | 17.87        |
|                    |            | RB3#0                 | 22.38                                   | 22.37 | 22.29 | 18.02        | 18.01 | 17.93        |
|                    |            | RB3#3                 | 22.41                                   | 22.29 | 22.26 | <b>18.05</b> | 17.93 | 17.90        |
|                    |            | RB6#0                 | 21.16                                   | 21.31 | 21.30 | 16.80        | 16.95 | 16.94        |
|                    | 16QAM      | RB1#0                 | 20.78                                   | 21.72 | 22.08 | 16.42        | 17.36 | 17.72        |
|                    |            | RB1#3                 | 20.78                                   | 21.73 | 22.12 | 16.42        | 17.37 | <b>17.76</b> |
|                    |            | RB1#5                 | 20.87                                   | 21.8  | 21.99 | 16.51        | 17.44 | 17.63        |
|                    |            | RB3#0                 | 21.31                                   | 21.34 | 21.04 | 16.95        | 16.98 | 16.68        |
|                    |            | RB3#3                 | 21.24                                   | 21.44 | 21.11 | 16.88        | 17.08 | 16.75        |
|                    |            | RB6#0                 | 20.40                                   | 20.38 | 20.15 | 16.04        | 16.02 | 15.79        |
| 3.0                | QPSK       | RB1#0                 | 22.30                                   | 22.24 | 22.19 | 17.94        | 17.88 | 17.83        |
|                    |            | RB1#8                 | 22.25                                   | 22.18 | 22.21 | 17.89        | 17.82 | 17.85        |
|                    |            | RB1#14                | 22.36                                   | 22.27 | 22.18 | 18.00        | 17.91 | 17.82        |
|                    |            | RB6#0                 | 21.30                                   | 21.20 | 21.14 | 16.94        | 16.84 | 16.78        |
|                    |            | RB6#9                 | 21.26                                   | 21.27 | 21.27 | 16.90        | 16.91 | 16.91        |
|                    |            | RB15#0                | 21.27                                   | 21.26 | 21.16 | 16.91        | 16.90 | 16.80        |
|                    | 16QAM      | RB1#0                 | 21.81                                   | 20.94 | 21.56 | 17.45        | 16.58 | 17.20        |
|                    |            | RB1#8                 | 21.90                                   | 20.91 | 21.43 | 17.54        | 16.55 | 17.07        |
|                    |            | RB1#14                | 22.01                                   | 20.90 | 21.44 | 17.65        | 16.54 | 17.08        |
|                    |            | RB6#0                 | 20.17                                   | 20.56 | 20.35 | 15.81        | 16.20 | 15.99        |
|                    |            | RB6#9                 | 20.73                                   | 20.44 | 20.25 | 16.37        | 16.08 | 15.89        |
|                    |            | RB15#0                | 20.17                                   | 20.23 | 20.32 | 15.81        | 15.87 | 15.96        |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm)     |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid   | High  |
| 5.0                | QPSK       | RB1#0                 | 22.40                                   | 22.20 | 22.21 | 18.04        | 17.84 | 17.85 |
|                    |            | RB1#13                | 22.21                                   | 22.22 | 22.32 | 17.85        | 17.86 | 17.96 |
|                    |            | RB1#24                | 22.23                                   | 22.22 | 22.15 | 17.87        | 17.86 | 17.79 |
|                    |            | RB15#0                | 21.21                                   | 21.35 | 21.24 | 16.85        | 16.99 | 16.88 |
|                    |            | RB15#10               | 21.31                                   | 21.27 | 21.19 | 16.95        | 16.91 | 16.83 |
|                    |            | RB25#0                | 21.25                                   | 21.33 | 21.18 | 16.89        | 16.97 | 16.82 |
|                    | 16QAM      | RB1#0                 | 21.22                                   | 20.93 | 20.33 | 16.86        | 16.57 | 15.97 |
|                    |            | RB1#13                | 21.43                                   | 20.86 | 20.27 | 17.07        | 16.50 | 15.91 |
|                    |            | RB1#24                | 21.32                                   | 20.80 | 20.19 | 16.96        | 16.44 | 15.83 |
|                    |            | RB15#0                | 20.11                                   | 20.31 | 20.72 | 15.75        | 15.95 | 16.36 |
|                    |            | RB15#10               | 20.57                                   | 20.23 | 20.34 | 16.21        | 15.87 | 15.98 |
|                    |            | RB25#0                | 20.67                                   | 20.11 | 20.45 | 16.31        | 15.75 | 16.09 |
| 10.0               | QPSK       | RB1#0                 | 22.50                                   | 22.27 | 22.11 | 18.14        | 17.91 | 17.75 |
|                    |            | RB1#25                | 22.34                                   | 22.28 | 22.05 | 17.98        | 17.92 | 17.69 |
|                    |            | RB1#49                | 22.46                                   | 22.17 | 22.10 | 18.10        | 17.81 | 17.74 |
|                    |            | RB25#0                | 21.27                                   | 21.30 | 21.29 | 16.91        | 16.94 | 16.93 |
|                    |            | RB25#25               | 21.28                                   | 21.27 | 21.20 | 16.92        | 16.91 | 16.84 |
|                    |            | RB50#0                | 21.22                                   | 21.27 | 21.22 | 16.86        | 16.91 | 16.86 |
|                    | 16QAM      | RB1#0                 | 21.40                                   | 20.78 | 21.35 | 17.04        | 16.42 | 16.99 |
|                    |            | RB1#25                | 21.42                                   | 20.82 | 21.33 | 17.06        | 16.46 | 16.97 |
|                    |            | RB1#49                | 21.84                                   | 20.87 | 21.26 | 17.48        | 16.51 | 16.90 |
|                    |            | RB25#0                | 20.82                                   | 20.47 | 20.22 | 16.46        | 16.11 | 15.86 |
|                    |            | RB25#25               | 20.81                                   | 20.37 | 20.35 | 16.45        | 16.01 | 15.99 |
|                    |            | RB50#0                | 20.37                                   | 20.12 | 20.20 | 16.01        | 15.76 | 15.84 |
| 15                 | QPSK       | RB1#0                 | 22.63                                   | 22.24 | 22.22 | <b>18.27</b> | 17.88 | 17.86 |
|                    |            | RB1#38                | 22.51                                   | 22.31 | 22.23 | 18.15        | 17.95 | 17.87 |
|                    |            | RB1#74                | 22.59                                   | 22.26 | 22.35 | 18.23        | 17.90 | 17.99 |
|                    |            | RB36#0                | 21.44                                   | 21.30 | 21.24 | 17.08        | 16.94 | 16.88 |
|                    |            | RB36#39               | 21.40                                   | 21.76 | 21.39 | 17.04        | 17.40 | 17.03 |
|                    |            | RB75#0                | 21.76                                   | 21.45 | 21.85 | 17.40        | 17.09 | 17.49 |
|                    | 16QAM      | RB1#0                 | 21.62                                   | 21.60 | 21.53 | 17.26        | 17.24 | 17.17 |
|                    |            | RB1#38                | 21.95                                   | 21.54 | 21.90 | <b>17.59</b> | 17.18 | 17.54 |
|                    |            | RB1#74                | 21.55                                   | 21.50 | 21.50 | 17.19        | 17.14 | 17.14 |
|                    |            | RB36#0                | 20.51                                   | 20.80 | 20.93 | 16.15        | 16.44 | 16.57 |
|                    |            | RB36#39               | 20.56                                   | 20.87 | 20.86 | 16.20        | 16.51 | 16.50 |
|                    |            | RB75#0                | 20.83                                   | 20.47 | 20.86 | 16.47        | 16.11 | 16.50 |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)

For Band5: Antenna Gain = -2.21dBi = -4.36dBd (0dBd=2.15dBi)

Limit: ERP ≤ 38.45dBm

**LTE Band 7**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm)    |       |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|-------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid   | High         |
| 5.0                | QPSK       | RB1#0                 | 20.85                                   | 20.78 | 21.05 | 21.78        | 21.71 | 21.98        |
|                    |            | RB1#13                | 20.83                                   | 20.83 | 21.08 | 21.76        | 21.76 | 22.01        |
|                    |            | RB1#24                | 20.82                                   | 20.82 | 21.11 | 21.75        | 21.75 | <b>22.04</b> |
|                    |            | RB15#0                | 19.79                                   | 19.88 | 20.09 | 20.72        | 20.81 | 21.02        |
|                    |            | RB15#10               | 19.80                                   | 19.91 | 20.09 | 20.73        | 20.84 | 21.02        |
|                    |            | RB25#0                | 19.74                                   | 19.93 | 20.13 | 20.67        | 20.86 | 21.06        |
|                    | 16QAM      | RB1#0                 | 19.76                                   | 19.41 | 19.33 | 20.69        | 20.34 | 20.26        |
|                    |            | RB1#13                | 19.76                                   | 19.37 | 19.21 | 20.69        | 20.30 | 20.14        |
|                    |            | RB1#24                | 19.80                                   | 19.45 | 19.22 | <b>20.73</b> | 20.38 | 20.15        |
|                    |            | RB15#0                | 18.78                                   | 18.93 | 19.19 | 19.71        | 19.86 | 20.12        |
|                    |            | RB15#10               | 18.81                                   | 18.98 | 19.18 | 19.74        | 19.91 | 20.11        |
|                    |            | RB25#0                | 18.95                                   | 18.80 | 19.21 | 19.88        | 19.73 | 20.14        |
| 10.0               | QPSK       | RB1#0                 | 20.80                                   | 20.78 | 20.91 | 21.73        | 21.71 | 21.84        |
|                    |            | RB1#25                | 20.84                                   | 20.85 | 20.94 | 21.77        | 21.78 | 21.87        |
|                    |            | RB1#49                | 20.89                                   | 20.80 | 20.93 | 21.82        | 21.73 | 21.86        |
|                    |            | RB25#0                | 19.69                                   | 19.81 | 19.91 | 20.62        | 20.74 | 20.84        |
|                    |            | RB25#25               | 19.84                                   | 19.94 | 19.98 | 20.77        | 20.87 | 20.91        |
|                    |            | RB50#0                | 19.73                                   | 19.89 | 20.07 | 20.66        | 20.82 | 21.00        |
|                    | 16QAM      | RB1#0                 | 19.96                                   | 19.35 | 20.08 | 20.89        | 20.28 | 21.01        |
|                    |            | RB1#25                | 19.84                                   | 19.33 | 20.14 | 20.77        | 20.26 | 21.07        |
|                    |            | RB1#49                | 19.93                                   | 19.40 | 20.15 | 20.86        | 20.33 | 21.08        |
|                    |            | RB25#0                | 19.02                                   | 19.04 | 19.15 | 19.95        | 19.97 | 20.08        |
|                    |            | RB25#25               | 19.00                                   | 19.07 | 19.19 | 19.93        | 20.00 | 20.12        |
|                    |            | RB50#0                | 18.99                                   | 18.95 | 19.15 | 19.92        | 19.88 | 20.08        |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm)    |              |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|--------------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid          | High         |
| 15.0               | QPSK       | RB1#0                 | 20.84                                   | 20.69 | 20.89 | 21.77        | 21.62        | 21.82        |
|                    |            | RB1#38                | 20.86                                   | 20.77 | 20.90 | 21.79        | 21.70        | 21.83        |
|                    |            | RB1#74                | 20.75                                   | 20.81 | 20.97 | 21.68        | 21.74        | <b>21.90</b> |
|                    |            | RB36#0                | 19.78                                   | 19.91 | 19.93 | 20.71        | 20.84        | 20.86        |
|                    |            | RB36#39               | 19.79                                   | 19.86 | 20.03 | 20.72        | 20.79        | 20.96        |
|                    |            | RB75#0                | 19.79                                   | 19.85 | 20.06 | 20.72        | 20.78        | 20.99        |
|                    | 16QAM      | RB1#0                 | 20.61                                   | 20.38 | 20.12 | 21.54        | 21.31        | 21.05        |
|                    |            | RB1#38                | 20.66                                   | 20.29 | 20.05 | 21.59        | 21.22        | 20.98        |
|                    |            | RB1#74                | 20.70                                   | 20.30 | 20.14 | <b>21.63</b> | 21.23        | 21.07        |
|                    |            | RB36#0                | 18.87                                   | 19.00 | 19.18 | 19.80        | 19.93        | 20.11        |
|                    |            | RB36#39               | 18.86                                   | 18.96 | 19.24 | 19.79        | 19.89        | 20.17        |
|                    |            | RB75#0                | 18.89                                   | 19.01 | 19.20 | 19.82        | 19.94        | 20.13        |
| 20.0               | QPSK       | RB1#0                 | 20.81                                   | 20.87 | 20.84 | 21.74        | 21.80        | 21.77        |
|                    |            | RB1#50                | 20.83                                   | 20.94 | 20.94 | 21.76        | 21.87        | 21.87        |
|                    |            | RB1#99                | 20.87                                   | 21.08 | 21.03 | 21.80        | <b>22.01</b> | 21.96        |
|                    |            | RB50#0                | 19.79                                   | 19.85 | 19.95 | 20.72        | 20.78        | 20.88        |
|                    |            | RB50#50               | 19.86                                   | 19.82 | 20.07 | 20.79        | 20.75        | 21.00        |
|                    |            | RB100#0               | 19.79                                   | 19.96 | 19.90 | 20.72        | 20.89        | 20.83        |
|                    | 16QAM      | RB1#0                 | 20.41                                   | 20.35 | 19.69 | 21.34        | 21.28        | 20.62        |
|                    |            | RB1#50                | 20.27                                   | 20.36 | 19.78 | 21.20        | 21.29        | 20.71        |
|                    |            | RB1#99                | 20.44                                   | 20.50 | 19.89 | 21.37        | <b>21.43</b> | 20.82        |
|                    |            | RB50#0                | 19.01                                   | 18.94 | 19.12 | 19.94        | 19.87        | 20.05        |
|                    |            | RB50#50               | 19.04                                   | 18.93 | 19.24 | 19.97        | 19.86        | 20.17        |
|                    |            | RB100#0               | 18.85                                   | 19.06 | 19.10 | 19.78        | 19.99        | 20.03        |

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band7: Antenna Gain = 0.93dBi

Limit: EIRP ≤ 33dBm

**LTE Band 12**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm)     |       |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|-------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid   | High         |
| 1.4                | QPSK       | RB1#0                 | 22.20                                   | 22.19 | 22.44 | 17.34        | 17.33 | 17.58        |
|                    |            | RB1#3                 | 22.31                                   | 22.20 | 22.38 | 17.45        | 17.34 | 17.52        |
|                    |            | RB1#5                 | 22.29                                   | 22.24 | 22.46 | 17.43        | 17.38 | 17.60        |
|                    |            | RB3#0                 | 22.43                                   | 22.48 | 22.54 | 17.57        | 17.62 | <b>17.68</b> |
|                    |            | RB3#3                 | 22.34                                   | 22.46 | 22.41 | 17.48        | 17.60 | 17.55        |
|                    |            | RB6#0                 | 21.54                                   | 21.25 | 21.25 | 16.68        | 16.39 | 16.39        |
|                    | 16QAM      | RB1#0                 | 22.12                                   | 20.96 | 21.83 | <b>17.26</b> | 16.10 | 16.97        |
|                    |            | RB1#3                 | 22.06                                   | 20.79 | 21.62 | 17.20        | 15.93 | 16.76        |
|                    |            | RB1#5                 | 22.00                                   | 20.87 | 21.61 | 17.14        | 16.01 | 16.75        |
|                    |            | RB3#0                 | 21.26                                   | 21.26 | 21.49 | 16.40        | 16.40 | 16.63        |
|                    |            | RB3#3                 | 21.31                                   | 21.24 | 21.31 | 16.45        | 16.38 | 16.45        |
|                    |            | RB6#0                 | 20.49                                   | 21.00 | 21.15 | 15.63        | 16.14 | 16.29        |
| 3.0                | QPSK       | RB1#0                 | 22.30                                   | 22.26 | 22.39 | 17.44        | 17.40 | 17.53        |
|                    |            | RB1#8                 | 22.31                                   | 22.32 | 22.35 | 17.45        | 17.46 | 17.49        |
|                    |            | RB1#14                | 22.34                                   | 22.27 | 22.46 | 17.48        | 17.41 | <b>17.60</b> |
|                    |            | RB6#0                 | 21.52                                   | 21.33 | 21.35 | 16.66        | 16.47 | 16.49        |
|                    |            | RB6#9                 | 21.56                                   | 21.31 | 21.29 | 16.70        | 16.45 | 16.43        |
|                    |            | RB15#0                | 21.49                                   | 21.36 | 21.52 | 16.63        | 16.50 | 16.66        |
|                    | 16QAM      | RB1#0                 | 22.16                                   | 20.94 | 21.70 | 17.30        | 16.08 | 16.84        |
|                    |            | RB1#8                 | 22.11                                   | 20.82 | 21.68 | 17.25        | 15.96 | 16.82        |
|                    |            | RB1#14                | 22.23                                   | 20.93 | 21.42 | <b>17.37</b> | 16.07 | 16.56        |
|                    |            | RB6#0                 | 20.45                                   | 21.00 | 20.33 | 15.59        | 16.14 | 15.47        |
|                    |            | RB6#9                 | 20.99                                   | 21.01 | 20.79 | 16.13        | 16.15 | 15.93        |
|                    |            | RB15#0                | 20.50                                   | 20.83 | 20.41 | 15.64        | 15.97 | 15.55        |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm)     |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid          | High  |
| 5.0                | QPSK       | RB1#0                 | 22.34                                   | 22.34 | 22.37 | 17.48        | 17.48        | 17.51 |
|                    |            | RB1#13                | 22.38                                   | 22.33 | 22.41 | 17.52        | 17.47        | 17.55 |
|                    |            | RB1#24                | 22.27                                   | 22.42 | 22.45 | 17.41        | 17.56        | 17.59 |
|                    |            | RB15#0                | 21.48                                   | 21.38 | 21.35 | 16.62        | 16.52        | 16.49 |
|                    |            | RB15#10               | 21.45                                   | 21.31 | 21.33 | 16.59        | 16.45        | 16.47 |
|                    |            | RB25#0                | 21.50                                   | 21.29 | 21.39 | 16.64        | 16.43        | 16.53 |
|                    | 16QAM      | RB1#0                 | 21.46                                   | 20.78 | 20.34 | 16.60        | 15.92        | 15.48 |
|                    |            | RB1#13                | 21.56                                   | 20.71 | 20.47 | 16.70        | 15.85        | 15.61 |
|                    |            | RB1#24                | 21.53                                   | 20.94 | 20.35 | 16.67        | 16.08        | 15.49 |
|                    |            | RB15#0                | 20.32                                   | 20.83 | 20.89 | 15.46        | 15.97        | 16.03 |
|                    |            | RB15#10               | 20.74                                   | 20.78 | 20.45 | 15.88        | 15.92        | 15.59 |
|                    |            | RB25#0                | 20.85                                   | 20.74 | 20.40 | 15.99        | 15.88        | 15.54 |
| 10.0               | QPSK       | RB1#0                 | 22.34                                   | 22.34 | 22.40 | 17.48        | 17.48        | 17.54 |
|                    |            | RB1#25                | 22.39                                   | 22.53 | 22.37 | 17.53        | <b>17.67</b> | 17.51 |
|                    |            | RB1#49                | 22.44                                   | 22.47 | 22.37 | 17.58        | 17.61        | 17.51 |
|                    |            | RB25#0                | 21.39                                   | 21.40 | 21.40 | 16.53        | 16.54        | 16.54 |
|                    |            | RB25#25               | 21.33                                   | 21.24 | 21.60 | 16.47        | 16.38        | 16.74 |
|                    |            | RB50#0                | 21.44                                   | 21.35 | 21.38 | 16.58        | 16.49        | 16.52 |
|                    | 16QAM      | RB1#0                 | 21.53                                   | 20.95 | 21.26 | <b>16.67</b> | 16.09        | 16.40 |
|                    |            | RB1#25                | 21.51                                   | 20.88 | 21.38 | 16.65        | 16.02        | 16.52 |
|                    |            | RB1#49                | 21.46                                   | 20.86 | 21.24 | 16.60        | 16.00        | 16.38 |
|                    |            | RB25#0                | 20.92                                   | 20.92 | 20.76 | 16.06        | 16.06        | 15.90 |
|                    |            | RB25#25               | 20.82                                   | 20.90 | 20.38 | 15.96        | 16.04        | 15.52 |
|                    |            | RB50#0                | 20.42                                   | 20.80 | 20.77 | 15.56        | 15.94        | 15.91 |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)

For Band12: Antenna Gain = -2.71dBi = -4.86dBd (0dBd=2.15dBi)

Limit: ERP ≤ 34.77dBm

**LTE Band 13**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm) |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|----------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low      | Mid          | High  |
| 5.0                | QPSK       | RB1#0                 | 22.22                                   | 22.25 | 22.35 | 17.36    | 17.39        | 17.49 |
|                    |            | RB1#13                | 22.23                                   | 22.33 | 22.25 | 17.37    | 17.47        | 17.39 |
|                    |            | RB1#24                | 22.34                                   | 22.19 | 22.41 | 17.48    | 17.33        | 17.55 |
|                    |            | RB15#0                | 21.30                                   | 21.34 | 21.30 | 16.44    | 16.48        | 16.44 |
|                    |            | RB15#10               | 21.19                                   | 21.45 | 21.31 | 16.33    | 16.59        | 16.45 |
|                    |            | RB25#0                | 21.24                                   | 21.38 | 21.21 | 16.38    | 16.52        | 16.35 |
|                    | 16QAM      | RB1#0                 | 21.33                                   | 20.79 | 20.44 | 16.47    | 15.93        | 15.58 |
|                    |            | RB1#13                | 21.35                                   | 21.01 | 20.35 | 16.49    | 16.15        | 15.49 |
|                    |            | RB1#24                | 21.44                                   | 20.96 | 20.32 | 16.58    | 16.10        | 15.46 |
|                    |            | RB15#0                | 20.22                                   | 20.74 | 20.21 | 15.36    | 15.88        | 15.35 |
|                    |            | RB15#10               | 20.13                                   | 20.72 | 20.23 | 15.27    | 15.86        | 15.37 |
|                    |            | RB25#0                | 20.32                                   | 20.63 | 20.31 | 15.46    | 15.77        | 15.45 |
| 10.0               | QPSK       | RB1#0                 | /                                       | 22.41 | /     | /        | 17.55        | /     |
|                    |            | RB1#25                | /                                       | 22.49 | /     | /        | 17.63        | /     |
|                    |            | RB1#49                | /                                       | 22.54 | /     | /        | <b>17.68</b> | /     |
|                    |            | RB25#0                | /                                       | 21.16 | /     | /        | 16.30        | /     |
|                    |            | RB25#25               | /                                       | 21.28 | /     | /        | 16.42        | /     |
|                    |            | RB50#0                | /                                       | 21.40 | /     | /        | 16.54        | /     |
|                    | 16QAM      | RB1#0                 | /                                       | 21.47 | /     | /        | 16.61        | /     |
|                    |            | RB1#25                | /                                       | 21.53 | /     | /        | <b>16.67</b> | /     |
|                    |            | RB1#49                | /                                       | 21.48 | /     | /        | 16.62        | /     |
|                    |            | RB25#0                | /                                       | 20.43 | /     | /        | 15.57        | /     |
|                    |            | RB25#25               | /                                       | 20.26 | /     | /        | 15.40        | /     |
|                    |            | RB50#0                | /                                       | 20.79 | /     | /        | 15.93        | /     |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)

For Band13: Antenna Gain = -2.71dBi = -4.86 dBd (0dBd=2.15dBi)

Limit: ERP ≤ 34.77dBm

## LTE Band 17

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm)     |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid          | High  |
| 5.0                | QPSK       | RB1#0                 | 22.28                                   | 22.34 | 22.40 | 17.42        | 17.48        | 17.54 |
|                    |            | RB1#13                | 22.40                                   | 22.35 | 22.46 | 17.54        | 17.49        | 17.60 |
|                    |            | RB1#24                | 22.39                                   | 22.35 | 22.45 | 17.53        | 17.49        | 17.59 |
|                    |            | RB15#0                | 21.37                                   | 21.28 | 21.28 | 16.51        | 16.42        | 16.42 |
|                    |            | RB15#10               | 21.33                                   | 21.27 | 21.46 | 16.47        | 16.41        | 16.60 |
|                    |            | RB25#0                | 21.28                                   | 21.30 | 21.33 | 16.42        | 16.44        | 16.47 |
|                    | 16QAM      | RB1#0                 | 21.28                                   | 20.72 | 20.32 | 16.42        | 15.86        | 15.46 |
|                    |            | RB1#13                | 21.27                                   | 20.87 | 20.46 | 16.41        | 16.01        | 15.60 |
|                    |            | RB1#24                | 21.24                                   | 20.79 | 20.34 | 16.38        | 15.93        | 15.48 |
|                    |            | RB15#0                | 20.74                                   | 20.76 | 20.95 | 15.88        | 15.90        | 16.09 |
|                    |            | RB15#10               | 20.75                                   | 20.79 | 20.39 | 15.89        | 15.93        | 15.53 |
|                    |            | RB25#0                | 20.79                                   | 20.64 | 20.41 | 15.93        | 15.78        | 15.55 |
| 10.0               | QPSK       | RB1#0                 | 22.39                                   | 22.54 | 22.34 | 17.53        | 17.68        | 17.48 |
|                    |            | RB1#25                | 22.40                                   | 22.49 | 22.31 | 17.54        | 17.63        | 17.45 |
|                    |            | RB1#49                | 22.52                                   | 22.55 | 22.47 | 17.66        | <b>17.69</b> | 17.61 |
|                    |            | RB25#0                | 21.39                                   | 21.32 | 21.37 | 16.53        | 16.46        | 16.51 |
|                    |            | RB25#25               | 21.27                                   | 21.36 | 21.47 | 16.41        | 16.50        | 16.61 |
|                    |            | RB50#0                | 21.35                                   | 21.23 | 21.32 | 16.49        | 16.37        | 16.46 |
|                    | 16QAM      | RB1#0                 | 21.45                                   | 20.94 | 21.31 | 16.59        | 16.08        | 16.45 |
|                    |            | RB1#25                | 21.44                                   | 20.98 | 21.36 | 16.58        | 16.12        | 16.50 |
|                    |            | RB1#49                | 21.52                                   | 20.95 | 21.24 | <b>16.66</b> | 16.09        | 16.38 |
|                    |            | RB25#0                | 20.89                                   | 20.91 | 20.84 | 16.03        | 16.05        | 15.98 |
|                    |            | RB25#25               | 20.88                                   | 20.95 | 20.32 | 16.02        | 16.09        | 15.46 |
|                    |            | RB50#0                | 20.90                                   | 20.81 | 20.88 | 16.04        | 15.95        | 16.02 |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)

For Band17: Antenna Gain = -2.71dBi = -4.86dBd (0dBd=2.15dBi)

Limit: ERP≤34.77dBm



**LTE Band 26(Part 90S):**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm) |              |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|----------|--------------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low      | Mid          | High         |
| 1.4                | QPSK       | RB1#0                 | 22.46                                   | 22.50 | 22.36 | 18.10    | 18.14        | 18.00        |
|                    |            | RB1#3                 | 22.40                                   | 22.41 | 22.47 | 18.04    | 18.05        | 18.11        |
|                    |            | RB1#5                 | 22.42                                   | 22.43 | 22.49 | 18.06    | 18.07        | 18.13        |
|                    |            | RB3#0                 | 22.48                                   | 22.58 | 22.44 | 18.12    | <b>18.22</b> | 18.08        |
|                    |            | RB3#3                 | 22.50                                   | 22.55 | 22.43 | 18.14    | 18.19        | 18.07        |
|                    |            | RB6#0                 | 21.47                                   | 21.38 | 21.66 | 17.11    | 17.02        | 17.30        |
|                    | 16QAM      | RB1#0                 | 20.92                                   | 21.78 | 22.06 | 16.56    | 17.42        | 17.70        |
|                    |            | RB1#3                 | 21.03                                   | 21.88 | 22.15 | 16.67    | 17.52        | <b>17.79</b> |
|                    |            | RB1#5                 | 21.00                                   | 21.79 | 22.08 | 16.64    | 17.43        | 17.72        |
|                    |            | RB3#0                 | 21.53                                   | 21.59 | 21.31 | 17.17    | 17.23        | 16.95        |
|                    |            | RB3#3                 | 21.47                                   | 21.58 | 21.29 | 17.11    | 17.22        | 16.93        |
|                    |            | RB6#0                 | 20.60                                   | 21.07 | 20.46 | 16.24    | 16.71        | 16.10        |
| 3.0                | QPSK       | RB1#0                 | 22.51                                   | 22.46 | 22.43 | 18.15    | 18.10        | 18.07        |
|                    |            | RB1#8                 | 22.44                                   | 22.49 | 22.42 | 18.08    | 18.13        | 18.06        |
|                    |            | RB1#14                | 22.49                                   | 22.41 | 22.39 | 18.13    | 18.05        | 18.03        |
|                    |            | RB6#0                 | 21.49                                   | 21.49 | 21.26 | 17.13    | 17.13        | 16.90        |
|                    |            | RB6#9                 | 21.38                                   | 21.46 | 21.56 | 17.02    | 17.10        | 17.20        |
|                    |            | RB15#0                | 21.40                                   | 21.50 | 21.59 | 17.04    | 17.14        | 17.23        |
|                    | 16QAM      | RB1#0                 | 21.71                                   | 20.92 | 21.59 | 17.35    | 16.56        | 17.23        |
|                    |            | RB1#8                 | 21.72                                   | 20.97 | 21.76 | 17.36    | 16.61        | 17.40        |
|                    |            | RB1#14                | 21.67                                   | 20.95 | 21.78 | 17.31    | 16.59        | 17.42        |
|                    |            | RB6#0                 | 20.53                                   | 21.04 | 20.52 | 16.17    | 16.68        | 16.16        |
|                    |            | RB6#9                 | 21.04                                   | 21.00 | 20.40 | 16.68    | 16.64        | 16.04        |
|                    |            | RB15#0                | 20.37                                   | 20.88 | 20.52 | 16.01    | 16.52        | 16.16        |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | ERP(dBm) |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|----------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low      | Mid          | High  |
| 5.0                | QPSK       | RB1#0                 | 22.47                                   | 22.34 | 22.47 | 18.11    | 17.98        | 18.11 |
|                    |            | RB1#13                | 22.41                                   | 22.39 | 22.41 | 18.05    | 18.03        | 18.05 |
|                    |            | RB1#24                | 22.48                                   | 22.42 | 22.36 | 18.12    | 18.06        | 18.00 |
|                    |            | RB15#0                | 21.30                                   | 21.51 | 21.31 | 16.94    | 17.15        | 16.95 |
|                    |            | RB15#10               | 21.30                                   | 21.46 | 21.48 | 16.94    | 17.10        | 17.12 |
|                    |            | RB25#0                | 21.26                                   | 21.44 | 21.27 | 16.90    | 17.08        | 16.91 |
|                    | 16QAM      | RB1#0                 | 21.10                                   | 20.99 | 20.54 | 16.74    | 16.63        | 16.18 |
|                    |            | RB1#13                | 21.10                                   | 21.10 | 20.39 | 16.74    | 16.74        | 16.03 |
|                    |            | RB1#24                | 21.21                                   | 21.00 | 20.52 | 16.85    | 16.64        | 16.16 |
|                    |            | RB15#0                | 20.21                                   | 20.91 | 20.55 | 15.85    | 16.55        | 16.19 |
|                    |            | RB15#10               | 20.62                                   | 20.87 | 20.50 | 16.26    | 16.51        | 16.14 |
|                    |            | RB25#0                | 20.74                                   | 20.69 | 20.61 | 16.38    | 16.33        | 16.25 |
| 10.0               | QPSK       | RB1#0                 | /                                       | 22.38 | /     | /        | 18.02        | /     |
|                    |            | RB1#25                | /                                       | 22.49 | /     | /        | <b>18.13</b> | /     |
|                    |            | RB1#49                | /                                       | 22.42 | /     | /        | 18.06        | /     |
|                    |            | RB25#0                | /                                       | 21.38 | /     | /        | 17.02        | /     |
|                    |            | RB25#25               | /                                       | 21.27 | /     | /        | 16.91        | /     |
|                    |            | RB50#0                | /                                       | 21.55 | /     | /        | 17.19        | /     |
|                    | 16QAM      | RB1#0                 | /                                       | 22.08 | /     | /        | 17.72        | /     |
|                    |            | RB1#25                | /                                       | 22.15 | /     | /        | <b>17.79</b> | /     |
|                    |            | RB1#49                | /                                       | 22.12 | /     | /        | 17.76        | /     |
|                    |            | RB25#0                | /                                       | 20.82 | /     | /        | 16.46        | /     |
|                    |            | RB25#25               | /                                       | 20.54 | /     | /        | 16.18        | /     |
|                    |            | RB50#0                | /                                       | 20.78 | /     | /        | 16.42        | /     |

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)  
 For Band26: Antenna Gain = -2.21dBi = -4.36dBd (0dBd=2.15dBi)  
 Limit: ERP ≤ 50dBm

**LTE Band 38**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm)    |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid          | High  |
| 5.0                | QPSK       | RB1#0                 | 21.64                                   | 21.61 | 21.56 | 22.57        | 22.54        | 22.49 |
|                    |            | RB1#13                | 21.69                                   | 21.63 | 21.52 | 22.62        | 22.56        | 22.45 |
|                    |            | RB1#24                | 21.76                                   | 21.78 | 21.62 | 22.69        | <b>22.71</b> | 22.55 |
|                    |            | RB15#0                | 20.63                                   | 20.59 | 20.56 | 21.56        | 21.52        | 21.49 |
|                    |            | RB15#10               | 20.59                                   | 20.68 | 20.60 | 21.52        | 21.61        | 21.53 |
|                    |            | RB25#0                | 20.51                                   | 20.60 | 20.56 | 21.44        | 21.53        | 21.49 |
|                    | 16QAM      | RB1#0                 | 20.73                                   | 20.97 | 20.39 | 21.66        | 21.90        | 21.32 |
|                    |            | RB1#13                | 20.39                                   | 20.90 | 20.54 | 21.32        | 21.83        | 21.47 |
|                    |            | RB1#24                | 20.59                                   | 20.98 | 20.57 | 21.52        | <b>21.91</b> | 21.50 |
|                    |            | RB15#0                | 19.18                                   | 19.24 | 19.44 | 20.11        | 20.17        | 20.37 |
|                    |            | RB15#10               | 19.17                                   | 19.33 | 19.32 | 20.10        | 20.26        | 20.25 |
|                    |            | RB25#0                | 19.18                                   | 19.35 | 18.96 | 20.11        | 20.28        | 19.89 |
| 10.0               | QPSK       | RB1#0                 | 21.46                                   | 21.23 | 21.31 | <b>22.39</b> | 22.16        | 22.24 |
|                    |            | RB1#25                | 21.41                                   | 21.22 | 21.33 | 22.34        | 22.15        | 22.26 |
|                    |            | RB1#49                | 21.44                                   | 21.28 | 21.40 | 22.37        | 22.21        | 22.33 |
|                    |            | RB25#0                | 20.17                                   | 20.30 | 20.27 | 21.10        | 21.23        | 21.20 |
|                    |            | RB25#25               | 20.22                                   | 20.22 | 20.23 | 21.15        | 21.15        | 21.16 |
|                    |            | RB50#0                | 20.26                                   | 20.29 | 20.24 | 21.19        | 21.22        | 21.17 |
|                    | 16QAM      | RB1#0                 | 20.64                                   | 20.08 | 20.36 | 21.57        | 21.01        | 21.29 |
|                    |            | RB1#25                | 20.94                                   | 20.13 | 20.31 | 21.87        | 21.06        | 21.24 |
|                    |            | RB1#49                | 21.04                                   | 20.14 | 20.36 | <b>21.97</b> | 21.07        | 21.29 |
|                    |            | RB25#0                | 18.86                                   | 18.99 | 18.66 | 19.79        | 19.92        | 19.59 |
|                    |            | RB25#25               | 18.93                                   | 18.95 | 18.66 | 19.86        | 19.88        | 19.59 |
|                    |            | RB50#0                | 18.79                                   | 18.72 | 18.83 | 19.72        | 19.65        | 19.76 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |              |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|--------------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid          | High  |
| 15.0               | QPSK       | RB1#0                 | 21.44                                   | 21.19 | 21.33 | 22.37     | 22.12        | 22.26 |
|                    |            | RB1#38                | 21.42                                   | 21.20 | 21.32 | 22.35     | 22.13        | 22.25 |
|                    |            | RB1#74                | 21.44                                   | 21.31 | 21.42 | 22.37     | 22.24        | 22.35 |
|                    |            | RB36#0                | 20.22                                   | 20.21 | 20.26 | 21.15     | 21.14        | 21.19 |
|                    |            | RB36#39               | 20.23                                   | 20.25 | 20.23 | 21.16     | 21.18        | 21.16 |
|                    |            | RB75#0                | 20.23                                   | 20.25 | 20.17 | 21.16     | 21.18        | 21.10 |
|                    | 16QAM      | RB1#0                 | 20.47                                   | 19.69 | 20.39 | 21.40     | 20.62        | 21.32 |
|                    |            | RB1#38                | 20.76                                   | 19.42 | 20.37 | 21.69     | 20.35        | 21.30 |
|                    |            | RB1#74                | 20.82                                   | 19.58 | 20.39 | 21.75     | 20.51        | 21.32 |
|                    |            | RB36#0                | 18.68                                   | 18.93 | 18.91 | 19.61     | 19.86        | 19.84 |
|                    |            | RB36#39               | 18.75                                   | 18.88 | 18.77 | 19.68     | 19.81        | 19.70 |
|                    |            | RB75#0                | 18.89                                   | 18.86 | 18.87 | 19.82     | 19.79        | 19.80 |
| 20.0               | QPSK       | RB1#0                 | 21.25                                   | 21.46 | 21.31 | 22.18     | 22.39        | 22.24 |
|                    |            | RB1#50                | 21.27                                   | 21.39 | 21.29 | 22.20     | 22.32        | 22.22 |
|                    |            | RB1#99                | 21.37                                   | 21.52 | 21.29 | 22.30     | <b>22.45</b> | 22.22 |
|                    |            | RB50#0                | 20.14                                   | 20.19 | 20.25 | 21.07     | 21.12        | 21.18 |
|                    |            | RB50#50               | 20.16                                   | 20.30 | 20.21 | 21.09     | 21.23        | 21.14 |
|                    |            | RB100#0               | 20.26                                   | 20.22 | 20.28 | 21.19     | 21.15        | 21.21 |
|                    | 16QAM      | RB1#0                 | 19.82                                   | 21.02 | 20.45 | 20.75     | <b>21.95</b> | 21.38 |
|                    |            | RB1#50                | 19.82                                   | 21.00 | 20.46 | 20.75     | 21.93        | 21.39 |
|                    |            | RB1#99                | 19.91                                   | 20.95 | 20.42 | 20.84     | 21.88        | 21.35 |
|                    |            | RB50#0                | 18.89                                   | 18.75 | 18.81 | 19.82     | 19.68        | 19.74 |
|                    |            | RB50#50               | 18.87                                   | 18.91 | 18.94 | 19.80     | 19.84        | 19.87 |
|                    |            | RB100#0               | 18.67                                   | 18.82 | 18.95 | 19.60     | 19.75        | 19.88 |

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

For Band38: Antenna Gain = 0.93dBi

Limit: EIRP ≤ 33dBm

**LTE Band 41**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm)    |       |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|--------------|-------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low          | Mid   | High         |
| 5.0                | QPSK       | RB1#0                 | 21.65                                   | 21.57 | 21.67 | 22.58        | 22.50 | 22.60        |
|                    |            | RB1#13                | 21.66                                   | 21.57 | 21.69 | 22.59        | 22.50 | 22.62        |
|                    |            | RB1#24                | 21.72                                   | 21.56 | 21.79 | 22.65        | 22.49 | <b>22.72</b> |
|                    |            | RB15#0                | 20.50                                   | 20.59 | 20.63 | 21.43        | 21.52 | 21.56        |
|                    |            | RB15#10               | 20.65                                   | 20.67 | 20.64 | 21.58        | 21.60 | 21.57        |
|                    |            | RB25#0                | 20.61                                   | 20.59 | 20.60 | 21.54        | 21.52 | 21.53        |
|                    | 16QAM      | RB1#0                 | 20.87                                   | 20.50 | 20.66 | 21.80        | 21.43 | 21.59        |
|                    |            | RB1#13                | 20.88                                   | 20.40 | 20.69 | 21.81        | 21.33 | 21.62        |
|                    |            | RB1#24                | 20.92                                   | 20.57 | 20.46 | <b>21.85</b> | 21.50 | 21.39        |
|                    |            | RB15#0                | 19.19                                   | 19.38 | 19.15 | 20.12        | 20.31 | 20.08        |
|                    |            | RB15#10               | 19.16                                   | 19.34 | 19.15 | 20.09        | 20.27 | 20.08        |
|                    |            | RB25#0                | 19.16                                   | 19.03 | 19.19 | 20.09        | 19.96 | 20.12        |
| 10.0               | QPSK       | RB1#0                 | 21.38                                   | 21.22 | 21.29 | 22.31        | 22.15 | 22.22        |
|                    |            | RB1#25                | 21.44                                   | 21.25 | 21.33 | 22.37        | 22.18 | 22.26        |
|                    |            | RB1#49                | 21.53                                   | 21.28 | 21.32 | 22.46        | 22.21 | 22.25        |
|                    |            | RB25#0                | 20.37                                   | 20.33 | 20.19 | 21.30        | 21.26 | 21.12        |
|                    |            | RB25#25               | 20.25                                   | 20.24 | 20.26 | 21.18        | 21.17 | 21.19        |
|                    |            | RB50#0                | 20.27                                   | 20.28 | 20.14 | 21.20        | 21.21 | 21.07        |
|                    | 16QAM      | RB1#0                 | 20.50                                   | 20.11 | 20.23 | 21.43        | 21.04 | 21.16        |
|                    |            | RB1#25                | 20.77                                   | 20.17 | 20.24 | 21.70        | 21.10 | 21.17        |
|                    |            | RB1#49                | 20.83                                   | 20.17 | 20.34 | 21.76        | 21.10 | 21.27        |
|                    |            | RB25#0                | 18.92                                   | 19.13 | 18.70 | 19.85        | 20.06 | 19.63        |
|                    |            | RB25#25               | 18.98                                   | 19.08 | 18.60 | 19.91        | 20.01 | 19.53        |
|                    |            | RB50#0                | 18.83                                   | 18.85 | 18.82 | 19.76        | 19.78 | 19.75        |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |              |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|--------------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High         |
| 15.0               | QPSK       | RB1#0                 | 21.05                                   | 21.41 | 21.40 | 21.98     | 22.34 | 22.33        |
|                    |            | RB1#38                | 21.11                                   | 21.46 | 21.42 | 22.04     | 22.39 | 22.35        |
|                    |            | RB1#74                | 21.14                                   | 21.42 | 21.43 | 22.07     | 22.35 | 22.36        |
|                    |            | RB36#0                | 20.22                                   | 20.33 | 20.21 | 21.15     | 21.26 | 21.14        |
|                    |            | RB36#39               | 20.40                                   | 20.37 | 20.13 | 21.33     | 21.30 | 21.06        |
|                    |            | RB75#0                | 20.26                                   | 20.20 | 20.17 | 21.19     | 21.13 | 21.10        |
|                    | 16QAM      | RB1#0                 | 20.41                                   | 20.38 | 20.57 | 21.34     | 21.31 | 21.50        |
|                    |            | RB1#38                | 20.30                                   | 20.32 | 20.66 | 21.23     | 21.25 | 21.59        |
|                    |            | RB1#74                | 20.41                                   | 20.37 | 20.50 | 21.34     | 21.30 | 21.43        |
|                    |            | RB36#0                | 18.84                                   | 18.78 | 18.70 | 19.77     | 19.71 | 19.63        |
|                    |            | RB36#39               | 18.83                                   | 18.77 | 18.70 | 19.76     | 19.70 | 19.63        |
|                    |            | RB75#0                | 18.95                                   | 18.75 | 18.87 | 19.88     | 19.68 | 19.80        |
| 20.0               | QPSK       | RB1#0                 | 21.20                                   | 21.21 | 21.38 | 22.13     | 22.14 | <b>22.31</b> |
|                    |            | RB1#50                | 21.20                                   | 21.21 | 21.34 | 22.13     | 22.14 | 22.27        |
|                    |            | RB1#99                | 21.30                                   | 21.30 | 21.37 | 22.23     | 22.23 | 22.30        |
|                    |            | RB50#0                | 20.18                                   | 20.21 | 20.29 | 21.11     | 21.14 | 21.22        |
|                    |            | RB50#50               | 20.11                                   | 20.16 | 20.22 | 21.04     | 21.09 | 21.15        |
|                    |            | RB100#0               | 20.18                                   | 20.22 | 20.11 | 21.11     | 21.15 | 21.04        |
|                    | 16QAM      | RB1#0                 | 20.41                                   | 19.71 | 21.27 | 21.34     | 20.64 | <b>22.20</b> |
|                    |            | RB1#50                | 20.40                                   | 19.76 | 21.02 | 21.33     | 20.69 | 21.95        |
|                    |            | RB1#99                | 20.50                                   | 19.82 | 21.19 | 21.43     | 20.75 | 22.12        |
|                    |            | RB50#0                | 18.87                                   | 18.79 | 18.86 | 19.80     | 19.72 | 19.79        |
|                    |            | RB50#50               | 18.87                                   | 18.75 | 18.89 | 19.80     | 19.68 | 19.82        |
|                    |            | RB100#0               | 18.74                                   | 18.78 | 18.76 | 19.67     | 19.71 | 19.69        |

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)

For Band41: Antenna Gain = 0.93dBi

Limit: EIRP ≤ 33dBm

**LTE Band 66:**

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 1.4                | QPSK       | RB1#0                 | 21.76                                   | 21.82 | 22.13 | 23.07     | 23.13 | 23.44 |
|                    |            | RB1#3                 | 22.06                                   | 21.87 | 22.12 | 23.37     | 23.18 | 23.43 |
|                    |            | RB1#5                 | 22.05                                   | 21.86 | 22.14 | 23.36     | 23.17 | 23.45 |
|                    |            | RB3#0                 | 22.05                                   | 22.02 | 22.08 | 23.36     | 23.33 | 23.39 |
|                    |            | RB3#3                 | 22.03                                   | 22.02 | 22.10 | 23.34     | 23.33 | 23.41 |
|                    |            | RB6#0                 | 20.95                                   | 20.98 | 21.04 | 22.26     | 22.29 | 22.35 |
|                    | 16QAM      | RB1#0                 | 21.64                                   | 21.59 | 21.63 | 22.95     | 22.90 | 22.94 |
|                    |            | RB1#3                 | 21.69                                   | 21.63 | 21.66 | 23.00     | 22.94 | 22.97 |
|                    |            | RB1#5                 | 21.66                                   | 21.62 | 21.62 | 22.97     | 22.93 | 22.93 |
|                    |            | RB3#0                 | 21.13                                   | 20.94 | 21.16 | 22.44     | 22.25 | 22.47 |
|                    |            | RB3#3                 | 21.20                                   | 21.02 | 21.19 | 22.51     | 22.33 | 22.50 |
|                    |            | RB6#0                 | 20.30                                   | 20.02 | 20.28 | 21.61     | 21.33 | 21.59 |
| 3.0                | QPSK       | RB1#0                 | 21.94                                   | 22.11 | 22.02 | 23.25     | 23.42 | 23.33 |
|                    |            | RB1#8                 | 21.99                                   | 22.08 | 22.02 | 23.30     | 23.39 | 23.33 |
|                    |            | RB1#14                | 22.03                                   | 22.11 | 22.02 | 23.34     | 23.42 | 23.33 |
|                    |            | RB6#0                 | 21.06                                   | 20.97 | 21.14 | 22.37     | 22.28 | 22.45 |
|                    |            | RB6#9                 | 20.97                                   | 21.01 | 21.13 | 22.28     | 22.32 | 22.44 |
|                    |            | RB15#0                | 21.09                                   | 21.02 | 21.11 | 22.40     | 22.33 | 22.42 |
|                    | 16QAM      | RB1#0                 | 21.85                                   | 21.17 | 21.56 | 23.16     | 22.48 | 22.87 |
|                    |            | RB1#8                 | 21.94                                   | 21.06 | 21.55 | 23.25     | 22.37 | 22.86 |
|                    |            | RB1#14                | 21.90                                   | 21.10 | 21.52 | 23.21     | 22.41 | 22.83 |
|                    |            | RB6#0                 | 19.99                                   | 20.34 | 20.10 | 21.30     | 21.65 | 21.41 |
|                    |            | RB6#9                 | 20.08                                   | 20.37 | 20.12 | 21.39     | 21.68 | 21.43 |
|                    |            | RB15#0                | 20.05                                   | 20.14 | 20.16 | 21.36     | 21.45 | 21.47 |

| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 5.0                | QPSK       | RB1#0                 | 22.12                                   | 21.91 | 22.03 | 23.43     | 23.22 | 23.34 |
|                    |            | RB1#13                | 22.08                                   | 21.92 | 22.04 | 23.39     | 23.23 | 23.35 |
|                    |            | RB1#24                | 22.13                                   | 21.88 | 22.01 | 23.44     | 23.19 | 23.32 |
|                    |            | RB15#0                | 21.05                                   | 20.89 | 21.11 | 22.36     | 22.20 | 22.42 |
|                    |            | RB15#10               | 20.98                                   | 20.96 | 21.13 | 22.29     | 22.27 | 22.44 |
|                    |            | RB25#0                | 21.04                                   | 20.90 | 21.15 | 22.35     | 22.21 | 22.46 |
|                    | 16QAM      | RB1#0                 | 21.13                                   | 20.65 | 20.41 | 22.44     | 21.96 | 21.72 |
|                    |            | RB1#13                | 21.13                                   | 20.59 | 20.38 | 22.44     | 21.90 | 21.69 |
|                    |            | RB1#24                | 21.13                                   | 20.66 | 20.46 | 22.44     | 21.97 | 21.77 |
|                    |            | RB15#0                | 19.96                                   | 20.10 | 20.15 | 21.27     | 21.41 | 21.46 |
|                    |            | RB15#10               | 19.94                                   | 20.08 | 20.27 | 21.25     | 21.39 | 21.58 |
|                    |            | RB25#0                | 20.10                                   | 19.92 | 20.21 | 21.41     | 21.23 | 21.52 |
| 10.0               | QPSK       | RB1#0                 | 22.05                                   | 22.16 | 22.02 | 23.36     | 23.47 | 23.33 |
|                    |            | RB1#25                | 22.04                                   | 22.07 | 22.01 | 23.35     | 23.38 | 23.32 |
|                    |            | RB1#49                | 21.99                                   | 22.14 | 22.03 | 23.30     | 23.45 | 23.34 |
|                    |            | RB25#0                | 21.01                                   | 21.01 | 21.06 | 22.32     | 22.32 | 22.37 |
|                    |            | RB25#25               | 21.07                                   | 20.99 | 21.06 | 22.38     | 22.30 | 22.37 |
|                    |            | RB50#0                | 21.05                                   | 21.00 | 21.17 | 22.36     | 22.31 | 22.48 |
|                    | 16QAM      | RB1#0                 | 21.20                                   | 20.51 | 21.26 | 22.51     | 21.82 | 22.57 |
|                    |            | RB1#25                | 21.12                                   | 20.50 | 21.27 | 22.43     | 21.81 | 22.58 |
|                    |            | RB1#49                | 21.18                                   | 20.49 | 21.26 | 22.49     | 21.80 | 22.57 |
|                    |            | RB25#0                | 20.20                                   | 20.16 | 20.18 | 21.51     | 21.47 | 21.49 |
|                    |            | RB25#25               | 20.17                                   | 20.13 | 20.16 | 21.48     | 21.44 | 21.47 |
|                    |            | RB50#0                | 20.18                                   | 20.12 | 20.23 | 21.49     | 21.43 | 21.54 |



| Bandwidth<br>(MHz) | Modulation | RB size/<br>RB Offset | Conducted Average Output<br>Power (dBm) |       |       | EIRP(dBm) |       |       |
|--------------------|------------|-----------------------|-----------------------------------------|-------|-------|-----------|-------|-------|
|                    |            |                       | Low                                     | Mid   | High  | Low       | Mid   | High  |
| 15.0               | QPSK       | RB1#0                 | 22.03                                   | 22.17 | 21.95 | 23.34     | 23.48 | 23.26 |
|                    |            | RB1#38                | 21.99                                   | 22.08 | 22.00 | 23.30     | 23.39 | 23.31 |
|                    |            | RB1#74                | 21.98                                   | 22.10 | 21.99 | 23.29     | 23.41 | 23.30 |
|                    |            | RB36#0                | 20.98                                   | 21.01 | 20.98 | 22.29     | 22.32 | 22.29 |
|                    |            | RB36#39               | 20.93                                   | 21.00 | 20.97 | 22.24     | 22.31 | 22.28 |
|                    |            | RB75#0                | 21.04                                   | 20.89 | 21.10 | 22.35     | 22.20 | 22.41 |
|                    | 16QAM      | RB1#0                 | 21.10                                   | 21.31 | 21.26 | 22.41     | 22.62 | 22.57 |
|                    |            | RB1#38                | 21.12                                   | 21.23 | 21.23 | 22.43     | 22.54 | 22.54 |
|                    |            | RB1#74                | 21.10                                   | 21.24 | 21.29 | 22.41     | 22.55 | 22.60 |
|                    |            | RB36#0                | 20.16                                   | 20.00 | 20.20 | 21.47     | 21.31 | 21.51 |
|                    |            | RB36#39               | 20.14                                   | 20.06 | 20.21 | 21.45     | 21.37 | 21.52 |
|                    |            | RB75#0                | 20.08                                   | 20.06 | 20.23 | 21.39     | 21.37 | 21.54 |
| 20.0               | QPSK       | RB1#0                 | 22.08                                   | 22.17 | 22.17 | 23.39     | 23.48 | 23.48 |
|                    |            | RB1#50                | 22.04                                   | 22.07 | 22.28 | 23.35     | 23.38 | 23.59 |
|                    |            | RB1#99                | 22.07                                   | 22.10 | 22.25 | 23.38     | 23.41 | 23.56 |
|                    |            | RB50#0                | 21.06                                   | 20.97 | 21.02 | 22.37     | 22.28 | 22.33 |
|                    |            | RB50#50               | 20.99                                   | 21.01 | 21.05 | 22.30     | 22.32 | 22.36 |
|                    |            | RB100#0               | 21.06                                   | 20.96 | 21.05 | 22.37     | 22.27 | 22.36 |
|                    | 16QAM      | RB1#0                 | 21.50                                   | 21.60 | 20.88 | 22.81     | 22.91 | 22.19 |
|                    |            | RB1#50                | 21.48                                   | 21.55 | 20.96 | 22.79     | 22.86 | 22.27 |
|                    |            | RB1#99                | 21.48                                   | 21.52 | 21.02 | 22.79     | 22.83 | 22.33 |
|                    |            | RB50#0                | 20.24                                   | 19.98 | 20.09 | 21.55     | 21.29 | 21.40 |
|                    |            | RB50#50               | 20.13                                   | 20.06 | 20.22 | 21.44     | 21.37 | 21.53 |
|                    |            | RB100#0               | 20.09                                   | 20.12 | 20.15 | 21.40     | 21.43 | 21.46 |

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band 66: Antenna Gain = 1.31dBi

Limit: EIRP ≤ 30dBm

**Peak-to-average ratio (PAR)****Cellular Band**

| Mode | Channel | PAR (dB) | Limit (dB) |
|------|---------|----------|------------|
| GSM  | Low     | 4.16     | 13         |
|      | Middle  | 4.64     | 13         |
|      | High    | 3.65     | 13         |

| Mode  | Channel | PAR (dB) | Limit (dB) |
|-------|---------|----------|------------|
| EGPRS | Low     | 4.24     | 13         |
|       | Middle  | 4.21     | 13         |
|       | High    | 3.82     | 13         |

| Mode             | Channel | PAR (dB) | Limit (dB) |
|------------------|---------|----------|------------|
| RMC<br>(BPSK)    | Low     | 3.11     | 13         |
|                  | Middle  | 3.17     | 13         |
|                  | High    | 3.24     | 13         |
| HSDPA<br>(16QAM) | Low     | 3.91     | 13         |
|                  | Middle  | 3.94     | 13         |
|                  | High    | 4.07     | 13         |
| HSUPA<br>(BPSK)  | Low     | 4.04     | 13         |
|                  | Middle  | 4.01     | 13         |
|                  | High    | 3.65     | 13         |
| HSPA+            | Low     | 3.26     | 13         |
|                  | Middle  | 3.51     | 13         |
|                  | High    | 3.42     | 13         |

**PCS Band**

| Mode | Channel | PAR (dB) | Limit (dB) |
|------|---------|----------|------------|
| GSM  | Low     | 3.23     | 13         |
|      | Middle  | 3.85     | 13         |
|      | High    | 3.72     | 13         |

| Mode  | Channel | PAR (dB) | Limit (dB) |
|-------|---------|----------|------------|
| EGPRS | Low     | 3.25     | 13         |
|       | Middle  | 3.60     | 13         |
|       | High    | 3.15     | 13         |

| Mode             | Channel | PAR (dB) | Limit (dB) |
|------------------|---------|----------|------------|
| RMC<br>(BPSK)    | Low     | 3.11     | 13         |
|                  | Middle  | 3.17     | 13         |
|                  | High    | 3.11     | 13         |
| HSDPA<br>(16QAM) | Low     | 4.04     | 13         |
|                  | Middle  | 4.10     | 13         |
|                  | High    | 4.10     | 13         |
| HSUPA<br>(BPSK)  | Low     | 3.91     | 13         |
|                  | Middle  | 4.17     | 13         |
|                  | High    | 4.04     | 13         |
| HSPA+            | Low     | 3.88     | 13         |
|                  | Middle  | 4.05     | 13         |
|                  | High    | 4.36     | 13         |

**AWS Band**

| Mode             | Channel | PAR (dB) | Limit (dB) |
|------------------|---------|----------|------------|
| RMC<br>(BPSK)    | Low     | 3.30     | 13         |
|                  | Middle  | 3.24     | 13         |
|                  | High    | 3.17     | 13         |
| HSDPA<br>(16QAM) | Low     | 4.01     | 13         |
|                  | Middle  | 4.13     | 13         |
|                  | High    | 4.01     | 13         |
| HSUPA<br>(BPSK)  | Low     | 4.23     | 13         |
|                  | Middle  | 4.23     | 13         |
|                  | High    | 4.10     | 13         |
| HSPA+            | Low     | 4.11     | 13         |
|                  | Middle  | 4.32     | 13         |
|                  | High    | 4.15     | 13         |

**LTE Band:** (pre-scan all bandwidth, the worst case as below)

**LTE Band 2 20MHz Bandwidth**

| Modulation         | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|--------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)    | 4.78             | 5.36                | 4.75              | 13             | Pass   |
| QPSK (100RB Size)  | 5.33             | 5.65                | 5.51              | 13             | Pass   |
| 16QAM (1RB Size)   | 6.12             | 6.12                | 6.29              | 13             | Pass   |
| 16QAM (100RB Size) | 6.12             | 6.49                | 6.32              | 13             | Pass   |

**LTE Band 4 20MHz Bandwidth**

| Modulation         | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|--------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)    | 5.54             | 5.36                | 4.00              | 13             | Pass   |
| QPSK (100RB Size)  | 5.57             | 5.30                | 4.23              | 13             | Pass   |
| 16QAM (1RB Size)   | 6.46             | 6.52                | 5.97              | 13             | Pass   |
| 16QAM (100RB Size) | 6.52             | 5.97                | 6.00              | 13             | Pass   |

**LTE Band 5 10MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | 8.43             | 8.46                | 10.26             | 13             | Pass   |
| QPSK (50RB Size)  | 4.97             | 5.71                | 5.64              | 13             | Pass   |
| 16QAM (1RB Size)  | 7.76             | 6.06                | 6.47              | 13             | Pass   |
| 16QAM (50RB Size) | 6.44             | 6.51                | 6.54              | 13             | Pass   |

**LTE Band 7 20MHz Bandwidth**

| Modulation         | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|--------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)    | 3.68             | 6.23                | 4.84              | 13             | Pass   |
| QPSK (100RB Size)  | 5.48             | 4.67                | 4.84              | 13             | Pass   |
| 16QAM (1RB Size)   | 4.61             | 6.12                | 6.35              | 13             | Pass   |
| 16QAM (100RB Size) | 6.41             | 6.17                | 6.38              | 13             | Pass   |

**LTE Band 12 10MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | 11.79            | 11.31               | 5.48              | 13             | Pass   |
| QPSK (50RB Size)  | 8.46             | 5.67                | 5.67              | 13             | Pass   |
| 16QAM (1RB Size)  | 5.10             | 6.99                | 6.19              | 13             | Pass   |
| 16QAM (50RB Size) | 9.36             | 11.19               | 6.51              | 13             | Pass   |

**LTE Band 13 10MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | /                | 4.62                | /                 | 13             | Pass   |
| QPSK (50RB Size)  | /                | 5.51                | /                 | 13             | Pass   |
| 16QAM (1RB Size)  | /                | 12.69               | /                 | 13             | Pass   |
| 16QAM (50RB Size) | /                | 10.99               | /                 | 13             | Pass   |

**LTE Band 17 10MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | 9.20             | 5.35                | 6.57              | 13             | Pass   |
| QPSK (50RB Size)  | 9.29             | 5.67                | 5.71              | 13             | Pass   |
| 16QAM (1RB Size)  | 6.70             | 6.41                | 5.93              | 13             | Pass   |
| 16QAM (50RB Size) | 6.60             | 6.54                | 6.54              | 13             | Pass   |

**LTE Band 26(Part 22H) 15MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | 5.62             | 4.70                | 4.96              | 13             | Pass   |
| QPSK (75RB Size)  | 4.58             | 4.96                | 4.93              | 13             | Pass   |
| 16QAM (1RB Size)  | 6.35             | 5.80                | 5.91              | 13             | Pass   |
| 16QAM (75RB Size) | 5.91             | 6.41                | 6.35              | 13             | Pass   |

**LTE Band 26(Part 90S) 10MHz Bandwidth**

| Modulation        | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|-------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)   | /                | 4.71                | /                 | 13             | Pass   |
| QPSK (50RB Size)  | /                | 5.64                | /                 | 13             | Pass   |
| 16QAM (1RB Size)  | /                | 6.06                | /                 | 13             | Pass   |
| 16QAM (50RB Size) | /                | 6.44                | /                 | 13             | Pass   |

**LTE Band 38 20MHz Bandwidth**

| Modulation         | Low channel (dB) | Middle channel (dB) | High channel (dB) | PAR Limit (dB) | Result |
|--------------------|------------------|---------------------|-------------------|----------------|--------|
| QPSK (1RB Size)    | 5.13             | 5.16                | 6.46              | 13             | Pass   |
| QPSK (100RB Size)  | 6.29             | 5.16                | 7.01              | 13             | Pass   |
| 16QAM (1RB Size)   | 5.86             | 6.06                | 5.77              | 13             | Pass   |
| 16QAM (100RB Size) | 6.46             | 6.38                | 6.17              | 13             | Pass   |

**LTE Band 41 20MHz Bandwidth**

| <b>Modulation</b>     | <b>Low channel<br/>(dB)</b> | <b>Middle channel<br/>(dB)</b> | <b>High channel<br/>(dB)</b> | <b>PAR<br/>Limit<br/>(dB)</b> | <b>Result</b> |
|-----------------------|-----------------------------|--------------------------------|------------------------------|-------------------------------|---------------|
| QPSK<br>(1RB Size)    | 5.45                        | 6.43                           | 5.13                         | 13                            | Pass          |
| QPSK<br>(100RB Size)  | 5.16                        | 6.23                           | 5.51                         | 13                            | Pass          |
| 16QAM<br>(1RB Size)   | 5.91                        | 6.23                           | 6.06                         | 13                            | Pass          |
| 16QAM<br>(100RB Size) | 5.97                        | 6.55                           | 6.32                         | 13                            | Pass          |

**LTE Band 66 20MHz Bandwidth**

| <b>Modulation</b>     | <b>Low channel<br/>(dB)</b> | <b>Middle channel<br/>(dB)</b> | <b>High channel<br/>(dB)</b> | <b>PAR<br/>Limit<br/>(dB)</b> | <b>Result</b> |
|-----------------------|-----------------------------|--------------------------------|------------------------------|-------------------------------|---------------|
| QPSK<br>(1RB Size)    | 4.43                        | 5.80                           | 4.43                         | 13                            | Pass          |
| QPSK<br>(100RB Size)  | 5.54                        | 5.80                           | 4.35                         | 13                            | Pass          |
| 16QAM<br>(1RB Size)   | 6.43                        | 4.23                           | 5.65                         | 13                            | Pass          |
| 16QAM<br>(100RB Size) | 6.46                        | 4.09                           | 5.65                         | 13                            | Pass          |

## FCC §2.1049, §22.917, §22.905 & §24.238&§27.53 &§90.209- OCCUPIED BANDWIDTH

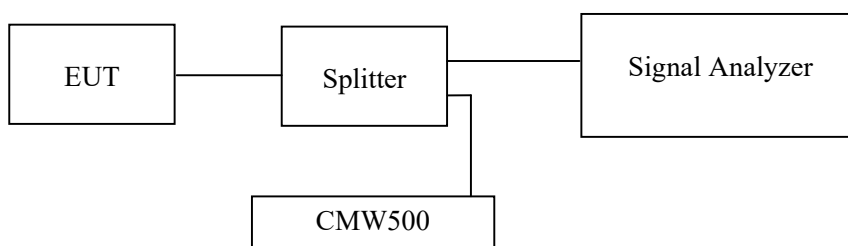
### Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238, §27.53 and §90.209.

### Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

### Test Data

#### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20~25 °C  |
| Relative Humidity: | 50~56.8 % |
| ATM Pressure:      | 101.0 kPa |

*The testing was performed by Glenn Jiang from 2023-01-06 to 2023-01-10.*

*EUT operation mode: Transmitting*

#### Test Result: Pass

*Please refer to the following tables and plots.*



**Cellular Band (Part 22H)**

| Mode        | Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | 26 dB Emission Bandwidth (kHz) |
|-------------|---------|-----------------|------------------------------|--------------------------------|
| GSM (GMSK)  | 128     | 824.2           | 243.00                       | 318.00                         |
|             | 190     | 836.6           | 246.00                       | 315.00                         |
|             | 251     | 848.8           | 246.00                       | 320.00                         |
| EGPRS(8PSK) | 128     | 824.2           | 247.00                       | 308.00                         |
|             | 190     | 836.6           | 245.00                       | 318.00                         |
|             | 251     | 848.8           | 246.00                       | 318.00                         |

|       | Frequency (MHz) | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) |
|-------|-----------------|--------------------------|----------------------|
| RMC   | 826.4           | 4.14                     | 4.71                 |
|       | 836.6           | 4.14                     | 4.68                 |
|       | 846.6           | 4.16                     | 4.68                 |
| HSDPA | 826.4           | 4.14                     | 4.71                 |
|       | 836.6           | 4.17                     | 4.70                 |
|       | 846.6           | 4.16                     | 4.68                 |
| HSUPA | 826.4           | 4.16                     | 4.70                 |
|       | 836.6           | 4.16                     | 4.70                 |
|       | 846.6           | 4.14                     | 4.68                 |

**PCS Band (Part 24E)**

| Mode        | Channel | Frequency (MHz) | 99% Occupied Bandwidth (kHz) | 26 dB Emission Bandwidth (kHz) |
|-------------|---------|-----------------|------------------------------|--------------------------------|
| GSM (GMSK)  | 512     | 1850.2          | 244.00                       | 320.00                         |
|             | 661     | 1880.0          | 247.00                       | 320.00                         |
|             | 810     | 1909.8          | 245.00                       | 315.00                         |
| EGPRS(8PSK) | 512     | 1850.2          | 243.00                       | 302.00                         |
|             | 661     | 1880.0          | 242.00                       | 303.00                         |
|             | 810     | 1909.8          | 242.00                       | 307.00                         |

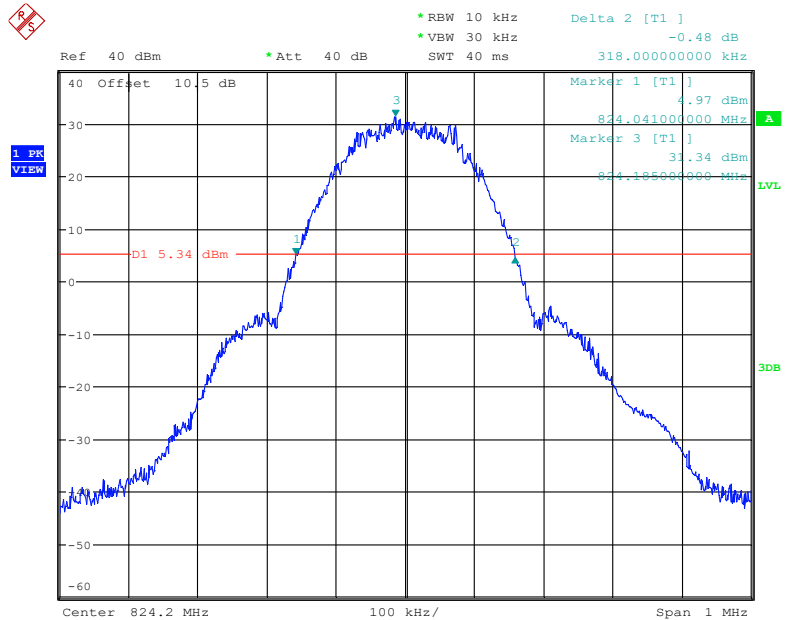
|       | Frequency (MHz) | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) |
|-------|-----------------|--------------------------|----------------------|
| RMC   | 1852.4          | 4.14                     | 4.70                 |
|       | 1880.0          | 4.16                     | 4.71                 |
|       | 1907.6          | 4.16                     | 4.70                 |
| HSDPA | 1852.4          | 4.17                     | 4.71                 |
|       | 1880.0          | 4.16                     | 4.68                 |
|       | 1907.6          | 4.16                     | 4.70                 |
| HSUPA | 1852.4          | 4.16                     | 4.68                 |
|       | 1880.0          | 4.16                     | 4.70                 |
|       | 1907.6          | 4.14                     | 4.71                 |

**AWS Band (Part 27)**

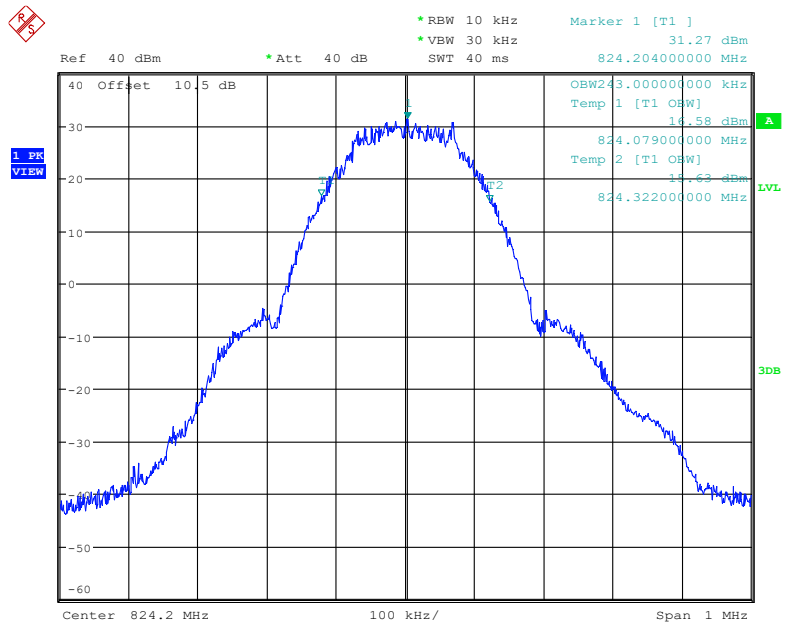
|       | Frequency (MHz) | Occupied Bandwidth (MHz) | 26dB Bandwidth (MHz) |
|-------|-----------------|--------------------------|----------------------|
| RMC   | 1712.4          | 4.16                     | 4.68                 |
|       | 1732.6          | 4.16                     | 4.70                 |
|       | 1752.6          | 4.16                     | 4.70                 |
| HSDPA | 1712.4          | 4.16                     | 4.68                 |
|       | 1732.6          | 4.16                     | 4.70                 |
|       | 1752.6          | 4.16                     | 4.70                 |
| HSUPA | 1712.4          | 4.16                     | 4.71                 |
|       | 1732.6          | 4.16                     | 4.71                 |
|       | 1752.6          | 4.16                     | 4.70                 |

## Cellular Band (Part 22H)

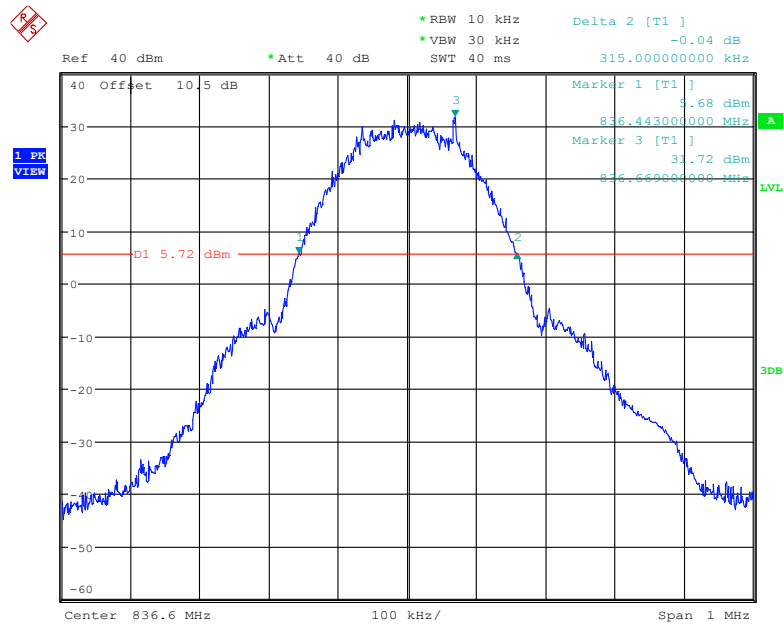
## 26 dB Emissions &amp; 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel



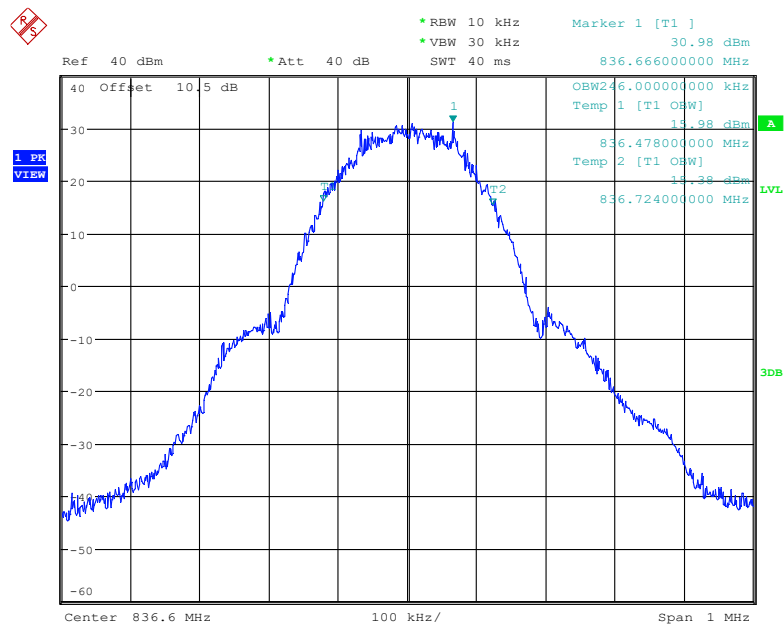
Date: 6.JAN.2023 17:12:24



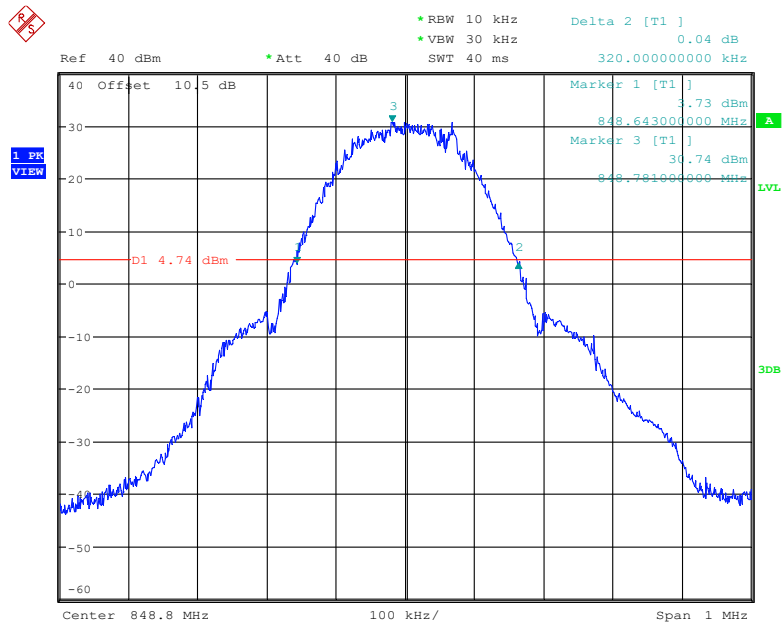
Date: 6.JAN.2023 17:11:40

**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel**

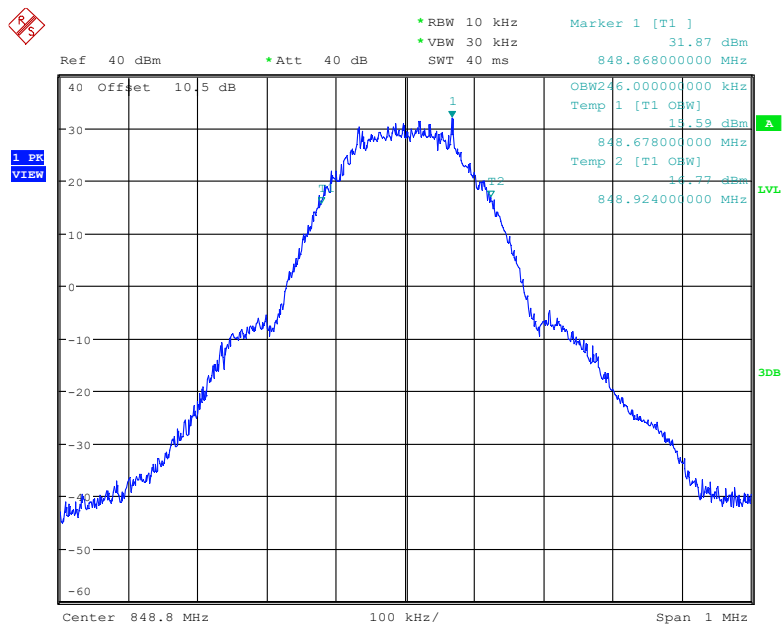
Date: 6.JAN.2023 17:18:34



Date: 6.JAN.2023 17:17:55

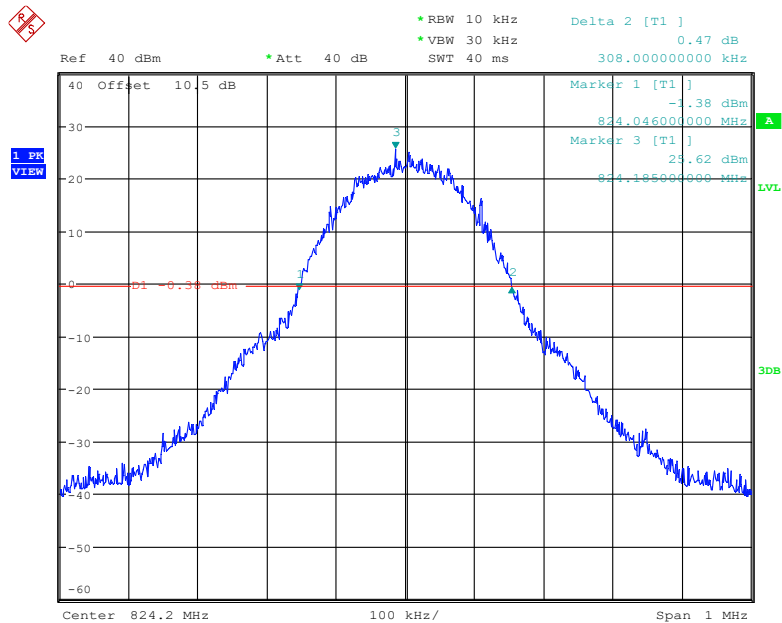
**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel**

Date: 6.JAN.2023 17:23:04

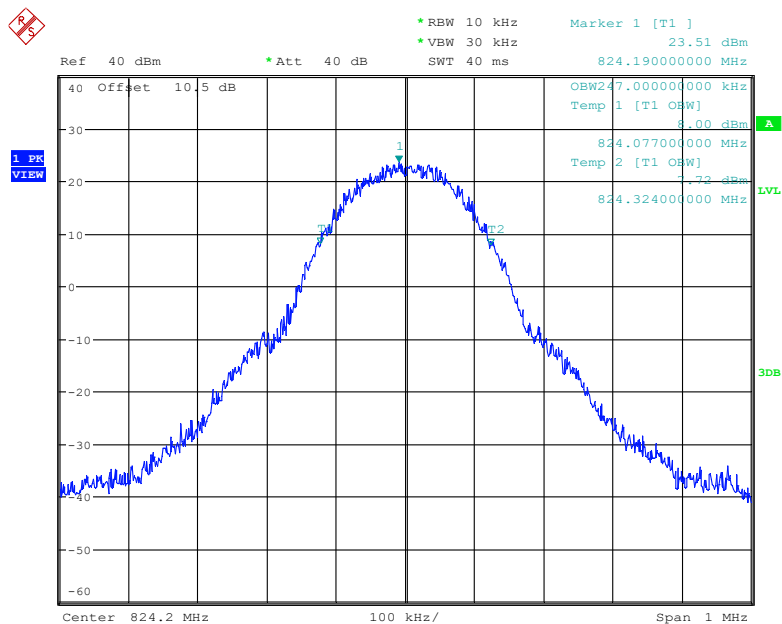


Date: 6.JAN.2023 17:22:23

## 26 dB Emission Bandwidth for GSM(8PSK) Mode, Low channel

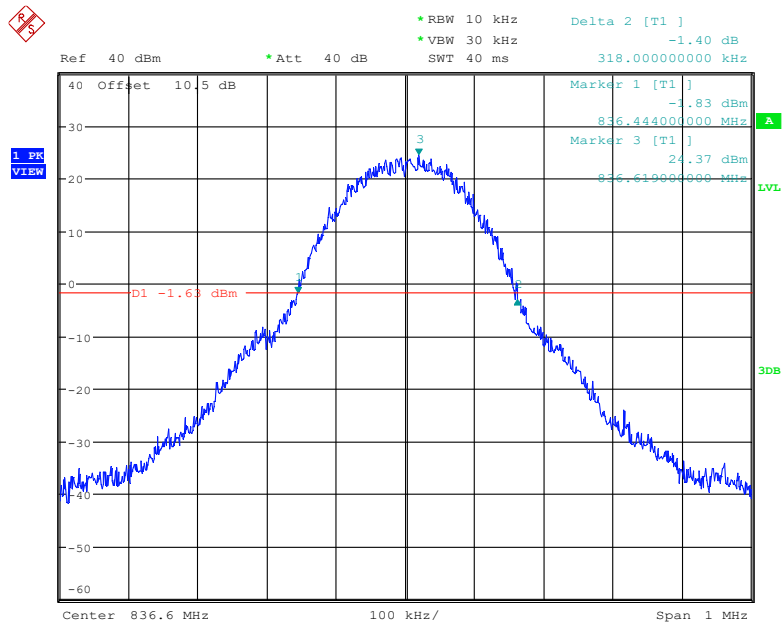


Date: 6.JAN.2023 17:28:53

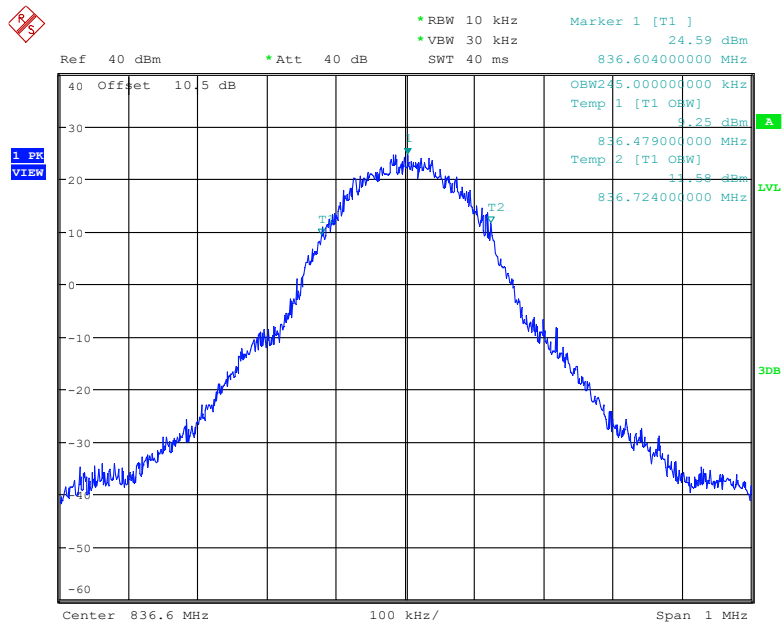


Date: 6.JAN.2023 17:28:13

## 26 dB Emission Bandwidth for GSM(8PSK) Mode, Middle channel

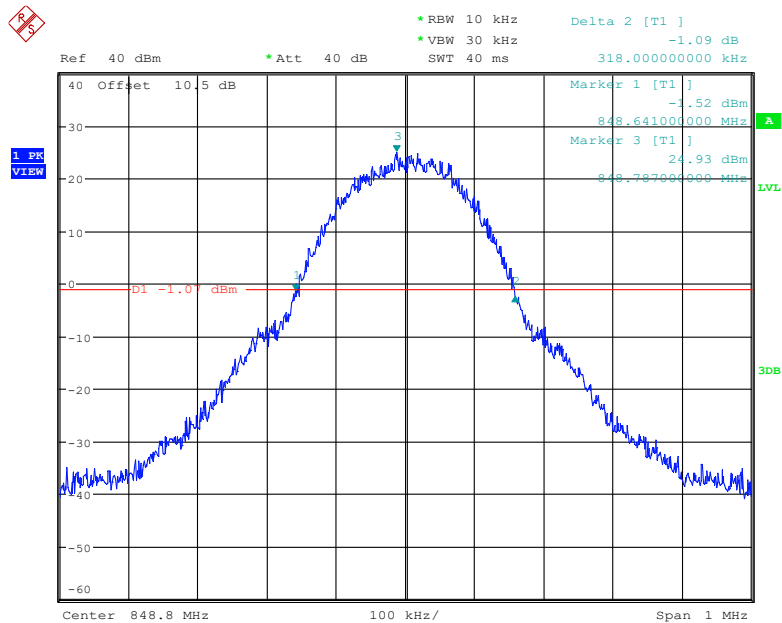


Date: 6.JAN.2023 17:33:03

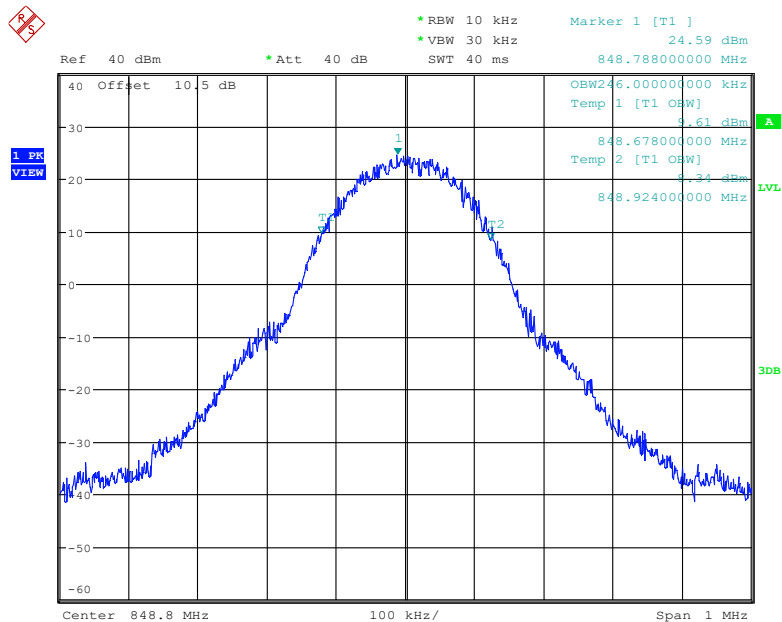


Date: 6.JAN.2023 17:32:22

## 26 dB Emission Bandwidth for GSM(8PSK) Mode, High channel



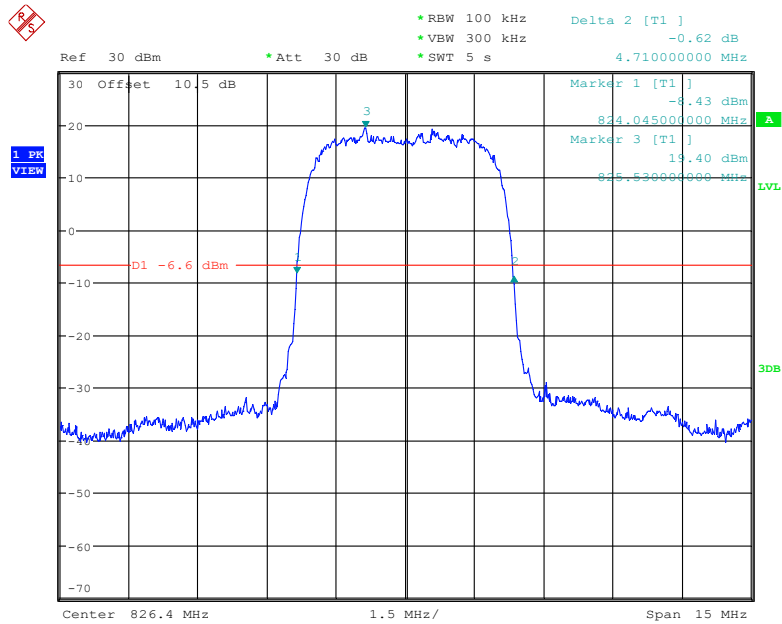
Date: 6.JAN.2023 17:49:20



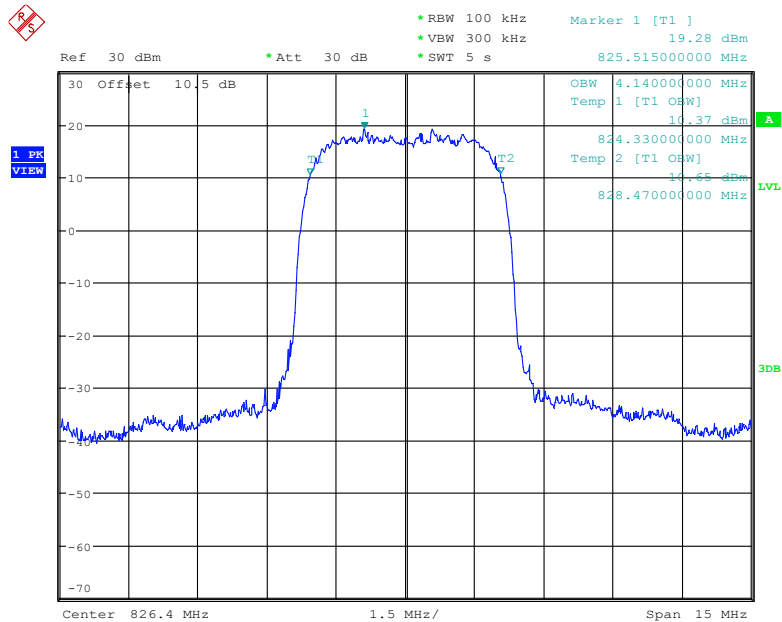
Date: 6.JAN.2023 17:48:41



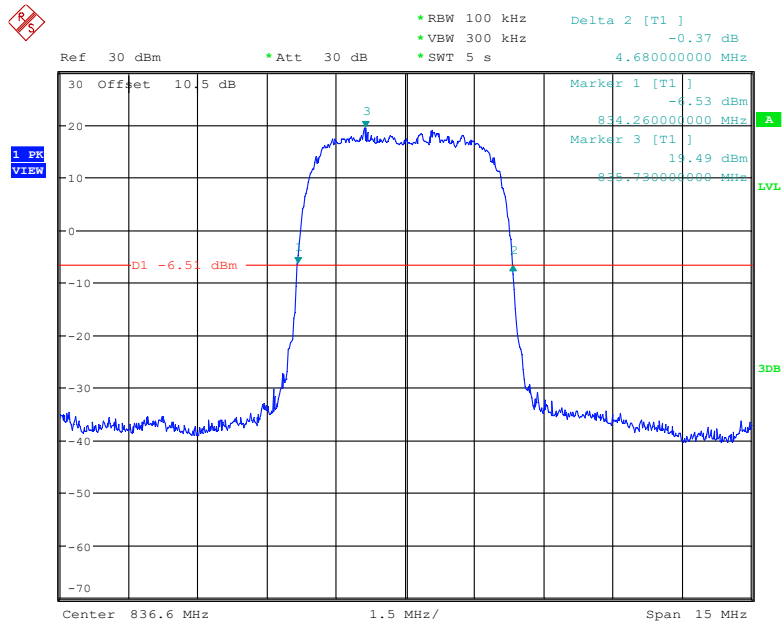
## 26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel



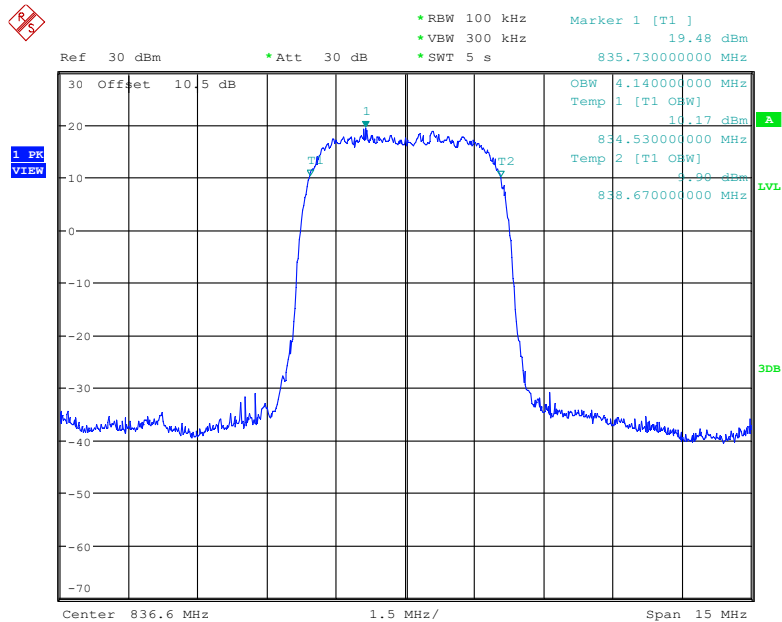
Date: 7.JAN.2023 09:47:47



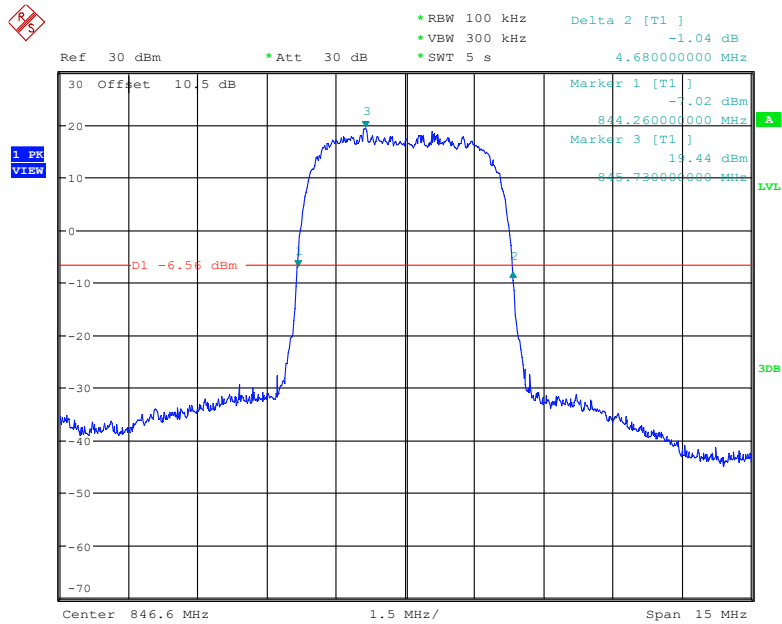
Date: 7.JAN.2023 09:47:07

**26 dB Emission Bandwidth for RMC (BPSK) Mode, Middle channel**

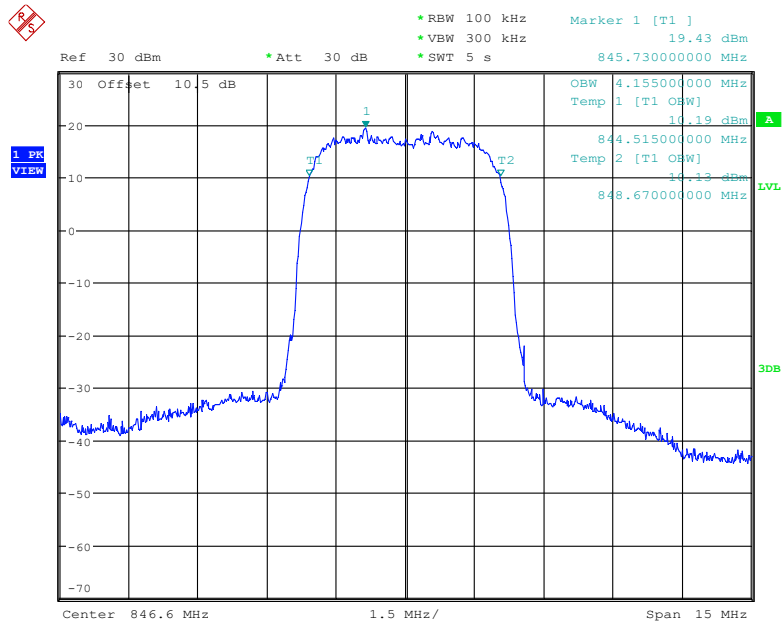
Date: 7.JAN.2023 09:51:55



Date: 7.JAN.2023 09:51:15

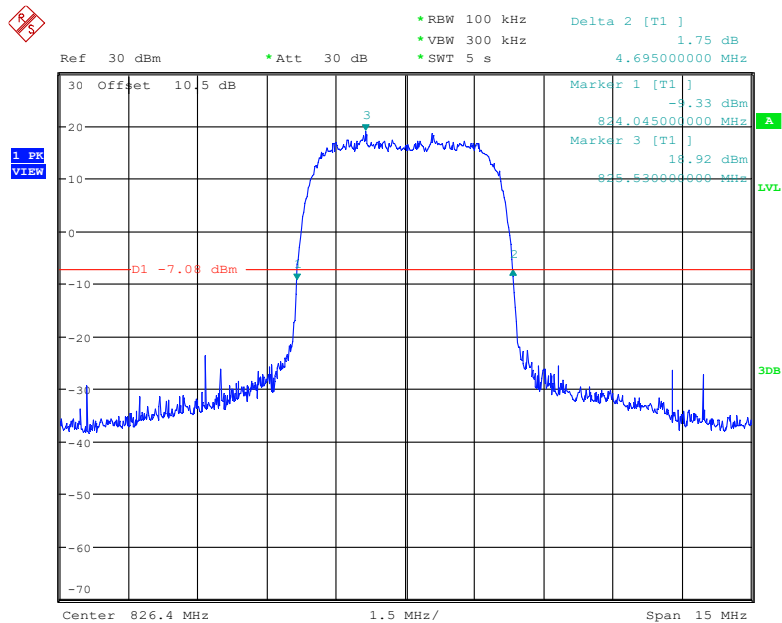
**26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel**

Date: 7.JAN.2023 09:55:13

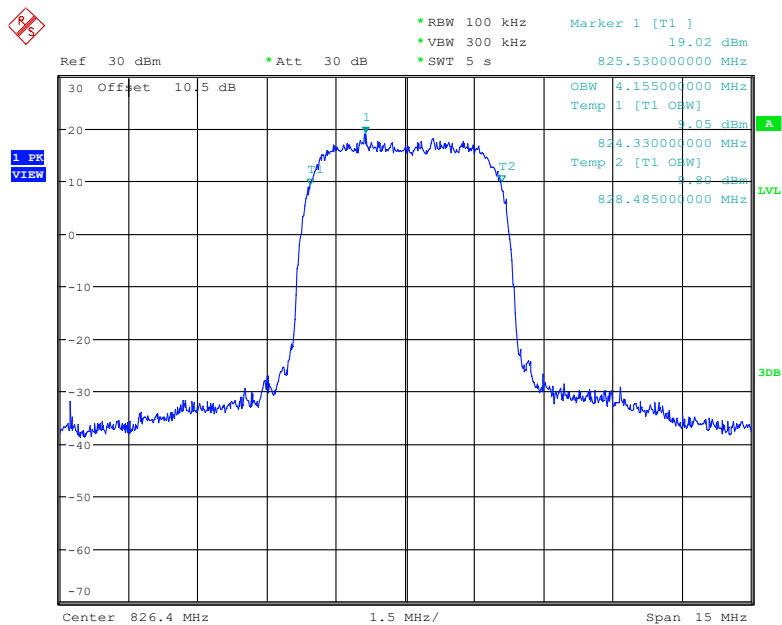


Date: 7.JAN.2023 09:54:32

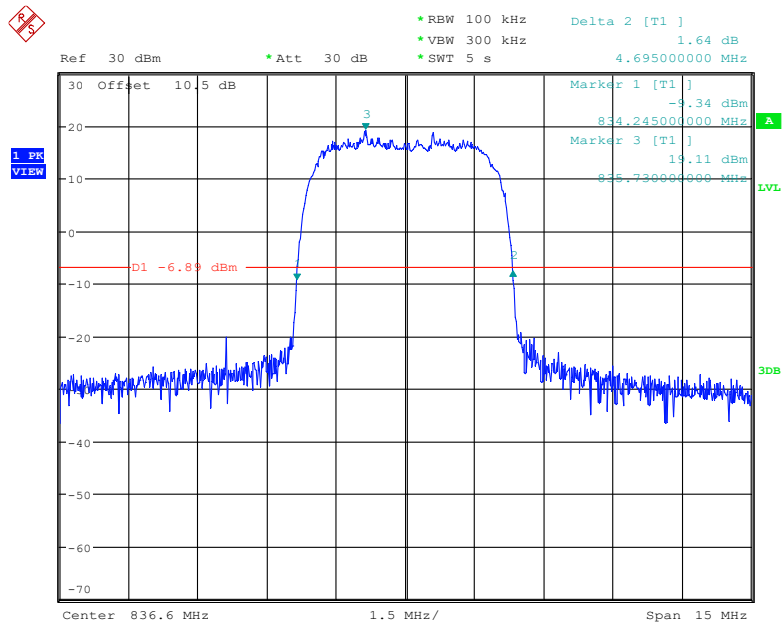
## 26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel



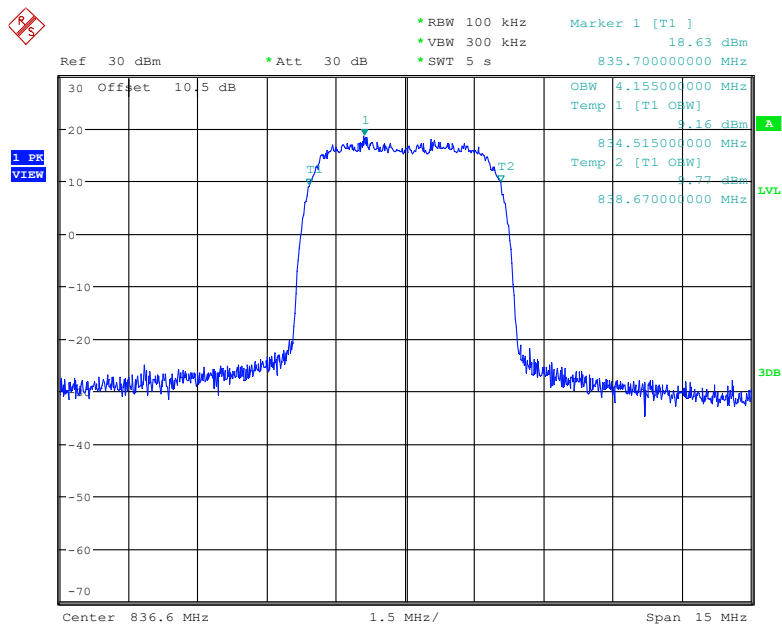
Date: 7.JAN.2023 10:14:33



Date: 7.JAN.2023 10:13:55

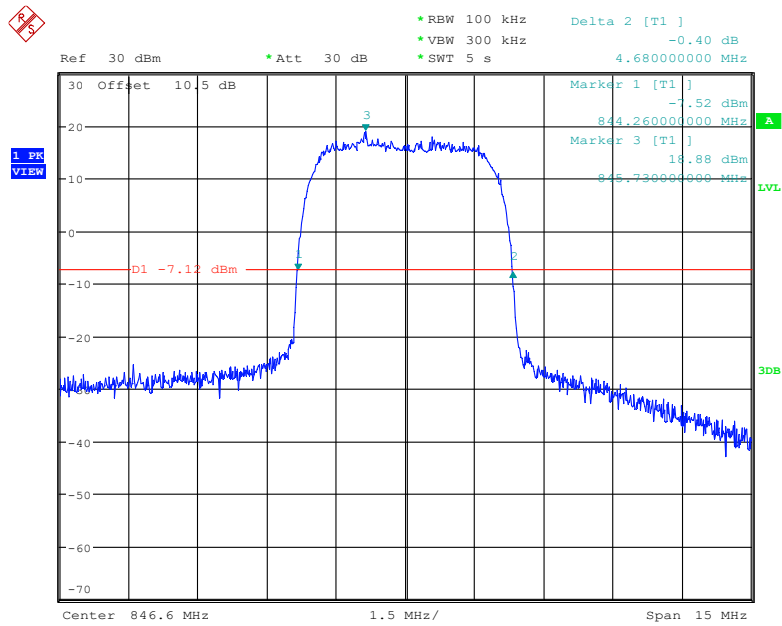
**26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel**

Date: 7.JAN.2023 10:18:09

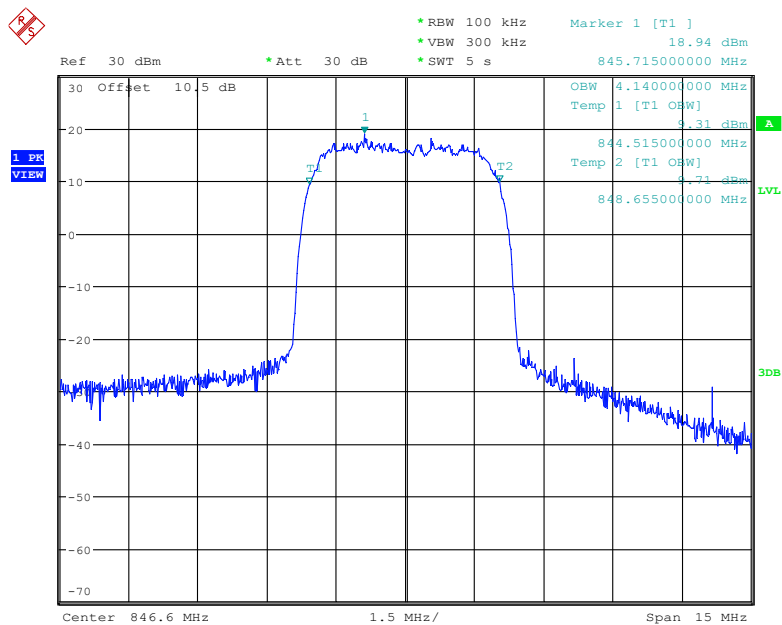


Date: 7.JAN.2023 10:17:29

## 26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel

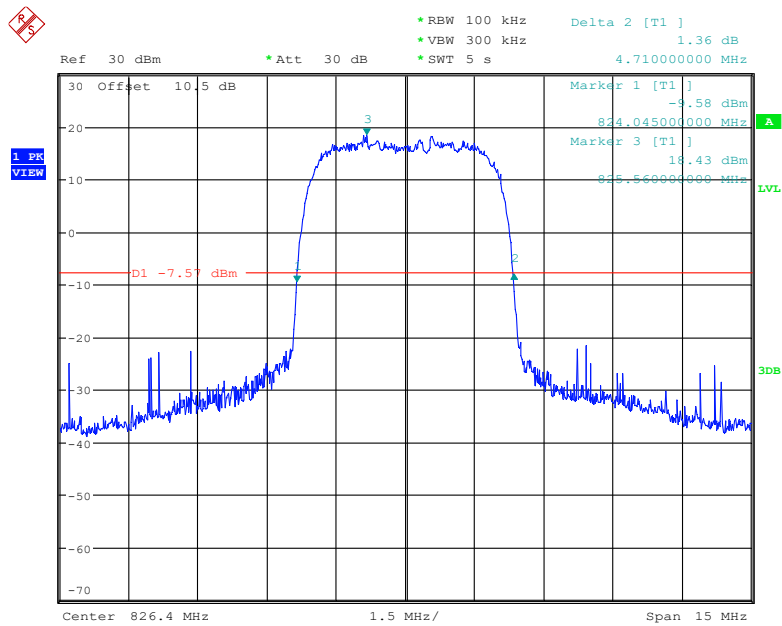


Date: 7.JAN.2023 10:20:56

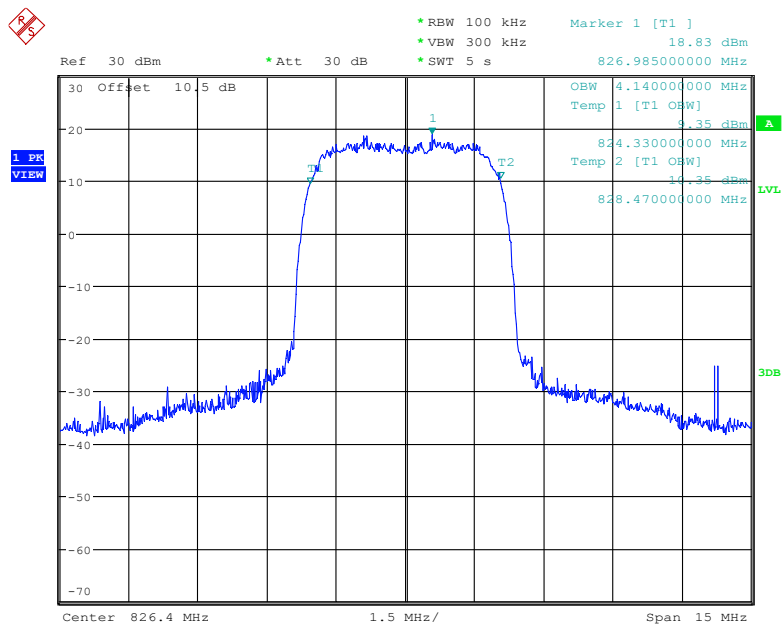


Date: 7.JAN.2023 10:20:16

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Low channel

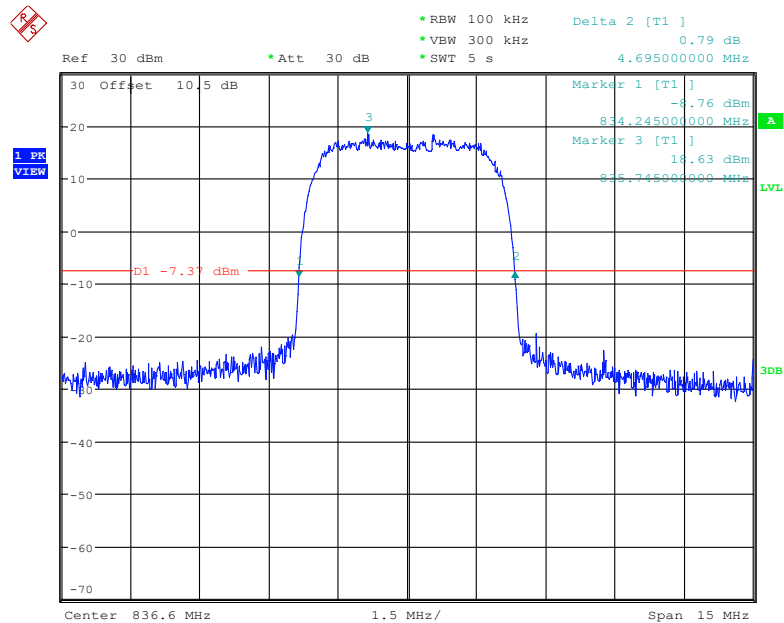


Date: 7.JAN.2023 10:00:11

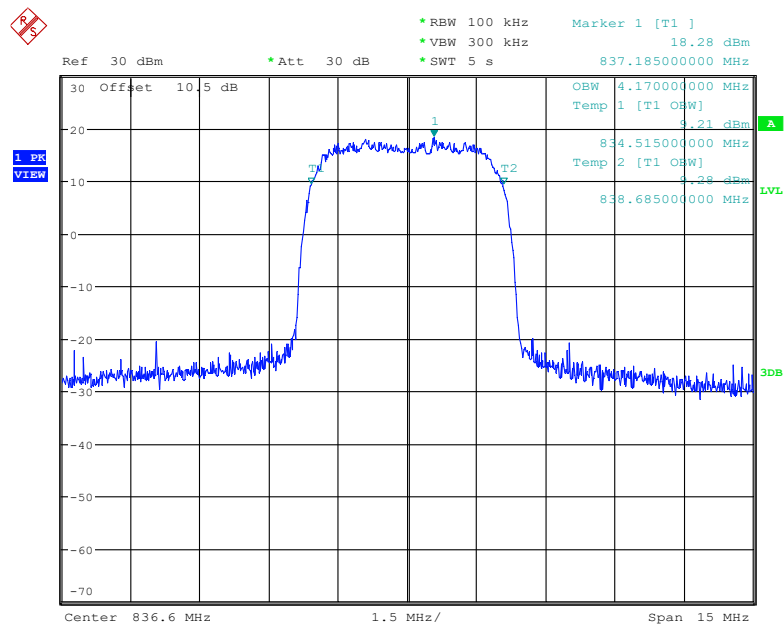


Date: 7.JAN.2023 09:59:30

## 26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Middle channel

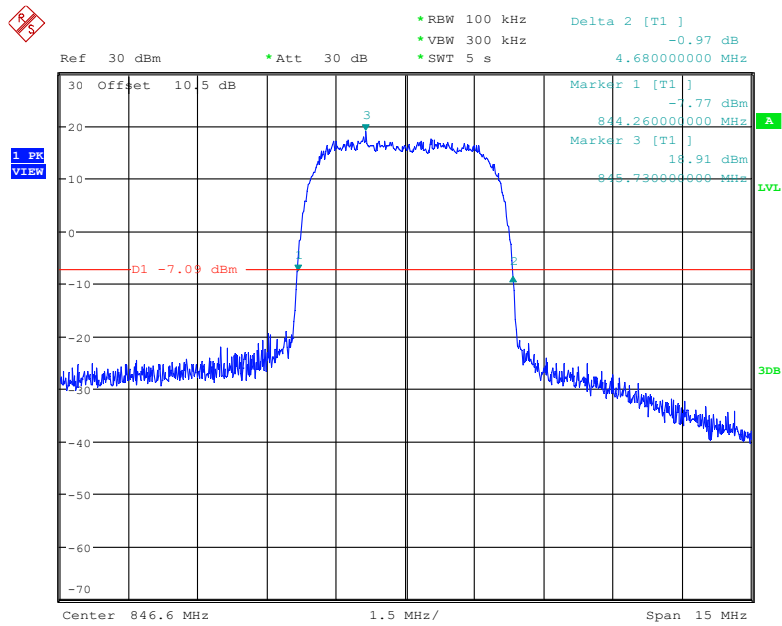


Date: 7.JAN.2023 10:03:30

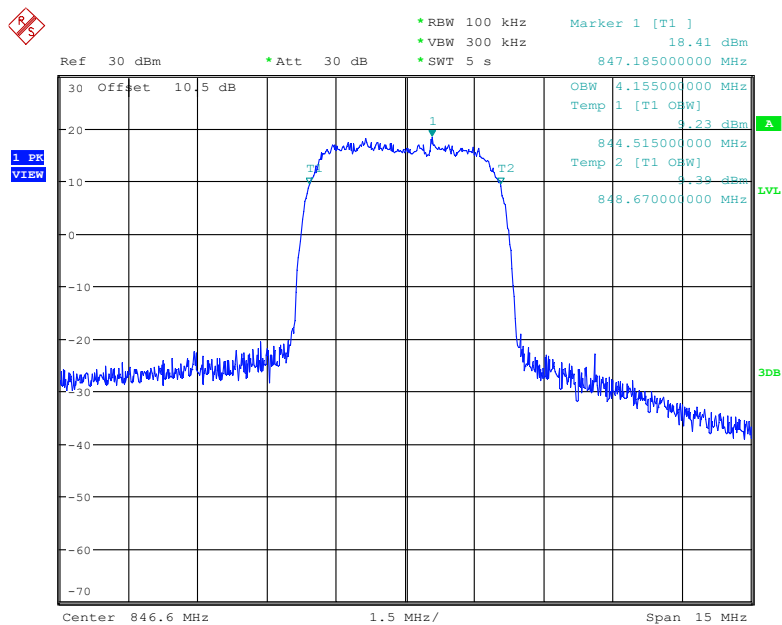


Date: 7.JAN.2023 10:02:50



**26 dB Emission Bandwidth for HSDPA (16QAM) Mode, High channel**

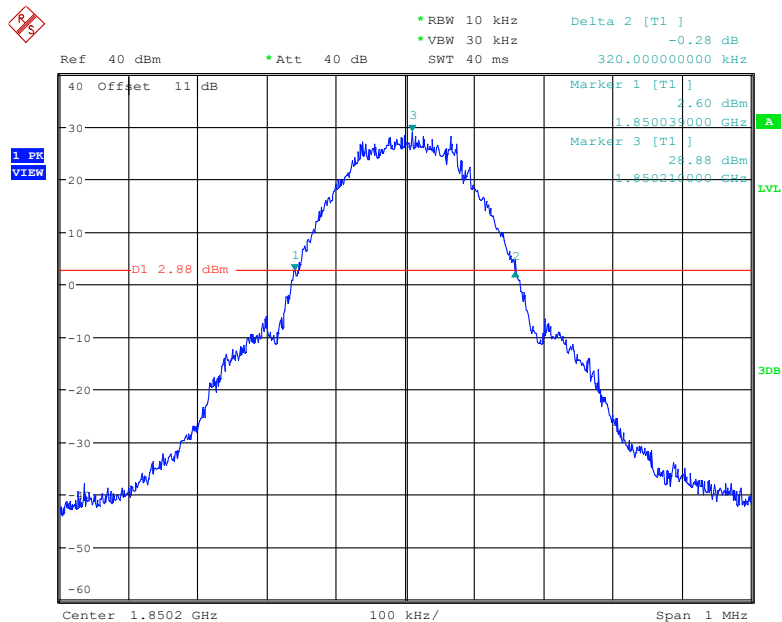
Date: 7.JAN.2023 10:06:10



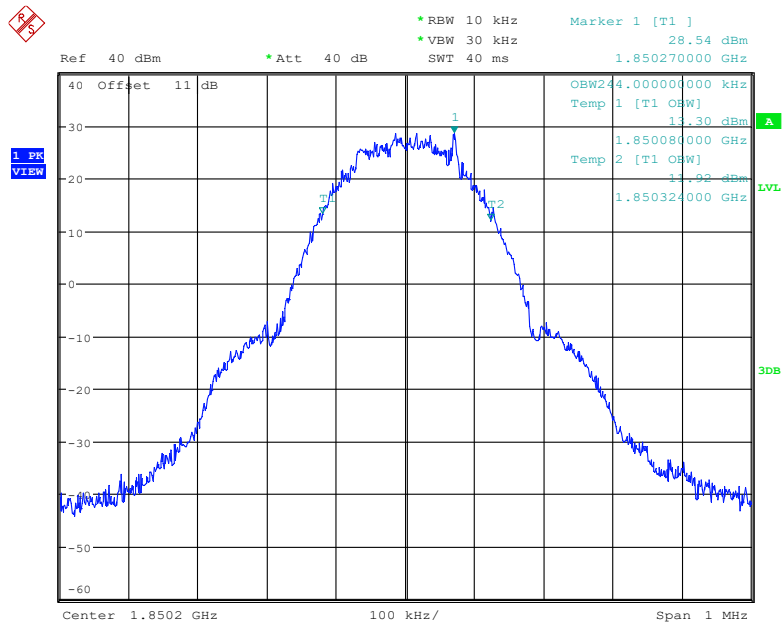
Date: 7.JAN.2023 10:05:30

PCS Band (Part 24E)

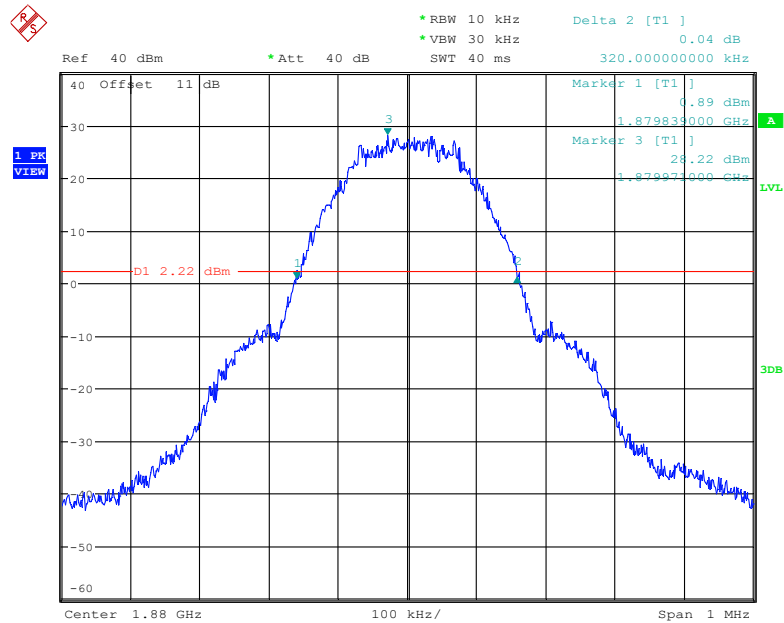
26 dB Emission Bandwidth for GSM(GMSK) Mode, Low channel



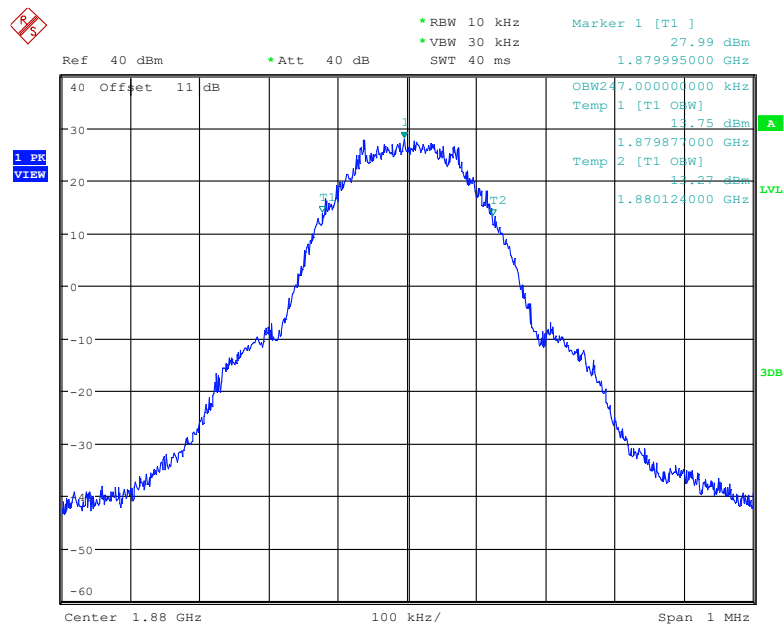
Date: 6.JAN.2023 17:59:21



Date: 6.JAN.2023 17:58:42

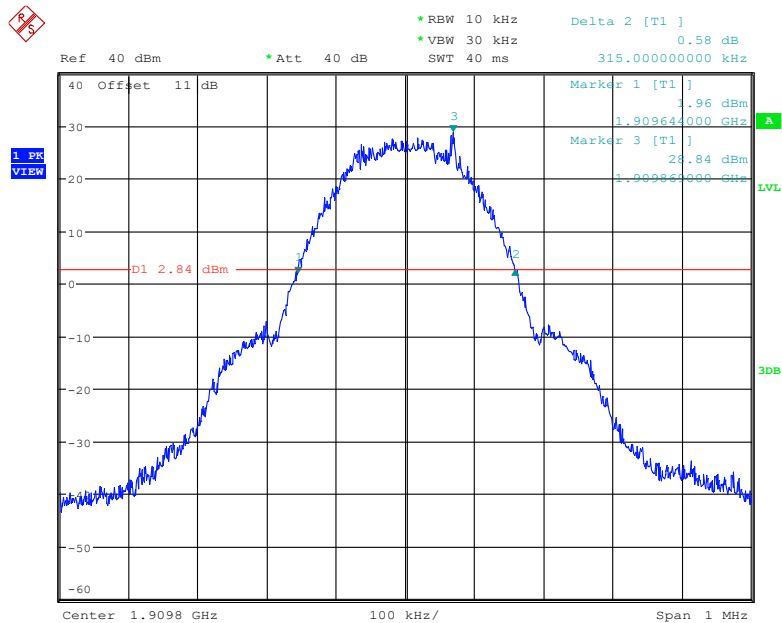
**26 dB Emission Bandwidth for GSM(GMSK) Mode, Middle channel**

Date: 6.JAN.2023 18:04:14

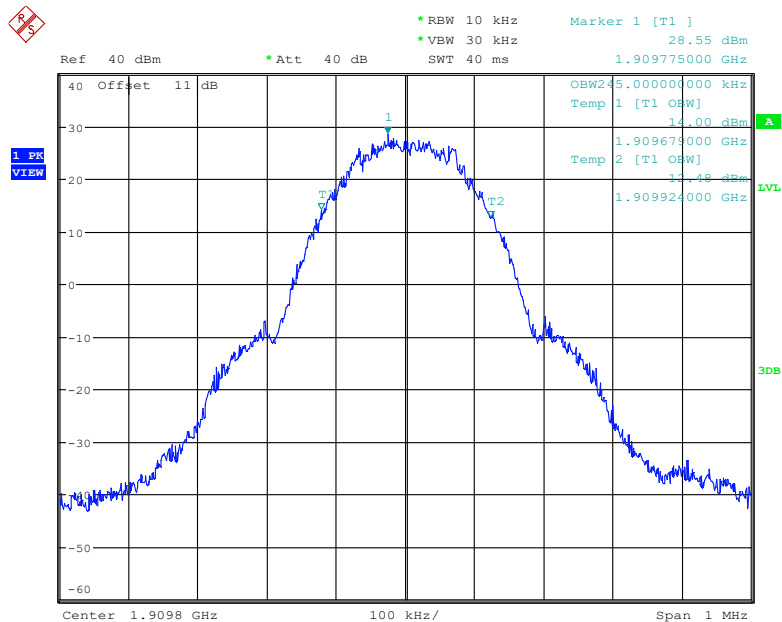


Date: 6.JAN.2023 18:03:34

## 26 dB Emission Bandwidth for GSM(GMSK) Mode, High channel

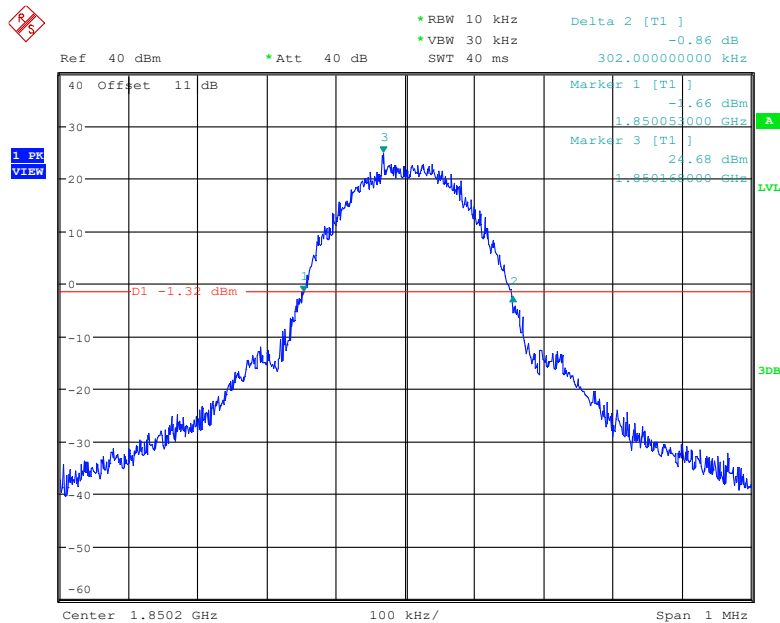


Date: 6.JAN.2023 18:11:14

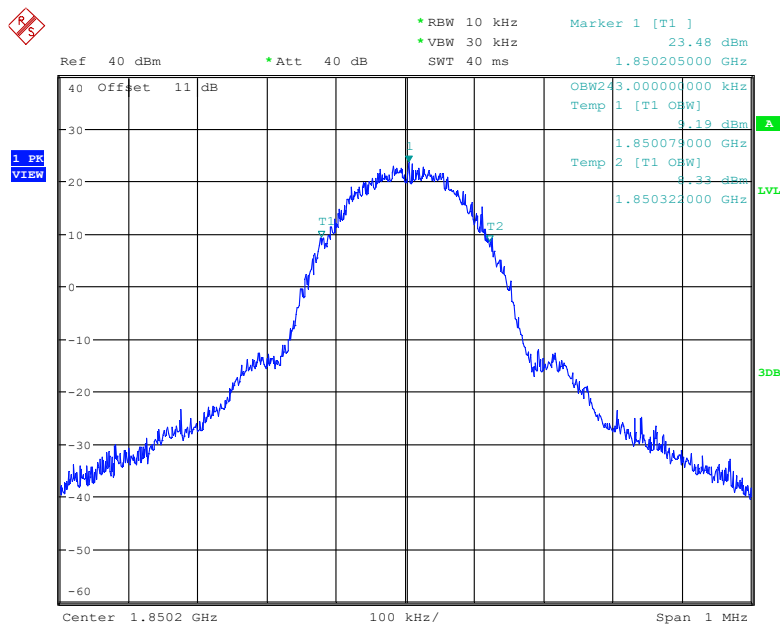


Date: 6.JAN.2023 18:10:35

26 dB Emission Bandwidth for GSM(8PSK) Mode, Low channel

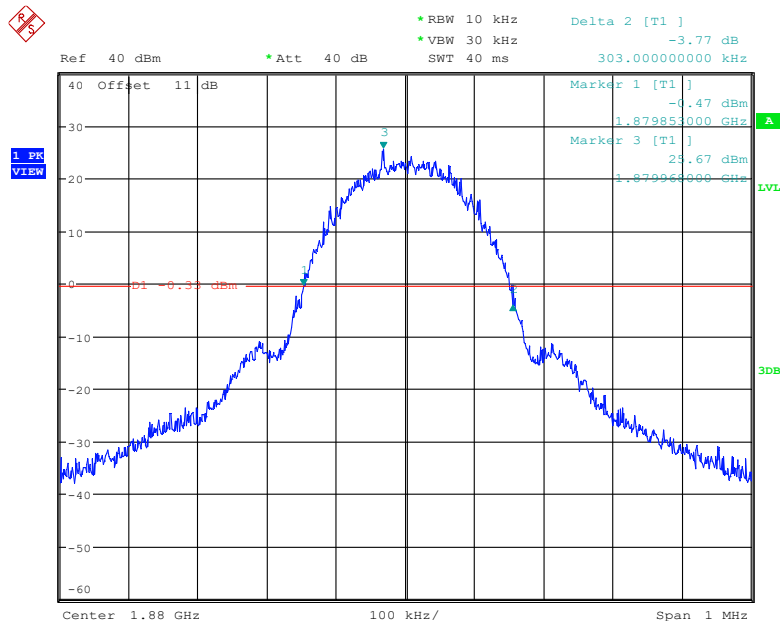


Date: 6.JAN.2023 18:22:00

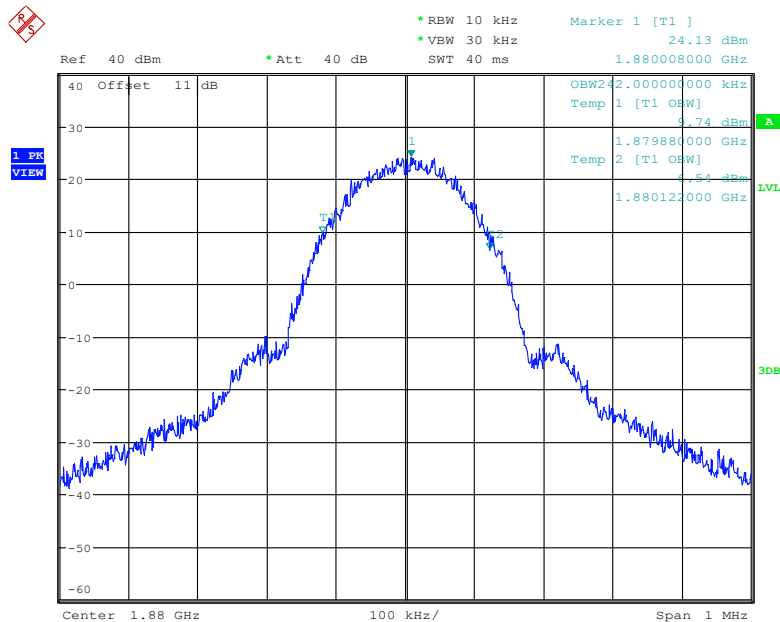


Date: 6.JAN.2023 18:21:20

26 dB Emission Bandwidth for GSM(8PSK) Mode, Middle channel

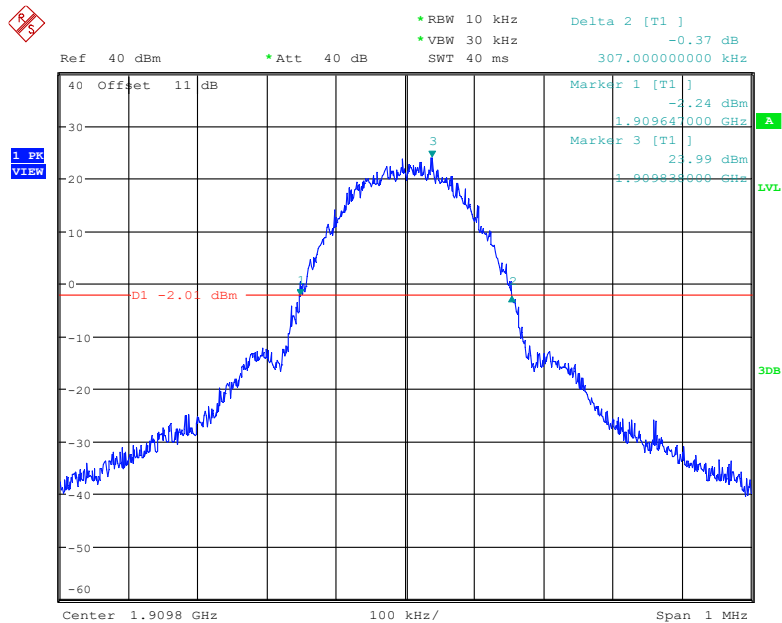


Date: 6.JAN.2023 18:27:39

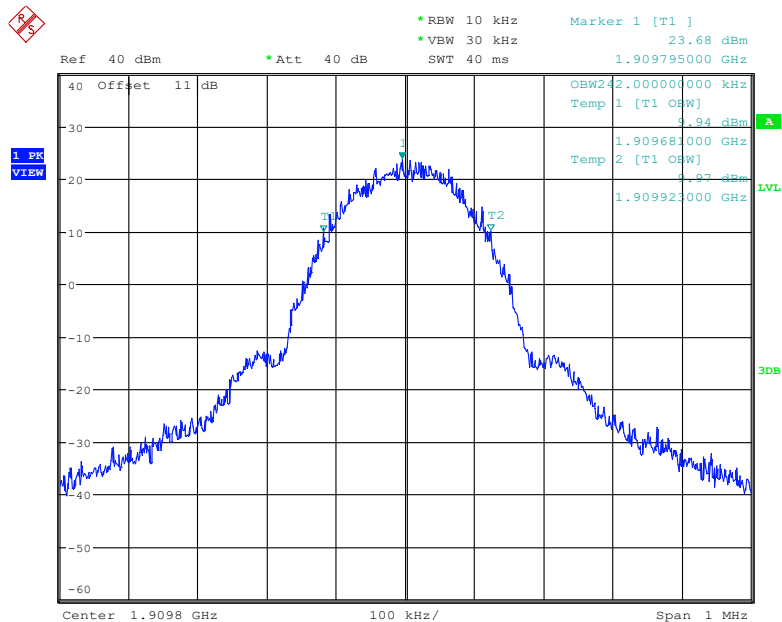


Date: 6.JAN.2023 18:26:59

## 26 dB Emission Bandwidth for GSM(8PSK) Mode, High channel

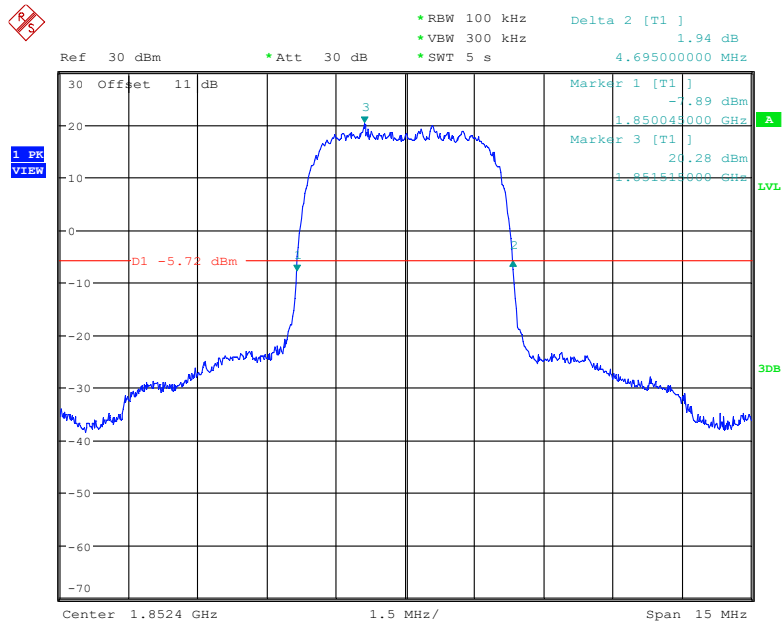


Date: 6.JAN.2023 18:31:59

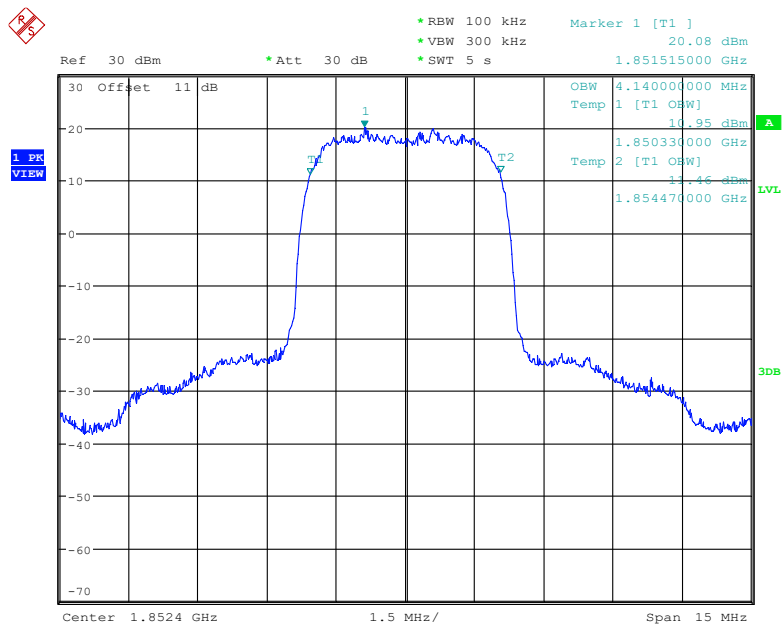


Date: 6.JAN.2023 18:31:20

## 26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel

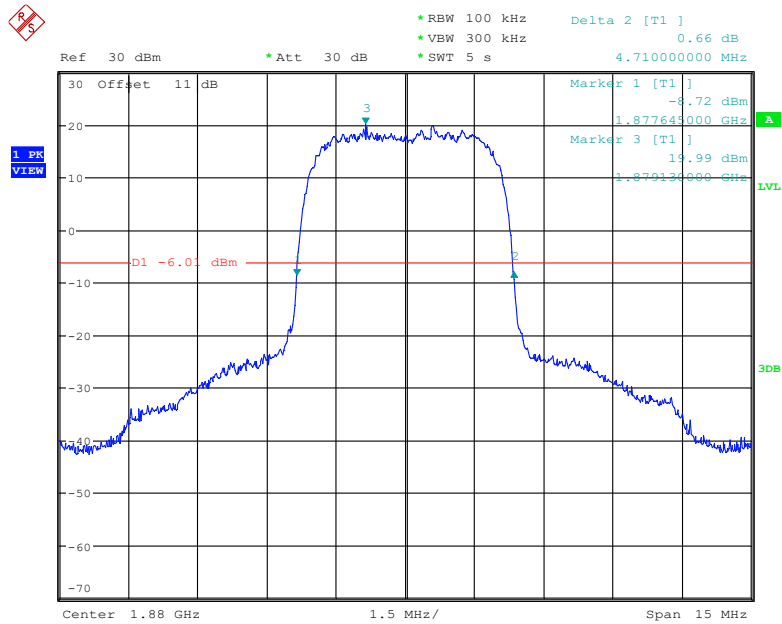


Date: 6.JAN.2023 18:57:41

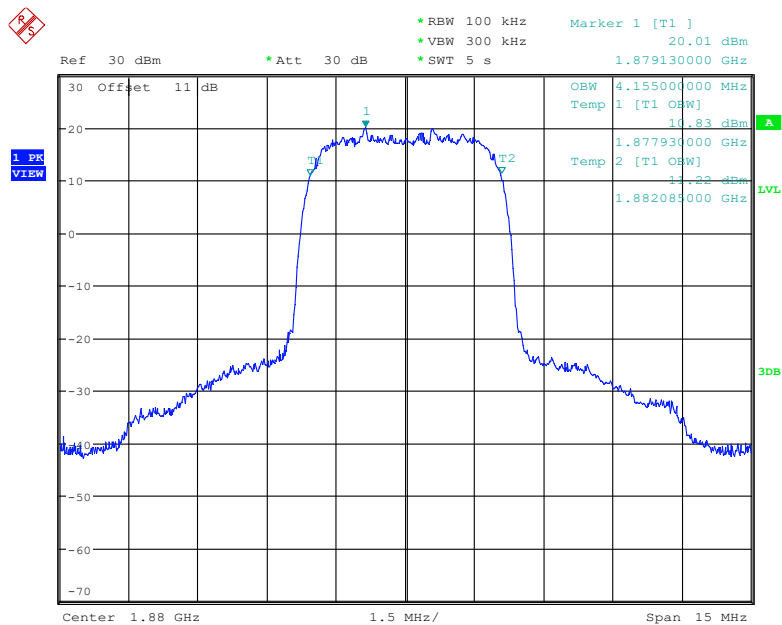


Date: 6.JAN.2023 18:57:01

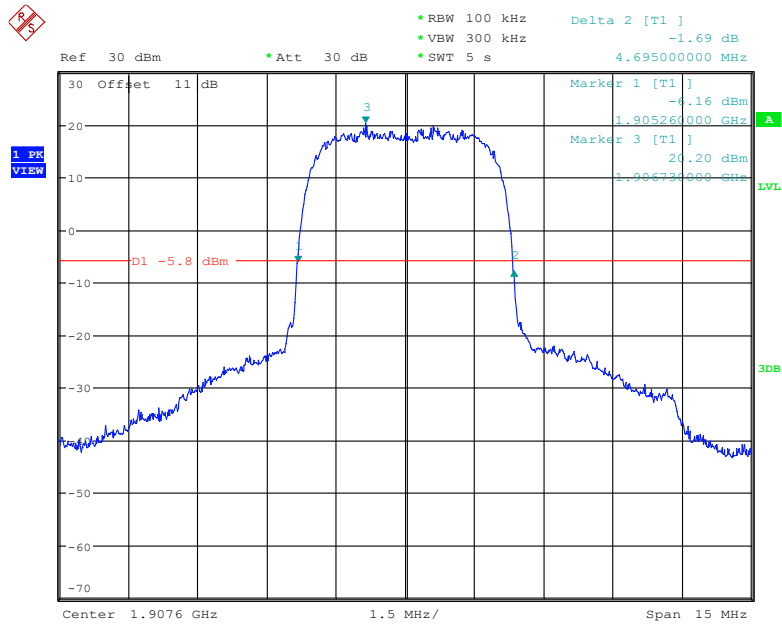


**26 dB Emission Bandwidth for RMC (BPSK) Mode, Middle channel**

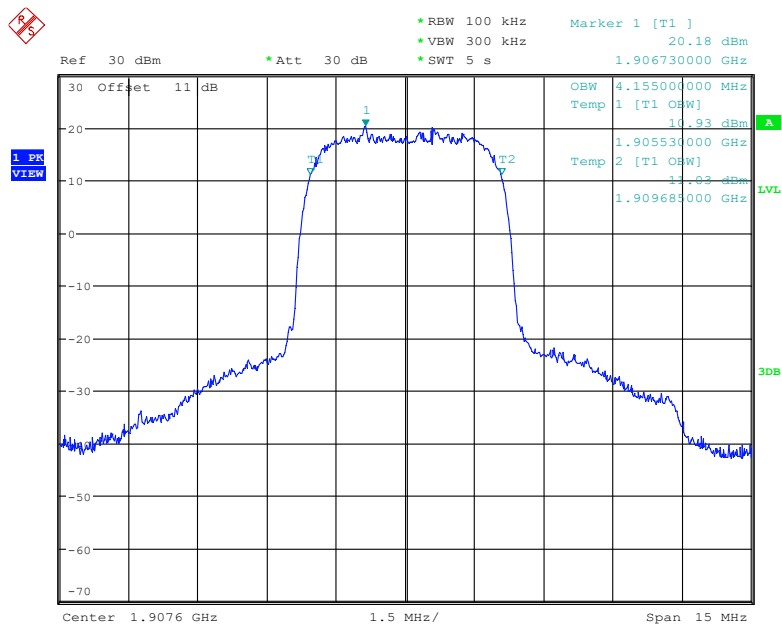
Date: 6.JAN.2023 19:01:40



Date: 6.JAN.2023 19:01:00

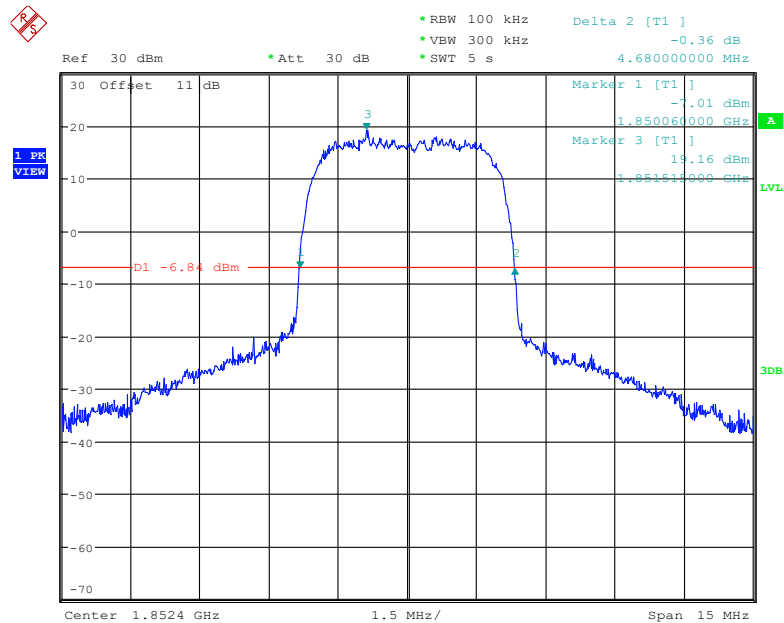
**26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel**

Date: 6.JAN.2023 19:05:31

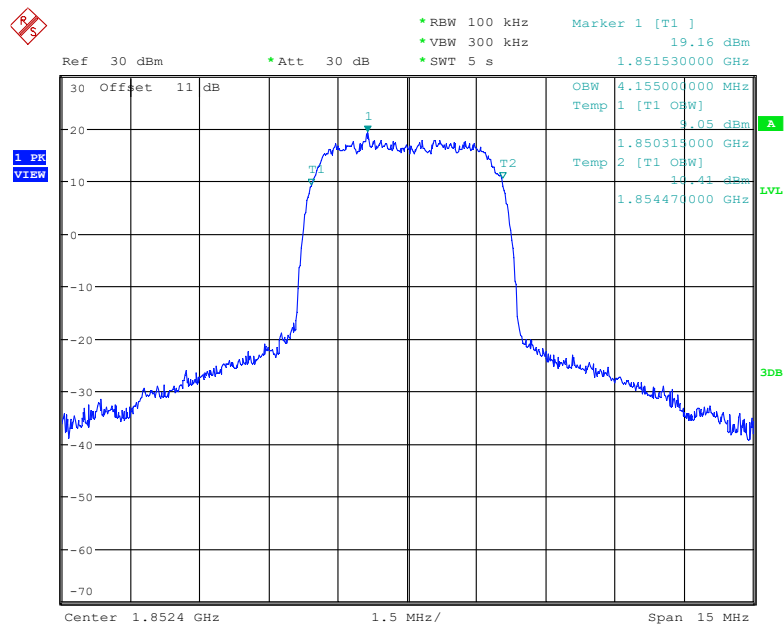


Date: 6.JAN.2023 19:04:52

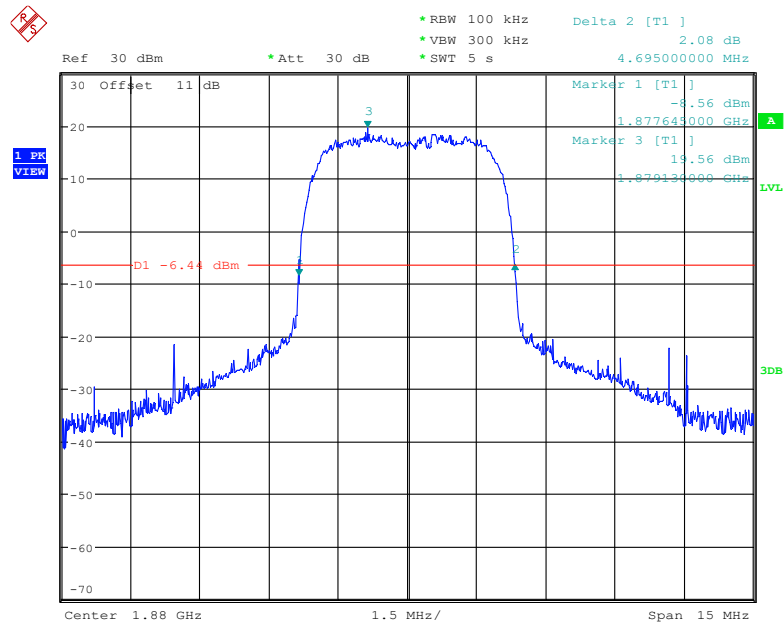
## 26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel



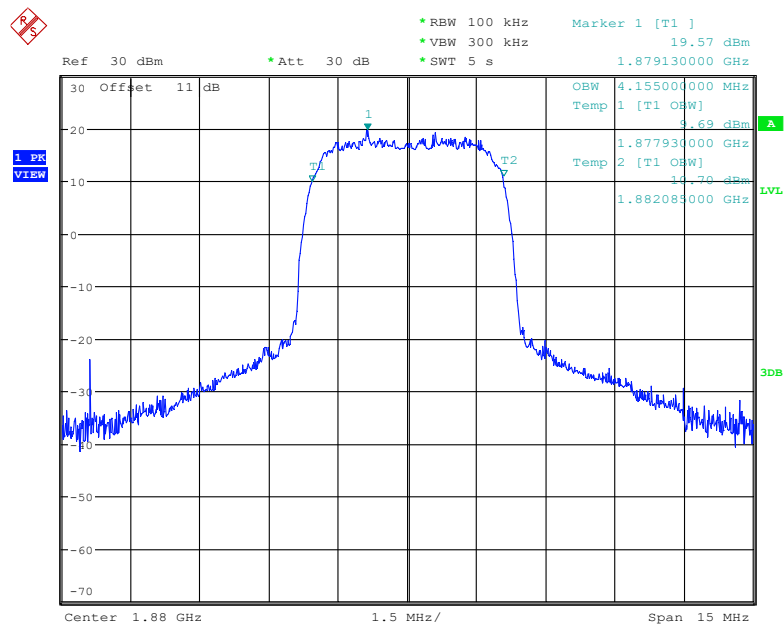
Date: 6.JAN.2023 19:24:15



Date: 6.JAN.2023 19:23:35

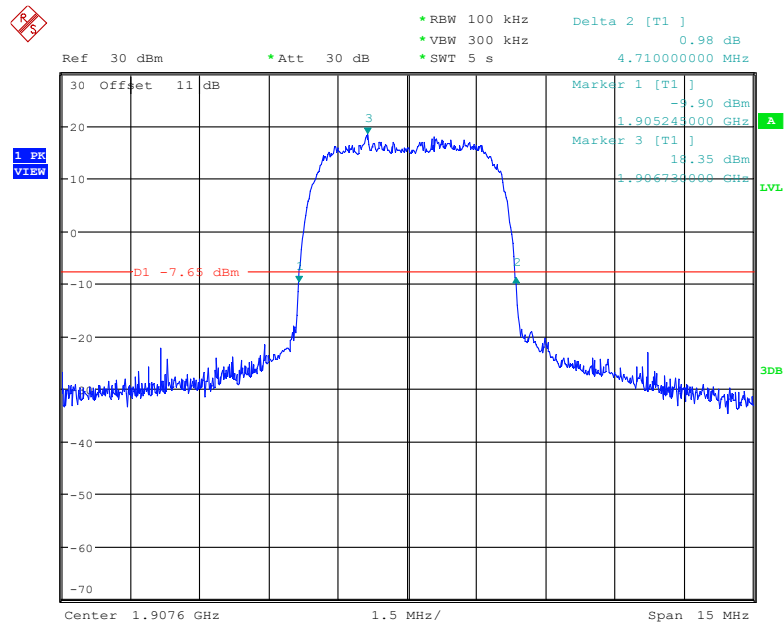
**26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel**

Date: 6.JAN.2023 19:28:24

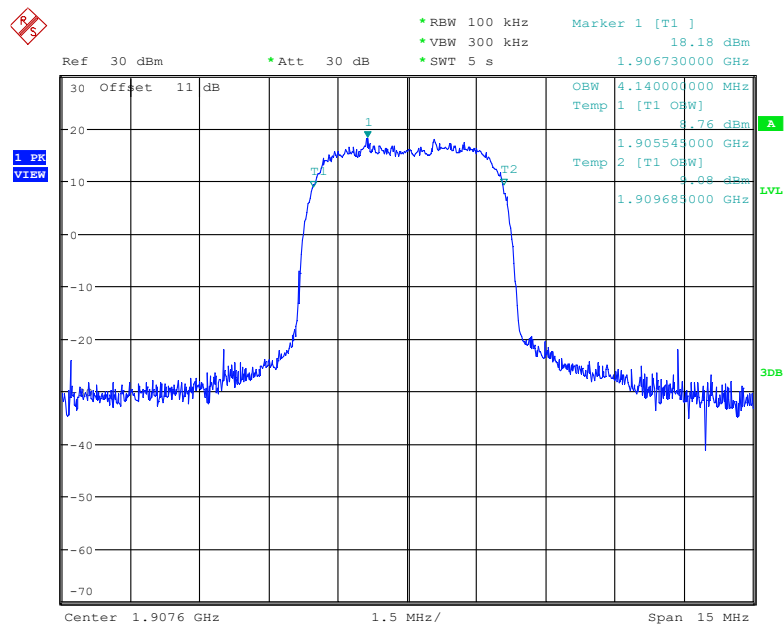


Date: 6.JAN.2023 19:27:45

## 26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel

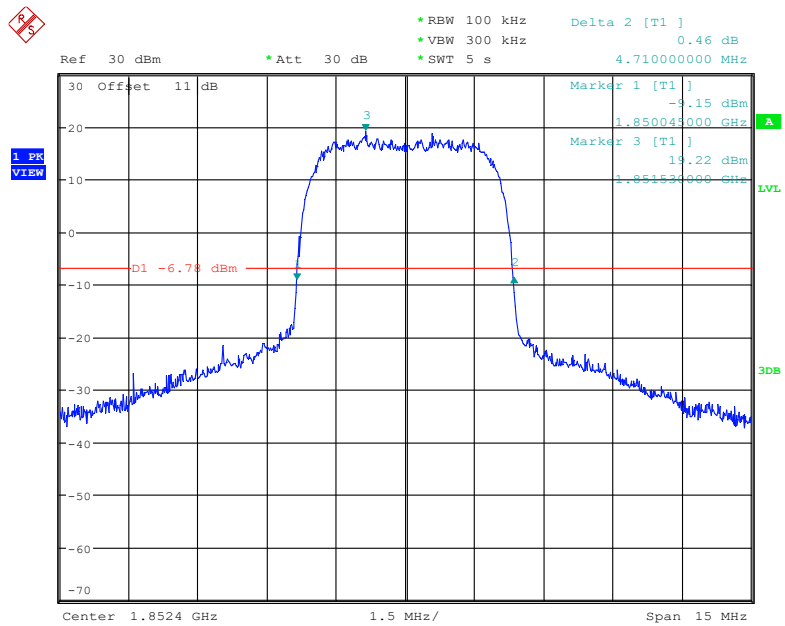


Date: 7.JAN.2023 08:48:43

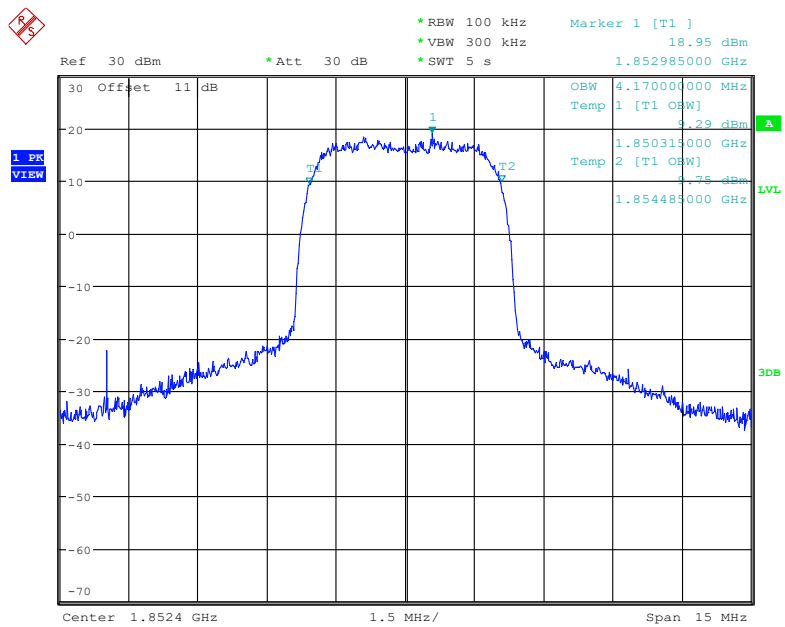


Date: 7.JAN.2023 08:47:55

## 26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Low channel

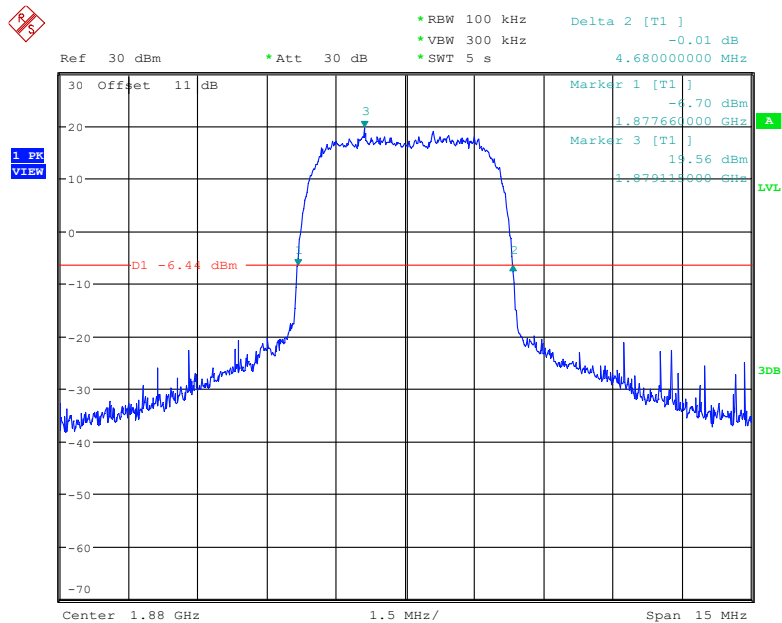


Date: 6.JAN.2023 19:11:09

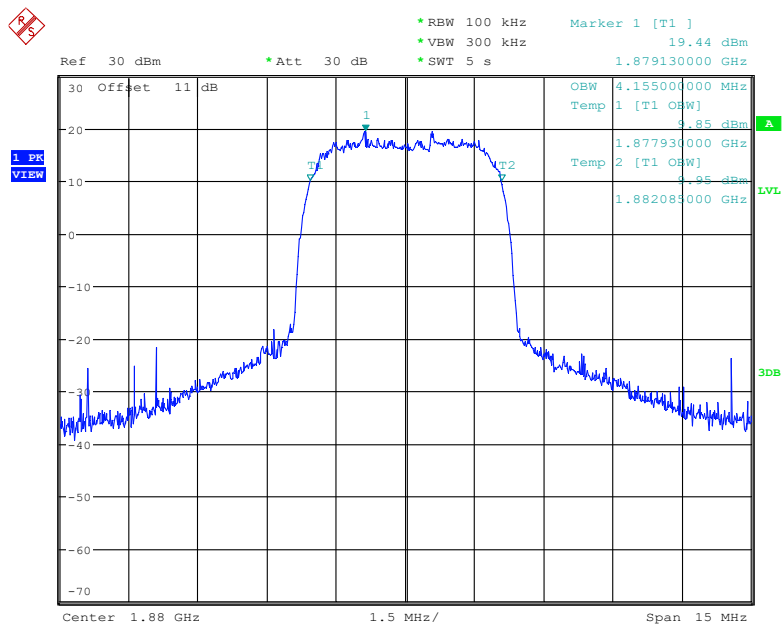


Date: 6.JAN.2023 19:10:30

## 26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Middle channel

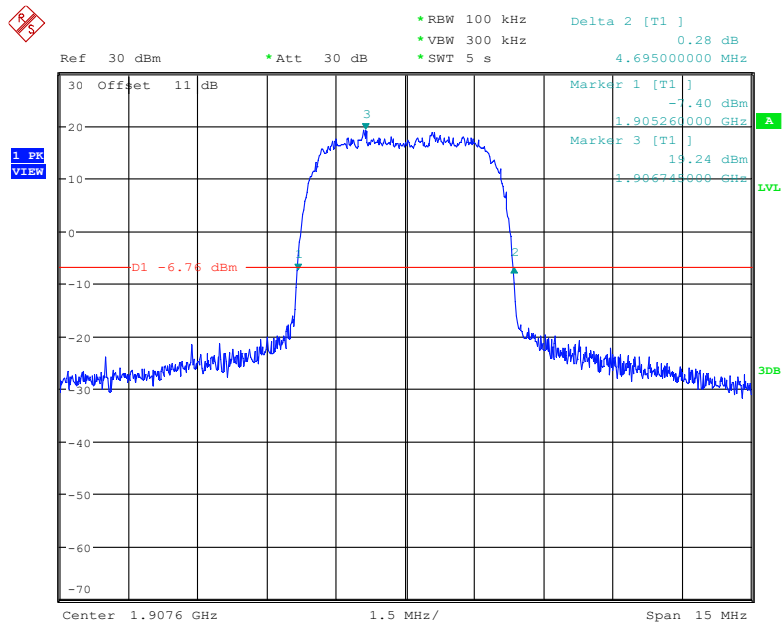


Date: 6.JAN.2023 19:15:07

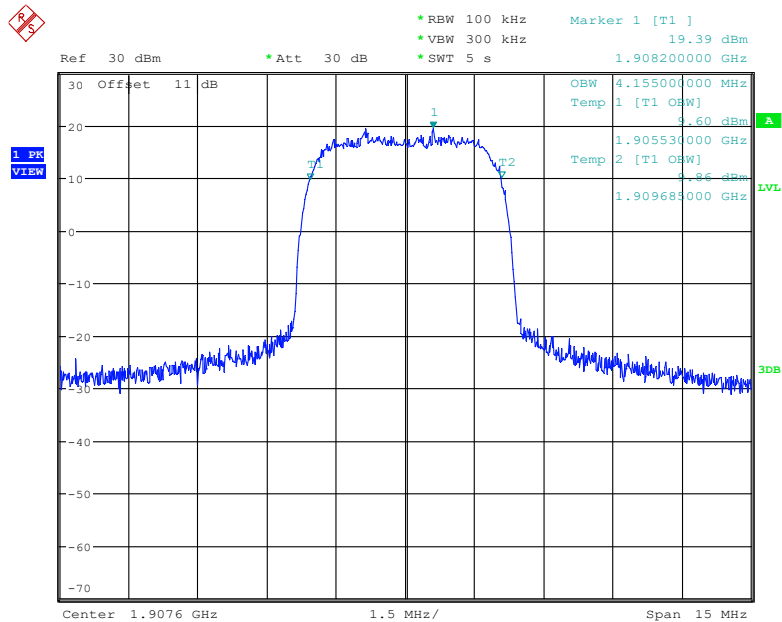


Date: 6.JAN.2023 19:14:29

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 6.JAN.2023 19:18:21

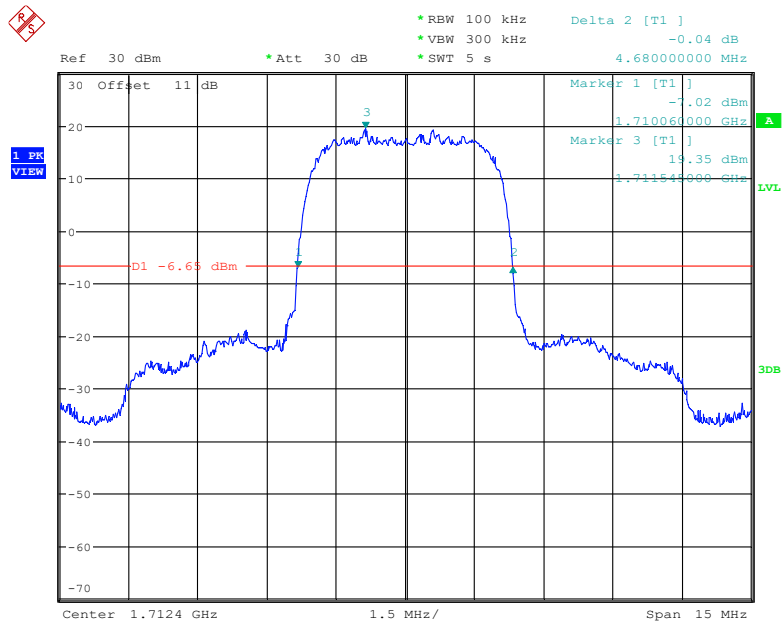


Date: 6.JAN.2023 19:17:42

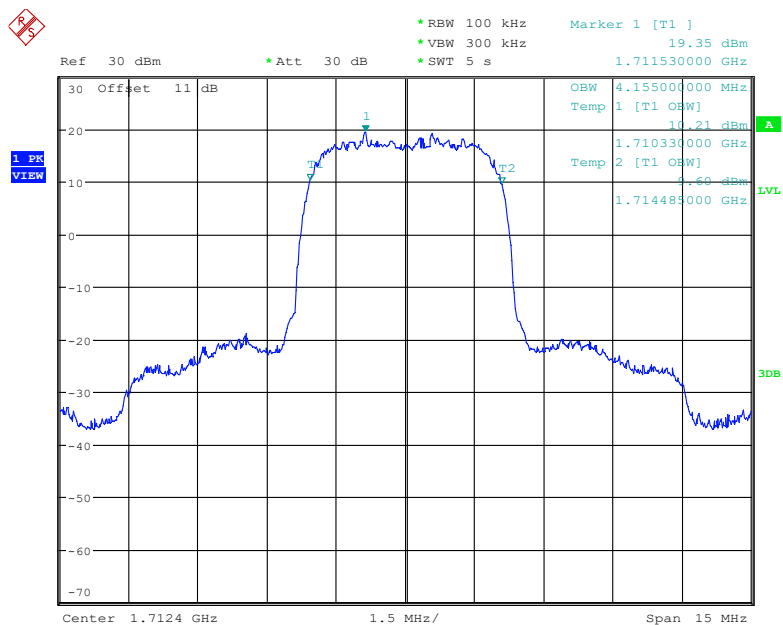


## AWS Band (Part 27)

## 26 dB Emissions &amp; 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel

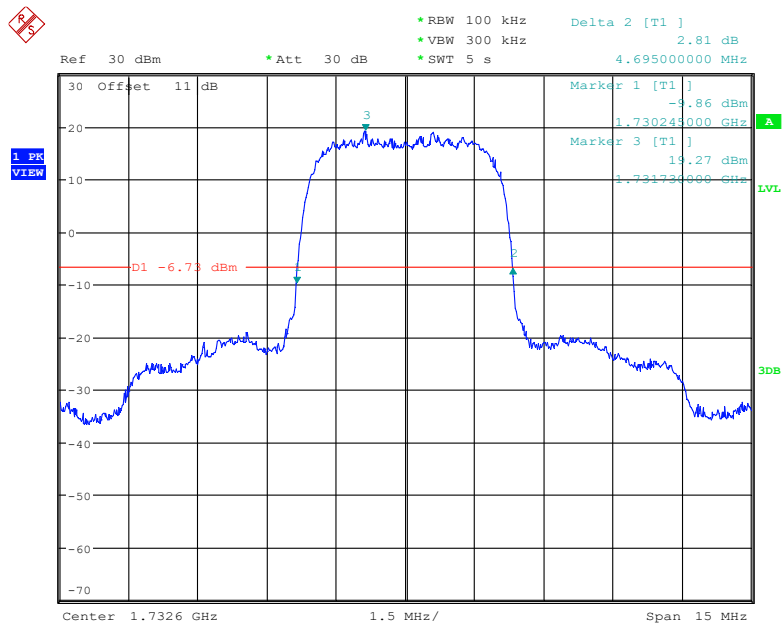


Date: 7.JAN.2023 09:02:39

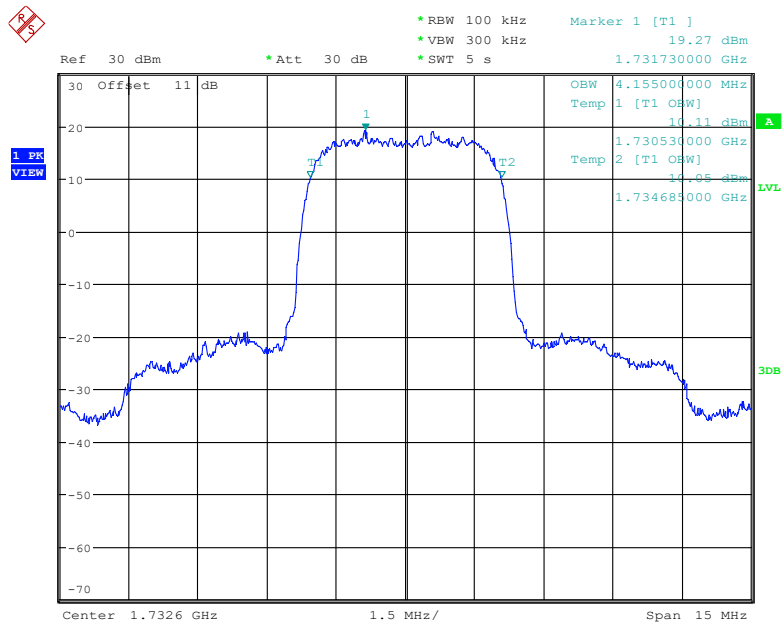


Date: 7.JAN.2023 09:01:59

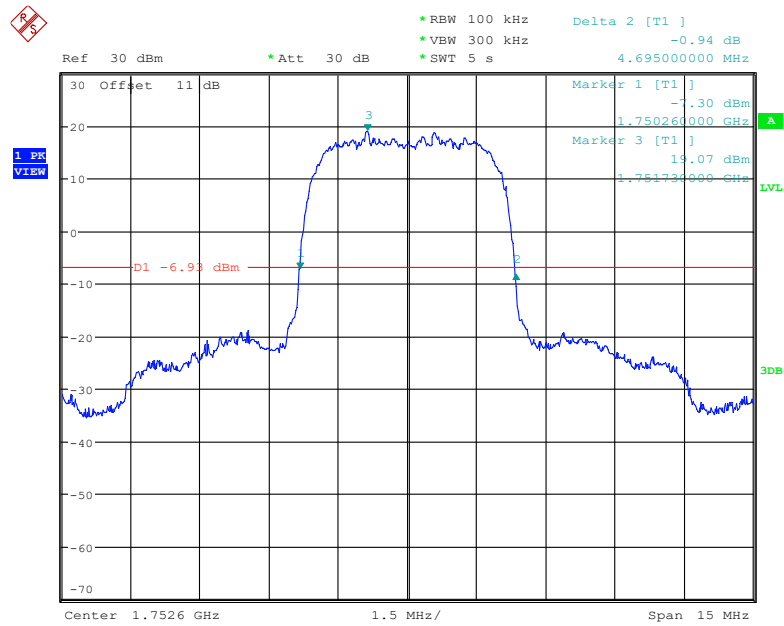
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



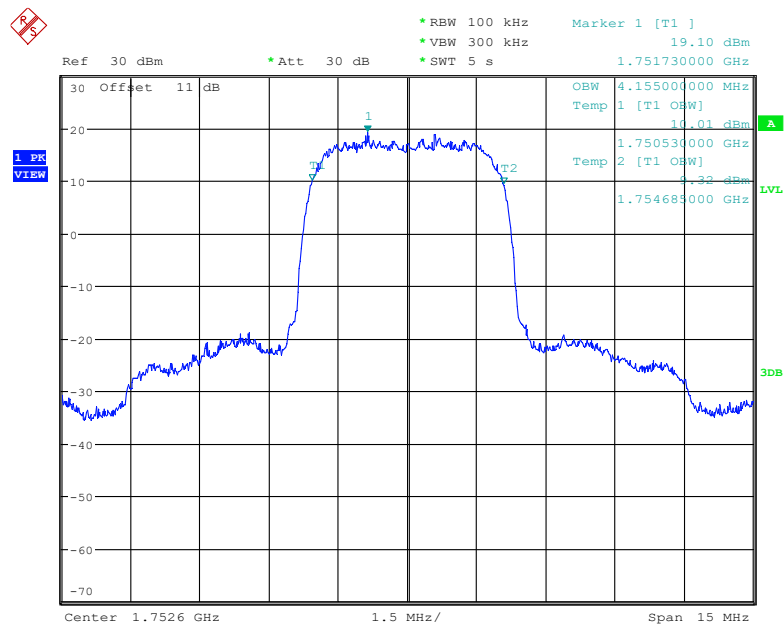
Date: 7.JAN.2023 09:06:38



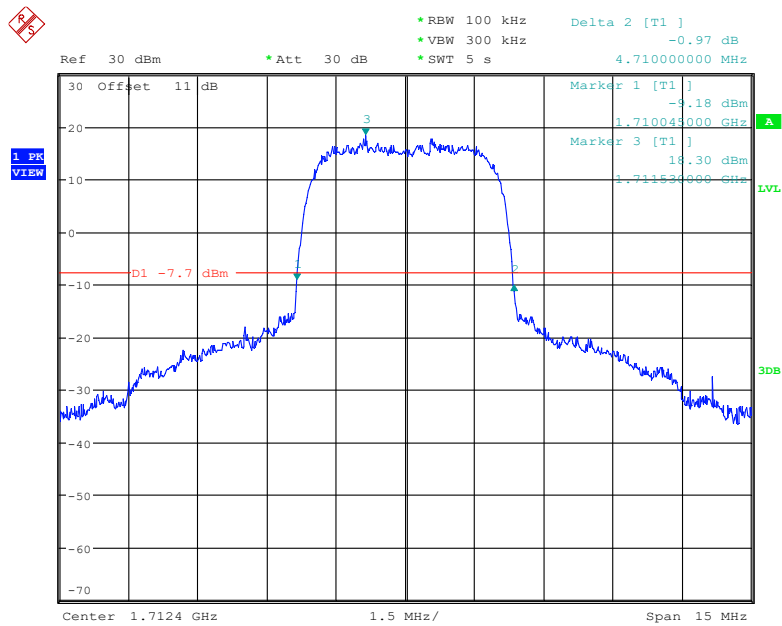
Date: 7.JAN.2023 09:06:00

**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel**

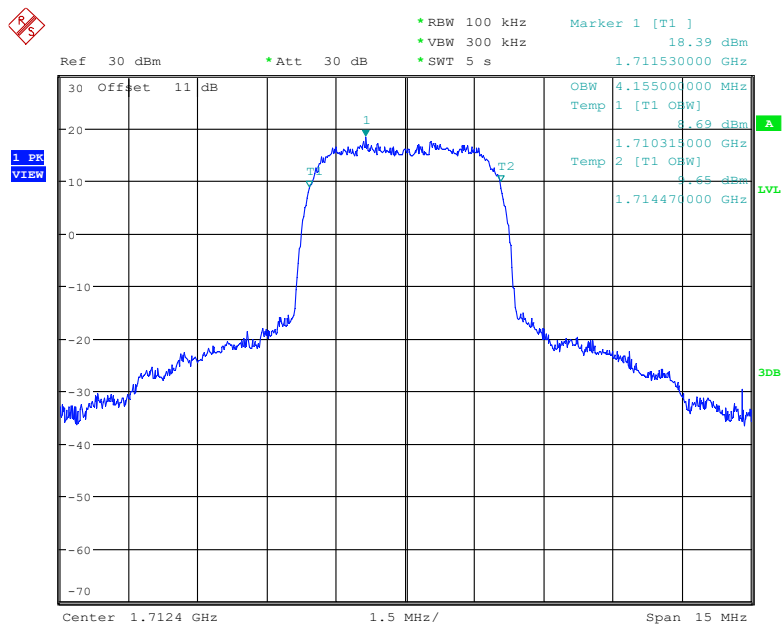
Date: 7.JAN.2023 09:10:29



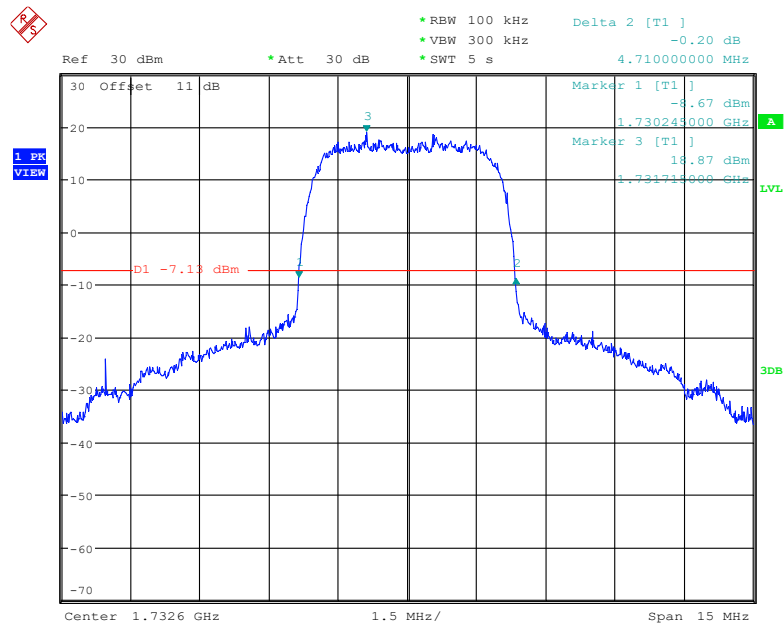
Date: 7.JAN.2023 09:09:49

**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (QPSK) Mode, Low channel**

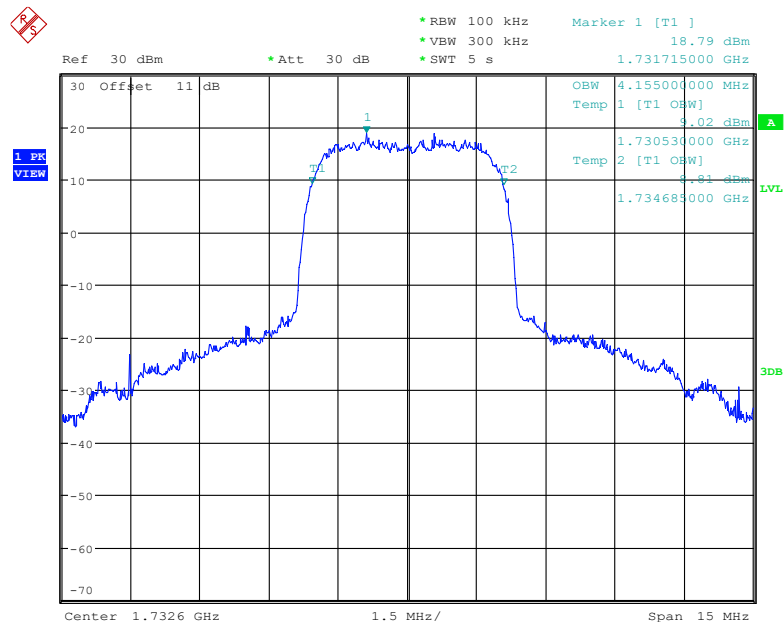
Date: 7.JAN.2023 09:32:38



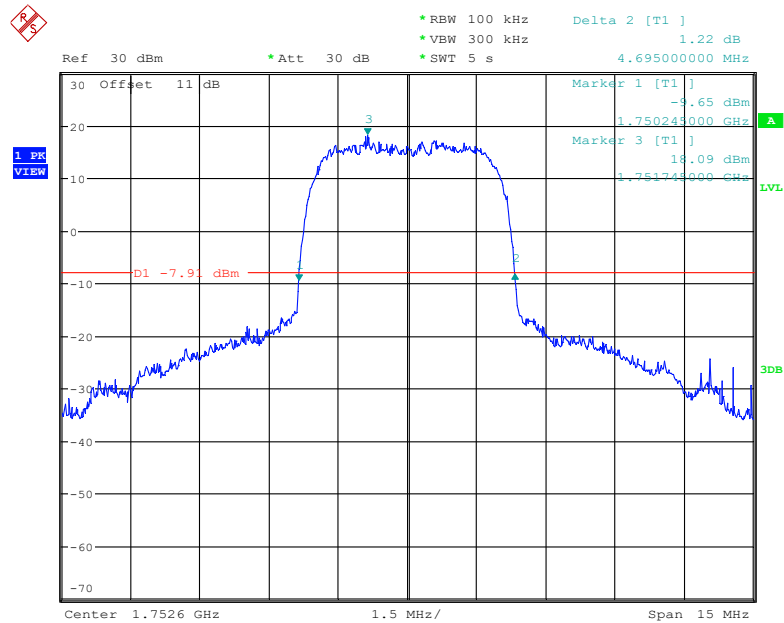
Date: 7.JAN.2023 09:32:00

**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (QPSK) Mode, Middle channel**

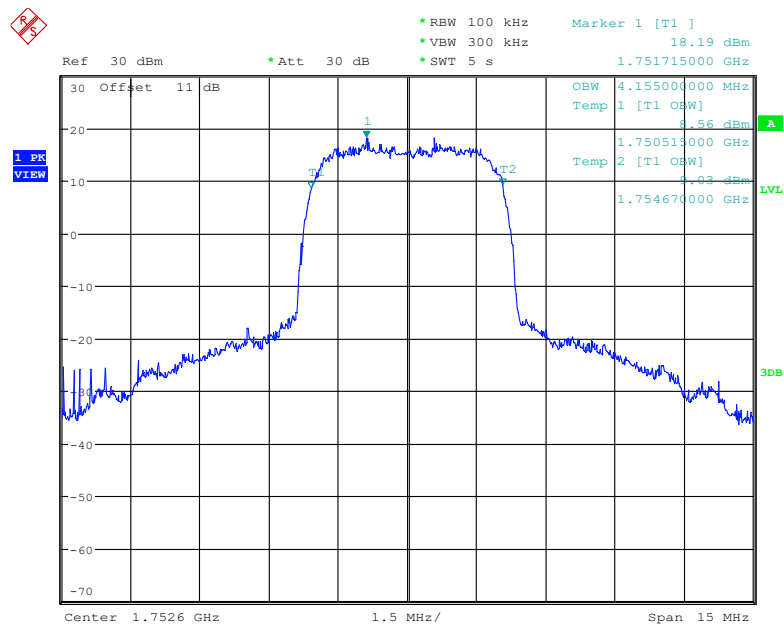
Date: 7.JAN.2023 09:36:40



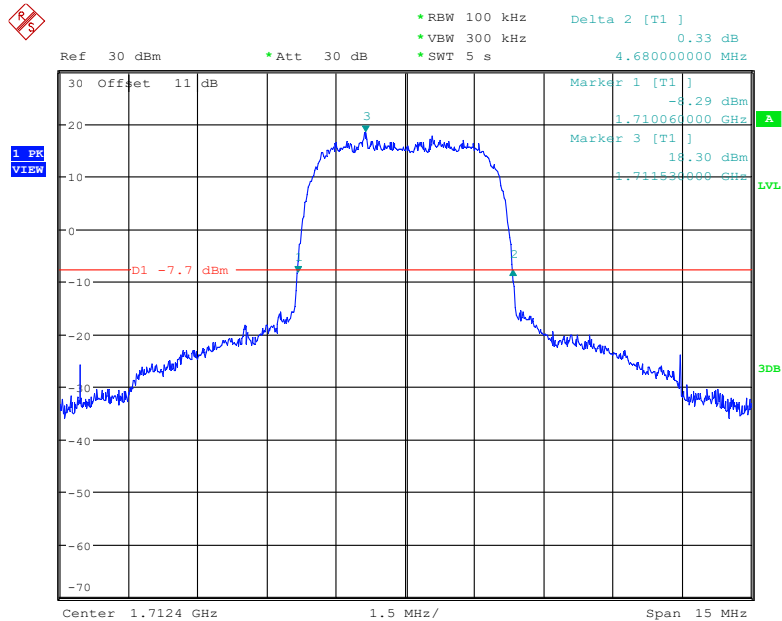
Date: 7.JAN.2023 09:36:01

**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (QPSK) Mode, High channel**

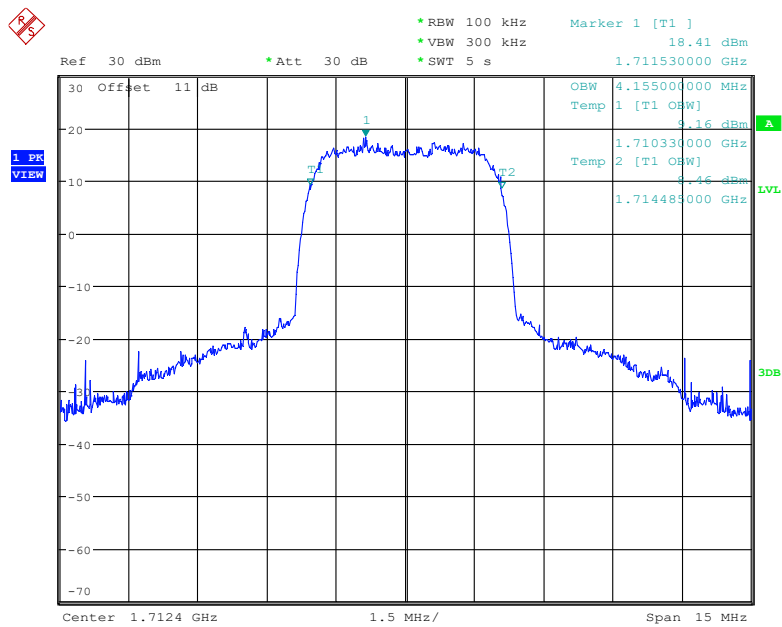
Date: 7.JAN.2023 09:42:51



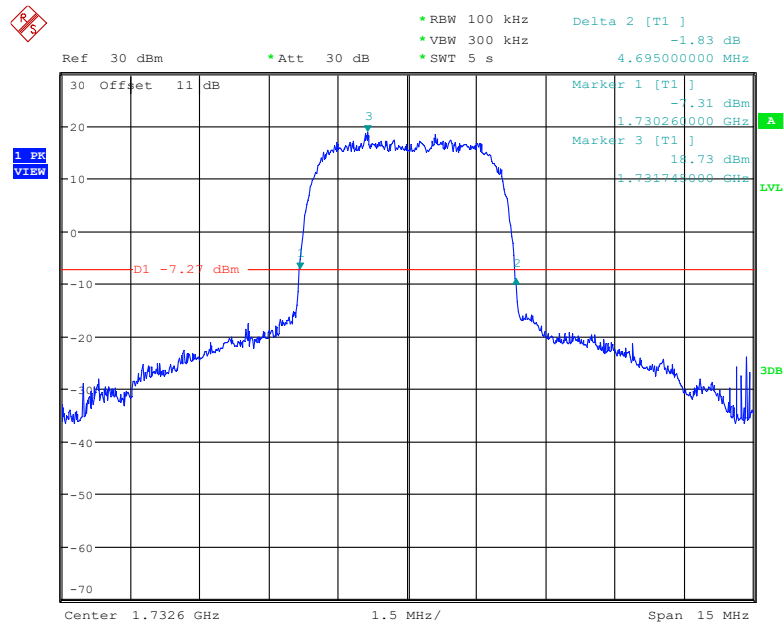
Date: 7.JAN.2023 09:42:12

**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel**

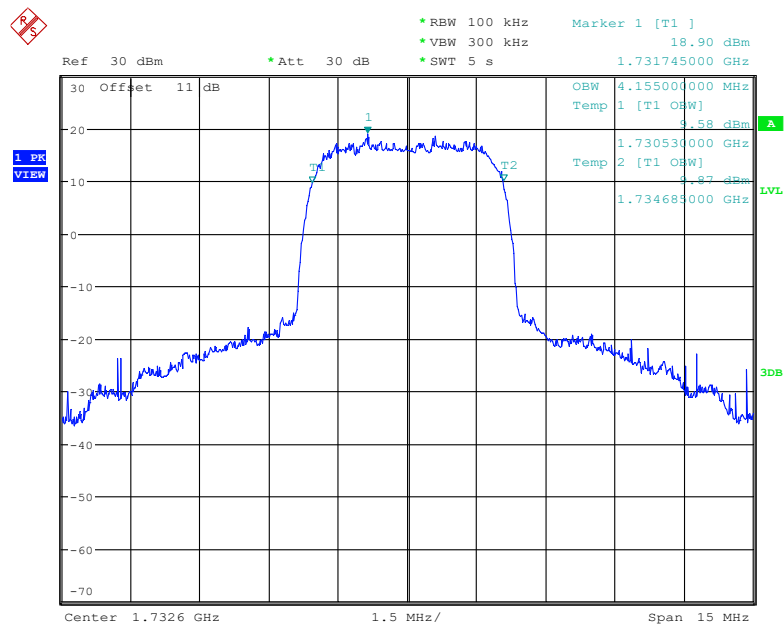
Date: 7.JAN.2023 09:17:30



Date: 7.JAN.2023 09:16:51

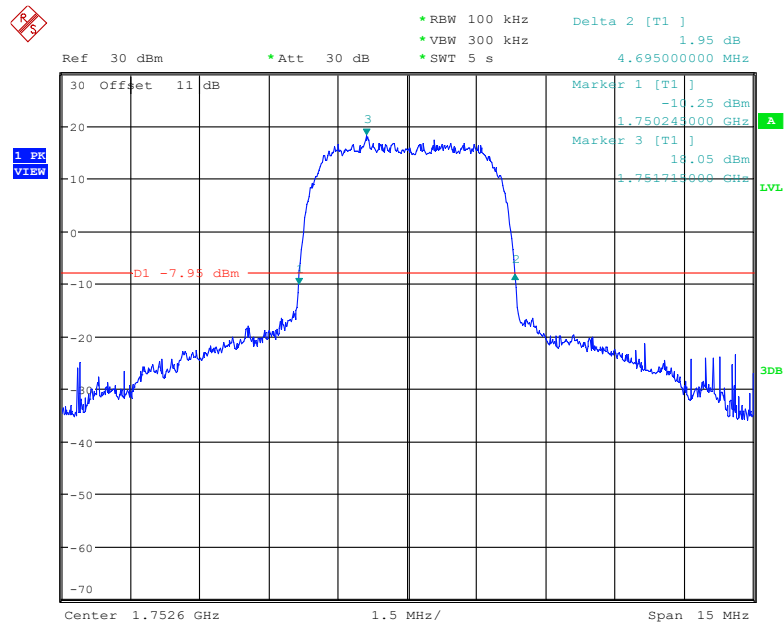
**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel**

Date: 7.JAN.2023 09:27:02

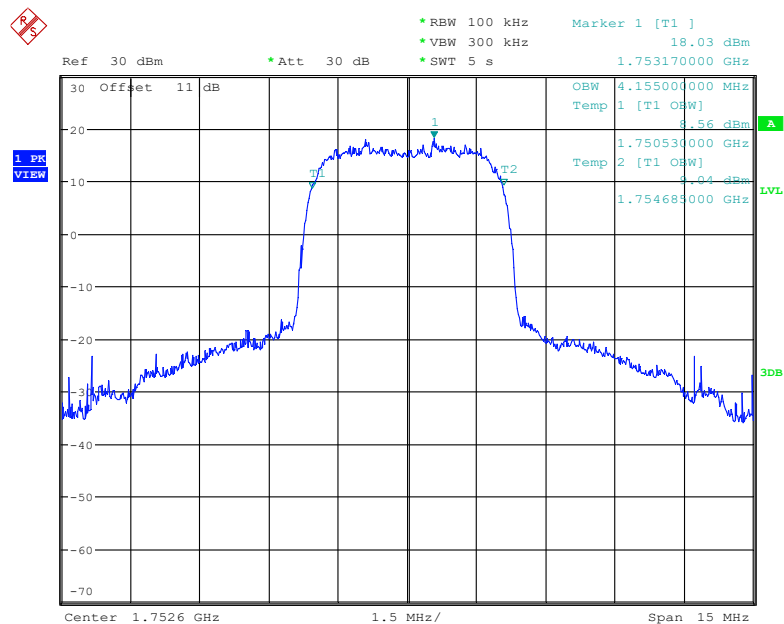


Date: 7.JAN.2023 09:26:23



**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel**

Date: 7.JAN.2023 09:22:02



Date: 7.JAN.2023 09:21:23

**LTE Band 2:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.104       | 1.302          | 1.110          | 1.314          | 1.110        | 1.308          |
|           | 16QAM      | 1.116       | 1.278          | 1.104          | 1.278          | 1.104        | 1.272          |
| 3 MHz     | QPSK       | 2.700       | 3.036          | 2.700          | 3.306          | 2.700        | 3.000          |
|           | 16QAM      | 2.688       | 3.036          | 2.700          | 3.024          | 2.700        | 3.012          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.500          | 4.980          | 4.540        | 5.000          |
|           | 16QAM      | 4.540       | 4.980          | 4.540          | 5.000          | 4.500        | 4.940          |
| 10 MHz    | QPSK       | 8.960       | 9.720          | 9.000          | 9.800          | 9.000        | 9.760          |
|           | 16QAM      | 8.960       | 9.800          | 8.920          | 9.760          | 8.960        | 9.800          |
| 15 MHz    | QPSK       | 13.440      | 15.000         | 13.560         | 15.060         | 13.620       | 15.060         |
|           | 16QAM      | 13.500      | 14.940         | 13.560         | 15.120         | 13.620       | 15.060         |
| 20 MHz    | QPSK       | 17.920      | 19.520         | 18.080         | 19.680         | 18.080       | 19.680         |
|           | 16QAM      | 18.000      | 19.520         | 18.000         | 19.680         | 18.080       | 19.760         |

**LTE Band 4:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.110       | 1.272          | 1.110          | 1.266          | 1.110        | 1.266          |
|           | 16QAM      | 1.104       | 1.296          | 1.110          | 1.272          | 1.116        | 1.260          |
| 3 MHz     | QPSK       | 2.688       | 3.012          | 2.700          | 3.048          | 2.700        | 2.988          |
|           | 16QAM      | 2.700       | 3.024          | 2.712          | 3.036          | 2.712        | 3.012          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 5.020          | 4.520        | 5.000          |
|           | 16QAM      | 4.540       | 5.000          | 4.540          | 5.020          | 4.520        | 5.000          |
| 10 MHz    | QPSK       | 8.960       | 9.800          | 8.960          | 9.720          | 9.000        | 9.840          |
|           | 16QAM      | 9.000       | 9.880          | 9.000          | 9.840          | 8.960        | 9.720          |
| 15 MHz    | QPSK       | 13.560      | 15.000         | 13.560         | 15.120         | 13.560       | 15.060         |
|           | 16QAM      | 13.560      | 15.240         | 13.560         | 15.060         | 13.560       | 15.120         |
| 20 MHz    | QPSK       | 18.000      | 19.760         | 18.000         | 19.760         | 18.000       | 19.600         |
|           | 16QAM      | 18.000      | 19.600         | 18.080         | 19.520         | 18.080       | 19.760         |

**LTE Band 5& LTE Band 26(Part 22H):**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.104       | 1.254          | 1.104          | 1.260          | 1.104        | 1.260          |
|           | 16QAM      | 1.104       | 1.260          | 1.110          | 1.248          | 1.110        | 1.254          |
| 3 MHz     | QPSK       | 2.700       | 3.000          | 2.688          | 3.012          | 2.712        | 3.000          |
|           | 16QAM      | 2.700       | 3.012          | 2.700          | 3.036          | 2.688        | 3.012          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 4.920          | 4.520        | 4.980          |
|           | 16QAM      | 4.520       | 5.000          | 4.520          | 5.000          | 4.520        | 4.960          |
| 10 MHz    | QPSK       | 8.960       | 9.760          | 8.960          | 9.800          | 8.960        | 9.760          |
|           | 16QAM      | 8.960       | 9.720          | 8.960          | 9.800          | 8.960        | 9.800          |
| 15MHz     | QPSK       | 13.440      | 15.000         | 13.560         | 15.060         | 13.560       | 15.060         |
|           | 16QAM      | 13.560      | 15.000         | 13.560         | 15.000         | 13.560       | 15.000         |

**LTE Band 7:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 5 MHz     | QPSK       | 4.520       | 4.980          | 4.520          | 5.020          | 4.540        | 5.000          |
|           | 16QAM      | 4.540       | 5.000          | 4.520          | 4.980          | 4.520        | 4.940          |
| 10 MHz    | QPSK       | 9.000       | 9.760          | 8.960          | 9.800          | 9.000        | 9.760          |
|           | 16QAM      | 8.960       | 9.760          | 8.960          | 9.840          | 8.960        | 9.760          |
| 15 MHz    | QPSK       | 13.500      | 15.060         | 13.500         | 15.000         | 13.560       | 14.940         |
|           | 16QAM      | 13.620      | 15.240         | 13.500         | 14.880         | 13.500       | 15.000         |
| 20 MHz    | QPSK       | 18.000      | 19.680         | 18.000         | 19.600         | 18.000       | 19.600         |
|           | 16QAM      | 18.000      | 19.680         | 18.000         | 19.760         | 18.000       | 19.680         |

**LTE Band 12:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.098       | 1.254          | 1.098          | 1.254          | 1.104        | 1.260          |
|           | 16QAM      | 1.098       | 1.248          | 1.104          | 1.260          | 1.098        | 1.248          |
| 3 MHz     | QPSK       | 2.700       | 3.012          | 2.700          | 3.000          | 2.700        | 2.988          |
|           | 16QAM      | 2.700       | 2.988          | 2.700          | 3.000          | 2.700        | 3.000          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.500          | 4.960          | 4.520        | 4.980          |
|           | 16QAM      | 4.520       | 5.020          | 4.500          | 5.040          | 4.520        | 4.960          |
| 10 MHz    | QPSK       | 8.960       | 9.800          | 8.960          | 9.800          | 8.960        | 9.720          |
|           | 16QAM      | 9.000       | 9.800          | 8.960          | 9.720          | 8.960        | 9.720          |

**LTE Band 13:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 4.980          | 4.520        | 4.980          |
|           | 16QAM      | 4.520       | 5.000          | 4.540          | 5.000          | 4.520        | 4.960          |
| 10 MHz    | QPSK       | /           | /              | 8.960          | 9.680          | /            | /              |
|           | 16QAM      | /           | /              | 8.960          | 9.760          | /            | /              |

**LTE Band 17:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 4.960          | 4.520        | 5.000          |
|           | 16QAM      | 4.520       | 5.000          | 4.520          | 5.000          | 4.520        | 5.000          |
| 10 MHz    | QPSK       | 8.960       | 9.680          | 8.960          | 9.760          | 8.960        | 9.800          |
|           | 16QAM      | 8.960       | 9.680          | 8.960          | 9.800          | 8.960        | 9.720          |

**LTE Band 26(Part 90):**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.098       | 1.260          | 1.098          | 1.248          | 1.092        | 1.248          |
|           | 16QAM      | 1.098       | 1.248          | 1.104          | 1.254          | 1.104        | 1.260          |
| 3 MHz     | QPSK       | 2.688       | 3.012          | 2.700          | 3.012          | 2.688        | 2.988          |
|           | 16QAM      | 2.700       | 3.000          | 2.688          | 3.012          | 2.700        | 3.000          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 4.960          | 4.520        | 4.960          |
|           | 16QAM      | 4.520       | 5.000          | 4.520          | 5.000          | 4.520        | 4.980          |
| 10 MHz    | QPSK       | /           | /              | 8.960          | 9.720          | /            | /              |
|           | 16QAM      | /           | /              | 8.960          | 9.800          | /            | /              |

**LTE Band 38:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 5 MHz     | QPSK       | 4.520       | 5.220          | 4.520          | 4.980          | 4.500        | 4.940          |
|           | 16QAM      | 4.520       | 5.320          | 4.520          | 5.040          | 4.520        | 4.960          |
| 10 MHz    | QPSK       | 8.960       | 9.720          | 9.000          | 9.840          | 8.960        | 9.800          |
|           | 16QAM      | 8.960       | 9.720          | 8.960          | 9.840          | 8.960        | 9.720          |
| 15 MHz    | QPSK       | 13.500      | 15.000         | 13.500         | 15.720         | 13.620       | 16.200         |
|           | 16QAM      | 13.560      | 15.180         | 13.500         | 14.940         | 13.500       | 15.060         |
| 20 MHz    | QPSK       | 17.920      | 19.600         | 17.920         | 19.760         | 18.000       | 19.600         |
|           | 16QAM      | 17.920      | 19.600         | 18.000         | 19.600         | 18.000       | 19.680         |

**LTE Band 41:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 5 MHz     | QPSK       | 4.500       | 4.960          | 4.540          | 5.380          | 4.520        | 4.980          |
|           | 16QAM      | 4.520       | 4.980          | 4.520          | 5.260          | 4.520        | 5.040          |
| 10 MHz    | QPSK       | 8.960       | 9.800          | 9.000          | 9.880          | 9.000        | 9.760          |
|           | 16QAM      | 8.960       | 9.760          | 9.000          | 9.840          | 8.960        | 9.760          |
| 15 MHz    | QPSK       | 13.620      | 16.260         | 13.500         | 15.120         | 13.500       | 15.300         |
|           | 16QAM      | 13.560      | 15.000         | 13.560         | 15.240         | 13.620       | 15.540         |
| 20 MHz    | QPSK       | 18.000      | 19.520         | 18.000         | 19.440         | 18.000       | 19.680         |
|           | 16QAM      | 18.000      | 19.600         | 18.000         | 20.240         | 18.000       | 19.680         |

**LTE Band 66:**

| Bandwidth | Modulation | Low channel |                | Middle channel |                | High channel |                |
|-----------|------------|-------------|----------------|----------------|----------------|--------------|----------------|
|           |            | OBW (MHz)   | 26dB EBW (MHz) | OBW (MHz)      | 26dB EBW (MHz) | OBW (MHz)    | 26dB EBW (MHz) |
| 1.4 MHz   | QPSK       | 1.110       | 1.272          | 1.104          | 1.266          | 1.110        | 1.284          |
|           | 16QAM      | 1.116       | 1.266          | 1.098          | 1.272          | 1.110        | 1.284          |
| 3 MHz     | QPSK       | 2.700       | 3.012          | 2.700          | 3.012          | 2.700        | 3.012          |
|           | 16QAM      | 2.700       | 3.024          | 2.700          | 3.024          | 2.700        | 3.024          |
| 5 MHz     | QPSK       | 4.520       | 5.000          | 4.520          | 5.000          | 4.520        | 4.960          |
|           | 16QAM      | 4.520       | 5.020          | 4.520          | 5.000          | 4.520        | 4.960          |
| 10 MHz    | QPSK       | 8.960       | 9.760          | 8.960          | 9.800          | 8.960        | 9.800          |
|           | 16QAM      | 8.960       | 9.720          | 8.960          | 9.880          | 8.960        | 9.720          |
| 15 MHz    | QPSK       | 13.500      | 15.060         | 13.500         | 15.000         | 13.560       | 15.060         |
|           | 16QAM      | 13.560      | 15.180         | 13.500         | 15.000         | 13.560       | 15.060         |
| 20 MHz    | QPSK       | 17.920      | 19.600         | 18.000         | 19.760         | 18.000       | 19.520         |
|           | 16QAM      | 18.000      | 19.760         | 18.000         | 19.600         | 18.000       | 19.600         |

The test plots of LTE band please refer to the Appendix A.

## FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 & §90.691 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

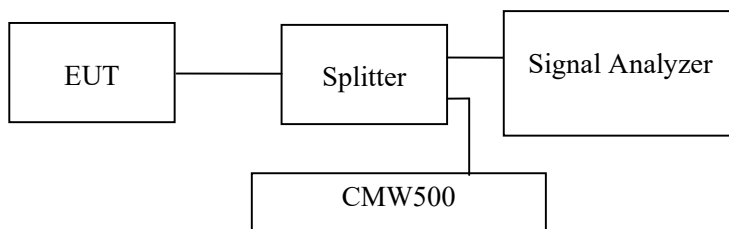
### Applicable Standard

FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 & §90.691.

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

### Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

### Test Data

#### Environmental Conditions

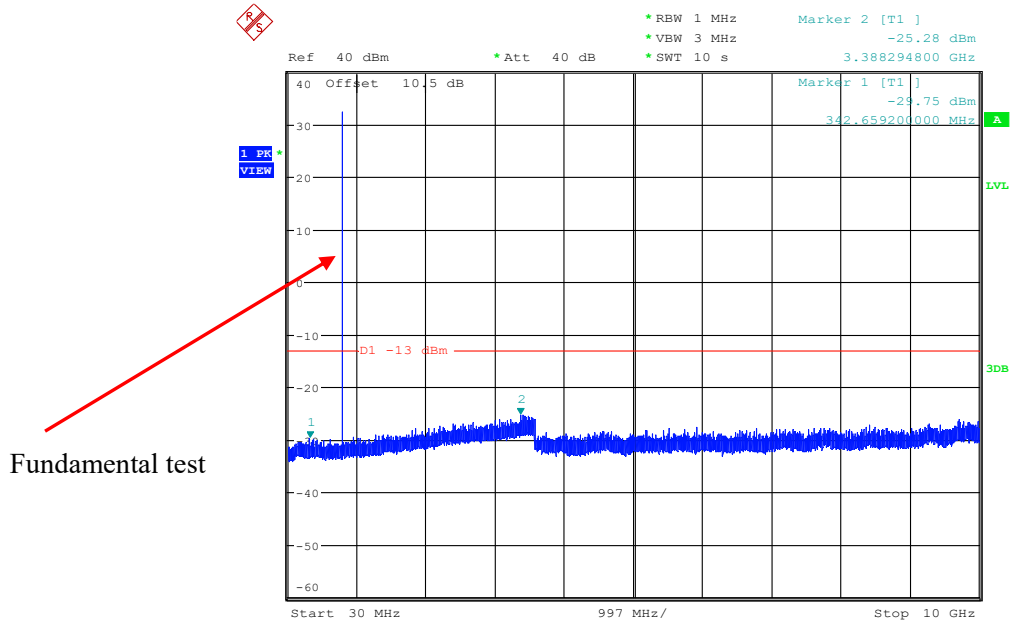
|                    |           |
|--------------------|-----------|
| Temperature:       | 20~25 °C  |
| Relative Humidity: | 50~56.8 % |
| ATM Pressure:      | 101.0 kPa |

*The testing was performed by Glenn Jiang from 2023-01-06 to 2023-02-13.*

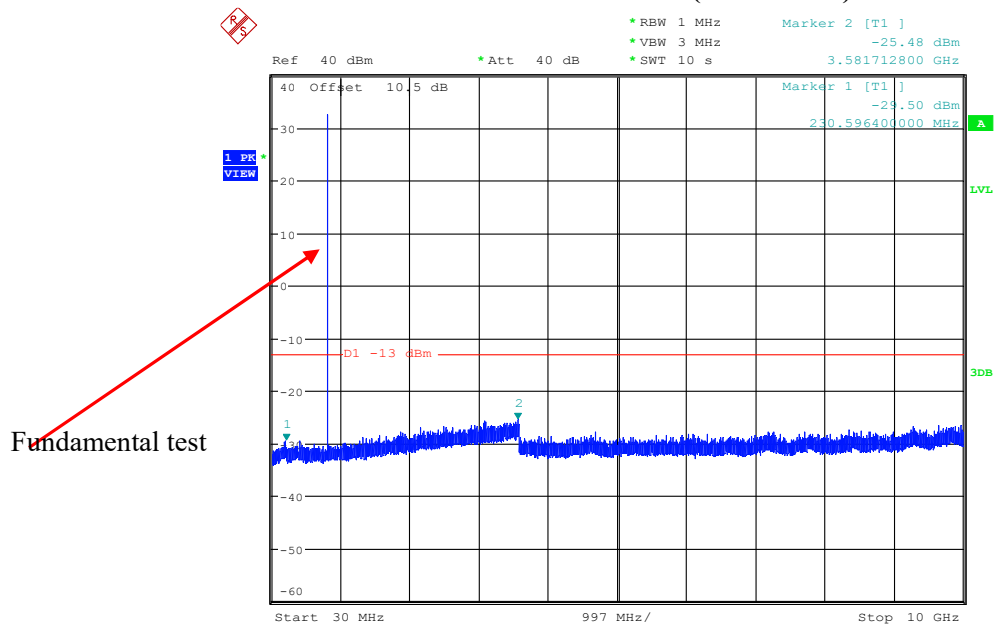
*EUT operation mode: Transmitting*

**Test result: Pass**

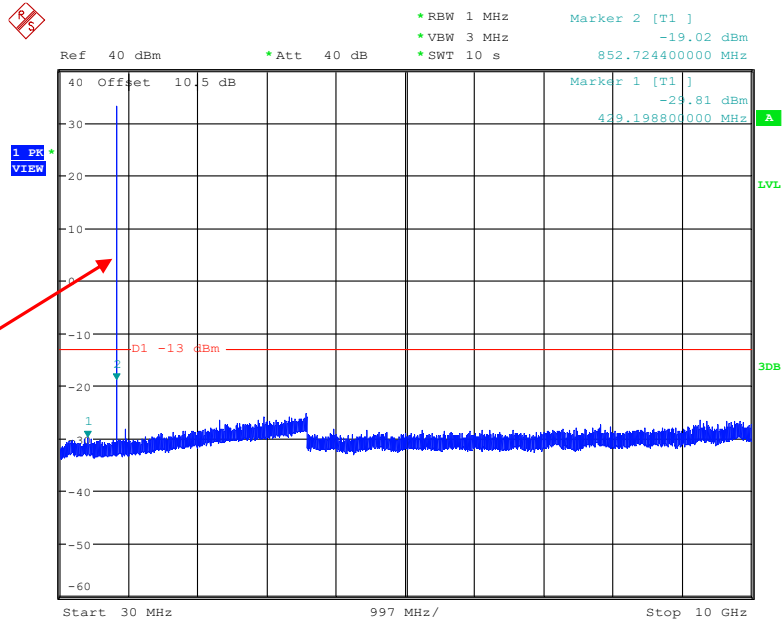
*Please refer to the following plots.*

**Cellular Band (Part 22H)****Low Channel:****30 MHz – 10GHz (GSM Mode)**

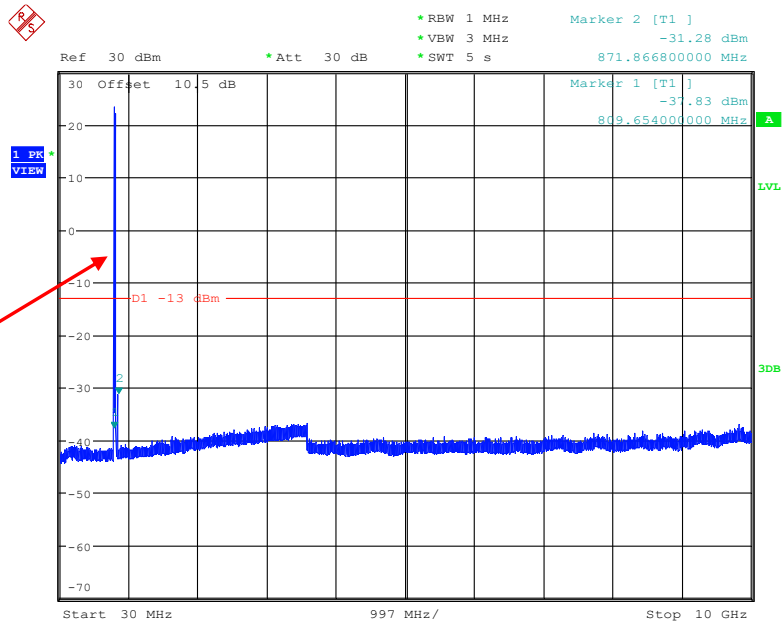
Date: 6.JAN.2023 17:15:40

**Middle Channel:****30 MHz – 10GHz (GSM Mode)**

Date: 6.JAN.2023 17:19:04

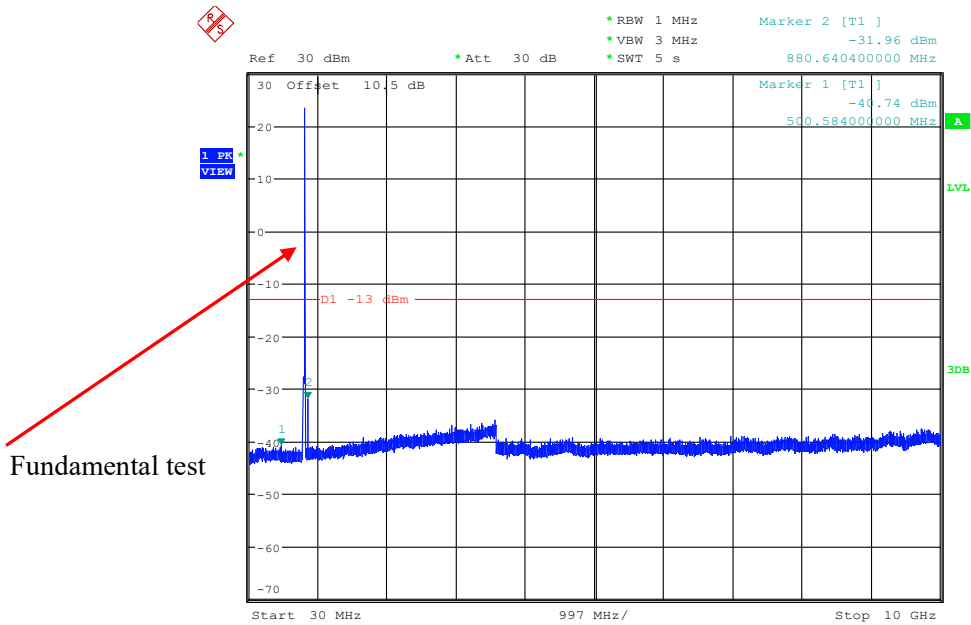
**High Channel:****30 MHz – 10GHz (GSM Mode)**

Date: 6.JAN.2023 17:25:06

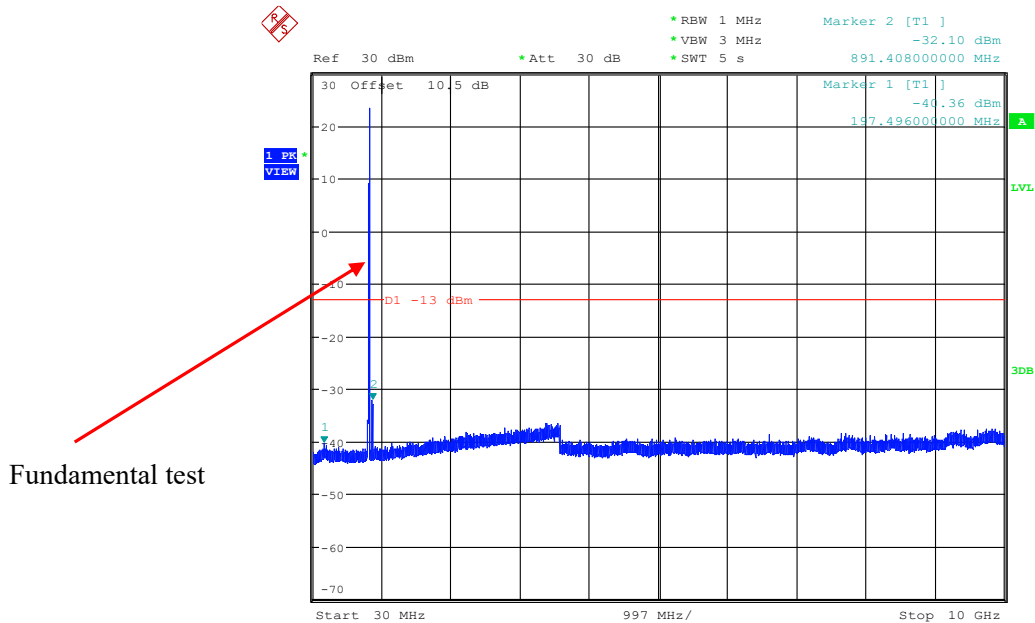
**Low Channel:****30 MHz – 10GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:49:08

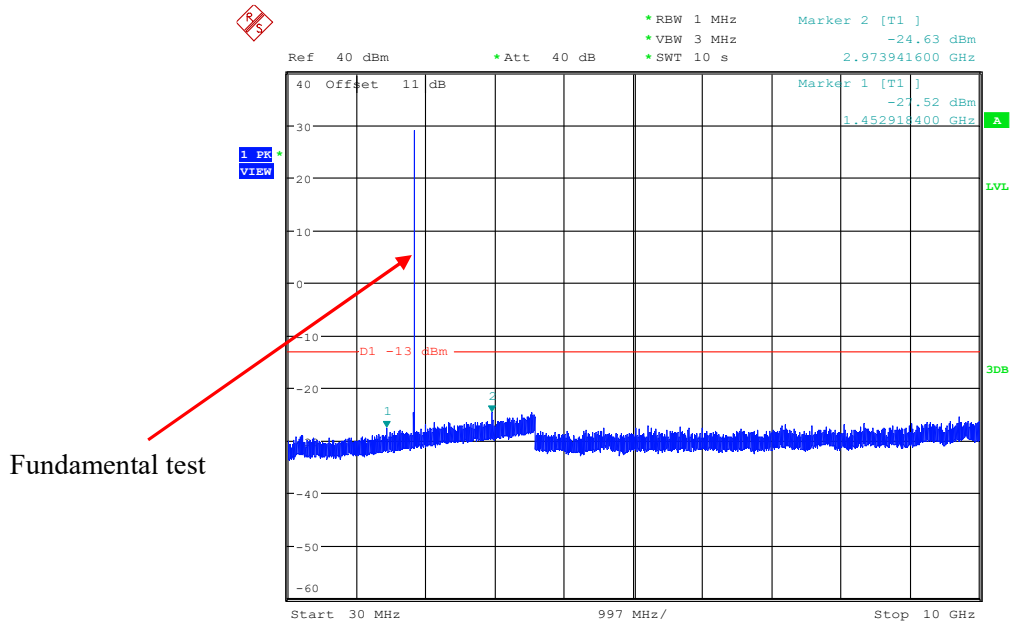


**Middle Channel:****30 MHz – 10GHz (WCDMA Mode)**

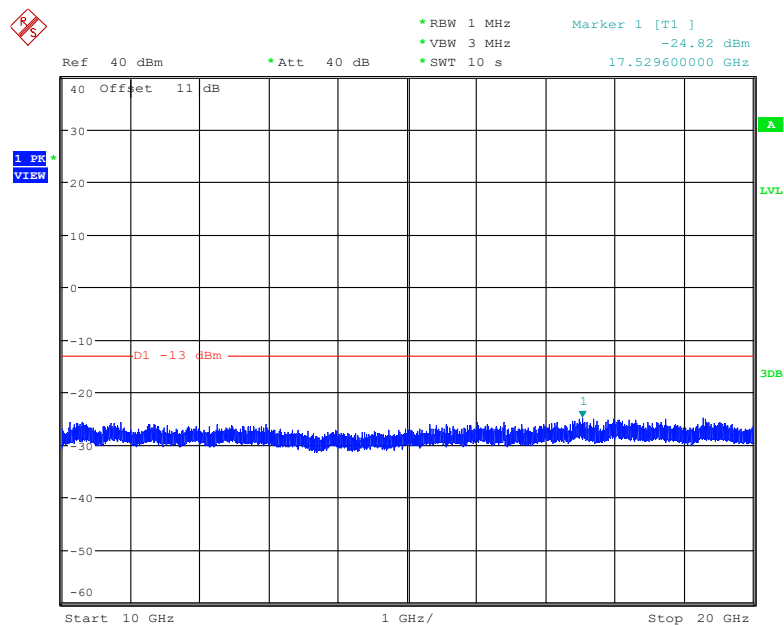
Date: 7.JAN.2023 09:52:36

**High Channel:****30 MHz – 10GHz (WCDMA Mode)**

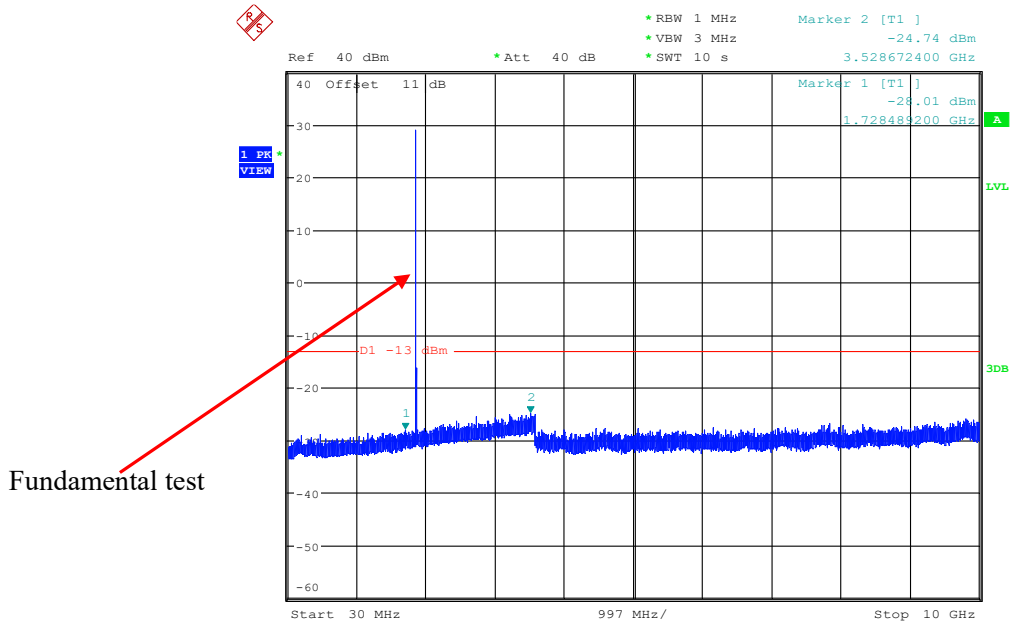
Date: 7.JAN.2023 09:56:34

**PCS Band (Part 24E)****Low Channel:****30 MHz – 10GHz (GSM Mode)**

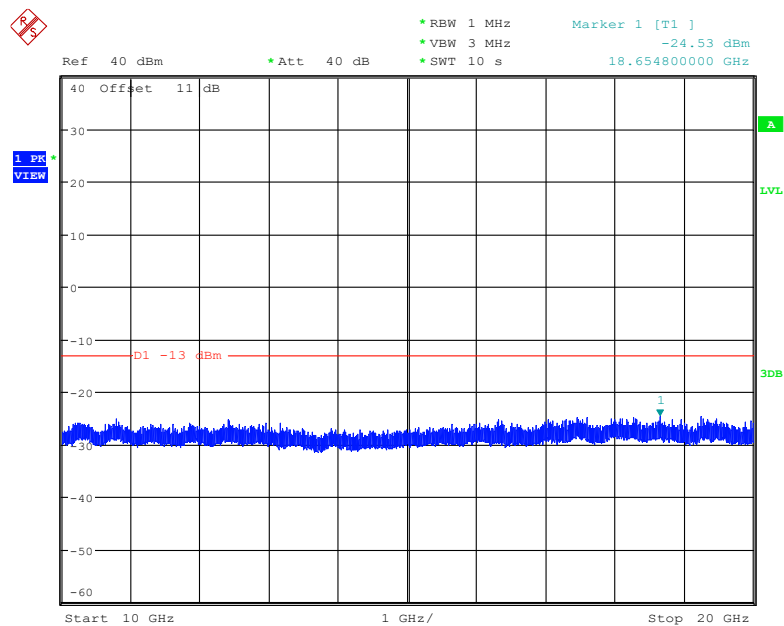
Date: 6.JAN.2023 18:17:45

**10 GHz – 20GHz (GSM Mode)**

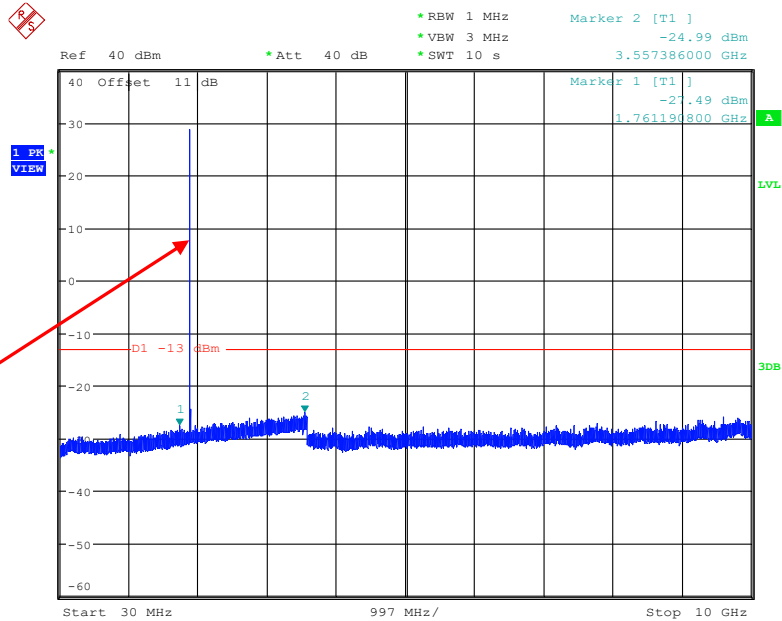
Date: 6.JAN.2023 18:02:08

**Middle Channel:****30 MHz – 10GHz (GSM Mode)**

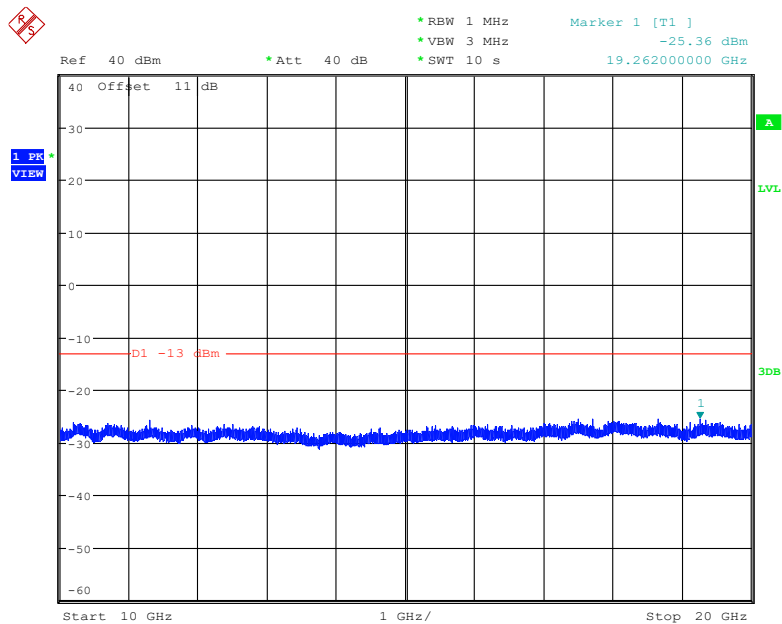
Date: 6.JAN.2023 18:18:42

**10 GHz – 20GHz (GSM Mode)**

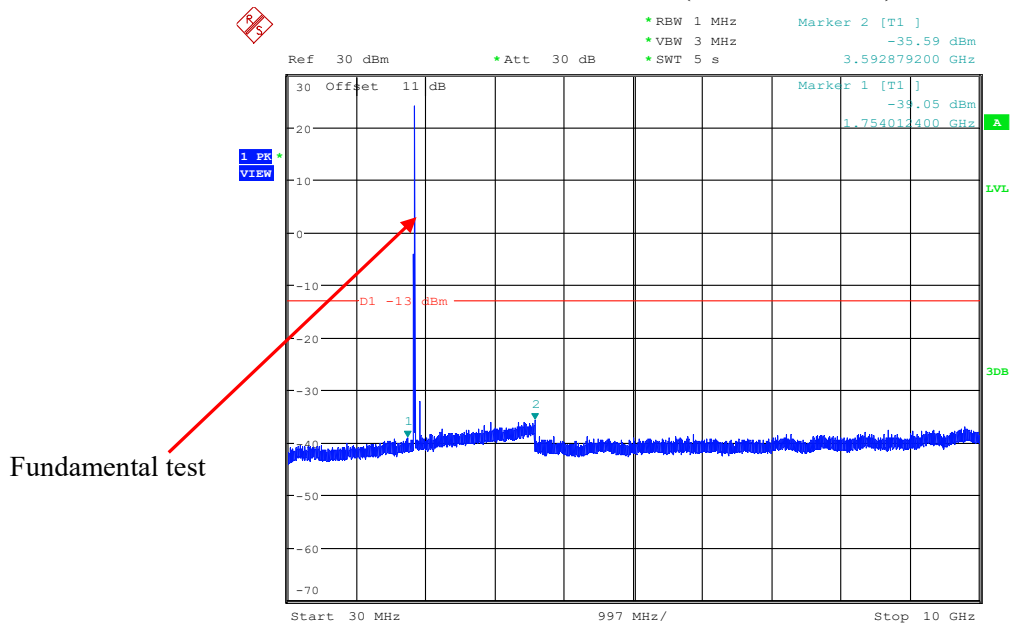
Date: 6.JAN.2023 18:09:00

**High Channel:****30 MHz – 10GHz (GSM Mode)**

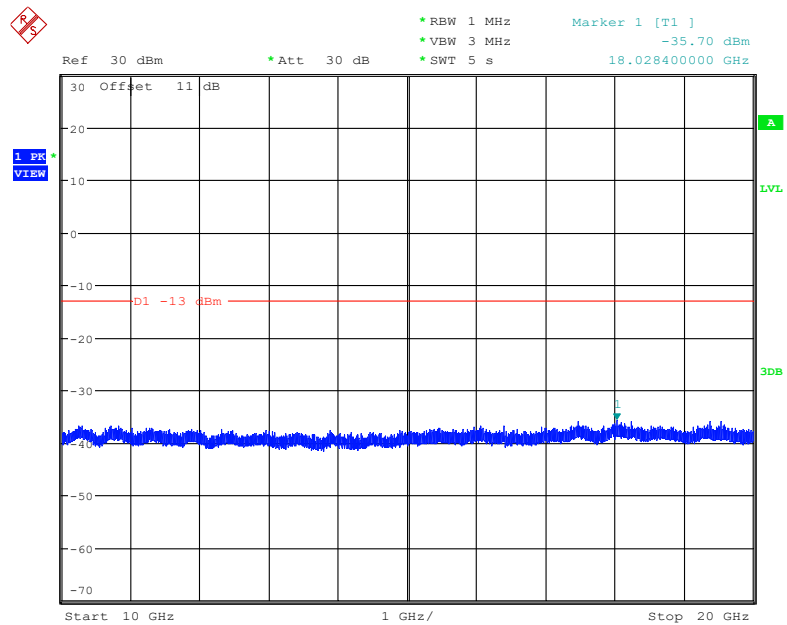
Date: 6.JAN.2023 18:12:37

**10 GHz – 20GHz (GSM Mode)**

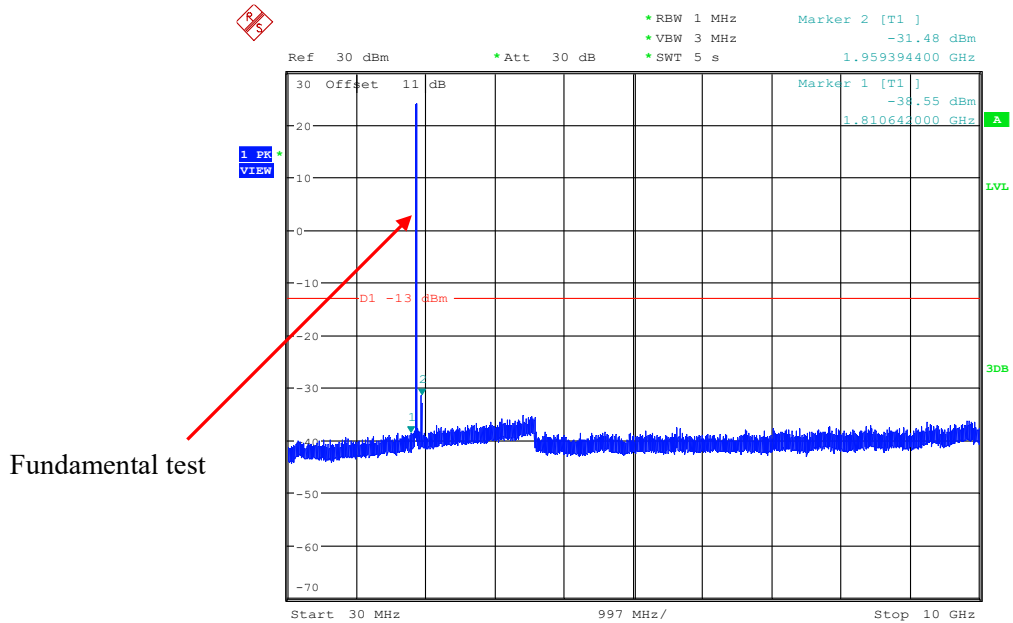
Date: 6.JAN.2023 18:13:52

**Low Channel:****30 MHz – 10GHz (WCDMA Mode)**

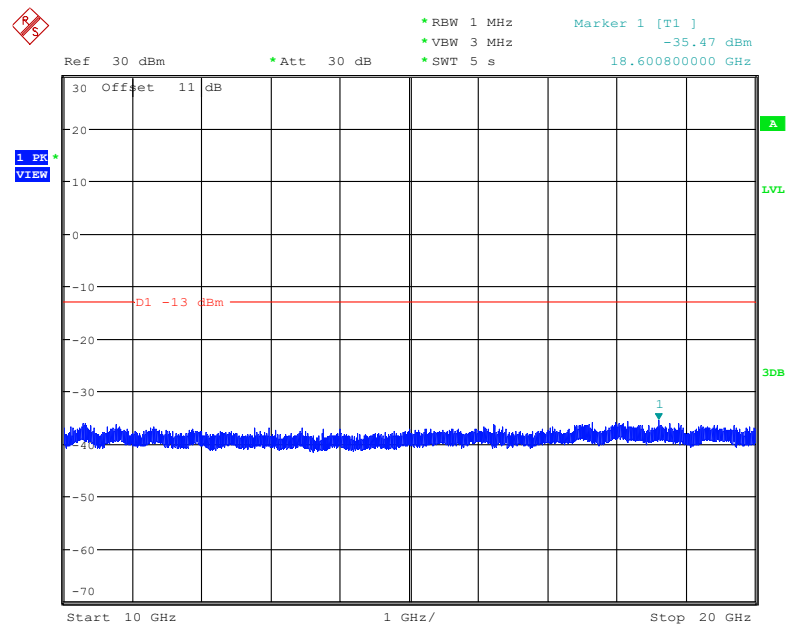
Date: 6.JAN.2023 18:59:02

**10 GHz – 20GHz (WCDMA Mode)**

Date: 6.JAN.2023 18:59:43

**Middle Channel:****30 MHz – 10GHz (WCDMA Mode)**

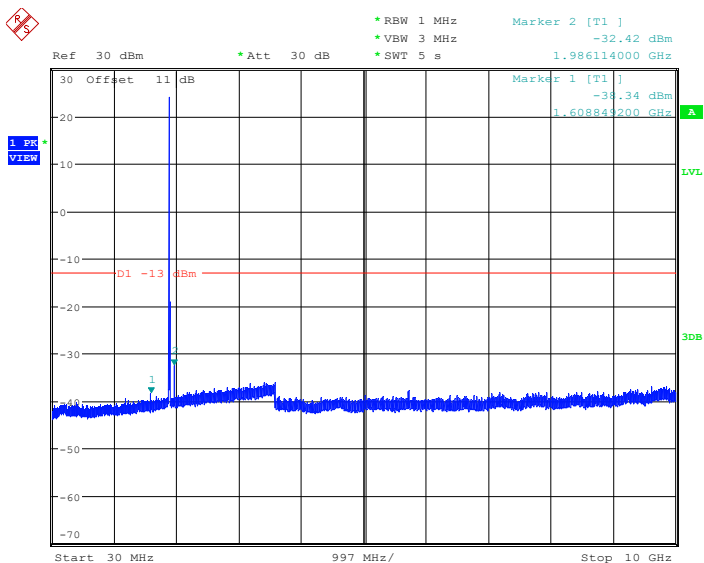
Date: 6.JAN.2023 19:03:03

**10 GHz – 20GHz (WCDMA Mode)**

Date: 6.JAN.2023 19:03:37

High Channel:

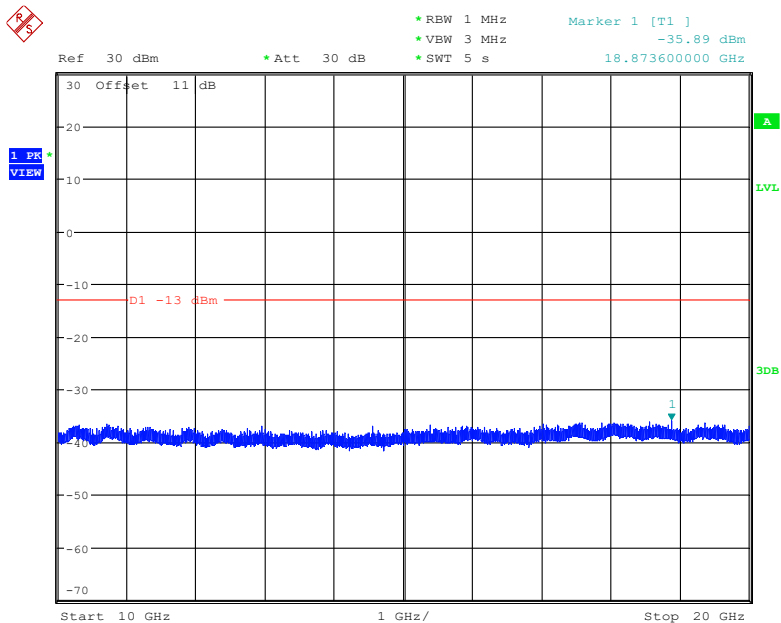
30 MHz – 10GHz (WCDMA Mode)



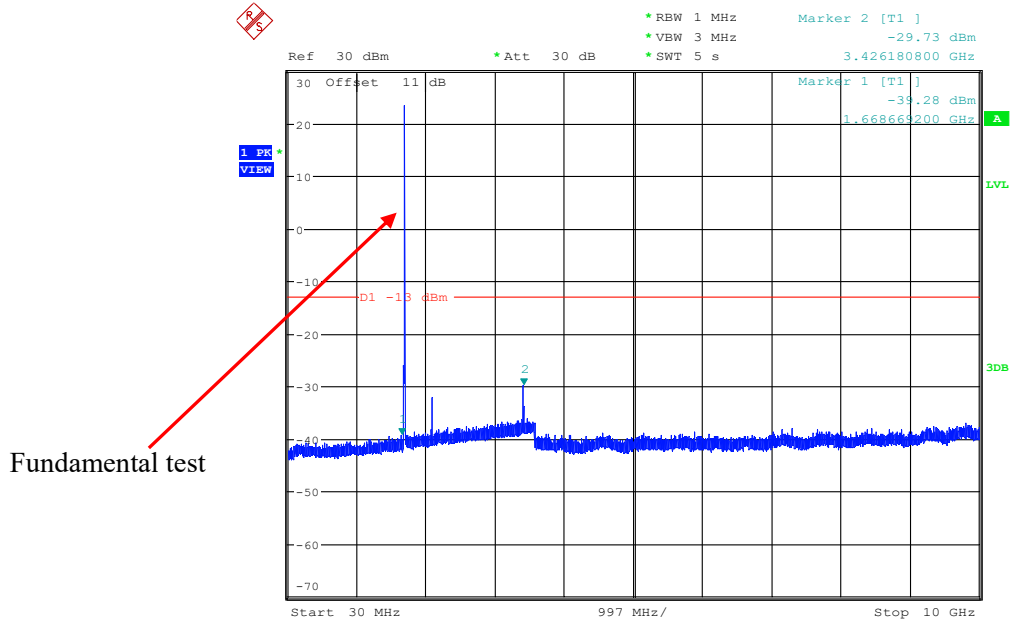
Fundamental test

Date: 6.JAN.2023 19:06:52

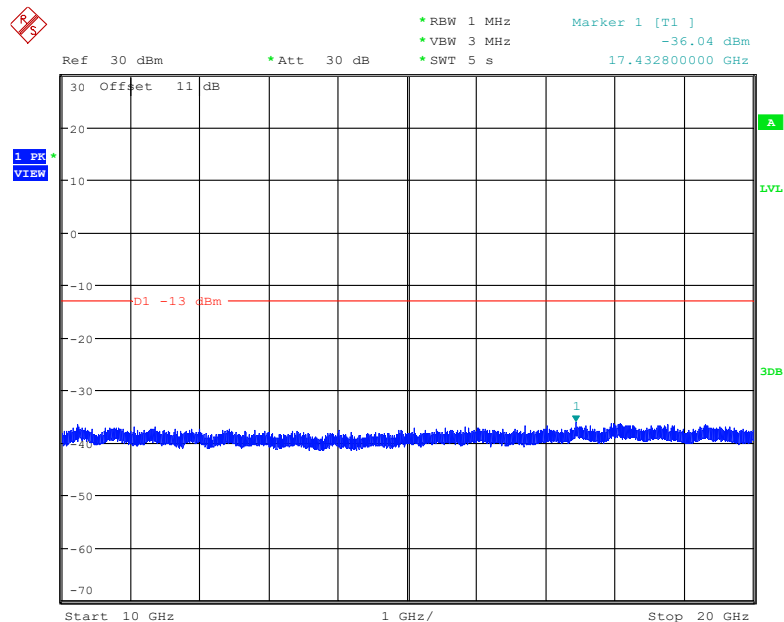
10 GHz – 20GHz (WCDMA Mode)



Date: 6.JAN.2023 19:07:34

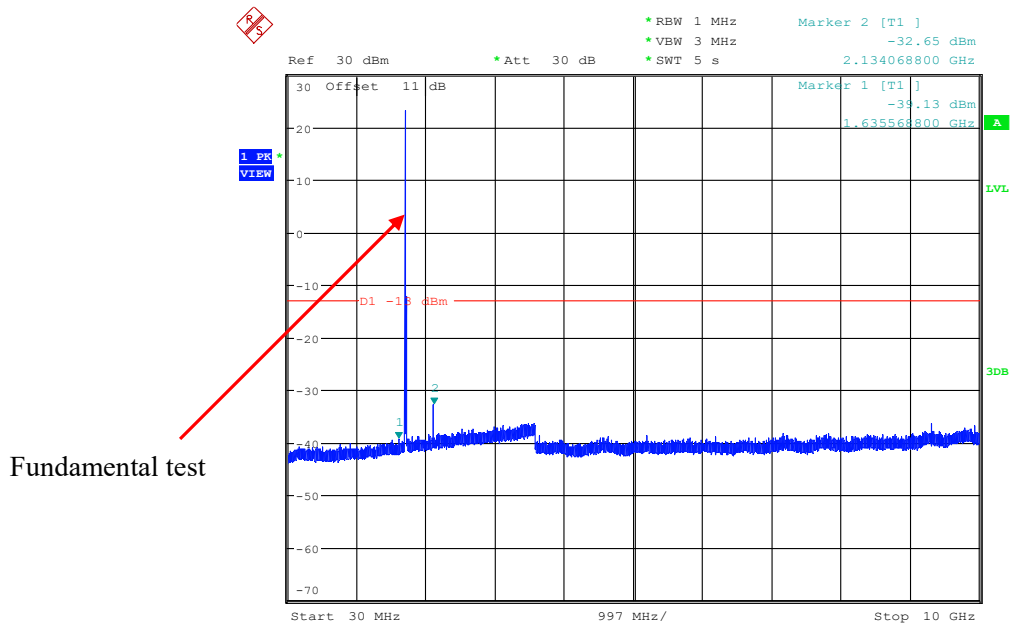
**AWS Band (Part 27)****Low Channel:****30 MHz – 10GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:04:00

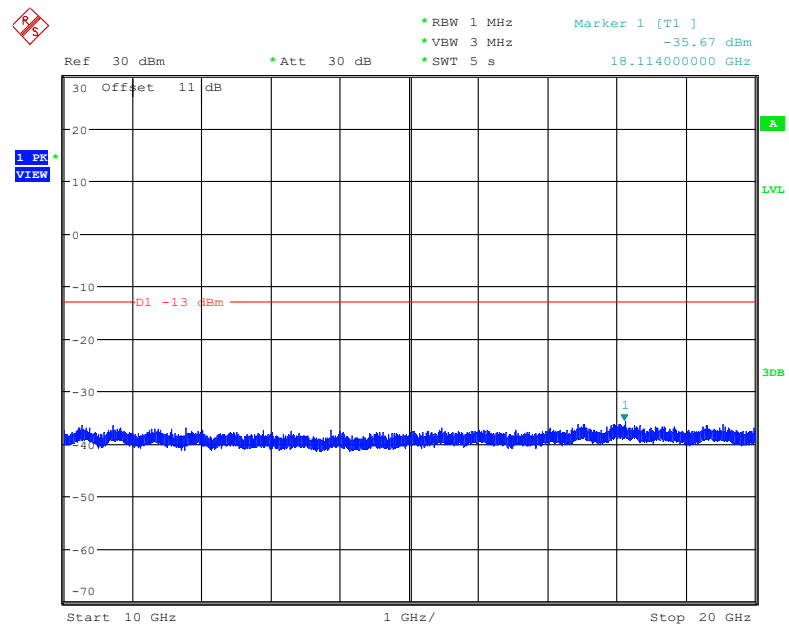
**10 GHz – 20GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:04:41

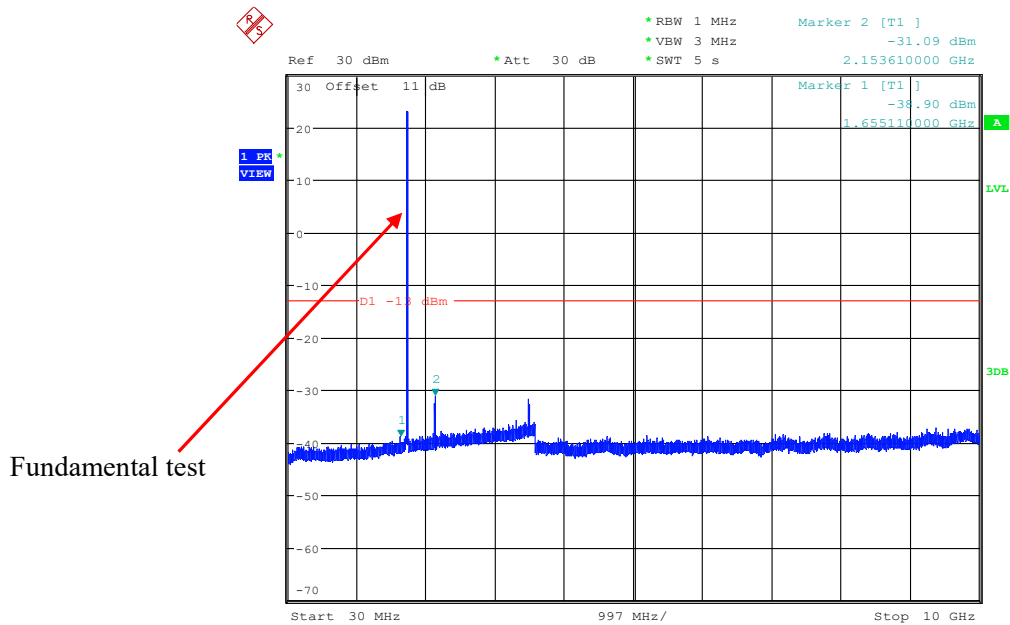


**Middle Channel:****30 MHz – 10GHz (WCDMA Mode)**

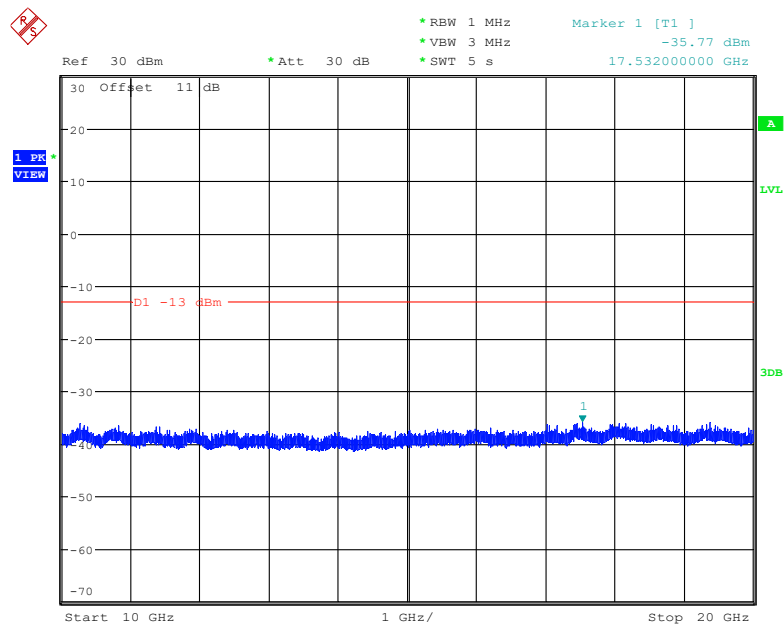
Date: 7.JAN.2023 09:07:19

**10 GHz – 20GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:08:00

**High Channel:****30 MHz – 10GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:11:49

**10 GHz – 20GHz (WCDMA Mode)**

Date: 7.JAN.2023 09:12:31

The test plots of LTE band please refer to the Appendix B.

## **FCC § 2.1053; § 22.917 (a); § 24.238 (a); §27.53; §90.691- SPURIOUS RADIATED EMISSIONS**

### **Applicable Standard**

FCC § 2.1053, §22.917(a)& § 24.238(a) &§ 27.53 &§90.691.

### **Test Procedure**

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

### **Test Data**

#### **Environmental Conditions**

|                           |          |
|---------------------------|----------|
| <b>Temperature:</b>       | 25.5 °C  |
| <b>Relative Humidity:</b> | 52 %     |
| <b>ATM Pressure:</b>      | 101.0kPa |

*The testing was performed by Jimi Zheng on 2023-01-08 .*

*Test mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded)*

*The worst case is as below:*

**30MHz-10GHz:****Cellular Band (Part 22H)**

| Frequency<br>(MHz)      | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|-------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                         |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| GSM 850                 |                              |                     |               |                |                               |                            |                |                |
| Low Channel 824.2MHz    |                              |                     |               |                |                               |                            |                |                |
| 952.34                  | -72.73                       | 268                 | 1.8           | H              | 10.0                          | -62.73                     | -13            | -49.73         |
| 952.34                  | -77.34                       | 174                 | 1.6           | V              | 11.7                          | -65.64                     | -13            | -52.64         |
| 1648.4                  | -53.70                       | 278                 | 1             | H              | 3.5                           | -50.20                     | -13            | -37.20         |
| 1648.4                  | -54.10                       | 72                  | 1.6           | V              | 3.1                           | -51.00                     | -13            | -38.00         |
| 2472.6                  | -45.60                       | 197                 | 2             | H              | 6.6                           | -39.00                     | -13            | -26.00         |
| 2472.6                  | -44.70                       | 283                 | 1.3           | V              | 5.8                           | -38.90                     | -13            | -25.90         |
| 3296.8                  | -46.30                       | 253                 | 1.9           | H              | 6.4                           | -39.90                     | -13            | -26.90         |
| 3296.8                  | -53.70                       | 278                 | 1             | H              | 3.5                           | -50.20                     | -13            | -37.20         |
| Middle Channel 836.6MHz |                              |                     |               |                |                               |                            |                |                |
| 953.89                  | -72.13                       | 67                  | 2.4           | H              | 10.0                          | -62.13                     | -13            | -49.13         |
| 953.89                  | -76.35                       | 334                 | 2.2           | V              | 11.7                          | -64.65                     | -13            | -51.65         |
| 1673.2                  | -52.50                       | 195                 | 1.6           | H              | 3.8                           | -48.70                     | -13            | -35.70         |
| 1673.2                  | -51.80                       | 284                 | 2.5           | V              | 3.1                           | -48.70                     | -13            | -35.70         |
| 2509.8                  | -45.20                       | 291                 | 1             | H              | 6.2                           | -39.00                     | -13            | -26.00         |
| 2509.8                  | -43.80                       | 155                 | 2.1           | V              | 5.6                           | -38.20                     | -13            | -25.20         |
| 3346.4                  | -46.80                       | 62                  | 1.9           | H              | 6.6                           | -40.20                     | -13            | -27.20         |
| 3346.4                  | -45.20                       | 140                 | 1.9           | V              | 5.4                           | -39.80                     | -13            | -26.80         |
| High Channel 848.8MHz   |                              |                     |               |                |                               |                            |                |                |
| 954.11                  | -70.25                       | 336                 | 1.3           | H              | 10.0                          | -60.25                     | -13            | -47.25         |
| 954.11                  | -77.02                       | 33                  | 2.3           | V              | 11.7                          | -65.32                     | -13            | -52.32         |
| 1697.6                  | -53.00                       | 54                  | 2.3           | H              | 4.1                           | -48.90                     | -13            | -35.90         |
| 1697.6                  | -51.80                       | 141                 | 1.3           | V              | 3.1                           | -48.70                     | -13            | -35.70         |
| 2546.4                  | -45.20                       | 218                 | 1.3           | H              | 6.1                           | -39.10                     | -13            | -26.10         |
| 2546.4                  | -44.80                       | 299                 | 2.2           | V              | 5.8                           | -39.00                     | -13            | -26.00         |
| 3395.2                  | -46.30                       | 237                 | 1.1           | H              | 6.2                           | -40.10                     | -13            | -27.10         |
| 3395.2                  | -46.30                       | 244                 | 1.1           | V              | 5.4                           | -40.90                     | -13            | -27.90         |

| Frequency<br>(MHz)      | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|-------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                         |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| WCDMA Band 5            |                              |                     |               |                |                               |                            |                |                |
| Low Channel 826.4MHz    |                              |                     |               |                |                               |                            |                |                |
| 950.35                  | -72.12                       | 324                 | 1.4           | H              | 10.0                          | -62.12                     | -13            | -49.12         |
| 950.35                  | -74.88                       | 211                 | 1.9           | V              | 11.7                          | -63.18                     | -13            | -50.18         |
| 1652.8                  | -54.30                       | 57                  | 1.7           | H              | 3.5                           | -50.80                     | -13            | -37.80         |
| 1652.8                  | -53.90                       | 63                  | 1.1           | V              | 3.1                           | -50.80                     | -13            | -37.80         |
| 2479.2                  | -51.40                       | 26                  | 2             | H              | 6.6                           | -44.80                     | -13            | -31.80         |
| 2479.2                  | -50.40                       | 101                 | 2.4           | V              | 5.8                           | -44.60                     | -13            | -31.60         |
| 3305.6                  | -49.80                       | 25                  | 1.5           | H              | 6.4                           | -43.40                     | -13            | -30.40         |
| 3305.6                  | -49.10                       | 343                 | 1.4           | V              | 5.7                           | -43.40                     | -13            | -30.40         |
| Middle Channel 836.6MHz |                              |                     |               |                |                               |                            |                |                |
| 953.83                  | -70.26                       | 51                  | 2.5           | H              | 10.0                          | -60.26                     | -13            | -47.26         |
| 953.83                  | -75.89                       | 176                 | 1.4           | V              | 11.7                          | -64.19                     | -13            | -51.19         |
| 1673.2                  | -54.80                       | 186                 | 2.3           | H              | 3.8                           | -51.00                     | -13            | -38.00         |
| 1673.2                  | -53.60                       | 33                  | 2.5           | V              | 3.1                           | -50.50                     | -13            | -37.50         |
| 2509.8                  | -50.00                       | 160                 | 2             | H              | 6.2                           | -43.80                     | -13            | -30.80         |
| 2509.8                  | -48.70                       | 137                 | 1.5           | V              | 5.6                           | -43.10                     | -13            | -30.10         |
| 3346.4                  | -49.10                       | 182                 | 1.6           | H              | 6.6                           | -42.50                     | -13            | -29.50         |
| 3346.4                  | -47.70                       | 72                  | 2             | V              | 5.4                           | -42.30                     | -13            | -29.30         |
| High Channel 846.6MHz   |                              |                     |               |                |                               |                            |                |                |
| 952.52                  | -71.65                       | 87                  | 2.2           | H              | 10.0                          | -61.65                     | -13            | -48.65         |
| 952.52                  | -76.47                       | 292                 | 2.0           | V              | 11.7                          | -64.77                     | -13            | -51.77         |
| 1693.2                  | -54.30                       | 236                 | 1.5           | H              | 4.1                           | -50.20                     | -13            | -37.20         |
| 1693.2                  | -53.00                       | 127                 | 1.0           | V              | 3.1                           | -49.90                     | -13            | -36.90         |
| 2539.8                  | -48.10                       | 160                 | 1.8           | H              | 6.1                           | -42.00                     | -13            | -29.00         |
| 2539.8                  | -48.70                       | 67                  | 2.4           | V              | 5.8                           | -42.90                     | -13            | -29.90         |
| 3386.4                  | -49.60                       | 149                 | 1.1           | H              | 6.2                           | -43.40                     | -13            | -30.40         |
| 3386.4                  | -48.00                       | 173                 | 1.6           | V              | 5.4                           | -42.60                     | -13            | -29.60         |

**30MHz-20GHz:****PCS Band (Part 24E)**

| Frequency<br>(MHz)      | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|-------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                         |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| PCS1900                 |                              |                     |               |                |                               |                            |                |                |
| Low Channel 1850.2MHz   |                              |                     |               |                |                               |                            |                |                |
| 951.68                  | -70.95                       | 102                 | 2.3           | H              | 10.0                          | -60.95                     | -13            | -47.95         |
| 951.68                  | -75.14                       | 247                 | 2.2           | V              | 11.7                          | -63.44                     | -13            | -50.44         |
| 3700.4                  | -50.30                       | 287                 | 1.7           | H              | 8.1                           | -42.20                     | -13            | -29.20         |
| 3700.4                  | -50.20                       | 189                 | 1.6           | V              | 7.6                           | -42.60                     | -13            | -29.60         |
| Middle Channel 1880MHz  |                              |                     |               |                |                               |                            |                |                |
| 956.34                  | -70.70                       | 29                  | 1.1           | H              | 10.0                          | -60.70                     | -13            | -47.70         |
| 956.34                  | -75.30                       | 161                 | 1.9           | V              | 11.7                          | -63.60                     | -13            | -50.60         |
| 3760                    | -51.10                       | 340                 | 2.2           | H              | 8.8                           | -42.30                     | -13            | -29.30         |
| 3760                    | -50.80                       | 351                 | 1.9           | V              | 8                             | -42.80                     | -13            | -29.80         |
| High Channel 1909.80MHz |                              |                     |               |                |                               |                            |                |                |
| 950.06                  | -71.07                       | 74                  | 1.3           | H              | 10.0                          | -61.07                     | -13            | -48.07         |
| 950.06                  | -76.67                       | 178                 | 2.1           | V              | 11.7                          | -64.97                     | -13            | -51.97         |
| 3819.6                  | -52.20                       | 91                  | 1.6           | H              | 8.7                           | -43.50                     | -13            | -30.50         |
| 3819.6                  | -49.90                       | 289                 | 2.1           | V              | 7.9                           | -42.00                     | -13            | -29.00         |

| Frequency<br>(MHz)     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| WCDMA Band 2           |                              |                     |               |                |                               |                            |                |                |
| Low Channel 1852.4MHz  |                              |                     |               |                |                               |                            |                |                |
| 952.59                 | -72.18                       | 320                 | 2.0           | H              | 10.0                          | -62.18                     | -13            | -49.18         |
| 952.59                 | -77.04                       | 245                 | 2.2           | V              | 11.7                          | -65.34                     | -13            | -52.34         |
| 3704.8                 | -51.40                       | 211                 | 1.3           | H              | 8.1                           | -43.30                     | -13            | -30.30         |
| 3704.8                 | -49.50                       | 239                 | 1.8           | V              | 7.6                           | -41.90                     | -13            | -28.90         |
| Middle Channel 1880MHz |                              |                     |               |                |                               |                            |                |                |
| 955.55                 | -72.65                       | 146                 | 1.5           | H              | 10.0                          | -62.65                     | -13            | -49.65         |
| 955.55                 | -76.73                       | 172                 | 1.7           | V              | 11.7                          | -65.03                     | -13            | -52.03         |
| 3760                   | -53.50                       | 18                  | 2.1           | H              | 8.8                           | -44.70                     | -13            | -31.70         |
| 3760                   | -51.10                       | 244                 | 1.1           | V              | 8                             | -43.10                     | -13            | -30.10         |
| High Channel 1907.6MHz |                              |                     |               |                |                               |                            |                |                |
| 956.11                 | -70.39                       | 193                 | 1.9           | H              | 10.0                          | -60.39                     | -13            | -47.39         |
| 956.11                 | -75.97                       | 156                 | 1.3           | V              | 11.7                          | -64.27                     | -13            | -51.27         |
| 3815.2                 | -52.70                       | 105                 | 2.5           | H              | 8.7                           | -44.00                     | -13            | -31.00         |
| 3815.2                 | -51.90                       | 291                 | 1.7           | V              | 7.9                           | -44.00                     | -13            | -31.00         |

**30MHz-20GHz:****AWS Band (Part 27E)**

| Frequency<br>(MHz)       | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                          |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| WCDMA Band 4             |                              |                     |               |                |                               |                            |                |                |
| Low Channel 1712.4MHz    |                              |                     |               |                |                               |                            |                |                |
| 956.08                   | -71.64                       | 58                  | 1.6           | H              | 10.0                          | -61.64                     | -13            | -48.64         |
| 956.08                   | -75.67                       | 27                  | 1.8           | V              | 11.7                          | -63.97                     | -13            | -50.97         |
| 3424.8                   | -48.80                       | 152                 | 1.5           | H              | 6.4                           | -42.40                     | -13            | -29.40         |
| 3424.8                   | -48.20                       | 135                 | 2.1           | V              | 5.8                           | -42.40                     | -13            | -29.40         |
| Middle Channel 1732.6MHz |                              |                     |               |                |                               |                            |                |                |
| 954.97                   | -71.99                       | 171                 | 1.6           | H              | 10.0                          | -61.99                     | -13            | -48.99         |
| 954.97                   | -77.55                       | 235                 | 1.0           | V              | 11.7                          | -65.85                     | -13            | -52.85         |
| 3465.2                   | -48.4                        | 350                 | 2.4           | H              | 7                             | -41.40                     | -13            | -28.40         |
| 3465.2                   | -48.8                        | 71                  | 1.1           | V              | 6.2                           | -42.60                     | -13            | -29.60         |
| High Channel 1752.6MHz   |                              |                     |               |                |                               |                            |                |                |
| 953.88                   | -72.45                       | 242                 | 1.7           | H              | 10.0                          | -62.45                     | -13            | -49.45         |
| 953.88                   | -77.25                       | 290                 | 2.2           | V              | 11.7                          | -65.55                     | -13            | -52.55         |
| 3505.2                   | -50.30                       | 339                 | 1.5           | H              | 7.8                           | -42.50                     | -13            | -29.50         |
| 3505.2                   | -50.10                       | 129                 | 1.0           | V              | 6.5                           | -43.60                     | -13            | -30.60         |



**LTE Band:** (Pre-scan with all bandwidth/modulation, the worst case as below)

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 2                             |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-20GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 954.50                                 | -71.50                       | 248                 | 1.8           | H              | 10.0                          | -61.50                     | -13            | -48.50         |
| 954.50                                 | -75.75                       | 163                 | 2.1           | V              | 11.7                          | -64.05                     | -13            | -51.05         |
| 3701.4                                 | -52.40                       | 291                 | 2.4           | H              | 8.1                           | -44.30                     | -13            | -31.30         |
| 3701.4                                 | -49.80                       | 43                  | 1.4           | V              | 7.6                           | -42.20                     | -13            | -29.20         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 954.46                                 | -72.49                       | 227                 | 1.5           | H              | 10.0                          | -62.49                     | -13            | -49.49         |
| 954.46                                 | -75.70                       | 145                 | 1.7           | V              | 11.7                          | -64.00                     | -13            | -51.00         |
| 3760                                   | -53.60                       | 10                  | 1.1           | H              | 8.8                           | -44.80                     | -13            | -31.80         |
| 3760                                   | -52.00                       | 281                 | 1.9           | V              | 8                             | -44.00                     | -13            | -31.00         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 955.45                                 | -71.22                       | 194                 | 1.9           | H              | 10.0                          | -61.22                     | -13            | -48.22         |
| 955.45                                 | -76.11                       | 349                 | 1.6           | V              | 11.7                          | -64.41                     | -13            | -51.41         |
| 3818.6                                 | -53.40                       | 284                 | 1.4           | H              | 8.7                           | -44.70                     | -13            | -31.70         |
| 3818.6                                 | -51.50                       | 106                 | 1.8           | V              | 7.9                           | -43.60                     | -13            | -30.60         |

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 4                             |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-20GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 955.41                                 | -71.83                       | 222                 | 2.0           | H              | 10.0                          | -61.83                     | -13            | -48.83         |
| 955.41                                 | -77.25                       | 165                 | 1.9           | V              | 11.7                          | -65.55                     | -13            | -52.55         |
| 3421.4                                 | -46.60                       | 284                 | 1.2           | H              | 6.4                           | -40.20                     | -13            | -27.20         |
| 3421.4                                 | -45.50                       | 342                 | 1.6           | V              | 5.8                           | -39.70                     | -13            | -26.70         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 956.33                                 | -70.18                       | 338                 | 1.4           | H              | 10.0                          | -60.18                     | -13            | -47.18         |
| 956.33                                 | -77.58                       | 93                  | 2.0           | V              | 11.7                          | -65.88                     | -13            | -52.88         |
| 3465                                   | -44.2                        | 215                 | 1.6           | H              | 7                             | -37.20                     | -13            | -24.20         |
| 3465                                   | -46.3                        | 5                   | 1.3           | V              | 6.2                           | -40.10                     | -13            | -27.10         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 953.62                                 | -71.23                       | 323                 | 2.2           | H              | 10.0                          | -61.23                     | -13            | -48.23         |
| 953.62                                 | -77.57                       | 60                  | 2.3           | V              | 11.7                          | -65.87                     | -13            | -52.87         |
| 3508.6                                 | -45.30                       | 306                 | 2             | H              | 7.8                           | -37.50                     | -13            | -24.50         |
| 3508.6                                 | -47.10                       | 98                  | 2.2           | V              | 6.5                           | -40.60                     | -13            | -27.60         |

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 5 & LTE Band 26(Part 22H)     |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-10GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 950.15                                 | -72.16                       | 290                 | 2.1           | H              | 10.0                          | -62.16                     | -13            | -49.16         |
| 950.15                                 | -74.88                       | 206                 | 1.7           | V              | 11.7                          | -63.18                     | -13            | -50.18         |
| 1649.4                                 | -52.10                       | 135                 | 1.3           | H              | 3.5                           | -48.60                     | -13            | -35.60         |
| 1649.4                                 | -49.00                       | 116                 | 1.2           | V              | 3.1                           | -45.90                     | -13            | -32.90         |
| 2474.1                                 | -41.60                       | 228                 | 1.7           | H              | 6.6                           | -35.00                     | -13            | -22.00         |
| 2474.1                                 | -38.80                       | 109                 | 2             | V              | 5.8                           | -33.00                     | -13            | -20.00         |
| 3298.8                                 | -49.60                       | 337                 | 1.5           | H              | 6.4                           | -43.20                     | -13            | -30.20         |
| 3298.8                                 | -48.90                       | 172                 | 2.4           | V              | 5.7                           | -43.20                     | -13            | -30.20         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 952.46                                 | -72.51                       | 165                 | 2.3           | H              | 10.0                          | -62.51                     | -13            | -49.51         |
| 952.46                                 | -75.49                       | 334                 | 1.2           | V              | 11.7                          | -63.79                     | -13            | -50.79         |
| 1673.0                                 | -52.90                       | 17                  | 1.4           | H              | 3.8                           | -49.10                     | -13            | -36.10         |
| 1673.0                                 | -51.00                       | 331                 | 1.6           | V              | 3.1                           | -47.90                     | -13            | -34.90         |
| 2509.5                                 | -40.10                       | 55                  | 1.8           | H              | 6.2                           | -33.90                     | -13            | -20.90         |
| 2509.5                                 | -38.50                       | 183                 | 2.2           | V              | 5.6                           | -32.90                     | -13            | -19.90         |
| 3346.0                                 | -49.10                       | 100                 | 2             | H              | 6.6                           | -42.50                     | -13            | -29.50         |
| 3346.0                                 | -48.00                       | 47                  | 1.7           | V              | 5.4                           | -42.60                     | -13            | -29.60         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 953.38                                 | -71.93                       | 60                  | 1.8           | H              | 10.0                          | -61.93                     | -13            | -48.93         |
| 953.38                                 | -75.71                       | 250                 | 1.8           | V              | 11.7                          | -64.01                     | -13            | -51.01         |
| 1696.6                                 | -51.70                       | 320                 | 2.0           | H              | 4.1                           | -47.60                     | -13            | -34.60         |
| 1696.6                                 | -50.00                       | 95                  | 1.0           | V              | 3.1                           | -46.90                     | -13            | -33.90         |
| 2544.9                                 | -40.50                       | 357                 | 2.2           | H              | 6.1                           | -34.40                     | -13            | -21.40         |
| 2544.9                                 | -40.70                       | 354                 | 2.0           | V              | 5.8                           | -34.90                     | -13            | -21.90         |
| 3393.2                                 | -48.60                       | 26                  | 1.7           | H              | 6.2                           | -42.40                     | -13            | -29.40         |
| 3393.2                                 | -48.70                       | 88                  | 2.4           | V              | 5.4                           | -43.30                     | -13            | -30.30         |

| Frequency<br>(MHz)                   | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                      |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 7                           |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-26.5GHz  |                              |                     |               |                |                               |                            |                |                |
| 5MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 954.99                               | -70.62                       | 129                 | 1.9           | H              | 10.0                          | -60.62                     | -25            | -35.62         |
| 954.99                               | -77.16                       | 2                   | 1.0           | V              | 11.7                          | -65.46                     | -25            | -40.46         |
| 5005                                 | -49.50                       | 113                 | 1.9           | H              | 10.8                          | -38.70                     | -25            | -13.70         |
| 5005                                 | -47.40                       | 261                 | 1.6           | V              | 10.2                          | -37.20                     | -25            | -12.20         |
| 7507.5                               | -51.50                       | 340                 | 1.7           | H              | 20.4                          | -31.10                     | -25            | -6.10          |
| 7507.5                               | -50.80                       | 29                  | 1.5           | V              | 20.1                          | -30.70                     | -25            | -5.70          |
| 5MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 951.90                               | -72.70                       | 256                 | 2.1           | H              | 9.8                           | -62.90                     | -25            | -37.90         |
| 951.90                               | -76.60                       | 245                 | 1.7           | V              | 11.7                          | -64.90                     | -25            | -39.90         |
| 5070                                 | -48.40                       | 216                 | 2.4           | H              | 11.1                          | -37.30                     | -25            | -12.30         |
| 5070                                 | -47.80                       | 280                 | 2.4           | V              | 10.8                          | -37.00                     | -25            | -12.00         |
| 7605                                 | -51.60                       | 10                  | 1.3           | H              | 21.2                          | -30.40                     | -25            | -5.40          |
| 7605                                 | -51.00                       | 310                 | 1.1           | V              | 20.1                          | -30.90                     | -25            | -5.90          |
| 5MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 956.39                               | -72.35                       | 49                  | 2.5           | H              | 10.0                          | -62.35                     | -25            | -37.35         |
| 956.39                               | -77.33                       | 345                 | 2.3           | V              | 11.7                          | -65.63                     | -25            | -40.63         |
| 5135                                 | -47.30                       | 24                  | 2             | H              | 11.3                          | -36.00                     | -25            | -11.00         |
| 5135                                 | -46.30                       | 13                  | 1.3           | V              | 10.8                          | -35.50                     | -25            | -10.50         |
| 7702.5                               | -54.00                       | 188                 | 2.2           | H              | 21.2                          | -32.80                     | -25            | -7.80          |
| 7702.5                               | -51.70                       | 62                  | 2             | V              | 21                            | -30.70                     | -25            | -5.70          |

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 12                            |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-10GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 953.24                                 | -60.95                       | 163                 | 1.5           | H              | 10.0                          | -50.95                     | -13            | -37.95         |
| 953.24                                 | -64.72                       | 343                 | 1.4           | V              | 11.7                          | -53.02                     | -13            | -40.02         |
| 1399.4                                 | -60.2                        | 135                 | 1             | H              | 6.3                           | -53.90                     | -13            | -40.90         |
| 1399.4                                 | -59.6                        | 31                  | 2.3           | V              | 5.7                           | -53.90                     | -13            | -40.90         |
| 2099.1                                 | -45.4                        | 257                 | 1.9           | H              | 4.9                           | -40.50                     | -13            | -27.50         |
| 2099.1                                 | -45.7                        | 257                 | 1             | V              | 3.9                           | -41.80                     | -13            | -28.80         |
| 2798.8                                 | -54.8                        | 89                  | 2.3           | H              | 6.6                           | -48.20                     | -13            | -35.20         |
| 2798.8                                 | -53.5                        | 200                 | 1.5           | V              | 6                             | -47.50                     | -13            | -34.50         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 953.24                                 | -60.95                       | 163                 | 1.5           | H              | 10.0                          | -50.95                     | -13            | -37.95         |
| 953.24                                 | -64.72                       | 343                 | 1.4           | V              | 11.7                          | -53.02                     | -13            | -40.02         |
| 1415                                   | -59.7                        | 262                 | 2.1           | H              | 5.9                           | -53.80                     | -13            | -40.80         |
| 1415                                   | -60.4                        | 355                 | 1.3           | V              | 5.9                           | -54.50                     | -13            | -41.50         |
| 2122.5                                 | -47                          | 72                  | 1.5           | H              | 6.3                           | -40.70                     | -13            | -27.70         |
| 2122.5                                 | -46.9                        | 320                 | 1.2           | V              | 5.1                           | -41.80                     | -13            | -28.80         |
| 2830                                   | -55.4                        | 276                 | 1.2           | H              | 6.7                           | -48.70                     | -13            | -35.70         |
| 2830                                   | -53.4                        | 32                  | 2             | V              | 6.7                           | -46.70                     | -13            | -33.70         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 953.24                                 | -60.95                       | 163                 | 1.5           | H              | 10.0                          | -50.95                     | -13            | -37.95         |
| 953.24                                 | -64.72                       | 343                 | 1.4           | V              | 11.7                          | -53.02                     | -13            | -40.02         |
| 1430.6                                 | -59.4                        | 9                   | 1.1           | H              | 5.9                           | -53.50                     | -13            | -40.50         |
| 1430.6                                 | -60.9                        | 23                  | 2.5           | V              | 5.9                           | -55.00                     | -13            | -42.00         |
| 2145.9                                 | -49.5                        | 183                 | 2.1           | H              | 6.3                           | -43.20                     | -13            | -30.20         |
| 2145.9                                 | -49.2                        | 100                 | 2             | V              | 5.1                           | -44.10                     | -13            | -31.10         |
| 2861.2                                 | -55                          | 222                 | 2.2           | H              | 6.7                           | -48.30                     | -13            | -35.30         |
| 2861.2                                 | -55.3                        | 185                 | 2.1           | V              | 6.7                           | -48.60                     | -13            | -35.60         |

| Frequency<br>(MHz)                   | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                      |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 13                          |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-10GHz    |                              |                     |               |                |                               |                            |                |                |
| 5MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 954.54                               | -59.96                       | 74                  | 2.1           | H              | -0.2                          | -60.16                     | -13            | -47.16         |
| 954.54                               | -67.41                       | 347                 | 1.7           | V              | 3.1                           | -64.31                     | -13            | -51.31         |
| 1559                                 | -57.2                        | 129                 | 2.3           | H              | 4.2                           | -53.00                     | -40            | -13.00         |
| 1559                                 | -56.2                        | 133                 | 2.2           | V              | 3.3                           | -52.90                     | -40            | -12.90         |
| 2338.5                               | -49.7                        | 81                  | 2.3           | H              | 7.3                           | -42.40                     | -13            | -29.40         |
| 2338.5                               | -46.7                        | 126                 | 2.2           | V              | 6.5                           | -40.20                     | -13            | -27.20         |
| 3118                                 | -51.9                        | 156                 | 1.3           | H              | 7.3                           | -44.60                     | -13            | -31.60         |
| 3118                                 | -50.7                        | 55                  | 1.5           | V              | 6.5                           | -44.20                     | -13            | -31.20         |
| 5MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 956.23                               | -72.17                       | 53                  | 1.7           | H              | 10.0                          | -62.17                     | -13            | -49.17         |
| 956.23                               | -77.00                       | 73                  | 2.4           | V              | 11.7                          | -65.30                     | -13            | -52.30         |
| 1564                                 | -56.8                        | 252                 | 2.5           | H              | 4.2                           | -52.60                     | -40            | -12.60         |
| 1564                                 | -55.5                        | 283                 | 2.5           | V              | 3.3                           | -52.20                     | -40            | -12.20         |
| 2346                                 | -48.2                        | 269                 | 2.1           | H              | 7.3                           | -40.90                     | -13            | -27.90         |
| 2346                                 | -47.6                        | 311                 | 2.4           | V              | 6.4                           | -41.20                     | -13            | -28.20         |
| 3128                                 | -51.8                        | 302                 | 1.6           | H              | 7.3                           | -44.50                     | -13            | -31.50         |
| 3128                                 | -51.4                        | 28                  | 2.1           | V              | 6.6                           | -44.80                     | -13            | -31.80         |
| 5MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 953.22                               | -72.04                       | 227                 | 2.4           | H              | 10.0                          | -62.04                     | -13            | -49.04         |
| 953.22                               | -75.71                       | 26                  | 1.2           | V              | 11.7                          | -64.01                     | -13            | -51.01         |
| 1569                                 | -57.2                        | 35                  | 2.1           | H              | 4.2                           | -53.00                     | -40            | -13.00         |
| 1569                                 | -56.3                        | 191                 | 1             | V              | 3.3                           | -53.00                     | -40            | -13.00         |
| 2353.5                               | -49.5                        | 353                 | 2.5           | H              | 7.3                           | -42.20                     | -13            | -29.20         |
| 2353.5                               | -47.7                        | 121                 | 1.1           | V              | 6.4                           | -41.30                     | -13            | -28.30         |
| 3138                                 | -52.6                        | 129                 | 1.4           | H              | 7.4                           | -45.20                     | -13            | -32.20         |
| 3138                                 | -50.1                        | 296                 | 1.6           | V              | 6.6                           | -43.50                     | -13            | -30.50         |

| Frequency<br>(MHz)                   | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                      |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 17                          |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-10GHz    |                              |                     |               |                |                               |                            |                |                |
| 5MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 954.19                               | -72.53                       | 54                  | 1.7           | H              | 10.0                          | -62.53                     | -13            | -49.53         |
| 954.19                               | -75.45                       | 266                 | 1.1           | V              | 11.7                          | -63.75                     | -13            | -50.75         |
| 1413                                 | -52.87                       | 155                 | 1.5           | H              | -0.53                         | -53.40                     | -13            | -40.40         |
| 1413                                 | -54.26                       | 255                 | 2.4           | V              | -0.74                         | -55.00                     | -13            | -42.00         |
| 2119.5                               | -39.11                       | 224                 | 1.5           | H              | -0.89                         | -40.00                     | -13            | -27.00         |
| 2119.5                               | -42.98                       | 17                  | 2             | V              | -1.12                         | -44.10                     | -13            | -31.10         |
| 2826                                 | -50.14                       | 24                  | 2             | H              | 2.24                          | -47.90                     | -13            | -34.90         |
| 2826                                 | -50.43                       | 115                 | 1.7           | V              | 2.33                          | -48.10                     | -13            | -35.10         |
| 5MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 956.63                               | -71.84                       | 207                 | 1.1           | H              | 10.0                          | -61.84                     | -13            | -48.84         |
| 956.63                               | -77.64                       | 146                 | 1.8           | V              | 11.7                          | -65.94                     | -13            | -52.94         |
| 1420                                 | -53.27                       | 333                 | 1.2           | H              | -0.53                         | -53.80                     | -13            | -40.80         |
| 1420                                 | -53.76                       | 77                  | 1.5           | V              | -0.74                         | -54.50                     | -13            | -41.50         |
| 2130                                 | -37.91                       | 339                 | 1.8           | H              | -0.89                         | -38.80                     | -13            | -25.80         |
| 2130                                 | -41.98                       | 111                 | 1.7           | V              | -1.12                         | -43.10                     | -13            | -30.10         |
| 2840                                 | -50.44                       | 89                  | 2.3           | H              | 2.24                          | -48.20                     | -13            | -35.20         |
| 2840                                 | -49.03                       | 22                  | 1.3           | V              | 2.33                          | -46.70                     | -13            | -33.70         |
| 5MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 952.92                               | -71.38                       | 207                 | 1.6           | H              | 10.0                          | -61.38                     | -13            | -48.38         |
| 952.92                               | -76.22                       | 224                 | 1.5           | V              | 11.7                          | -64.52                     | -13            | -51.52         |
| 1427                                 | -53.17                       | 224                 | 2.3           | H              | -0.53                         | -53.70                     | -13            | -40.70         |
| 1427                                 | -54.06                       | 339                 | 1.3           | V              | -0.74                         | -54.80                     | -13            | -41.80         |
| 2140.5                               | -38.21                       | 185                 | 1.1           | H              | -0.89                         | -39.10                     | -13            | -26.10         |
| 2140.5                               | -40.28                       | 60                  | 2.1           | V              | -1.12                         | -41.40                     | -13            | -28.40         |
| 2854                                 | -50.44                       | 118                 | 1.4           | H              | 2.24                          | -48.20                     | -13            | -35.20         |
| 2854                                 | -50.13                       | 52                  | 1.2           | V              | 2.33                          | -47.80                     | -13            | -34.80         |

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 26(Part 90S)                  |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-10GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 955.16                                 | -72.59                       | 290                 | 1.0           | H              | 10.0                          | -62.59                     | -13            | -49.59         |
| 955.16                                 | -77.57                       | 245                 | 2.2           | V              | 11.7                          | -65.87                     | -13            | -52.87         |
| 1629.4                                 | -52.90                       | 296                 | 1.5           | H              | 3.7                           | -49.20                     | -13            | -36.20         |
| 1629.4                                 | -52.00                       | 358                 | 2.1           | V              | 3.1                           | -48.90                     | -13            | -35.90         |
| 2444.1                                 | -49.70                       | 222                 | 2.4           | H              | 7                             | -42.70                     | -13            | -29.70         |
| 2444.1                                 | -46.50                       | 227                 | 2.5           | V              | 6                             | -40.50                     | -13            | -27.50         |
| 3258.8                                 | -46.10                       | 47                  | 1.3           | H              | 6.9                           | -39.20                     | -13            | -26.20         |
| 3258.8                                 | -42.30                       | 228                 | 1             | V              | 6                             | -36.30                     | -13            | -23.30         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 952.30                                 | -72.71                       | 313                 | 1.4           | H              | 10.0                          | -62.71                     | -13            | -49.71         |
| 952.30                                 | -77.46                       | 199                 | 1.5           | V              | 11.7                          | -65.76                     | -13            | -52.76         |
| 1638.0                                 | -54.14                       | 236                 | 1.9           | H              | 3.64                          | -50.50                     | -13            | -37.50         |
| 1638.0                                 | -53.62                       | 87                  | 2.1           | V              | 3.12                          | -50.50                     | -13            | -37.50         |
| 2457.0                                 | -48.69                       | 242                 | 2.1           | H              | 6.89                          | -41.80                     | -13            | -28.80         |
| 2457.0                                 | -46.43                       | 268                 | 2.1           | V              | 5.93                          | -40.50                     | -13            | -27.50         |
| 3276.0                                 | -46.29                       | 172                 | 1.6           | H              | 6.69                          | -39.60                     | -13            | -26.60         |
| 3276.0                                 | -42.59                       | 334                 | 2.3           | V              | 5.89                          | -36.70                     | -13            | -23.70         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 954.29                                 | -70.61                       | 86                  | 1.9           | H              | 10.0                          | -60.61                     | -13            | -47.61         |
| 954.29                                 | -77.11                       | 174                 | 1.4           | V              | 11.7                          | -65.41                     | -13            | -52.41         |
| 1646.6                                 | -53.85                       | 29                  | 1.1           | H              | 3.55                          | -50.30                     | -13            | -37.30         |
| 1646.6                                 | -52.31                       | 137                 | 2.1           | V              | 3.11                          | -49.20                     | -13            | -36.20         |
| 2469.9                                 | -48.38                       | 284                 | 1.5           | H              | 6.68                          | -41.70                     | -13            | -28.70         |
| 2469.9                                 | -46.20                       | 359                 | 1.9           | V              | 5.8                           | -40.40                     | -13            | -27.40         |
| 3293.2                                 | -47.18                       | 275                 | 1.3           | H              | 6.48                          | -40.70                     | -13            | -27.70         |
| 3293.2                                 | -42.05                       | 35                  | 2.2           | V              | 5.75                          | -36.30                     | -13            | -23.30         |



| Frequency<br>(MHz)                   | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                      |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 38                          |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-26.5GHz  |                              |                     |               |                |                               |                            |                |                |
| 5MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 951.15                               | -71.02                       | 346                 | 1.4           | H              | 10.0                          | -61.02                     | -25            | -36.02         |
| 951.15                               | -76.62                       | 78                  | 1.2           | V              | 11.7                          | -64.92                     | -25            | -39.92         |
| 5145                                 | -54.9                        | 22                  | 2.0           | H              | 11.4                          | -43.5                      | -25            | -18.5          |
| 5145                                 | -53.6                        | 247                 | 1.9           | V              | 10.7                          | -42.9                      | -25            | -17.9          |
| 7717.5                               | -55.5                        | 11                  | 2.2           | H              | 20.6                          | -34.9                      | -25            | -9.9           |
| 7717.5                               | -55.0                        | 258                 | 2.1           | V              | 20.4                          | -34.6                      | -25            | -9.6           |
| 5MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 950.32                               | -83.96                       | 59                  | 1.1           | H              | 10.0                          | -73.96                     | -25            | -48.96         |
| 950.32                               | -89.67                       | 350                 | 2.3           | V              | 11.7                          | -77.97                     | -25            | -52.97         |
| 5190                                 | -53.3                        | 275                 | 1.6           | H              | 10.5                          | -42.8                      | -25            | -17.8          |
| 5190                                 | -52.2                        | 201                 | 1.5           | V              | 10                            | -42.2                      | -25            | -17.2          |
| 7785                                 | -61.6                        | 22                  | 2.3           | H              | 18.3                          | -43.3                      | -25            | -18.3          |
| 7785                                 | -61.8                        | 80                  | 1.1           | V              | 18                            | -43.8                      | -25            | -18.8          |
| 5MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 955.68                               | -72.85                       | 104                 | 1.4           | H              | 10.0                          | -62.85                     | -25            | -37.85         |
| 955.68                               | -74.87                       | 253                 | 1.4           | V              | 11.7                          | -63.17                     | -25            | -38.17         |
| 5235                                 | -52.8                        | 19                  | 1.0           | H              | 9.7                           | -43.1                      | -25            | -18.1          |
| 5235                                 | -51.7                        | 86                  | 1.2           | V              | 9.3                           | -42.4                      | -25            | -17.4          |
| 7852.5                               | -53.5                        | 270                 | 2.1           | H              | 18.2                          | -35.3                      | -25            | -10.3          |
| 7852.5                               | -50.9                        | 144                 | 2.2           | V              | 17.6                          | -33.3                      | -25            | -8.3           |

| Frequency<br>(MHz)                   | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|--------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                      |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 41                          |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-26.55GHz |                              |                     |               |                |                               |                            |                |                |
| 5MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 955.32                               | -72.10                       | 200                 | 1.0           | H              | 10.0                          | -62.10                     | -25            | -37.10         |
| 955.32                               | -75.78                       | 127                 | 1.4           | V              | 11.7                          | -64.08                     | -25            | -39.08         |
| 5075                                 | -54.7                        | 305                 | 2.3           | H              | 11.2                          | -43.5                      | -25            | -18.5          |
| 5075                                 | -53.9                        | 186                 | 1.2           | V              | 10.8                          | -43.1                      | -25            | -18.1          |
| 7612.5                               | -57.0                        | 339                 | 1.9           | H              | 21.2                          | -35.8                      | -25            | -10.8          |
| 7612.5                               | -58.0                        | 291                 | 2.4           | V              | 20.2                          | -37.8                      | -25            | -12.8          |
| 5MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 955.96                               | -70.24                       | 219                 | 2.0           | H              | 10.0                          | -60.24                     | -25            | -35.24         |
| 955.96                               | -77.40                       | 47                  | 1.9           | V              | 11.7                          | -65.70                     | -25            | -40.70         |
| 5190                                 | -52.9                        | 221                 | 1.7           | H              | 10.5                          | -42.4                      | -25            | -17.4          |
| 5190                                 | -52.6                        | 293                 | 2.2           | V              | 10                            | -42.6                      | -25            | -17.6          |
| 7785                                 | -54.4                        | 259                 | 1.6           | H              | 18.3                          | -36.1                      | -25            | -11.1          |
| 7785                                 | -51.7                        | 254                 | 2.2           | V              | 18                            | -33.7                      | -25            | -8.7           |
| 5MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 956.95                               | -70.50                       | 62                  | 2.3           | H              | 10.0                          | -60.50                     | -25            | -35.50         |
| 956.95                               | -76.46                       | 353                 | 1.3           | V              | 11.7                          | -64.76                     | -25            | -39.76         |
| 5305                                 | -50.7                        | 75                  | 2.4           | H              | 9.6                           | -41.1                      | -25            | -16.1          |
| 5305                                 | -50.7                        | 261                 | 1.2           | V              | 8.8                           | -41.9                      | -25            | -16.9          |
| 7957.5                               | -51.9                        | 303                 | 1.9           | H              | 18.9                          | -33.0                      | -25            | -8.0           |
| 7957.5                               | -52.8                        | 268                 | 1.7           | V              | 18.5                          | -34.3                      | -25            | -9.3           |

| Frequency<br>(MHz)                     | Receiver<br>Reading<br>(dBm) | Turntable<br>Degree | Rx Antenna    |                | Substituted<br>Factor<br>(dB) | Absolute<br>Level<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) |
|----------------------------------------|------------------------------|---------------------|---------------|----------------|-------------------------------|----------------------------|----------------|----------------|
|                                        |                              |                     | Height<br>(m) | Polar<br>(H/V) |                               |                            |                |                |
| LTE Band 66                            |                              |                     |               |                |                               |                            |                |                |
| Test frequency range: 30MHz-20GHz      |                              |                     |               |                |                               |                            |                |                |
| 1.4MHz Bandwidth, QPSK, Low Channel    |                              |                     |               |                |                               |                            |                |                |
| 953.34                                 | -72.99                       | 100                 | 1.5           | H              | 10.0                          | -62.99                     | -13            | -49.99         |
| 953.34                                 | -75.19                       | 337                 | 1.6           | V              | 11.7                          | -63.49                     | -13            | -50.49         |
| 3421.4                                 | -45.7                        | 214                 | 1.7           | H              | 6.4                           | -39.30                     | -13            | -26.30         |
| 3421.4                                 | -44.7                        | 62                  | 1.6           | V              | 5.7                           | -39.00                     | -13            | -26.00         |
| 1.4MHz Bandwidth, QPSK, Middle Channel |                              |                     |               |                |                               |                            |                |                |
| 954.44                                 | -72.93                       | 29                  | 1.2           | H              | 10.0                          | -62.93                     | -13            | -49.93         |
| 954.44                                 | -76.46                       | 274                 | 1.2           | V              | 11.7                          | -64.76                     | -13            | -51.76         |
| 3490                                   | -48                          | 141                 | 1.5           | H              | 7.6                           | -40.40                     | -13            | -27.40         |
| 3490                                   | -47.9                        | 259                 | 2.3           | V              | 6.4                           | -41.50                     | -13            | -28.50         |
| 1.4MHz Bandwidth, QPSK, High Channel   |                              |                     |               |                |                               |                            |                |                |
| 953.34                                 | -72.99                       | 100                 | 1.5           | H              | 10.0                          | -62.99                     | -13            | -49.99         |
| 953.34                                 | -75.19                       | 337                 | 1.6           | V              | 11.7                          | -63.49                     | -13            | -50.49         |
| 3558.6                                 | -49.3                        | 108                 | 2.2           | H              | 7.8                           | -41.50                     | -13            | -28.50         |
| 3558.6                                 | -47.1                        | 182                 | 2.5           | V              | 7                             | -40.10                     | -13            | -27.10         |

**Note:**

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain

Margin = Absolute Level –Limit

Other emissions that are more than 20dB below the limit was not recorded.

**FCC§ 22.917 (a);§ 24.238 (a); §27.53(c)(g) (h)(m); §90.691 - BAND EDGES****Applicable Standard**

According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to FCC §27.53 (c), For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $76 + 10 \log(P)$  dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $65 + 10 \log(P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

According to FCC §27.53 (g) (h), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

According to FCC §27.53 (m), the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in [paragraph \(m\)\(6\)](#) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz.

According to § 90.691, (a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

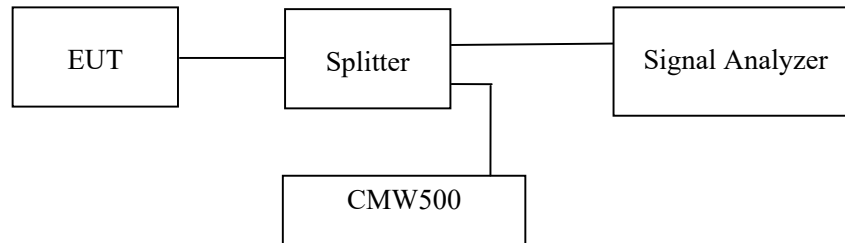
(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section

## Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

## Test Data

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20~25 °C  |
| Relative Humidity: | 50~56.8 % |
| ATM Pressure:      | 101.0 kPa |

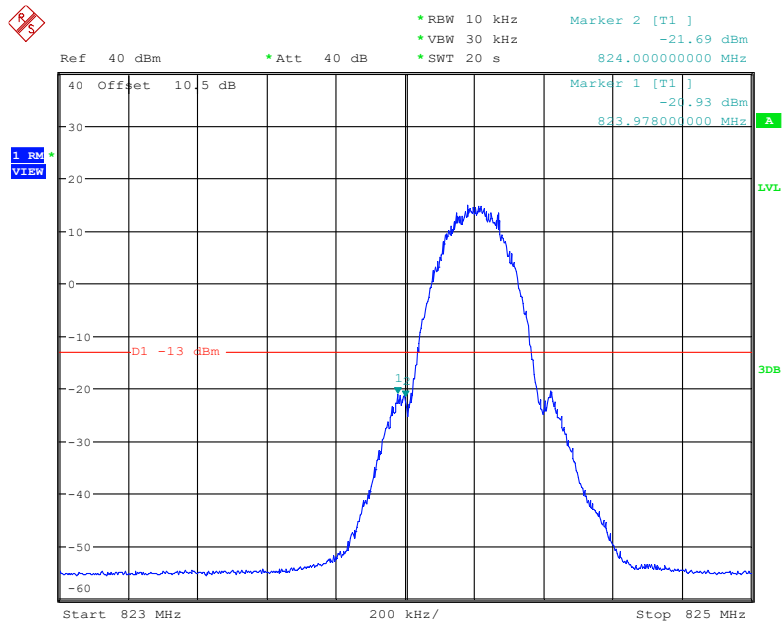
The testing was performed by Glenn Jiang from 2023-01-06 to 2023-01-10.

*EUT operation mode: Transmitting (Worst case)*

**Test Result: Pass**

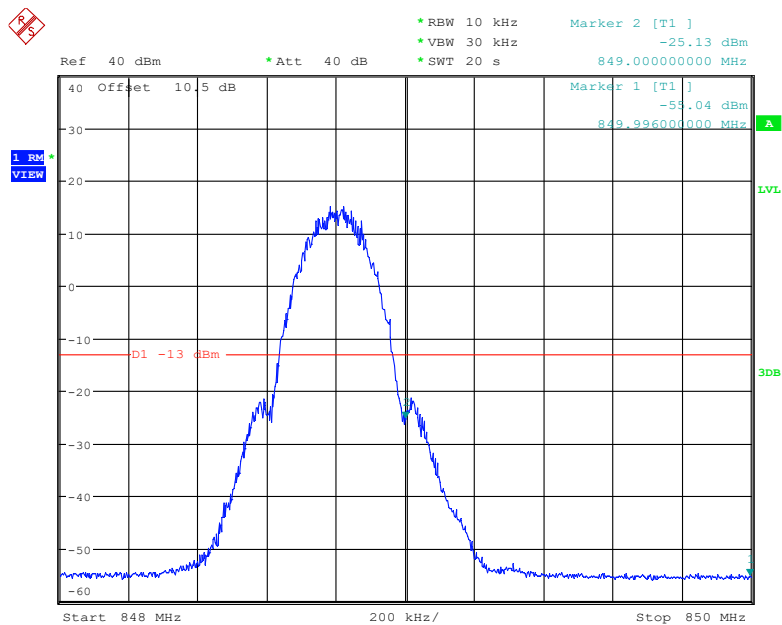
Please refer to the following plots.

### Cellular Band, Left Band Edge for GSM (GMSK) Mode



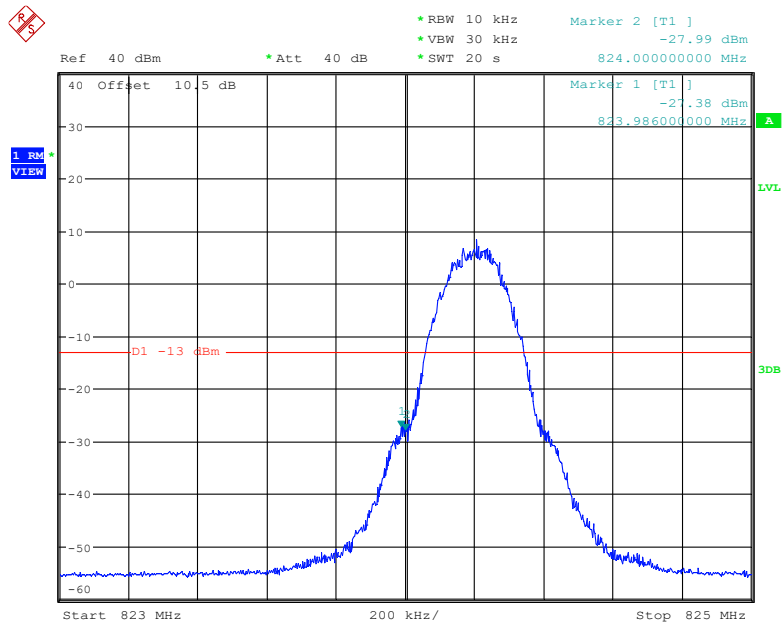
Date: 6.JAN.2023 17:14:19

### Cellular Band, Right Band Edge for GSM (GMSK) Mode



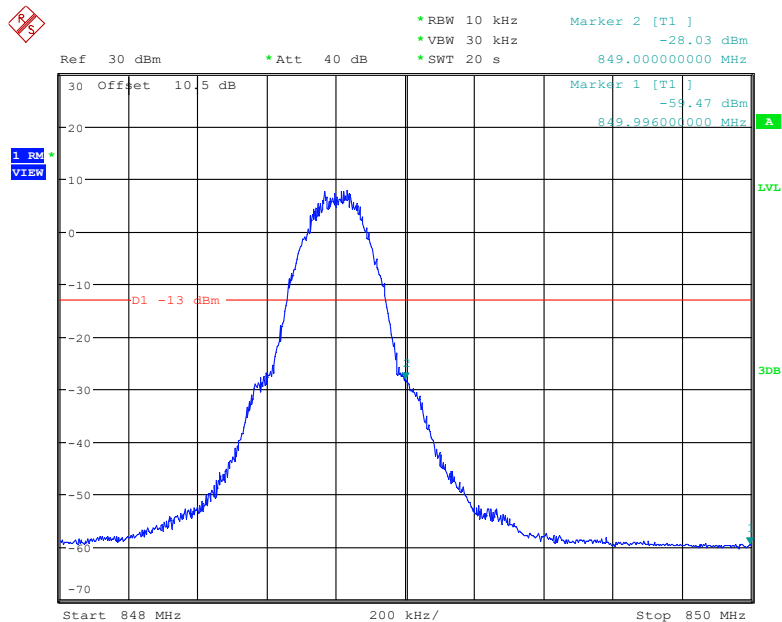
Date: 6.JAN.2023 17:24:17

## Cellular Band, Left Band Edge for EGPRS (8PSK) Mode



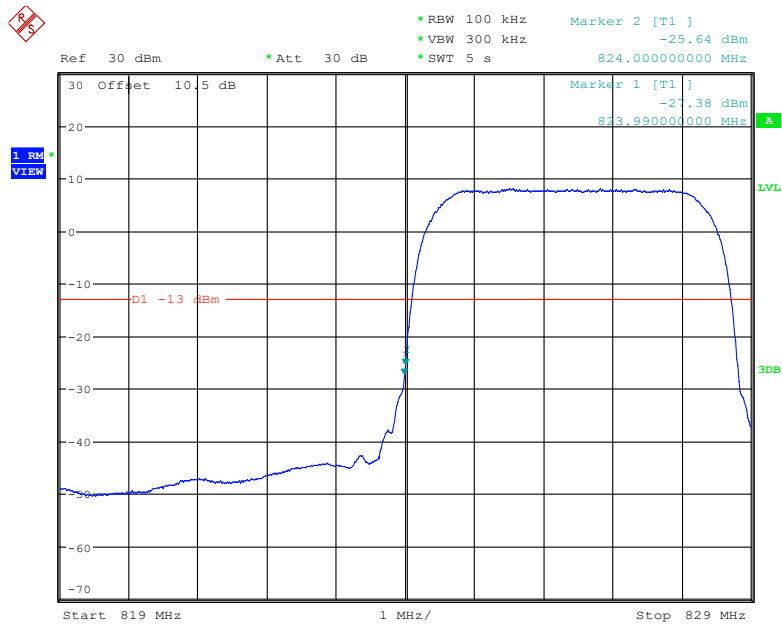
Date: 6.JAN.2023 17:29:57

## Cellular Band, Right Band Edge for EGPRS (8PSK) Mode



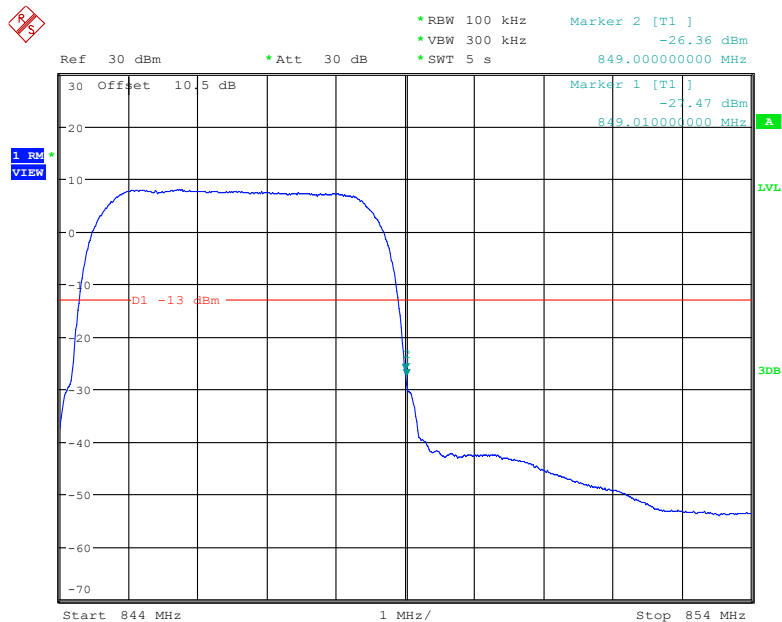
Date: 6.JAN.2023 17:50:52

## Cellular Band, Left Band Edge for RMC (BPSK) Mode



Date: 7.JAN.2023 09:48:26

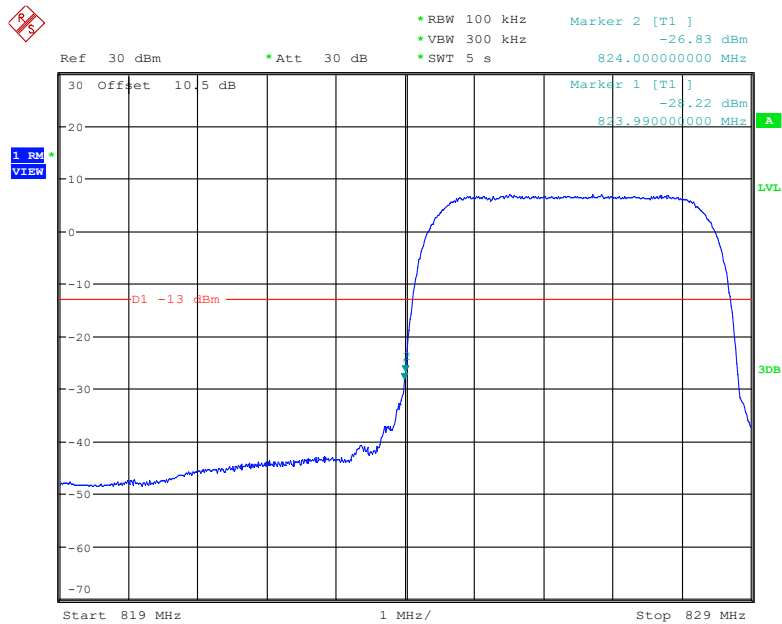
## Cellular Band, Right Band Edge for RMC (BPSK) Mode



Date: 7.JAN.2023 09:55:52

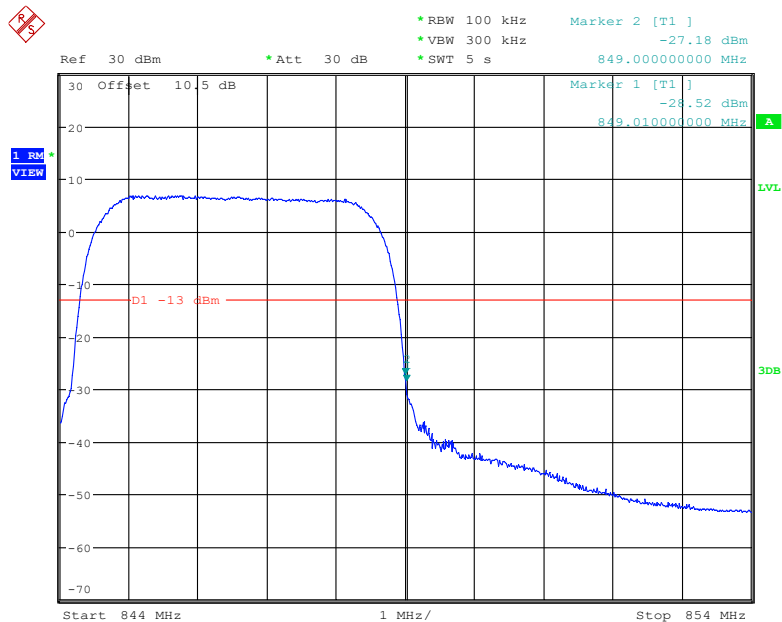


## Cellular Band, Left Band Edge for HSDPA(16QAM) Mode



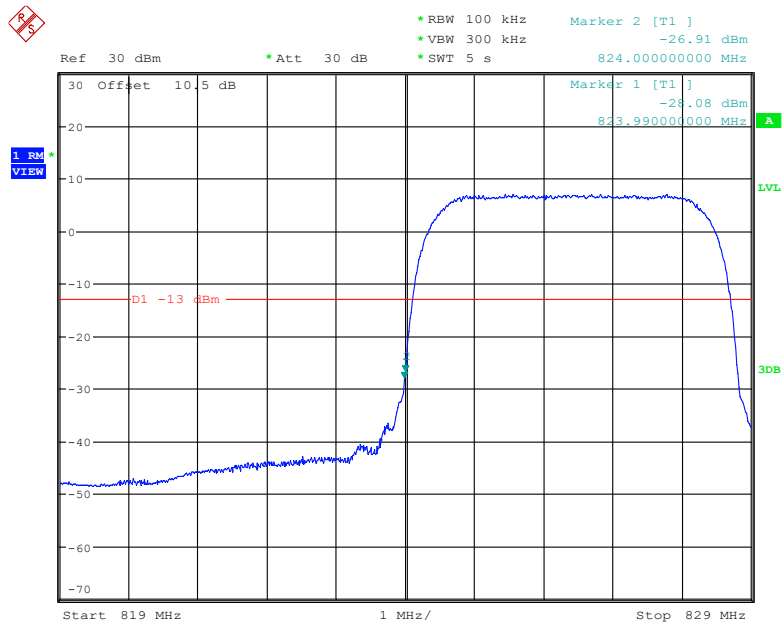
Date: 7.JAN.2023 10:00:50

## Cellular Band, Right Band Edge for HSDPA (16QA) Mode



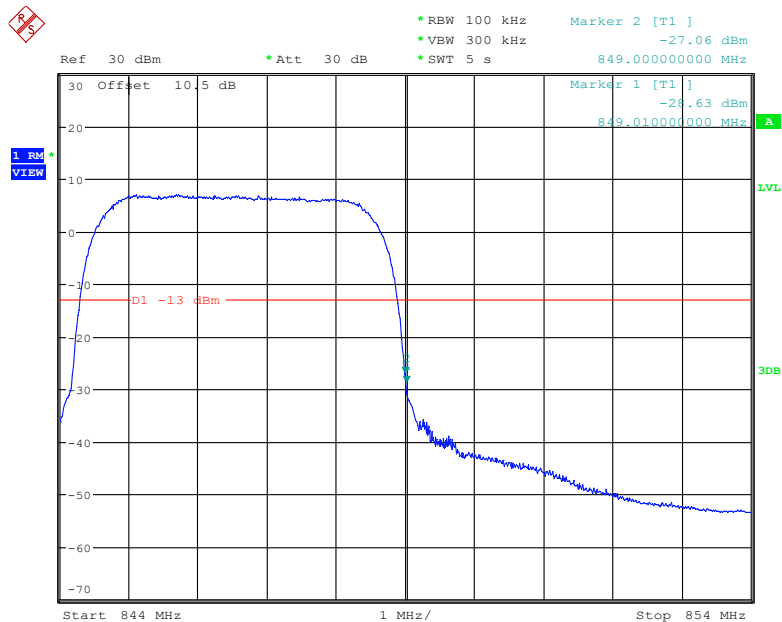
Date: 7.JAN.2023 10:06:50

## Cellular Band, Left Band Edge for HSUPA (QPSK) Mode



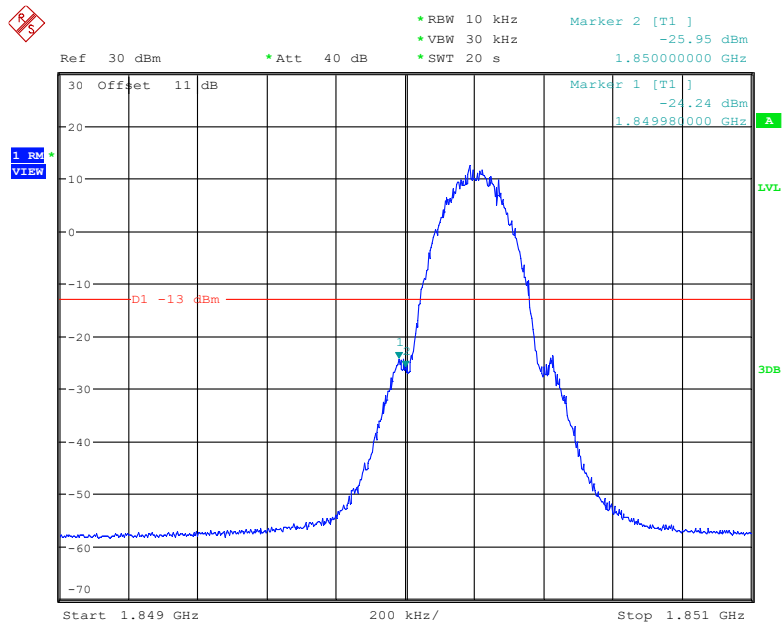
Date: 7.JAN.2023 10:15:14

## Cellular Band, Right Band Edge for HSUPA (QPSK) Mode



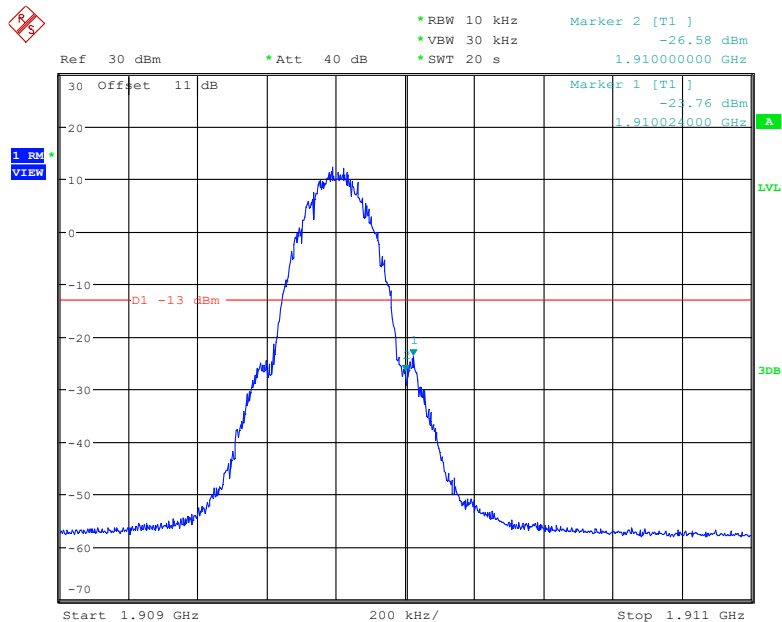
Date: 7.JAN.2023 10:21:35

## PCS Band, Left Band Edge for GSM (GMSK) Mode



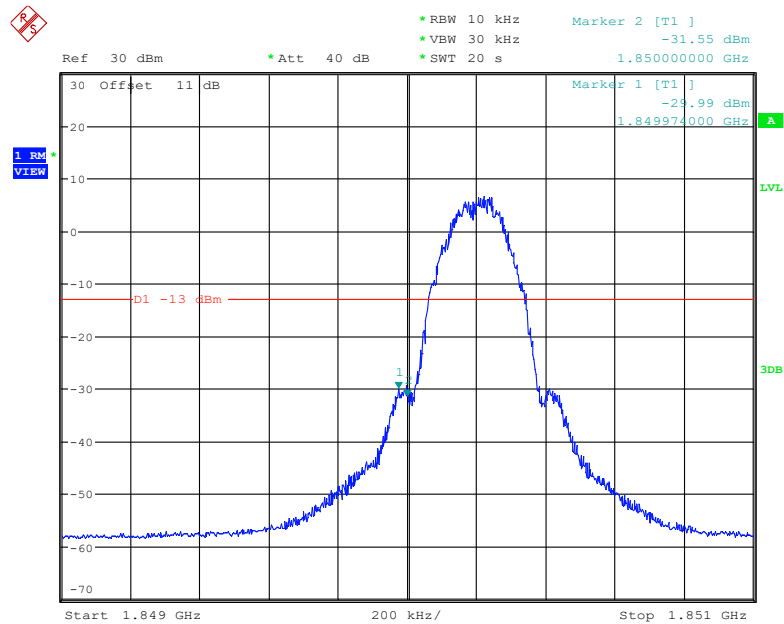
Date: 6.JAN.2023 18:00:53

## PCS Band, Right Band Edge for GSM (GMSK) Mode



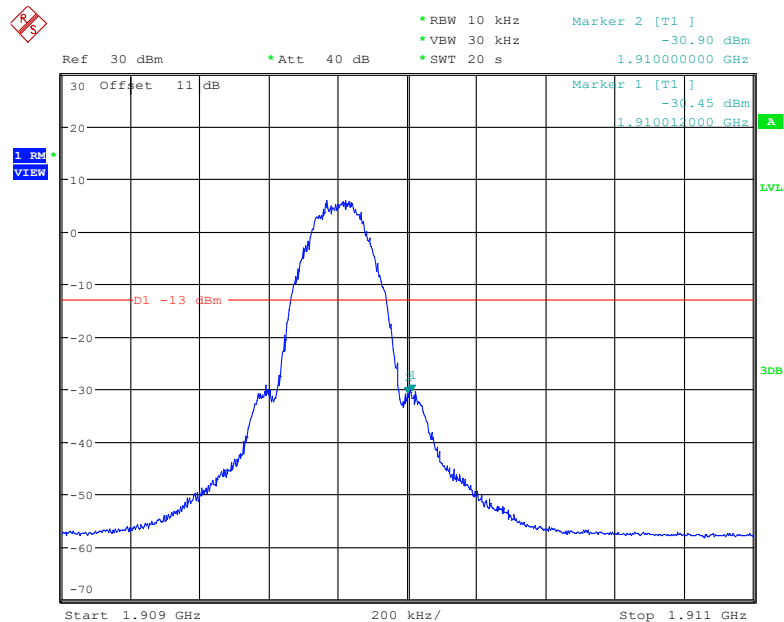
Date: 6.JAN.2023 18:11:56

### PCS Band, Left Band Edge for EGPRS (8PSK) Mode



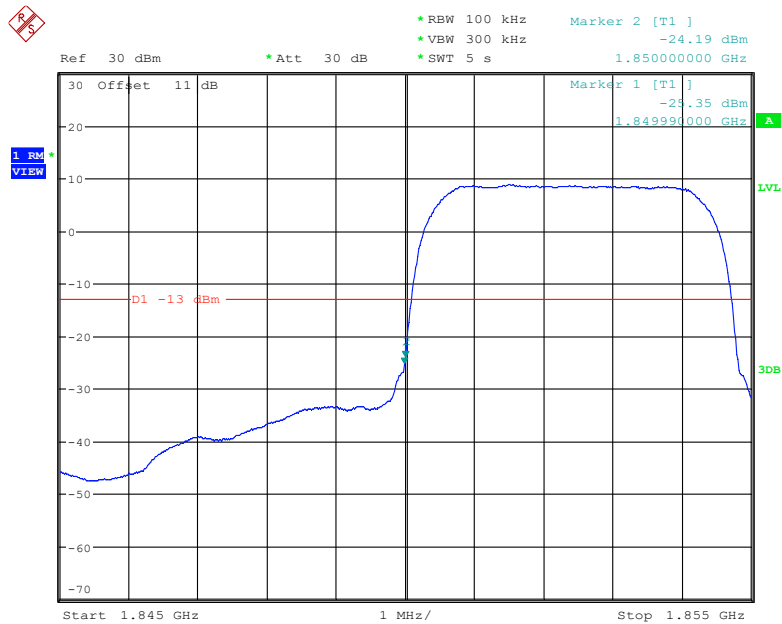
Date: 6.JAN.2023 18:23:14

### PCS Band, Right Band Edge for EGPRS (8PSK) Mode



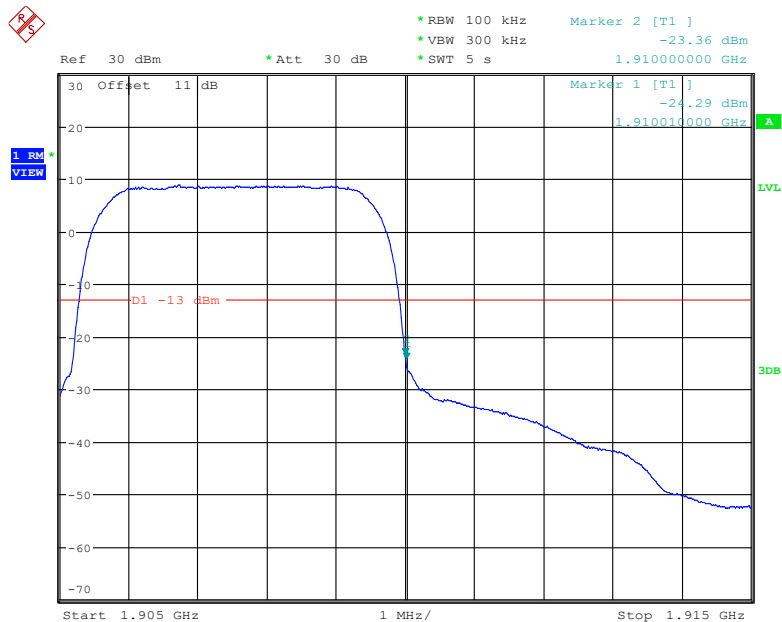
Date: 6.JAN.2023 18:34:07

## PCS Band, Left Band Edge for RMC (BPSK) Mode

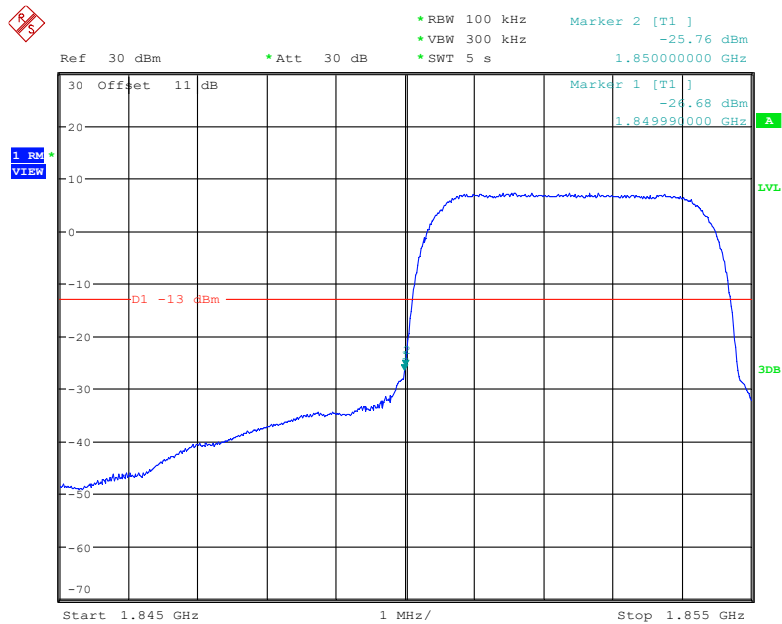


Date: 6.JAN.2023 18:58:21

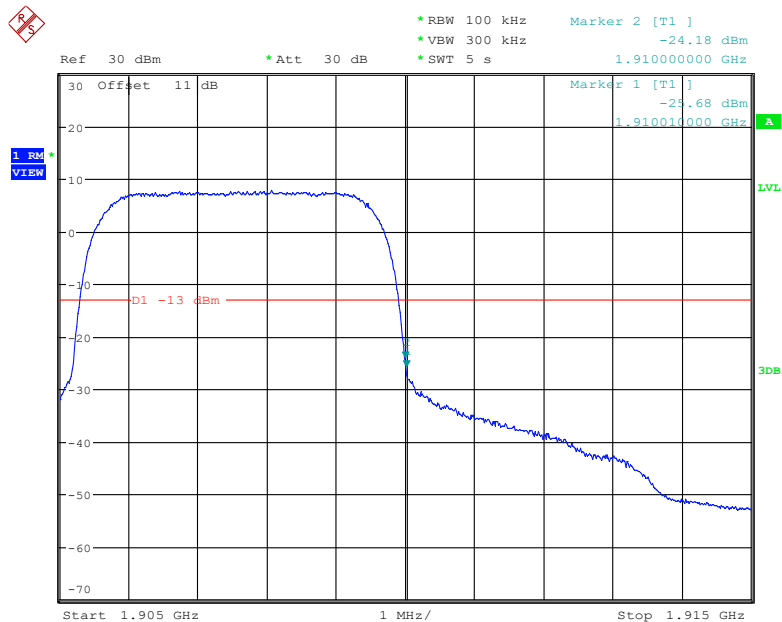
## PCS Band, Right Band Edge for RMC (BPSK) Mode



Date: 6.JAN.2023 19:06:11

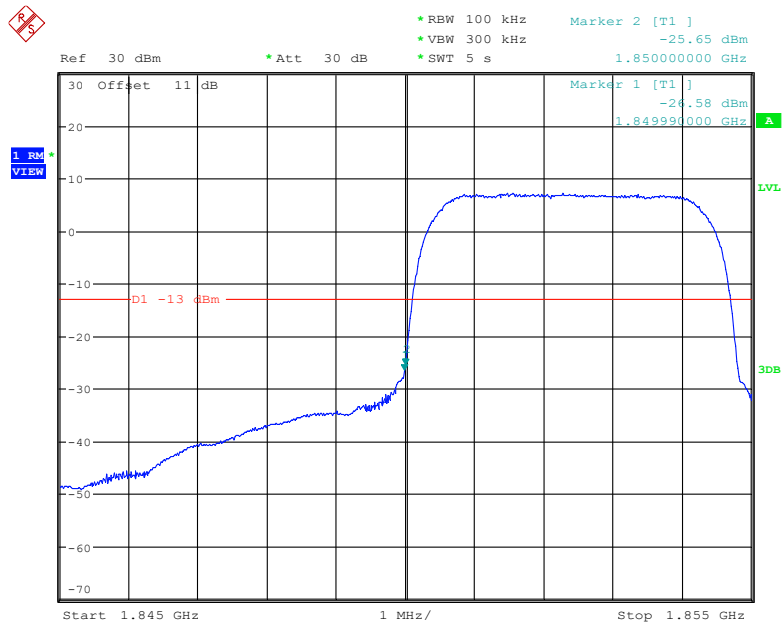
**PCS Band, Left Band Edge for HSDPA(16QAM) Mode**

Date: 6.JAN.2023 19:11:49

**PCS Band, Right Band Edge for HSDPA (16QAM) Mode**

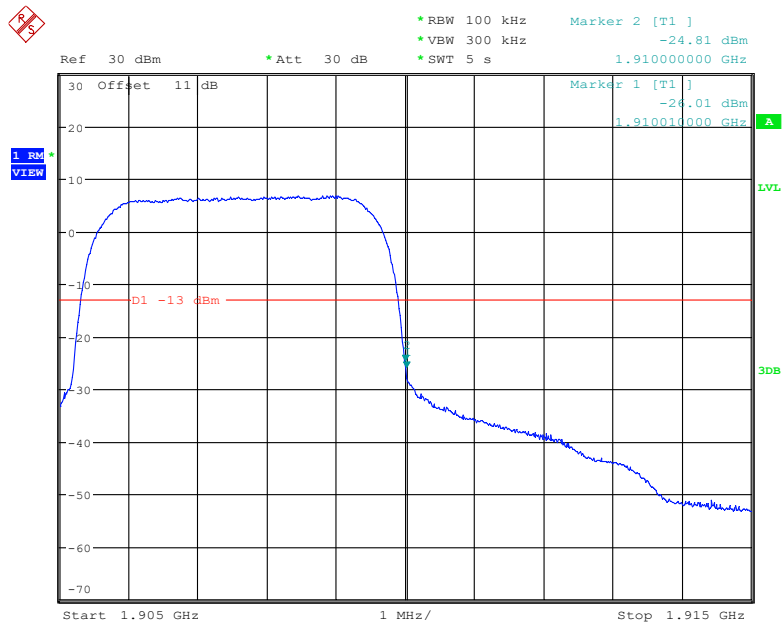
Date: 6.JAN.2023 19:19:01

## PCS Band, Left Band Edge for HSUPA (QPSK) Mode



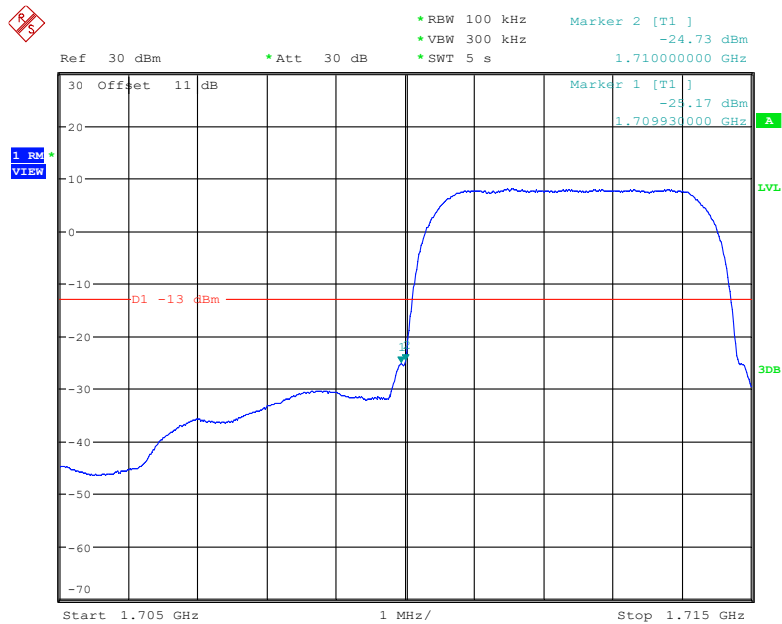
Date: 6.JAN.2023 19:24:55

## PCS Band, Right Band Edge for HSUPA (QPSK) Mode



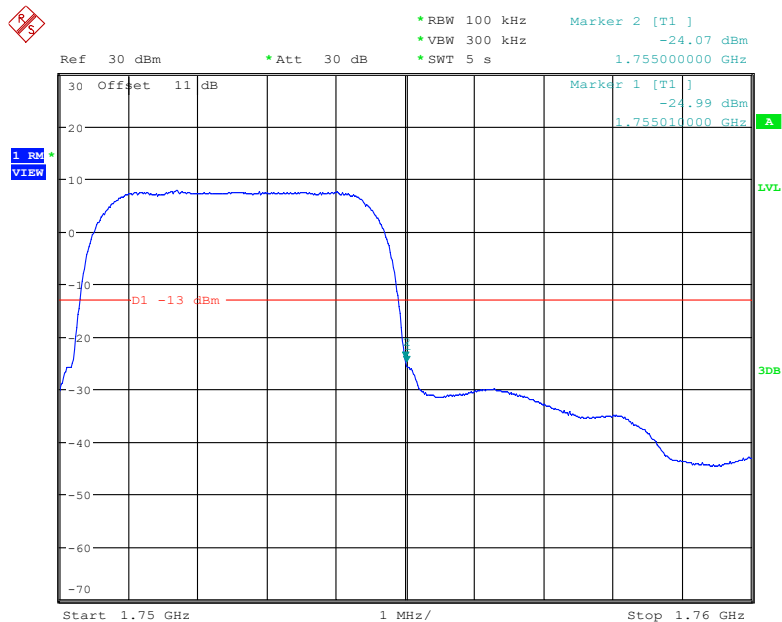
Date: 7.JAN.2023 08:49:23

## AWS Band, Left Band Edge for RMC (BPSK) Mode



Date: 7.JAN.2023 09:03:19

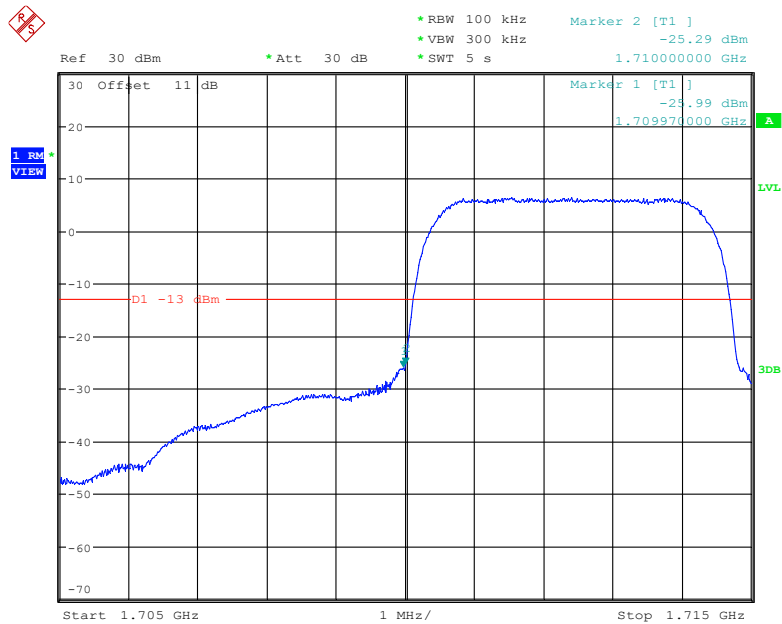
## AWS Band, Right Band Edge for RMC (BPSK) Mode



Date: 7.JAN.2023 09:11:09

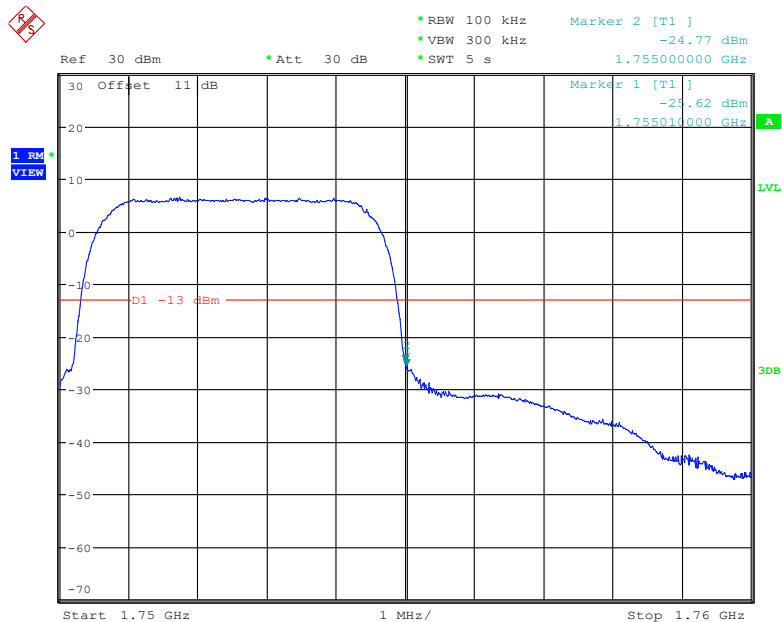


## AWS Band, Left Band Edge for HSDPA(16QAM) Mode

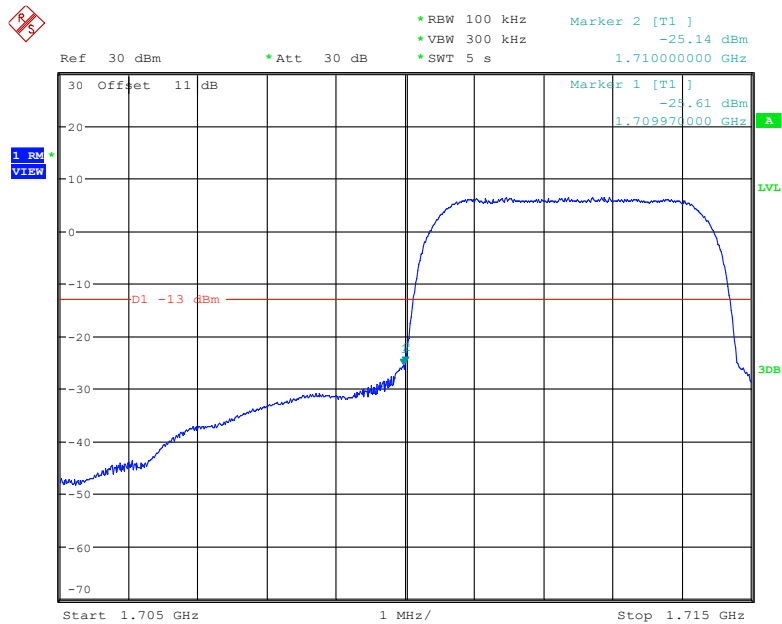


Date: 7.JAN.2023 09:18:10

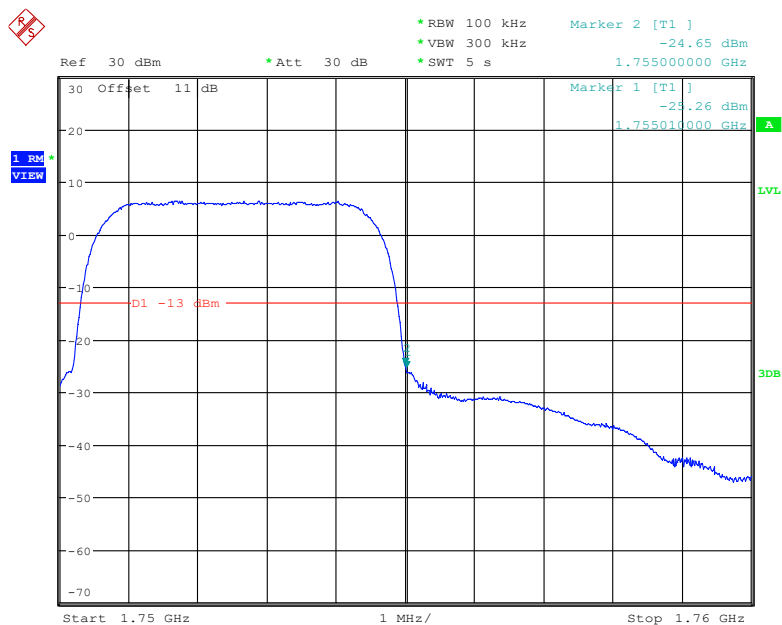
## AWS Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 7.JAN.2023 09:22:43

**AWS Band, Left Band Edge for HSUPA (QPSK) Mode**

Date: 7.JAN.2023 09:33:19

**AWS Band, Right Band Edge for HSUPA (QPSK) Mode**

Date: 7.JAN.2023 09:43:31

The test plots of LTE bands please refer to the Appendix C.

## **FCC § 2.1055; § 22.355; § 24.235; §27.54; §90.213- FREQUENCY STABILITY**

### **Applicable Standard**

FCC § 2.1055, §22.355, §24.235&§27.54&§90.213.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

| Frequency Range (MHz) | Base, fixed (ppm) | Mobile ≤ 3 watts (ppm) | Mobile > 3 watts (ppm) |
|-----------------------|-------------------|------------------------|------------------------|
| 25 to 50              | 20.0              | 20.0                   | 50.0                   |
| 50 to 450             | 5.0               | 5.0                    | 50.0                   |
| 450 to 512            | 2.5               | 5.0                    | 5.0                    |
| 821 to 896            | 1.5               | 2.5                    | 2.5                    |
| 928 to 929.           | 5.0               | N/A                    | N/A                    |
| 929 to 960.           | 1.5               | N/A                    | N/A                    |
| 2110 to 2220          | 10.0              | N/A                    | N/A                    |

According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

According to §90.213, unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table:

TABLE 1 TO §90.213(a)—MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

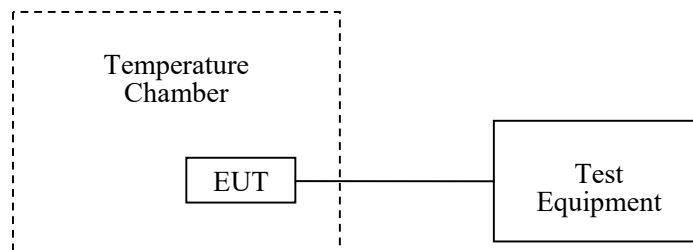
| Frequency range (MHz)    | Fixed and base stations | Mobile stations           |                              |
|--------------------------|-------------------------|---------------------------|------------------------------|
|                          |                         | Over 2 watts output power | 2 watts or less output power |
| Below 25                 | 1 2 3 100               | 100                       | 200                          |
| 25-50                    | 20                      | 20                        | 50                           |
| 72-76                    | 5                       |                           | 50                           |
| 150-174                  | 5 11 5                  | 6 5                       | 4 6 50                       |
| 216-220                  | 1.0                     |                           | 1.0                          |
| 220-222 <sup>12</sup>    | 0.1                     | 1.5                       | 1.5                          |
| 421-512                  | 7 11 14 2.5             | 8 5                       | 8 5                          |
| 806-809                  | 14 1.0                  | 1.5                       | 1.5                          |
| 809-824                  | 14 1.5                  | 2.5                       | 2.5                          |
| 851-854                  | 1.0                     | 1.5                       | 1.5                          |
| 854-869                  | 1.5                     | 2.5                       | 2.5                          |
| 896-901                  | 14 0.1                  | 1.5                       | 1.5                          |
| 902-928                  | 2.5                     | 2.5                       | 2.5                          |
| 902-928 <sup>13</sup>    | 2.5                     | 2.5                       | 2.5                          |
| 929-930                  | 1.5                     |                           |                              |
| 935-940                  | 0.1                     | 1.5                       | 1.5                          |
| 1427-1435                | 9 300                   | 300                       | 300                          |
| Above 2450 <sup>10</sup> |                         |                           |                              |

## Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The AC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



## Test Data

### Environmental Conditions

|                    |           |
|--------------------|-----------|
| Temperature:       | 20~25 °C  |
| Relative Humidity: | 50~56.8 % |
| ATM Pressure:      | 101.0 kPa |

*The testing was performed by Glenn Jiang from 2023-01-07 to 2023-01-14.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the following tables.*

**Cellular Band (Part 22H)****GSM Mode**

| Middle Channel, $f_0 = 836.6\text{MHz}$ |                                     |                      |                       |             |
|-----------------------------------------|-------------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                        | Voltage Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -30                                     | N.V.                                | 7                    | 0.0084                | 2.5         |
| -20                                     |                                     | 6                    | 0.0072                | 2.5         |
| -10                                     |                                     | 5                    | 0.0060                | 2.5         |
| 0                                       |                                     | 3                    | 0.0036                | 2.5         |
| 10                                      |                                     | 2                    | 0.0024                | 2.5         |
| 20                                      |                                     | 4                    | 0.0048                | 2.5         |
| 30                                      |                                     | 3                    | 0.0036                | 2.5         |
| 40                                      |                                     | 4                    | 0.0048                | 2.5         |
| 50                                      |                                     | 5                    | 0.0060                | 2.5         |
| 20                                      | L.V.                                | 8                    | 0.0096                | 2.5         |
|                                         | H.V.                                | 6                    | 0.0072                | 2.5         |

**EDGE Mode**

| Middle Channel, $f_0 = 836.6\text{MHz}$ |                                     |                      |                       |             |
|-----------------------------------------|-------------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                        | Voltage Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -30                                     | N.V.                                | 3.56                 | 0.0043                | 2.5         |
| -20                                     |                                     | 4.21                 | 0.0050                | 2.5         |
| -10                                     |                                     | 4.33                 | 0.0052                | 2.5         |
| 0                                       |                                     | 4.18                 | 0.0050                | 2.5         |
| 10                                      |                                     | 3.59                 | 0.0043                | 2.5         |
| 20                                      |                                     | 4.30                 | 0.0051                | 2.5         |
| 30                                      |                                     | 4.26                 | 0.0051                | 2.5         |
| 40                                      |                                     | 4.31                 | 0.0052                | 2.5         |
| 50                                      |                                     | 5.11                 | 0.0061                | 2.5         |
| 20                                      | L.V.                                | 2.39                 | 0.0029                | 2.5         |
|                                         | H.V.                                | 3.45                 | 0.0041                | 2.5         |

**WCDMA Mode**

| <b>Middle Channel, <math>f_0 = 836.6\text{MHz}</math></b> |                                                  |                                     |                                      |                        |
|-----------------------------------------------------------|--------------------------------------------------|-------------------------------------|--------------------------------------|------------------------|
| <b>Temperature<br/>(°C)</b>                               | <b>Voltage<br/>Supplied<br/>(V<sub>DC</sub>)</b> | <b>Frequency<br/>Error<br/>(Hz)</b> | <b>Frequency<br/>Error<br/>(ppm)</b> | <b>Limit<br/>(ppm)</b> |
| -30                                                       | N.V.                                             | 1.21                                | 0.0014                               | 2.5                    |
| -20                                                       |                                                  | 1.11                                | 0.0013                               | 2.5                    |
| -10                                                       |                                                  | 2.04                                | 0.0024                               | 2.5                    |
| 0                                                         |                                                  | 0.86                                | 0.0010                               | 2.5                    |
| 10                                                        |                                                  | 0.96                                | 0.0011                               | 2.5                    |
| 20                                                        |                                                  | 0.78                                | 0.0009                               | 2.5                    |
| 30                                                        |                                                  | 1.22                                | 0.0015                               | 2.5                    |
| 40                                                        |                                                  | 1.31                                | 0.0016                               | 2.5                    |
| 50                                                        |                                                  | 1.24                                | 0.0015                               | 2.5                    |
| 20                                                        | L.V.                                             | 1.36                                | 0.0016                               | 2.5                    |
|                                                           | H.V.                                             | 1.24                                | 0.0015                               | 2.5                    |

**PCS Band (Part 24E)****GSM Mode**

| <b>Temperature<br/>(°C)</b> | <b>Power<br/>Supplied<br/>(V<sub>DC</sub>)</b> | <b>F<sub>L</sub><br/>(MHz)</b> | <b>F<sub>H</sub><br/>(MHz)</b> | <b>F<sub>L</sub> Limit<br/>(MHz)</b> | <b>F<sub>H</sub> Limit<br/>(MHz)</b> |
|-----------------------------|------------------------------------------------|--------------------------------|--------------------------------|--------------------------------------|--------------------------------------|
| -30                         | N.V.                                           | 1850.0152                      | 1909.9734                      | 1850                                 | 1910                                 |
| -20                         |                                                | 1850.0136                      | 1909.9745                      | 1850                                 | 1910                                 |
| -10                         |                                                | 1850.0148                      | 1909.9716                      | 1850                                 | 1910                                 |
| 0                           |                                                | 1850.0122                      | 1909.9732                      | 1850                                 | 1910                                 |
| 10                          |                                                | 1850.0135                      | 1909.9726                      | 1850                                 | 1910                                 |
| 20                          |                                                | 1850.0125                      | 1909.9747                      | 1850                                 | 1910                                 |
| 30                          |                                                | 1850.0146                      | 1909.9725                      | 1850                                 | 1910                                 |
| 40                          |                                                | 1850.0125                      | 1909.9736                      | 1850                                 | 1910                                 |
| 50                          |                                                | 1850.0133                      | 1909.9744                      | 1850                                 | 1910                                 |
| 20                          | L.V.                                           | 1850.0132                      | 1909.9728                      | 1850                                 | 1910                                 |
|                             | H.V.                                           | 1850.0141                      | 1909.9737                      | 1850                                 | 1910                                 |

**EDGE Mode**

| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| -30              | N.V.                              | 1850.0144            | 1909.9725            | 1850                       | 1910                       |
| -20              |                                   | 1850.0162            | 1909.9741            | 1850                       | 1910                       |
| -10              |                                   | 1850.0136            | 1909.9712            | 1850                       | 1910                       |
| 0                |                                   | 1850.0141            | 1909.9732            | 1850                       | 1910                       |
| 10               |                                   | 1850.0132            | 1909.9736            | 1850                       | 1910                       |
| 20               |                                   | 1850.0125            | 1909.9725            | 1850                       | 1910                       |
| 30               |                                   | 1850.0133            | 1909.9721            | 1850                       | 1910                       |
| 40               |                                   | 1850.0118            | 1909.9737            | 1850                       | 1910                       |
| 50               |                                   | 1850.0115            | 1909.9728            | 1850                       | 1910                       |
| 20               | L.V.                              | 1850.0126            | 1909.9721            | 1850                       | 1910                       |
|                  | H.V.                              | 1850.0139            | 1909.9736            | 1850                       | 1910                       |

**WCDMA Mode**

| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| -30              | N.V.                              | 1850.0142            | 1909.9733            | 1850                       | 1910                       |
| -20              |                                   | 1850.0161            | 1909.9728            | 1850                       | 1910                       |
| -10              |                                   | 1850.0135            | 1909.9716            | 1850                       | 1910                       |
| 0                |                                   | 1850.0142            | 1909.9732            | 1850                       | 1910                       |
| 10               |                                   | 1850.0135            | 1909.9734            | 1850                       | 1910                       |
| 20               |                                   | 1850.0123            | 1909.9722            | 1850                       | 1910                       |
| 30               |                                   | 1850.0141            | 1909.9716            | 1850                       | 1910                       |
| 40               |                                   | 1850.0112            | 1909.9735            | 1850                       | 1910                       |
| 50               |                                   | 1850.0113            | 1909.9724            | 1850                       | 1910                       |
| 20               | L.V.                              | 1850.0127            | 1909.9711            | 1850                       | 1910                       |
|                  | H.V.                              | 1850.0134            | 1909.9725            | 1850                       | 1910                       |

**AWS Band (Part 27)**

| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| -30              | N.V.                              | 1710.0164            | 1754.9737            | 1710                       | 1755                       |
| -20              |                                   | 1710.0158            | 1754.9726            | 1710                       | 1755                       |
| -10              |                                   | 1710.0151            | 1754.9714            | 1710                       | 1755                       |
| 0                |                                   | 1710.0147            | 1754.9732            | 1710                       | 1755                       |
| 10               |                                   | 1710.0135            | 1754.9741            | 1710                       | 1755                       |
| 20               |                                   | 1710.0124            | 1754.9725            | 1710                       | 1755                       |
| 30               |                                   | 1710.0135            | 1754.9722            | 1710                       | 1755                       |
| 40               |                                   | 1710.0122            | 1754.9737            | 1710                       | 1755                       |
| 50               |                                   | 1710.0115            | 1754.9732            | 1710                       | 1755                       |
| 20               | L.V.                              | 1710.0137            | 1754.9722            | 1710                       | 1755                       |
|                  | H.V.                              | 1710.0145            | 1754.9734            | 1710                       | 1755                       |

**LTE:**  
**QPSK:**  
**Band 2:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1850.1148            | 1909.8722            | 1850                       | 1910                       |
| -20              |                                   | 1850.1153            | 1909.8732            | 1850                       | 1910                       |
| -10              |                                   | 1850.1122            | 1909.8741            | 1850                       | 1910                       |
| 0                |                                   | 1850.1157            | 1909.8724            | 1850                       | 1910                       |
| 10               |                                   | 1850.1133            | 1909.8736            | 1850                       | 1910                       |
| 20               |                                   | 1850.1152            | 1909.8745            | 1850                       | 1910                       |
| 30               |                                   | 1850.1134            | 1909.8752            | 1850                       | 1910                       |
| 40               |                                   | 1850.1137            | 1909.8737            | 1850                       | 1910                       |
| 50               |                                   | 1850.1124            | 1909.8741            | 1850                       | 1910                       |
| 20               | L.V.                              | 1850.1132            | 1909.8728            | 1850                       | 1910                       |
|                  | H.V.                              | 1850.1043            | 1909.8747            | 1850                       | 1910                       |



**Band 4:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1710.1162            | 1754.8735            | 1710                       | 1755                       |
| -20              |                                   | 1710.1154            | 1754.8732            | 1710                       | 1755                       |
| -10              |                                   | 1710.1195            | 1754.8723            | 1710                       | 1755                       |
| 0                |                                   | 1710.1156            | 1754.8724            | 1710                       | 1755                       |
| 10               |                                   | 1710.1147            | 1754.8754            | 1710                       | 1755                       |
| 20               |                                   | 1710.1156            | 1754.8743            | 1710                       | 1755                       |
| 30               |                                   | 1710.1134            | 1754.8754            | 1710                       | 1755                       |
| 40               |                                   | 1710.1122            | 1754.8735            | 1710                       | 1755                       |
| 50               |                                   | 1710.1124            | 1754.8742            | 1710                       | 1755                       |
| 20               | L.V.                              | 1710.1135            | 1754.8734            | 1710                       | 1755                       |
|                  | H.V.                              | 1710.1043            | 1754.8747            | 1710                       | 1755                       |

**Band 5& Band 26(Part 22H)**

| 10.0 MHz Middle Channel, f <sub>o</sub> =836.5MHz |                                     |                      |                       |             |
|---------------------------------------------------|-------------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                                  | Voltage Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -30                                               | N.V.                                | -27.19               | -0.0325               | 2.5         |
| -20                                               |                                     | -5.80                | -0.0069               | 2.5         |
| -10                                               |                                     | -8.48                | -0.0101               | 2.5         |
| 0                                                 |                                     | 7.33                 | 0.0088                | 2.5         |
| 10                                                |                                     | 5.51                 | 0.0066                | 2.5         |
| 20                                                |                                     | 5.00                 | 0.0060                | 2.5         |
| 30                                                |                                     | -5.72                | -0.0068               | 2.5         |
| 40                                                |                                     | -7.68                | -0.0092               | 2.5         |
| 50                                                |                                     | -9.13                | -0.0109               | 2.5         |
| 20                                                | L.V.                                | -9.50                | -0.0114               | 2.5         |
|                                                   | H.V.                                | 8.59                 | 0.0103                | 2.5         |

**Band 7:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2500.8752            | 2569.9852            | 2500                       | 2570                       |
| -20              |                                   | 2500.8741            | 2569.9936            | 2500                       | 2570                       |
| -10              |                                   | 2500.8752            | 2569.9852            | 2500                       | 2570                       |
| 0                |                                   | 2500.8783            | 2569.9761            | 2500                       | 2570                       |
| 10               |                                   | 2500.7935            | 2569.9823            | 2500                       | 2570                       |
| 20               |                                   | 2500.7874            | 2569.9425            | 2500                       | 2570                       |
| 30               |                                   | 2500.7752            | 2569.9335            | 2500                       | 2570                       |
| 40               |                                   | 2500.7656            | 2569.9924            | 2500                       | 2570                       |
| 50               |                                   | 2500.7542            | 2569.9876            | 2500                       | 2570                       |
| 20               | L.V.                              | 2500.7527            | 2569.9834            | 2500                       | 2570                       |
|                  | H.V.                              | 2500.7436            | 2569.9742            | 2500                       | 2570                       |

**Band 12:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 699.8632             | 715.8864             | 699                        | 716                        |
| -20              |                                   | 699.8641             | 715.8725             | 699                        | 716                        |
| -10              |                                   | 699.8523             | 715.8453             | 699                        | 716                        |
| 0                |                                   | 699.8424             | 715.8634             | 699                        | 716                        |
| 10               |                                   | 699.8232             | 715.8413             | 699                        | 716                        |
| 20               |                                   | 699.8423             | 715.8242             | 699                        | 716                        |
| 30               |                                   | 699.8282             | 715.8321             | 699                        | 716                        |
| 40               |                                   | 699.8344             | 715.8317             | 699                        | 716                        |
| 50               |                                   | 699.8245             | 715.8454             | 699                        | 716                        |
| 20               | L.V.                              | 699.8476             | 715.8673             | 699                        | 716                        |
|                  | H.V.                              | 699.8346             | 715.8546             | 699                        | 716                        |

**Band 13:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 777.1287             | 786.8452             | 777                        | 787                        |
| -20              |                                   | 777.1232             | 786.8434             | 777                        | 787                        |
| -10              |                                   | 777.1271             | 786.8426             | 777                        | 787                        |
| 0                |                                   | 777.1213             | 786.8432             | 777                        | 787                        |
| 10               |                                   | 777.1245             | 786.8442             | 777                        | 787                        |
| 20               |                                   | 777.1292             | 786.8454             | 777                        | 787                        |
| 30               |                                   | 777.1244             | 786.8453             | 777                        | 787                        |
| 40               |                                   | 777.1295             | 786.8492             | 777                        | 787                        |
| 50               |                                   | 777.1267             | 786.8434             | 777                        | 787                        |
| 20               | L.V.                              | 777.1233             | 786.8456             | 777                        | 787                        |
|                  | H.V.                              | 777.1254             | 786.8415             | 777                        | 787                        |

**Band 17:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 704.3344             | 715.8825             | 704                        | 716                        |
| -20              |                                   | 704.3152             | 715.8764             | 704                        | 716                        |
| -10              |                                   | 704.2553             | 715.8423             | 704                        | 716                        |
| 0                |                                   | 704.2614             | 715.8516             | 704                        | 716                        |
| 10               |                                   | 704.5146             | 715.7682             | 704                        | 716                        |
| 20               |                                   | 704.5024             | 715.6527             | 704                        | 716                        |
| 30               |                                   | 704.4562             | 715.7344             | 704                        | 716                        |
| 40               |                                   | 704.3564             | 715.7622             | 704                        | 716                        |
| 50               |                                   | 704.3326             | 715.6833             | 704                        | 716                        |
| 20               | L.V.                              | 704.2952             | 715.7645             | 704                        | 716                        |
|                  | H.V.                              | 704.3112             | 715.5311             | 704                        | 716                        |

**Band 26(Part 90S):**

| 10.0 MHz Middle Channel, fo =819MHz |                        |                      |                       |             |
|-------------------------------------|------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                    | Voltage Supplied (VDC) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -30                                 | N.V.                   | -20.67               | -0.0252               | 2.5         |
| -20                                 |                        | -7.15                | -0.0087               | 2.5         |
| -10                                 |                        | 8.56                 | 0.0105                | 2.5         |
| 0                                   |                        | 8.98                 | 0.0110                | 2.5         |
| 10                                  |                        | 7.30                 | 0.0089                | 2.5         |
| 20                                  |                        | 5.57                 | 0.0068                | 2.5         |
| 30                                  |                        | -9.40                | -0.0115               | 2.5         |
| 40                                  |                        | -7.22                | -0.0088               | 2.5         |
| 50                                  |                        | -6.28                | -0.0077               | 2.5         |
| 20                                  | L.V.                   | 8.67                 | 0.0106                | 2.5         |
|                                     | H.V.                   | -9.90                | -0.0121               | 2.5         |

**Band 38:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2570.1372            | 2619.9822            | 2570                       | 2620                       |
| -20              |                                   | 2570.1066            | 2619.8723            | 2570                       | 2620                       |
| -10              |                                   | 2570.1243            | 2619.8635            | 2570                       | 2620                       |
| 0                |                                   | 2570.1154            | 2619.8553            | 2570                       | 2620                       |
| 10               |                                   | 2570.1053            | 2619.8427            | 2570                       | 2620                       |
| 20               |                                   | 2570.1932            | 2619.8326            | 2570                       | 2620                       |
| 30               |                                   | 2570.1831            | 2619.8227            | 2570                       | 2620                       |
| 40               |                                   | 2570.1726            | 2619.8122            | 2570                       | 2620                       |
| 50               |                                   | 2570.1615            | 2619.8325            | 2570                       | 2620                       |
| 20               | L.V.                              | 2570.1523            | 2619.8256            | 2570                       | 2620                       |
|                  | H.V.                              | 2570.1824            | 2619.8124            | 2570                       | 2620                       |

**Band 41:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2535.1716            | 2654.8874            | 2535                       | 2655                       |
| -20              |                                   | 2535.1671            | 2654.8852            | 2535                       | 2655                       |
| -10              |                                   | 2535.1565            | 2654.8763            | 2535                       | 2655                       |
| 0                |                                   | 2535.1423            | 2654.8651            | 2535                       | 2655                       |
| 10               |                                   | 2535.1321            | 2654.8553            | 2535                       | 2655                       |
| 20               |                                   | 2535.1223            | 2654.8437            | 2535                       | 2655                       |
| 30               |                                   | 2535.1157            | 2654.8353            | 2535                       | 2655                       |
| 40               |                                   | 2535.1152            | 2654.8232            | 2535                       | 2655                       |
| 50               |                                   | 2535.1933            | 2654.8264            | 2535                       | 2655                       |
| 20               | L.V.                              | 2535.1623            | 2654.8236            | 2535                       | 2655                       |
|                  | H.V.                              | 2535.1525            | 2654.8217            | 2535                       | 2655                       |

**Band 66:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1710.0245            | 1779.9753            | 1710                       | 1780                       |
| -20              |                                   | 1710.0237            | 1779.9727            | 1710                       | 1780                       |
| -10              |                                   | 1710.0241            | 1779.9832            | 1710                       | 1780                       |
| 0                |                                   | 1710.0233            | 1779.9757            | 1710                       | 1780                       |
| 10               |                                   | 1710.0235            | 1779.9756            | 1710                       | 1780                       |
| 20               |                                   | 1710.0224            | 1779.9744            | 1710                       | 1780                       |
| 30               |                                   | 1710.0255            | 1779.9745            | 1710                       | 1780                       |
| 40               |                                   | 1710.0252            | 1779.9752            | 1710                       | 1780                       |
| 50               |                                   | 1710.0233            | 1779.9844            | 1710                       | 1780                       |
| 20               | L.V.                              | 1710.0225            | 1779.9725            | 1710                       | 1780                       |
|                  | H.V.                              | 1710.0224            | 1779.9757            | 1710                       | 1780                       |

**16QAM:  
Band 2:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1850.1162            | 1909.8735            | 1850                       | 1910                       |
| -20              |                                   | 1850.1154            | 1909.8732            | 1850                       | 1910                       |
| -10              |                                   | 1850.1195            | 1909.8723            | 1850                       | 1910                       |
| 0                |                                   | 1850.1156            | 1909.8724            | 1850                       | 1910                       |
| 10               |                                   | 1850.1147            | 1909.8754            | 1850                       | 1910                       |
| 20               |                                   | 1850.1156            | 1909.8743            | 1850                       | 1910                       |
| 30               |                                   | 1850.1134            | 1909.8754            | 1850                       | 1910                       |
| 40               |                                   | 1850.1122            | 1909.8735            | 1850                       | 1910                       |
| 50               |                                   | 1850.1124            | 1909.8742            | 1850                       | 1910                       |
| 20               | L.V.                              | 1850.1135            | 1909.8734            | 1850                       | 1910                       |
|                  | H.V.                              | 1850.1043            | 1909.8747            | 1850                       | 1910                       |

**Band 4:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1710.2931            | 1754.7673            | 1710                       | 1755                       |
| -20              |                                   | 1710.2952            | 1754.7564            | 1710                       | 1755                       |
| -10              |                                   | 1710.2751            | 1754.7676            | 1710                       | 1755                       |
| 0                |                                   | 1710.2652            | 1754.7453            | 1710                       | 1755                       |
| 10               |                                   | 1710.2632            | 1754.7434            | 1710                       | 1755                       |
| 20               |                                   | 1710.2644            | 1754.7623            | 1710                       | 1755                       |
| 30               |                                   | 1710.2573            | 1754.7622            | 1710                       | 1755                       |
| 40               |                                   | 1710.2654            | 1754.7659            | 1710                       | 1755                       |
| 50               |                                   | 1710.2617            | 1754.7751            | 1710                       | 1755                       |
| 20               | L.V.                              | 1710.2621            | 1754.7533            | 1710                       | 1755                       |
|                  | H.V.                              | 1710.2712            | 1754.7523            | 1710                       | 1755                       |

**Band 5& Band 26(Part 22H):**

| 10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$ |                                     |                      |                       |             |
|------------------------------------------------|-------------------------------------|----------------------|-----------------------|-------------|
| Temperature (°C)                               | Voltage Supplied (V <sub>DC</sub> ) | Frequency Error (Hz) | Frequency Error (ppm) | Limit (ppm) |
| -30                                            | N.V.                                | -16.29               | -0.0195               | 2.5         |
| -20                                            |                                     | -8.90                | -0.0106               | 2.5         |
| -10                                            |                                     | 6.86                 | 0.0082                | 2.5         |
| 0                                              |                                     | -7.36                | -0.0088               | 2.5         |
| 10                                             |                                     | -7.89                | -0.0094               | 2.5         |
| 20                                             |                                     | -9.13                | -0.0109               | 2.5         |
| 30                                             |                                     | 9.81                 | 0.0117                | 2.5         |
| 40                                             |                                     | 6.75                 | 0.0081                | 2.5         |
| 50                                             |                                     | -5.11                | -0.0061               | 2.5         |
| 20                                             | L.V.                                | 9.08                 | 0.0109                | 2.5         |
|                                                | H.V.                                | -8.84                | -0.0106               | 2.5         |

**Band 7:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2500.8454            | 2569.8372            | 2500                       | 2570                       |
| -20              |                                   | 2500.8425            | 2569.8552            | 2500                       | 2570                       |
| -10              |                                   | 2500.7646            | 2569.8423            | 2500                       | 2570                       |
| 0                |                                   | 2500.7257            | 2569.8534            | 2500                       | 2570                       |
| 10               |                                   | 2500.6324            | 2569.8287            | 2500                       | 2570                       |
| 20               |                                   | 2500.6232            | 2569.7826            | 2500                       | 2570                       |
| 30               |                                   | 2500.6356            | 2569.7831            | 2500                       | 2570                       |
| 40               |                                   | 2500.6227            | 2569.8422            | 2500                       | 2570                       |
| 50               |                                   | 2500.6218            | 2569.8451            | 2500                       | 2570                       |
| 20               | L.V.                              | 2500.6237            | 2569.8357            | 2500                       | 2570                       |
|                  | H.V.                              | 2500.6146            | 2569.8260            | 2500                       | 2570                       |

**Band 12:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 699.1121             | 715.8362             | 699                        | 716                        |
| -20              |                                   | 699.1135             | 715.8221             | 699                        | 716                        |
| -10              |                                   | 699.1012             | 715.8951             | 699                        | 716                        |
| 0                |                                   | 699.1913             | 715.8127             | 699                        | 716                        |
| 10               |                                   | 699.1724             | 715.8906             | 699                        | 716                        |
| 20               |                                   | 699.1922             | 715.8772             | 699                        | 716                        |
| 30               |                                   | 699.1784             | 715.8814             | 699                        | 716                        |
| 40               |                                   | 699.1836             | 715.8911             | 699                        | 716                        |
| 50               |                                   | 699.1733             | 715.8942             | 699                        | 716                        |
| 20               | L.V.                              | 699.1857             | 715.8161             | 699                        | 716                        |
|                  | H.V.                              | 699.1862             | 715.8173             | 699                        | 716                        |

**Band 13:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 777.0315             | 786.9216             | 777                        | 787                        |
| -20              |                                   | 777.0361             | 786.9235             | 777                        | 787                        |
| -10              |                                   | 777.0352             | 786.9243             | 777                        | 787                        |
| 0                |                                   | 777.0364             | 786.9272             | 777                        | 787                        |
| 10               |                                   | 777.0311             | 786.9231             | 777                        | 787                        |
| 20               |                                   | 777.0325             | 786.9244             | 777                        | 787                        |
| 30               |                                   | 777.0331             | 786.9235             | 777                        | 787                        |
| 40               |                                   | 777.0315             | 786.9243             | 777                        | 787                        |
| 50               |                                   | 777.0295             | 786.9213             | 777                        | 787                        |
| 20               | L.V.                              | 777.0323             | 786.9252             | 777                        | 787                        |
|                  | H.V.                              | 777.0345             | 786.9213             | 777                        | 787                        |



**Band 17:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 704.1364             | 715.8871             | 704                        | 716                        |
| -20              |                                   | 704.1984             | 715.8654             | 704                        | 716                        |
| -10              |                                   | 704.1983             | 715.8983             | 704                        | 716                        |
| 0                |                                   | 704.1684             | 715.8435             | 704                        | 716                        |
| 10               |                                   | 704.1321             | 715.8987             | 704                        | 716                        |
| 20               |                                   | 704.1592             | 715.8586             | 704                        | 716                        |
| 30               |                                   | 704.1236             | 715.8931             | 704                        | 716                        |
| 40               |                                   | 704.1684             | 715.8537             | 704                        | 716                        |
| 50               |                                   | 704.1692             | 715.8934             | 704                        | 716                        |
| 20               | L.V.                              | 704.1852             | 715.8862             | 704                        | 716                        |
|                  | H.V.                              | 704.1327             | 715.8322             | 704                        | 716                        |

**Band 26(Part 90S):**

| 10.0 MHz Middle Channel, fo =819MHz |                        |                      |                       |        |
|-------------------------------------|------------------------|----------------------|-----------------------|--------|
| Temperature (°C)                    | Voltage Supplied (VDC) | Frequency Error (Hz) | Frequency Error (ppm) | Result |
| -30                                 | N.V.                   | -17.82               | -0.0218               | pass   |
| -20                                 |                        | 8.87                 | 0.0108                | pass   |
| -10                                 |                        | 8.57                 | 0.0105                | pass   |
| 0                                   |                        | 6.67                 | 0.0081                | pass   |
| 10                                  |                        | -5.08                | -0.0062               | pass   |
| 20                                  |                        | -5.31                | -0.0065               | pass   |
| 30                                  |                        | 6.98                 | 0.0085                | pass   |
| 40                                  |                        | 8.60                 | 0.0105                | pass   |
| 50                                  |                        | 9.73                 | 0.0119                | pass   |
| 20                                  | L.V.                   | 6.97                 | 0.0085                | pass   |
|                                     | H.V.                   | -8.71                | -0.0106               | pass   |

**Band 38:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2570.1872            | 2619.8852            | 2570                       | 2620                       |
| -20              |                                   | 2570.1925            | 2619.8762            | 2570                       | 2620                       |
| -10              |                                   | 2570.1823            | 2619.8693            | 2570                       | 2620                       |
| 0                |                                   | 2570.1734            | 2619.8552            | 2570                       | 2620                       |
| 10               |                                   | 2570.1633            | 2619.8491            | 2570                       | 2620                       |
| 20               |                                   | 2570.1527            | 2619.8345            | 2570                       | 2620                       |
| 30               |                                   | 2570.1411            | 2619.8291            | 2570                       | 2620                       |
| 40               |                                   | 2570.1375            | 2619.8116            | 2570                       | 2620                       |
| 50               |                                   | 2570.1284            | 2619.8125            | 2570                       | 2620                       |
| 20               | L.V.                              | 2570.1173            | 2619.8786            | 2570                       | 2620                       |
|                  | H.V.                              | 2570.1132            | 2619.8647            | 2570                       | 2620                       |

**Band 41:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 2535.1432            | 2654.8653            | 2535                       | 2655                       |
| -20              |                                   | 2535.1447            | 2654.8587            | 2535                       | 2655                       |
| -10              |                                   | 2535.1372            | 2654.8482            | 2535                       | 2655                       |
| 0                |                                   | 2535.1267            | 2654.8376            | 2535                       | 2655                       |
| 10               |                                   | 2535.1132            | 2654.8282            | 2535                       | 2655                       |
| 20               |                                   | 2535.1174            | 2654.8187            | 2535                       | 2655                       |
| 30               |                                   | 2535.1982            | 2654.8582            | 2535                       | 2655                       |
| 40               |                                   | 2535.1886            | 2654.8983            | 2535                       | 2655                       |
| 50               |                                   | 2535.1827            | 2654.8883            | 2535                       | 2655                       |
| 20               | L.V.                              | 2535.1613            | 2654.8767            | 2535                       | 2655                       |
|                  | H.V.                              | 2535.1572            | 2654.8342            | 2535                       | 2655                       |

**Band 66:**

| 10 MHz Bandwidth |                                   |                      |                      |                            |                            |
|------------------|-----------------------------------|----------------------|----------------------|----------------------------|----------------------------|
| Temperature (°C) | Power Supplied (V <sub>DC</sub> ) | F <sub>L</sub> (MHz) | F <sub>H</sub> (MHz) | F <sub>L</sub> Limit (MHz) | F <sub>H</sub> Limit (MHz) |
| -30              | N.V.                              | 1710.0271            | 1779.8394            | 1710                       | 1780                       |
| -20              |                                   | 1710.0242            | 1779.8445            | 1710                       | 1780                       |
| -10              |                                   | 1710.0244            | 1779.8364            | 1710                       | 1780                       |
| 0                |                                   | 1710.0273            | 1779.8352            | 1710                       | 1780                       |
| 10               |                                   | 1710.0264            | 1779.8364            | 1710                       | 1780                       |
| 20               |                                   | 1710.0231            | 1779.8333            | 1710                       | 1780                       |
| 30               |                                   | 1710.0246            | 1779.8347            | 1710                       | 1780                       |
| 40               |                                   | 1710.0243            | 1779.8361            | 1710                       | 1780                       |
| 50               |                                   | 1710.0231            | 1779.8373            | 1710                       | 1780                       |
| 20               | L.V.                              | 1710.0293            | 1779.8353            | 1710                       | 1780                       |
|                  | H.V.                              | 1710.0257            | 1779.8355            | 1710                       | 1780                       |

\*\*\*\*\* **END OF REPORT** \*\*\*\*\*