# TEST REPORT

## No.I19N00481-SAR

**For**

**TCL Communication Ltd.**

**Tablet PC**

**Model Name: 9027G**

**With**

**Hardware Version: 03**

**Software Version: E7B**

**FCC ID: 2ACCJBT15**

**Issued Date: 2019-03-30**

**Designation Number: CN1210**

**Note:**

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

**Test Laboratory:**

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## REPORT HISTORY

| Report Number | Revision | Issue Date | Description |
|---|---|---|---|
| I19N00481-SAR | Rev.0 | 2019-03-30 | Initial creation of test report |

# TABLE OF CONTENT

# 1 Test Laboratory

## 1.1 Testing Location

| | |
|---|---|
| Company Name: | Shenzhen Academy of Information and Communications Technology |
| Address: | Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China |
| Postal Code: | 518026 |
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## 1.2 Testing Environment

| | |
|---|---|
| Temperature: | 18°C~25 °C |
| Relative humidity: | 30%~ 70% |
| Ground system resistance: | <4Ω |
| Ambient noise & Reflection: | < 0.012 W/kg |

## 1.3 Project Data

| | |
|---|---|
| Testing Start Date: | March 14, 2019 |
| Testing End Date: | March 26, 2019 |

## 1.4 Signature

Li Yongfu
**(Prepared this test report)**

Zhang Yunzhuan
**(Reviewed this test report)**

Cao Junfei
Deputy Director of the laboratory
**(Approved this test report)**

## 2 Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for TCL Communication Ltd. Tablet PC 9027G are as follows:

**Table 2.1: Highest Reported SAR for Body (1g)**

| Exposure Configuration | Technology Band | Highest Reported SAR 1g(W/Kg) | Equipment Class |
|---|---|---|---|
| Hotspot(Body) | GSM850 | 0.91 | PCB |
| | GSM1900 | 1.19 | |
| | WCDMA850 | **1.33** | |
| | WCDMA1900 | 1.32 | |
| | WCDMA1700 | 1.16 | |
| | LTE Band 2 | 1.26 | |
| | LTE Band 5 | 0.67 | |
| | LTE Band 7 | 1.26 | |
| | LTE Band 12 | 0.90 | |
| | LTE Band 66 | 1.03 | |
| | LTE Band 71 | 0.77 | |
| | WLAN 2.4G | 0.39 | DTS |
| | WLAN 5G | 0.40 | U-NII-3 |

The SAR values found for the EUT are below the maximum recommended levels of 1.6 W/Kg as averaged over any 1g tissue according to the ANSI C95.1-1992.

For body worn operation, this device has been tested and meets FCC RF exposure guidelines when used with any accessory that contains no metal and which provides a minimum separation distance from 0/9/12/14/15mm between this device and the body of the user. Use of other accessories may not ensure compliance with FCC RF exposure guidelines.
The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output.
The measurement together with the test system set-up is described in annex C of this test report. A detailed description of the equipment under test can be found in chapter 4 of this test report.

The highest reported SAR value is obtained at the case of **(Table 2.1),** and the values are**: 1.33 W/kg (1g).**

**Table 2.2: The sum of reported SAR values for main antenna and Wi-Fi**

| / | Band | Position | Main antenna | WiFi | Sum | SPLSR |
|---|---|---|---|---|---|---|
| **Maximum reported SAR value for Body** | W850 | Rear | 1.33 | 0.27 | **1.60** | **Yes** |

According to the KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by $(SAR1 + SAR2)^{1.5}/Ri$, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

**Table 2.3: The sum of reported SAR values for main antenna and BT**

| / | Position | Main antenna | BT | Sum |
|---|---|---|---|---|
| Highest reported SAR value for Body | Rear | 1.33 | 0.19 | 1.52 |

BT* - Estimated SAR for Bluetooth (see the table 12.3)

According to the above tables, the highest sum of reported SAR values is **1.60W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 12.

# 3 Client Information

## 3.1 Applicant Information

| | |
|---|---|
| Company Name: | TCL Communication Ltd. |
| Address /Post: | 7/F, Block F4, TCL Communication Technology Building, TCL International E City, Zhong Shan Yuan Road, Nanshan District, Shenzhen, Guangdong, P.R. China 518052 |
| Contact: | Gong Zhizhou |
| Email: | zhizhou.gong@tcl.com |
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| Fax: | / |

## 3.2 Manufacturer Information

| | |
|---|---|
| Company Name: | TCL Communication Ltd. |
| Address /Post: | 7/F, Block F4, TCL Communication Technology Building, TCL International E City, Zhong Shan Yuan Road, Nanshan District, Shenzhen, Guangdong, P.R. China 518052 |
| Contact: | Gong Zhizhou |
| Email: | zhizhou.gong@tcl.com |
| Telephone: | 0086-755-36611722 |
| Fax: | / |

# 4 Equipment under Test (EUT) and Ancillary Equipment (AE)

## 4.1 About EUT

| | |
|---|---|
| Description: | Tablet PC |
| Model Name: | 9027G |
| Condition of EUT as received | No obvious damage in appearance |
| Operating mode(s): | GSM850/1900, WCDMA850/1700/1900,<br>LTE Band 2/4/5/7/12/17/66/71, BT, Wi-Fi 2.4G/5G |
| Tested Tx Frequency: | 825 – 848.8MHz (GSM 850) |
| | 1850.2 – 1910MHz (GSM 1900) |
| | 826.4 – 846.6MHz (WCDMA850 Band V) |
| | 1712.4 – 1752.6MHz (WCDMA1700 Band IV) |
| | 1852.4 – 1907.6MHz (WCDMA1900 Band II) |
| | 1850.7 – 1909.3MHz (LTE FDD Band 2) |
| | 1710.7 – 1754.3MHz (LTE FDD Band 4) |
| | 824.7 – 848.3MHz (LTE FDD Band 5) |
| | 2502.5 – 2567.5MHz (LTE FDD Band 7) |
| | 699.7 – 715.3MHz (LTE FDD Band 12) |
| | 706.7 – 713.5MHz (LTE FDD Band 17) |
| | 1710.7 – 1779.3MHz (LTE FDD Band 66) |
| | 665.5 – 695.5MHz (LTE FDD Band 71) |
| | 2412 – 2462MHz (Wi-Fi 2.4G) |
| | 5150 – 5350MHz, 5725 – 5825MHz (Wi-Fi 5G) |
| Test device Production information: | Production unit |
| Device type: | Portable device |
| Antenna type: | Integrated antenna |
| Product dimension | Long 209.5mm ;Wide 125mm ;Diagonal 243.96mm |

## 4.2 Internal Identification of EUT used during the test

| EUT ID* | IMEI | HW Version | SW Version |
|---|---|---|---|
| EUT1 | 015450000000240 | 03 | E7B |
| EUT2 | 015450000000265 | 03 | E7B |
| EUT3 | 015450000000257 | 03 | E7B |

*EUT ID: is used to identify the test sample in the lab internally.

**Note:** It is performed to test SAR with the EUT 1 & EUT 2, and conducted power with the EUT 3.

## 4.3 Internal Identification of AE used during the test

| AE ID* | Description | Type | Manufacturer |
|---|---|---|---|
| AE1 | Battery | TLp040J1 | BYD |

*AE ID: is used to identify the test sample in the lab internally.

# 5 Test Methodology

## 5.1 Applicable Limit Regulations

**ANSI C95.1–1992:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

## 5.2 Applicable Measurement Standards

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

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

**KDB 447498 D01 General RF Exposure Guidance v06:** Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

**KDB 616217 D04 SAR for laptop and tablets v01r02:** SAR Evaluation Considerations for Laptop, Notebook, Notebook and Tablet Computers.

**KDB 941225 D01 SAR test for 3G devices v03r01:** SAR Measurement Procedures for 3G Devices

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

**KDB 248227 D01 802.11 Wi-Fi SAR v02r02:** SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters.

**KDB 865664 D01SAR measurement 100 MHz to 6 GHz v01r04:** SAR Measurement Requirements for 100 MHz to 6 GHz.

**KDB 865664 D02 RF Exposure Reporting v01r02:** RF Exposure Compliance Reporting and Documentation Considerations

# 6 Specific Absorption Rate (SAR)

## 6.1 Introduction

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

## 6.2 SAR Definition

The SAR definition is the time derivative (rate) of the incremental energy ($dW$) absorbed by (dissipated in) an incremental mass ($dm$) contained in a volume element ($dv$) of a given density ($\rho$) . The equation description is as below:

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

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

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

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

Where: C is the specific head capacity, $\delta T$ is the temperature rise and $\delta t$ is the exposure duration, or related to the electrical field in the tissue by

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

Where: $\sigma$ is the conductivity of the tissue, $\rho$ is the mass density of tissue and $E$ is the RMS electrical field strength.

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

# 7 Tissue Simulating Liquids

## 7.1 Targets for tissue simulating liquid

**Table 7.1: Targets for tissue simulating liquid**

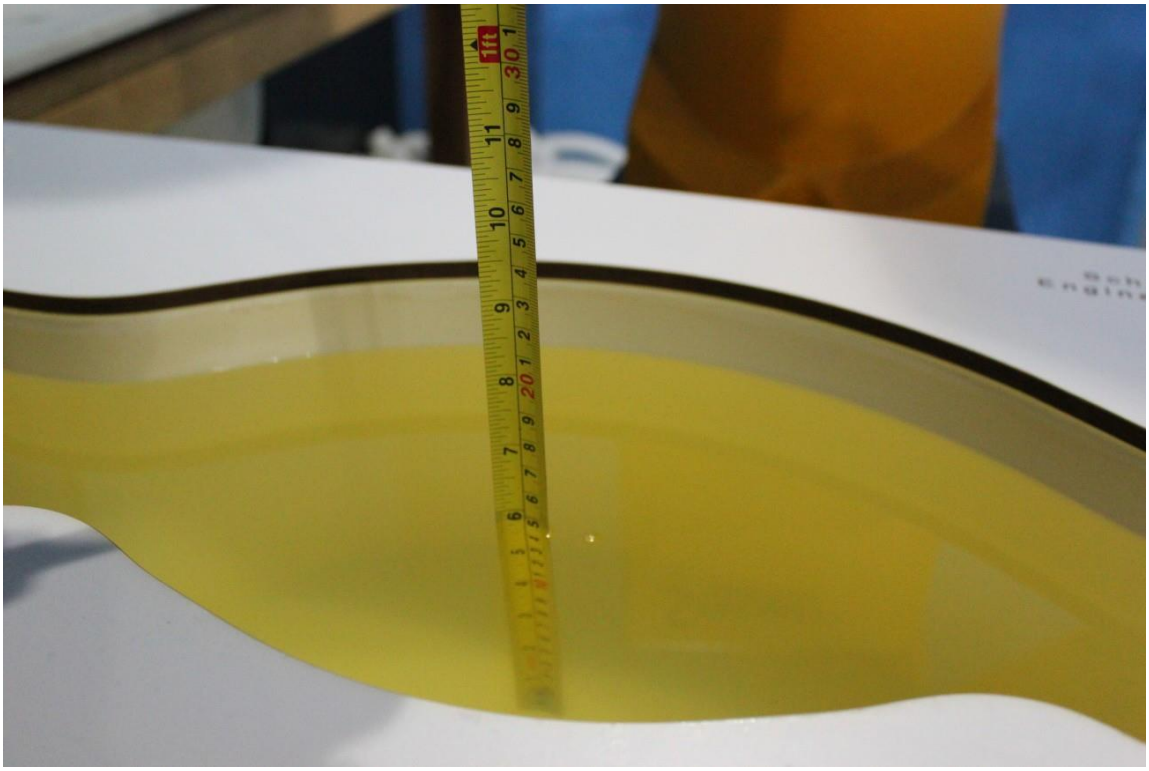
| Frequency (MHz) | Liquid Type | Conductivity (σ) | ± 5% Range | Permittivity (ε) | ± 5% Range |
|---|---|---|---|---|---|
| 750 | Body | 0.96 | 0.91～1.01 | 55.50 | 52.7～58.3 |
| 835 | Body | 0.97 | 0.92～1.02 | 55.20 | 52.4～58.0 |
| 1750 | Body | 1.49 | 1.42～1.56 | 53.40 | 50.7～56.1 |
| 1900 | Body | 1.52 | 1.44～1.60 | 53.30 | 50.6～56.0 |
| 2450 | Body | 1.95 | 1.85～2.05 | 52.70 | 50.1～55.3 |
| 2550 | Body | 2.09 | 1.99～2.19 | 52.60 | 50.0～55.2 |
| 5300 | Body | 5.42 | 5.15～5.69 | 48.90 | 46.5～51.3 |
| 5800 | Body | 6.00 | 5.70～6.30 | 48.20 | 45.8～50.6 |

## 7.2 Dielectric Performance

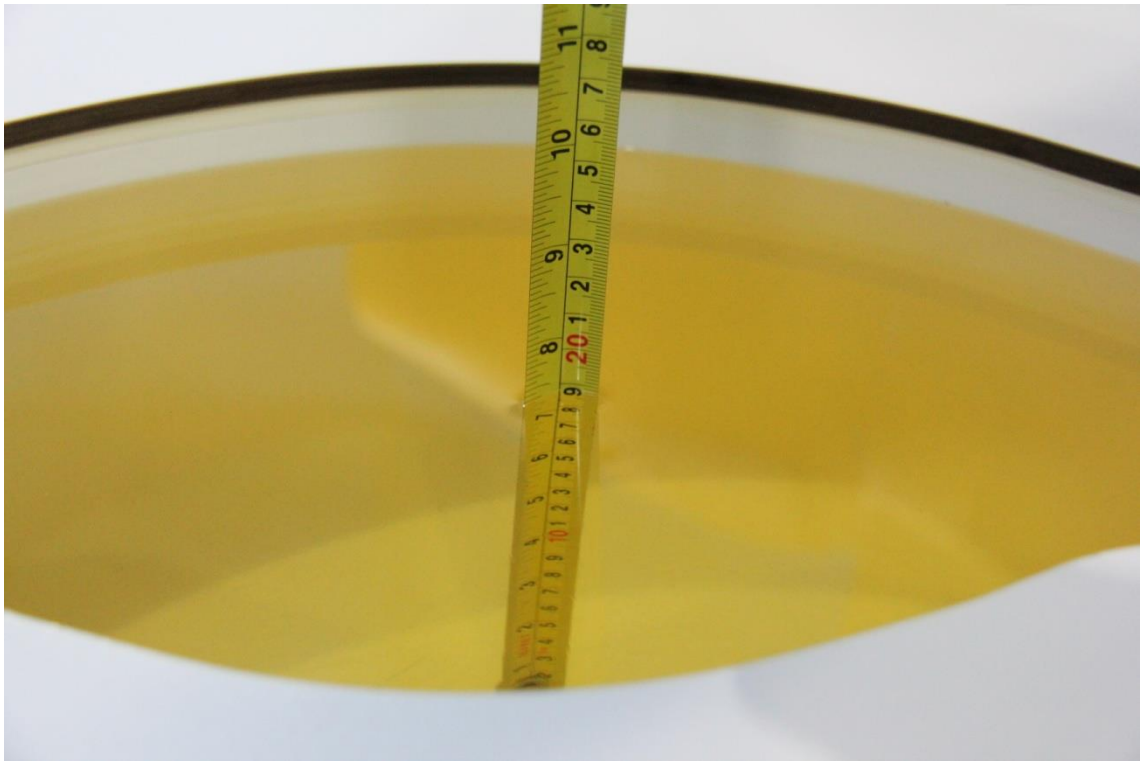
**Table 7.2: Dielectric Performance of Tissue Simulating Liquid**

| Measurement Date (yyyy-mm-dd) | Type | Frequency | Conductivity σ (S/m) | Drift (%) | Permittivity ε | Drift (%) |
|---|---|---|---|---|---|---|
| 2019-3-17 | Body | 750 | 1.001 | 4.27 | 54.892 | -1.10 |
| 2019-3-19 | Body | 835 | 0.989 | 1.96 | 52.694 | -4.54 |
| 2019-3-14 | Body | 1750 | 1.458 | -2.15 | 53.391 | -0.02 |
| 2019-3-24 | Body | 1900 | 1.574 | 3.55 | 52.954 | -0.65 |
| 2019-3-23 | Body | 2450 | 1.928 | -1.13 | 50.533 | -4.11 |
| 2019-3-20 | Body | 2550 | 2.052 | -1.82 | 52.208 | -0.75 |
| 2019-3-26 | Body | 5300 | 5.474 | 1.00 | 47.628 | -2.60 |
| 2019-3-26 | Body | 5800 | 6.202 | 3.37 | 47.395 | -1.67 |

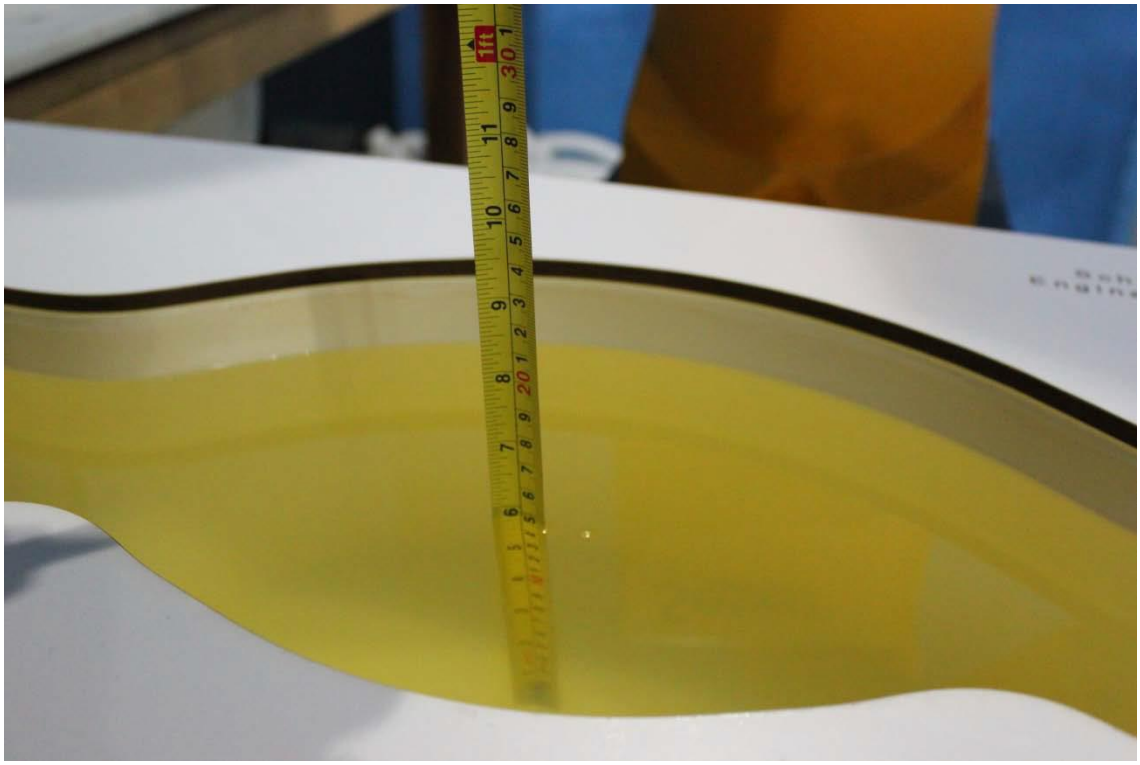
Note: The liquid temperature is 22.0$^{o}$C.



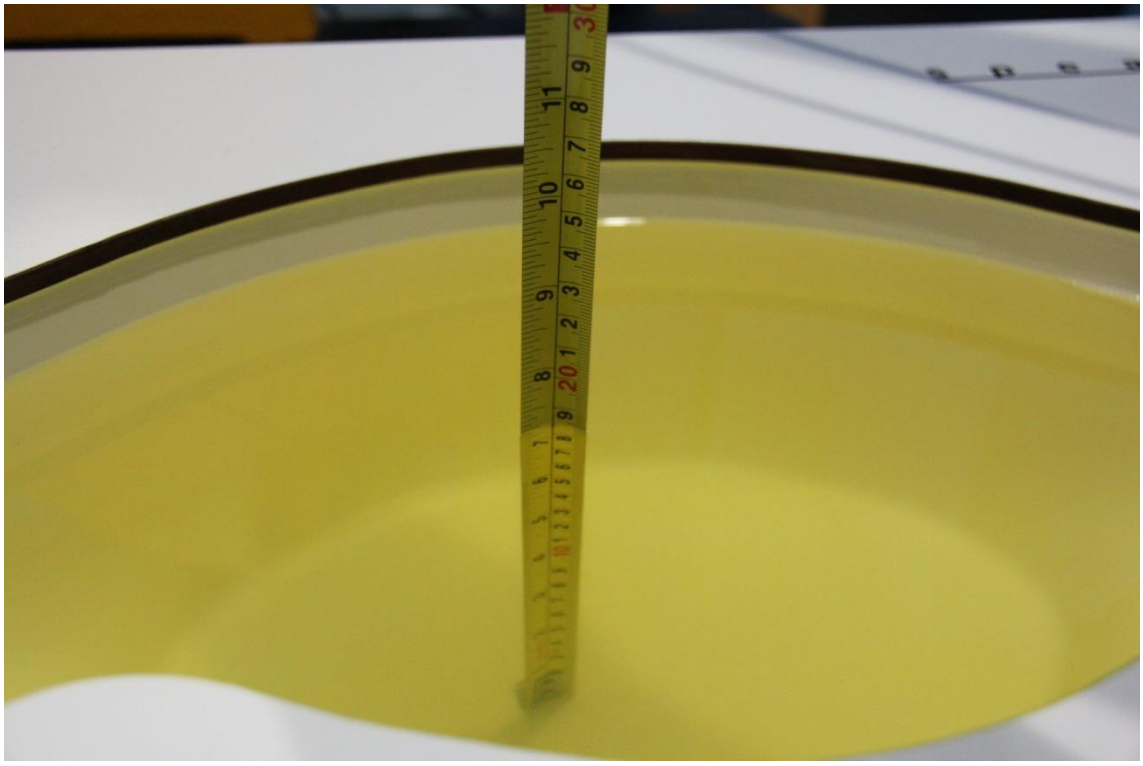
**Picture 7-1: Liquid depth in the Flat Phantom (750 MHz)**



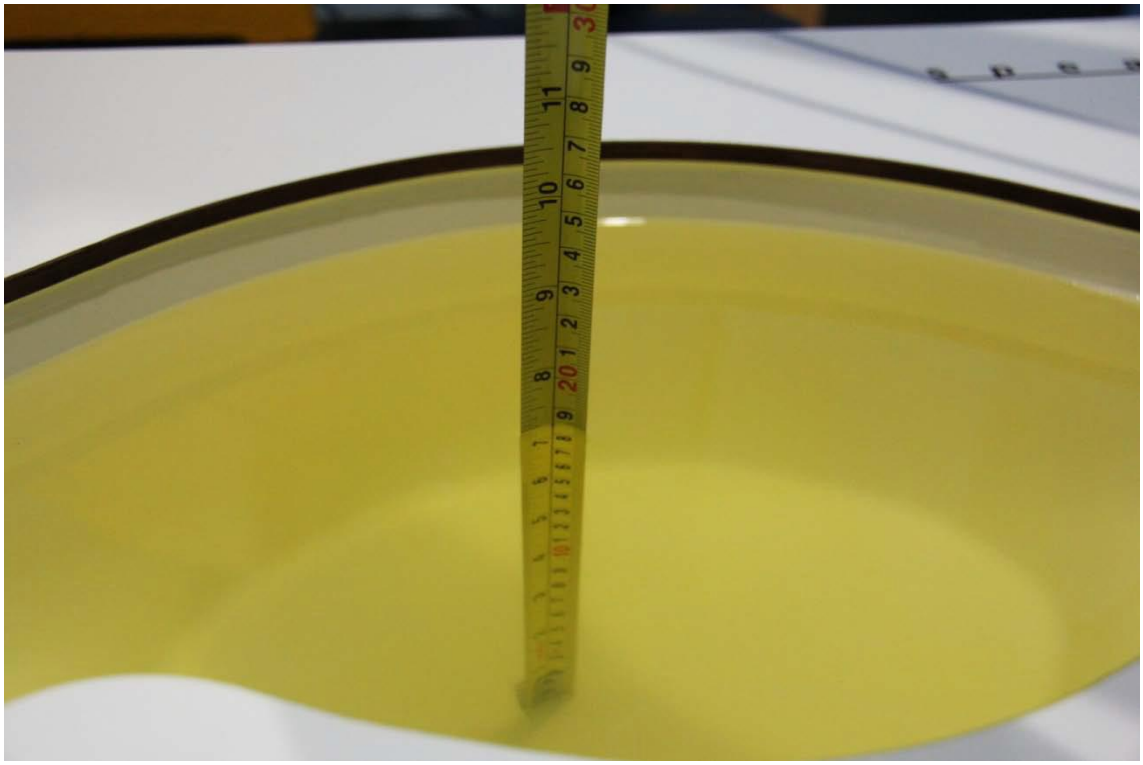
**Picture 7-2: Liquid depth in the Flat Phantom (835 MHz)**



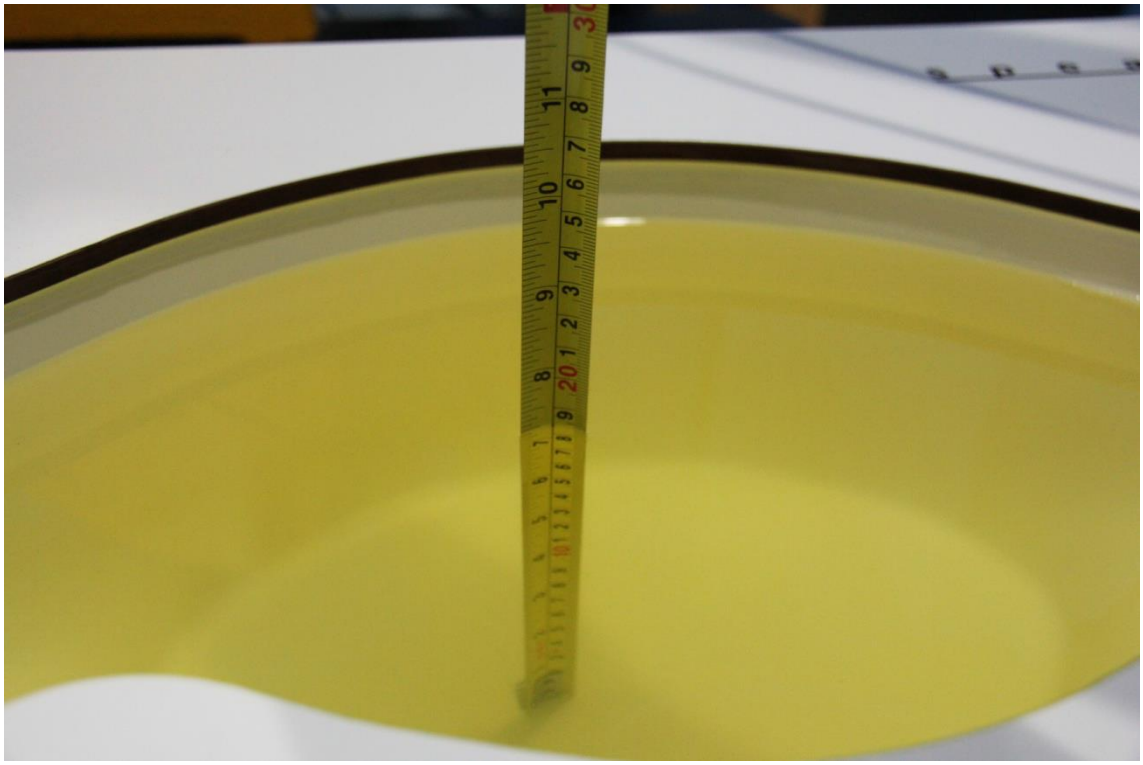
**Picture 7-3: Liquid depth in the Flat Phantom (1750 MHz)**



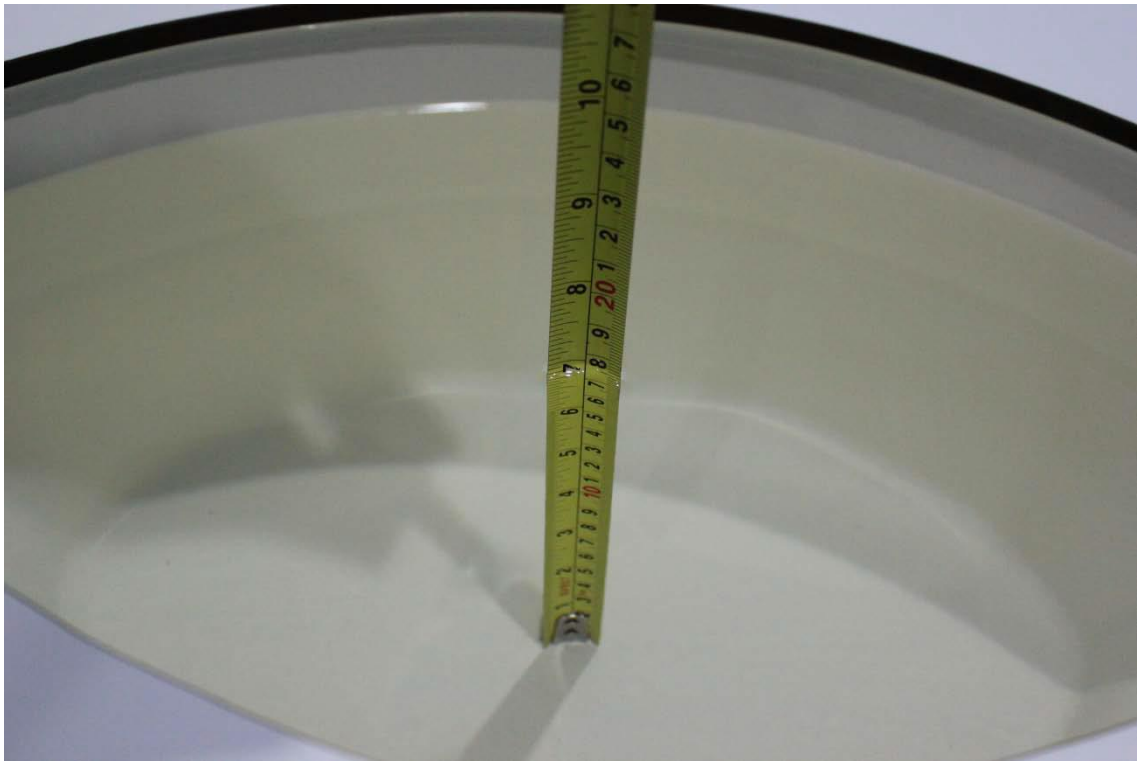
**Picture 7-4: Liquid depth in the Flat Phantom (1900MHz)**



**Picture 7-5: Liquid depth in the Flat Phantom(2450MHz)**



**Picture 7-6: Liquid depth in the Flat Phantom(2550MHz)**

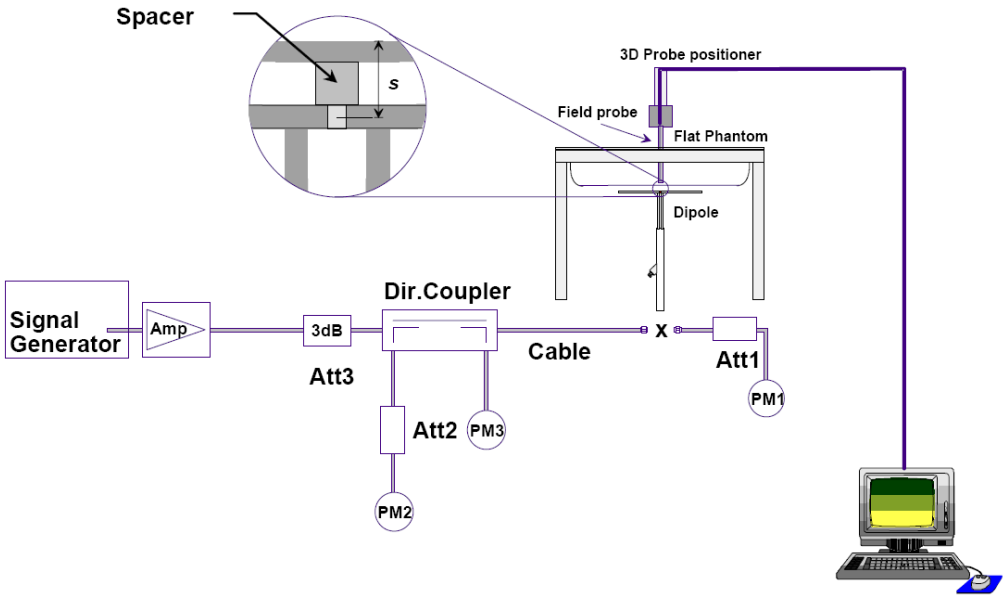


**Picture 7-7: Liquid depth in the Flat Phantom(5GHz)**

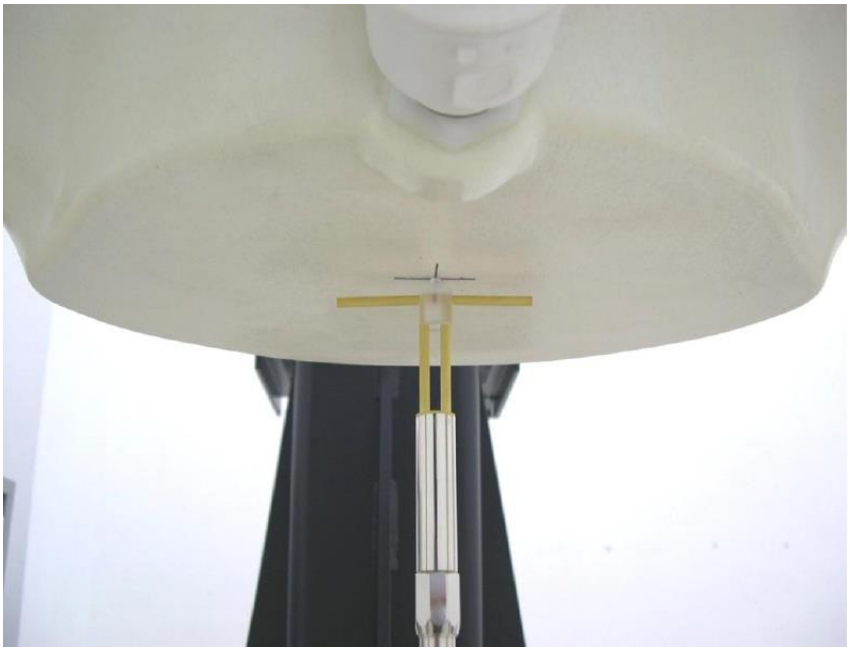
# 8 System verification

## 8.1 System Setup

In the simplified setup for system evaluation, the DUT is replaced by a calibrated dipole and the power source is replaced by a continuous wave that comes from a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the SAM twin phantom with the correct distance holder. The distance holder should touch the phantom surface with a light pressure at the reference marking and be oriented parallel to the long side of the phantom. The equipment setup is shown below:




**Picture 8.1 System Setup for System Evaluation**



**Picture 8.2 Photo of Dipole Setup**

## 8.2 System Verification

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device.

**Table 8.1: System Verification of Body**

| Measurement Date (yyyy-mm-dd) | Frequency | Target value (W/kg) | | Measured value (W/kg) | | Deviation (%) | |
|---|---|---|---|---|---|---|---|
| | | 10 g Average | 1 g Average | 10 g Average | 1 g Average | 10 g Average | 1 g Average |
| 2019-3-17 | 750 MHz | 5.64 | 8.58 | 5.76 | 8.88 | 2.13 | 3.50 |
| 2019-3-19 | 835 MHz | 6.56 | 9.90 | 6.68 | 10.24 | 1.83 | 3.43 |
| 2019-3-14 | 1750 MHz | 19.5 | 36.2 | 19.12 | 34.92 | -1.95 | -3.54 |
| 2019-3-24 | 1900 MHz | 21.4 | 40.6 | 21.96 | 42.40 | 2.62 | 4.43 |
| 2019-3-23 | 2450 MHz | 23.5 | 50.5 | 22.92 | 48.40 | -2.47 | -4.16 |
| 2019-3-20 | 2550 MHz | 24.7 | 54.0 | 24.20 | 52.00 | -2.02 | -3.70 |
| 2019-3-26 | 5300 MHz | 21.5 | 76.5 | 21.80 | 78.30 | 1.40 | 2.35 |
| 2019-3-26 | 5800 MHz | 21.1 | 76.2 | 21.50 | 78.70 | 1.90 | 3.28 |

# 9 Measurement Procedures

## 9.1 Tests to be performed

In order to determine the highest value of the peak spatial-average SAR of a handset, all device positions, configurations and operational modes shall be tested for each frequency band according to steps 1 to 3 below. A flowchart of the test process is shown in picture 9.1.

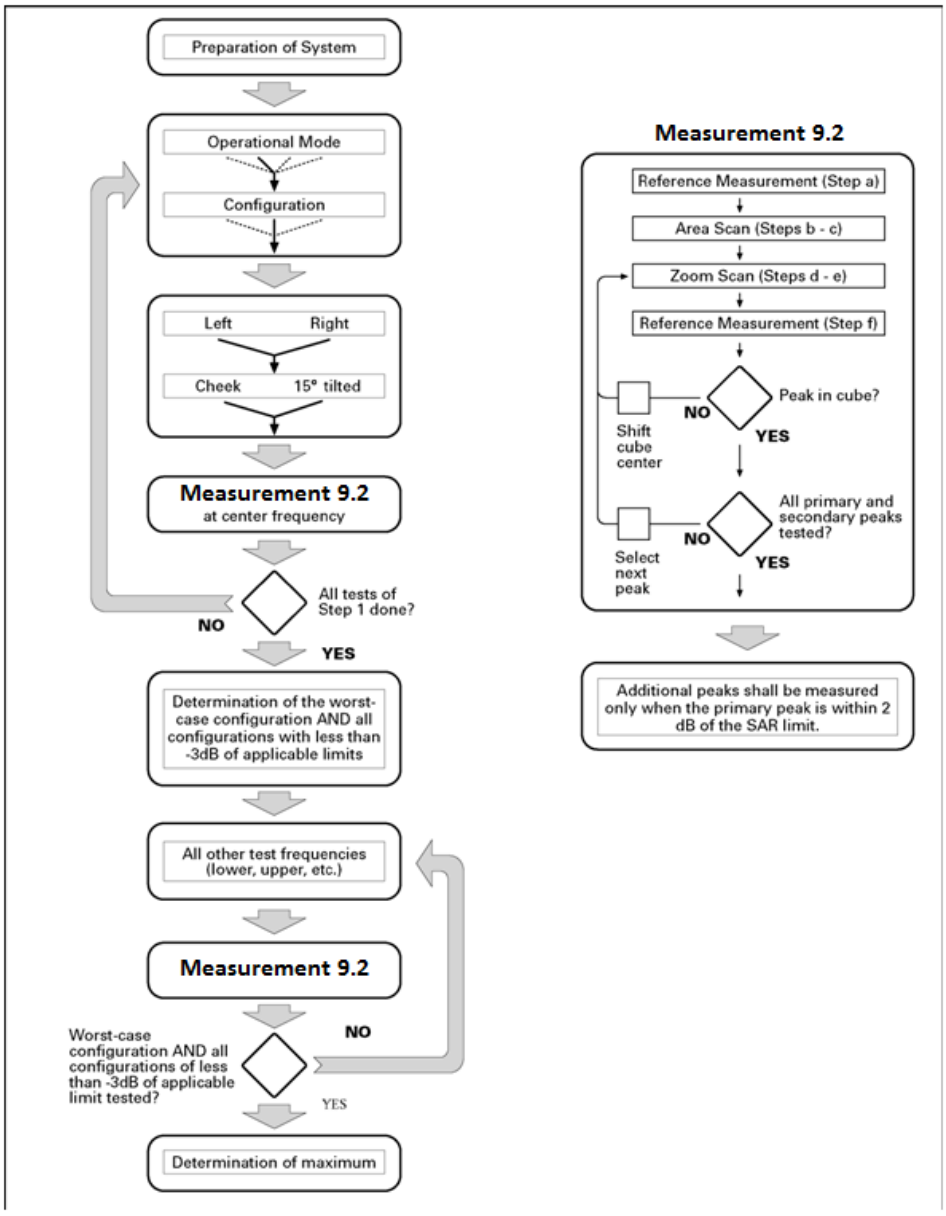
**Step 1**: The tests described in 9.2 shall be performed at the channel that is closest to the center of the transmit frequency band ( $f_c$ ) for:

a) all device positions (cheek and tilt, for both left and right sides of the SAM phantom, as described in annex D),
b) all configurations for each device position in a), e.g., antenna extended and retracted, and
c) all operational modes, e.g., analogue and digital, for each device position in a) and configuration in b) in each frequency band.

If more than three frequencies need to be tested according to 11.1 (i.e., $N_c$ > 3), then all frequencies, configurations and modes shall be tested for all of the above test conditions.

**Step 2**: For the condition providing highest peak spatial-average SAR determined in Step 1, perform all tests described in 9.2 at all other test frequencies, i.e., lowest and highest frequencies. In addition, for all other conditions (device position, configuration and operational mode) where the peak spatial-average SAR value determined in Step 1 is within 3 dB of the applicable SAR limit, it is recommended that all other test frequencies shall be tested as well.

**Step 3**: Examine all data to determine the highest value of the peak spatial-average SAR found in Steps 1 to 2.




**Picture 9.1 Block diagram of the tests to be performed**

## 9.2 General Measurement Procedure

The area and zoom scan resolutions specified in the table below must be applied to the SAR measurements and fully documented in SAR reports to qualify for TCB approval. Probe boundary effect error compensation is required for measurements with the probe tip closer than half a probe tip diameter to the phantom surface. Both the probe tip diameter and sensor offset distance must satisfy measurement protocols; to ensure probe boundary effect errors are minimized and the higher fields closest to the phantom surface can be correctly measured and extrapolated to the phantom surface for computing 1-g SAR. Tolerances of the post-processing algorithms must be verified by the test laboratory for the scan resolutions used in the SAR measurements, according to the reference distribution functions specified in IEEE Std 1528-2013. The results should be documented as part of the system validation records and may be requested to support test results when all the measurement parameters in the following table are not satisfied.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5 ± 1 mm</td><td>½·δ·ln(2) ± 0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface normal at the measurement location</td><td>30° ± 1°</td><td>20° ± 1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan spatial resolution: $\Delta x_{Area}$, $\Delta y_{Area}$</td><td>≤ 2 GHz: ≤ 15 mm<br>2 – 3 GHz: ≤ 12 mm</td><td>3 – 4 GHz: ≤ 12 mm<br>4 – 6 GHz: ≤ 10 mm</td></tr>
<tr><td colspan="2">When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.</td></tr>
<tr><td colspan="3">Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$, $\Delta y_{Zoom}$</td><td>≤ 2 GHz: ≤ 8 mm<br>2 – 3 GHz: ≤ 5 mm*</td><td>3 – 4 GHz: ≤ 5 mm*<br>4 – 6 GHz: ≤ 4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan spatial resolution, normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{Zoom}(n)$</td><td>≤ 5 mm</td><td>3 – 4 GHz: ≤ 4 mm<br>4 – 5 GHz: ≤ 3 mm<br>5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface</td><td>≤ 4 mm</td><td>3 – 4 GHz: ≤ 3 mm<br>4 – 5 GHz: ≤ 2.5 mm<br>5 – 6 GHz: ≤ 2 mm</td></tr>
<tr><td>$\Delta z_{Zoom}(n>1)$: between subsequent points</td><td colspan="2">≤ 1.5·$\Delta z_{Zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3 – 4 GHz: ≥ 28 mm<br>4 – 5 GHz: ≥ 25 mm<br>5 – 6 GHz: ≥ 22 mm</td></tr>
<tr><td colspan="5">Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.<br>* When zoom scan is required and the <u>reported</u> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.</td></tr>
</table>

## 9.3 WCDMA Measurement Procedures for SAR

The following procedures are applicable to WCDMA handsets operating under 3GPP Release99, Release 5 and Release 6. The default test configuration is to measure SAR with an established radio link between the DUT and a communication test set using a 12.2kbps RMC (reference measurement channel) configured in Test Loop Mode 1. SAR is selectively confirmed for other physical channel configurations (DPCCH & $DPDCH_n$), HSDPA and HSPA (HSUPA/HSDPA) modes according to output power, exposure conditions and device operating capabilities. Both uplink and downlink should be configured with the same RMC or AMR, when required. SAR for Release 5 HSDPA and Release 6 HSPA are measured using the applicable FRC (fixed reference channel) and E-DCH reference channel configurations. Maximum output power is verified according to applicable versions of 3GPP TS 34.121 and SAR must be measured according to these maximum output conditions. When Maximum Power Reduction (MPR) is not implemented according to Cubic Metric (CM) requirements for Release 6 HSPA, the following procedures do not apply.

**For Release 5 HSDPA Data Devices:**

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ （SF） | $\beta_c / \beta_d$ | $\beta_{hs}$ | CM/dB |
|---|---|---|---|---|---|---|
| 1 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 0.0 |
| 2 | 12/15 | 15/15 | 64 | 12/15 | 24/25 | 1.0 |
| 3 | 15/15 | 8/15 | 64 | 15/8 | 30/15 | 1.5 |
| 4 | 15/15 | 4/15 | 64 | 15/4 | 30/15 | 1.5 |

**For Release 6 HSPA Data Devices**

| Sub-test | $\beta_c$ | $\beta_d$ | $\beta_d$ （SF） | $\beta_c / \beta_d$ | $\beta_{hs}$ | $\beta_{ec}$ | $\beta_{ed}$ | $\beta_{ed}$ （SF） | $\beta_{ed}$ （codes） | CM (dB) | MPR (dB) | AG Index | E-TFCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 11/15 | 15/15 | 64 | 11/15 | 22/15 | 209/225 | 1039/225 | 4 | 1 | 1.0 | 0.0 | 20 | 75 |
| 2 | 6/15 | 15/15 | 64 | 6/15 | 12/15 | 12/15 | 12/15 | 4 | 1 | 3.0 | 2.0 | 12 | 67 |
| 3 | 15/15 | 9/15 | 64 | 15/9 | 30/15 | 30/15 | $\beta_{ed1}$:47/15<br>$\beta_{ed2}$:47/15 | 4 | 2 | 2.0 | 1.0 | 15 | 92 |
| 4 | 2/15 | 15/15 | 64 | 2/15 | 4/15 | 4/15 | 56/75 | 4 | 1 | 3.0 | 2.0 | 17 | 71 |
| 5 | 15/15 | 15/15 | 64 | 15/15 | 24/15 | 30/15 | 134/15 | 4 | 1 | 1.0 | 0.0 | 21 | 81 |

## 9.4 Bluetooth & WI-FI Measurement Procedures for SAR

Normal network operating configurations are not suitable for measuring the SAR of 802.11 transmitters in general. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure that the results are consistent and reliable.

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in a test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters. The test frequencies should correspond to actual channel frequencies defined for domestic use. SAR for devices with switched diversity should be measured with only one antenna transmitting at a time during each SAR measurement, according to a fixed modulation and data rate. The same data pattern should be used for all measurements.

## 9.5 SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Anristu MT8820C. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the Anristu MT8820C.It is performed for conducted power and SAR based on the KDB941225 D05.

SAR is evaluated separately according to the following procedures for the different test positions in each exposure condition – head, body, body-worn accessories and other use conditions. The procedures in the following subsections are applied separately to test each LTE frequency band.

1) QPSK with 1 RB allocation
   Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is ≤ 0.8 W/kg, testing of the remaining RB offset configurations and required test channels is not required for 1 RB allocation; otherwise, SAR is required for the remaining required test channels and only for the RB offset configuration with the highest output power for that channel. When the reported SAR of a required test channel is > 1.45 W/kg, SAR is required for all three RB offset configurations for that required test channel.
2) QPSK with 50% RB allocation
   The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.
3) QPSK with 100% RB allocation
   For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation in 1) and 2) are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.

## 9.6 Power Drift

To control the output power stability during the SAR test, DASY5 system calculates the power drift by measuring the E-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in Section 14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.

# 10 Conducted Output Power

## 10.1 GSM Measurement result

During the process of testing, the EUT was controlled via Agilent Digital Radio Communication tester (E5515C) to ensure the maximum power transmission and proper modulation. This result contains conducted output power for the EUT. In all cases, the measured peak output power should be greater and within 5% than EMI measurement.

**able 10.1：The conducted power measurement results for GPRS and EGPRS**

| Normal Power | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GPRS 850 | Tune up | Measured Power (dBm) | | | calculation | Average Power (dBm) | | |
| | | 251 | 190 | 128 | | 251 | 190 | 128 |
| 1Tx-slots | 34.0 | 32.60 | 32.63 | 32.52 | -9.03dB | 23.57 | 23.60 | 23.49 |
| 2Tx-slots | 32.0 | **31.01** | **31.04** | **30.91** | -6.02dB | **24.99** | **25.02** | **24.89** |
| 3Tx-slots | 30.0 | 29.01 | 29.00 | 28.84 | -4.26dB | 24.75 | 24.74 | 24.58 |
| 4Tx-slots | 28.5 | 27.53 | 27.51 | 27.29 | -3.01dB | 24.52 | 24.50 | 24.28 |
| EGPRS 850 (8PSK) | Tune up | Measured Power (dBm) | | | calculation | Measured Power (dBm) | | |
| | | 251 | 190 | 128 | | 251 | 190 | 128 |
| 1Tx-slots | 28.0 | 26.68 | 26.92 | 26.83 | -9.03dB | 17.65 | 17.89 | 17.80 |
| 2Tx-slots | 27.0 | 25.98 | 25.86 | 25.96 | -6.02dB | 19.96 | 19.84 | 19.94 |
| 3Tx-slots | 25.0 | 23.74 | 23.61 | 23.86 | -4.26dB | 19.48 | 20.35 | 19.60 |
| 4Tx-slots | 24.0 | 22.58 | 22.54 | 22.63 | -3.01dB | 19.57 | 19.53 | 19.62 |
| GPRS 1900 | Tune up | Measured Power (dBm) | | | calculation | Average Power (dBm) | | |
| | | 810 | 661 | 512 | | 810 | 661 | 512 |
| 1Tx-slots | 31.0 | 29.79 | 29.73 | 29.78 | -9.03dB | 20.76 | 20.70 | 20.75 |
| 2Tx-slots | 29.5 | **28.33** | **28.24** | **28.31** | -6.02dB | **22.31** | **22.22** | **22.29** |
| 3Tx-slots | 27.5 | 26.40 | 26.29 | 26.33 | -4.26dB | 22.14 | 22.03 | 22.07 |
| 4Tx-slots | 26.0 | 24.98 | 24.88 | 24.94 | -3.01dB | 21.97 | 21.87 | 21.93 |
| EGPRS 1900 (8PSK) | Tune up | Measured Power (dBm) | | | calculation | Measured Power (dBm) | | |
| | | 810 | 661 | 512 | | 810 | 661 | 512 |
| 1Tx-slots | 27.5 | 26.40 | 26.36 | 26.31 | -9.03dB | 17.37 | 17.33 | 17.28 |
| 2Tx-slots | 26.5 | 25.26 | 25.45 | 25.42 | -6.02dB | 19.24 | 19.43 | 19.40 |
| 3Tx-slots | 24.5 | 23.17 | 23.27 | 23.24 | -4.26dB | 18.91 | 19.01 | 18.98 |
| 4Tx-slots | 23.5 | 22.07 | 22.26 | 22.19 | -3.01dB | 19.06 | 19.25 | 19.18 |

| sensor-on | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| GPRS 850 | Tune up | Measured Power (dBm) | | | calculation | Average Power (dBm) | | |
| | | 251 | 190 | 128 | | 251 | 190 | 128 |
| 1Tx-slots | 24.0 | 23.13 | 23.06 | 22.84 | -9.03dB | 14.10 | 14.03 | 13.81 |
| 2Tx-slots | 24.0 | 23.11 | 23.05 | 22.81 | -6.02dB | 17.09 | 17.03 | 16.79 |
| 3Tx-slots | 24.0 | 23.07 | 23.01 | 22.75 | -4.26dB | 18.81 | 18.75 | 18.49 |
| 4Tx-slots | 24.0 | **23.03** | **22.96** | **22.68** | -3.01dB | **20.02** | **19.95** | **19.67** |
| EGPRS 850 (8PSK) | Tune up | Measured Power (dBm) | | | calculation | Measured Power (dBm) | | |
| | | 251 | 190 | 128 | | 251 | 190 | 128 |
| 1Tx-slots | 18.0 | 16.86 | 16.87 | 16.92 | -9.03dB | 7.83 | 7.84 | 7.89 |
| 2Tx-slots | 18.0 | 16.84 | 16.86 | 16.91 | -6.02dB | 10.82 | 10.84 | 10.89 |
| 3Tx-slots | 18.0 | 16.68 | 16.67 | 16.72 | -4.26dB | 12.42 | 12.41 | 12.46 |
| 4Tx-slots | 18.0 | 16.49 | 16.47 | 16.53 | -3.01dB | 13.48 | 13.46 | 13.52 |
| GPRS 1900 | Tune up | Measured Power (dBm) | | | calculation | Average Power (dBm) | | |
| | | 810 | 661 | 512 | | 810 | 661 | 512 |
| 1Tx-slots | 17.5 | 16.35 | 16.26 | 16.27 | -9.03dB | 7.32 | 7.23 | 7.24 |
| 2Tx-slots | 17.5 | 16.40 | 16.31 | 16.33 | -6.02dB | 10.38 | 10.29 | 10.31 |
| 3Tx-slots | 17.5 | 16.45 | 16.36 | 16.38 | -4.26dB | 12.19 | 12.10 | 12.12 |
| 4Tx-slots | 17.5 | **16.50** | **16.41** | **16.43** | -3.01dB | **13.49** | **13.40** | **13.42** |
| EGPRS 1900 (8PSK) | Tune up | Measured Power (dBm) | | | calculation | Measured Power (dBm) | | |
| | | 810 | 661 | 512 | | 810 | 661 | 512 |
| 1Tx-slots | 13.5 | 12.51 | 12.57 | 12.53 | -9.03dB | 3.48 | 3.54 | 3.50 |
| 2Tx-slots | 13.5 | 12.28 | 12.36 | 12.29 | -6.02dB | 6.26 | 6.34 | 6.27 |
| 3Tx-slots | 13.5 | 12.09 | 12.22 | 12.25 | -4.26dB | 7.83 | 7.96 | 7.99 |
| 4Tx-slots | 13.5 | 12.02 | 12.18 | 12.13 | -3.01dB | 9.01 | 9.17 | 9.12 |

NOTES:

1) Division Factors

To average the power, the division factor is as follows:

1TX-slot = 1 transmit time slot out of 8 time slots=> conducted power divided by (8/1) => -9.03dB

2TX-slots = 2 transmit time slots out of 8 time slots=> conducted power divided by (8/2) => -6.02dB

3TX-slots = 3 transmit time slots out of 8 time slots=> conducted power divided by (8/3) => -4.26dB

4TX-slots = 4 transmit time slots out of 8 time slots=> conducted power divided by (8/4) => -3.01dB

## 10.2 WCDMA Measurement result

**Table 10.3 he conducted Power for WCDMA850/1700/1900**

| Normal Power | | | | | |
|---|---|---|---|---|---|
| Item | band | FDD Band 5 result | | | |
| | ARFCN | Tune up | 4233 (846.6MHz) | 4182 (836.4MHz) | 4132 (826.4MHz) |
| WCDMA | RMC | 24.0 | 23.38 | 23.40 | 23.36 |
| HSUPA | 1 | 23.0 | 22.34 | 22.33 | 22.32 |
| | 2 | 23.0 | 22.33 | 22.29 | 22.31 |
| | 3 | 23.0 | 21.80 | 21.79 | 21.81 |
| | 4 | 23.0 | 22.32 | 22.30 | 22.27 |
| | 5 | 23.0 | 21.32 | 21.31 | 21.29 |
| HSPA+(16QAM) | / | 23.0 | 21.83 | 21.84 | 21.80 |
| DC-HSDPA | 1 | 23.0 | 22.24 | 22.27 | 22.23 |
| | 2 | 23.0 | 22.13 | 22.16 | 22.26 |
| | 3 | 23.0 | 21.72 | 21.74 | 21.85 |
| | 4 | 23.0 | 21.71 | 21.73 | 21.81 |
| Item | band | FDD Band 2 result | | | |
| | ARFCN | Tune up | 9538 (1907.6MHz) | 9400 (1880MHz) | 9262 (1852.4MHz) |
| WCDMA | RMC | 24.0 | 23.41 | 23.45 | 23.49 |
| HSUPA | 1 | 23.5 | 22.41 | 22.39 | 22.47 |
| | 2 | 23.5 | 22.35 | 22.38 | 22.44 |
| | 3 | 23.0 | 21.74 | 21.76 | 21.78 |
| | 4 | 23.5 | 22.34 | 22.36 | 22.39 |
| | 5 | 23.0 | 21.22 | 21.38 | 21.33 |
| HSPA+(16QAM) | / | 23.0 | 21.79 | 21.83 | 21.97 |
| DC-HSDPA | 1 | 23.0 | 22.29 | 22.31 | 22.41 |
| | 2 | 23.0 | 22.16 | 22.17 | 22.36 |
| | 3 | 23.0 | 21.80 | 21.83 | 21.95 |
| | 4 | 23.0 | 21.78 | 21.82 | 21.91 |

| Normal Power | | | | | |
|---|---|---|---|---|---|
| Item | band | FDD Band 4 result | | | |
| | ARFCN | Tune up | 1513 (1752.6MHz) | 1413 (1732.6MHz) | 1312 (1712.4MHz) |
| WCDMA | RMC | 24.0 | 23.44 | 23.42 | 23.32 |
| HSUPA | 1 | 23.5 | 22.36 | 22.40 | 22.45 |
| | 2 | 23.5 | 22.32 | 22.37 | 22.38 |
| | 3 | 23.0 | 21.82 | 21.76 | 21.72 |
| | 4 | 23.5 | 22.36 | 22.32 | 22.35 |
| | 5 | 23.0 | 21.23 | 21.24 | 21.25 |
| HSPA+(16QAM) | / | 23.0 | 21.91 | 21.86 | 21.85 |
| DC-HSDPA | 1 | 23.0 | 22.28 | 22.26 | 22.29 |
| | 2 | 23.0 | 22.18 | 22.20 | 22.14 |
| | 3 | 23.0 | 21.79 | 21.81 | 21.78 |
| | 4 | 23.0 | 21.76 | 21.77 | 21.75 |

| sensor-on | | | | | |
|---|---|---|---|---|---|
| Item | band | FDD Band 2 result | | | |
| | ARFCN | Tune up | 9538 (1907.6MHz) | 9400 (1880MHz) | 9262 (1852.4MHz) |
| WCDMA | RMC | 13.0 | 12.69 | 12.78 | 12.87 |
| HSUPA | 1 | 13.0 | 12.68 | 12.71 | 12.84 |
| | 2 | 13.0 | 12.67 | 12.76 | 12.83 |
| | 3 | 13.0 | 12.26 | 12.21 | 12.34 |
| | 4 | 13.0 | 12.66 | 12.78 | 12.86 |
| | 5 | 13.0 | 11.71 | 12.82 | 11.97 |
| DC-HSDPA | 1 | 13.0 | 12.77 | 12.83 | 12.96 |
| | 2 | 13.0 | 12.73 | 12.80 | 12.91 |
| | 3 | 13.0 | 12.18 | 12.23 | 12.33 |
| | 4 | 13.0 | 12.17 | 12.21 | 12.34 |
| Item | band | FDD Band 4 result | | | |
| | ARFCN | Tune up | 1513 (1752.6MHz) | 1413 (1732.6MHz) | 1312 (1712.4MHz) |
| WCDMA | RMC | 15.0 | 13.31 | 13.26 | 13.28 |
| HSUPA | 1 | 15.0 | 13.26 | 13.21 | 13.23 |
| | 2 | 15.0 | 13.23 | 13.25 | 13.22 |
| | 3 | 14.0 | 12.84 | 12.81 | 12.79 |
| | 4 | 15.0 | 13.25 | 13.23 | 13.29 |
| | 5 | 14.0 | 12.27 | 12.29 | 12.31 |
| DC-HSDPA | 1 | 15.0 | 13.32 | 13.30 | 13.29 |
| | 2 | 15.0 | 13.23 | 13.24 | 13.25 |
| | 3 | 14.0 | 12.71 | 12.66 | 12.72 |
| | 4 | 14.0 | 12.69 | 12.67 | 12.66 |

## 10.3 LTE Measurement result

**Table 10.4：The conducted Power measurement results for LTE**

**Normal Power**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 1909.3MHz | 1880MHz | 1850.7MHz | |
| | 1RB | High | QPSK | 23.24 | 23.25 | 23.04 | 24 |
| | | | 16QAM | 22.16 | 22.34 | 22.58 | 23 |
| | | Middle | QPSK | 23.37 | 23.41 | 23.43 | 24 |
| | | | 16QAM | 22.28 | 22.50 | 22.78 | 23 |
| | | Low | QPSK | 23.04 | 23.12 | 23.19 | 24 |
| | | | 16QAM | 22.15 | 22.37 | 22.60 | 23 |
| | 3RB | High | QPSK | 23.10 | 23.23 | 23.21 | 24 |
| | | | 16QAM | 22.31 | 22.36 | 22.46 | 23 |
| | | Middle | QPSK | 23.13 | 23.27 | 23.33 | 24 |
| | | | 16QAM | 22.35 | 22.42 | 22.45 | 23 |
| | | Low | QPSK | 23.12 | 23.23 | 23.29 | 24 |
| | | | 16QAM | 22.33 | 22.37 | 22.47 | 23 |
| | 6RB | / | QPSK | 22.18 | 22.28 | 22.26 | 23 |
| | | | 16QAM | 21.36 | 21.43 | 21.24 | 22 |
| 3 MHz | | | | 1908.5MHz | 1880MHz | 1851.5MHz | / |
| | 1RB | High | QPSK | 23.27 | 23.32 | 23.39 | 24 |
| | | | 16QAM | 22.60 | 22.29 | 22.24 | 23 |
| | | Middle | QPSK | 23.23 | 23.42 | 23.41 | 24 |
| | | | 16QAM | 22.77 | 22.49 | 22.33 | 23 |
| | | Low | QPSK | 23.15 | 23.22 | 23.35 | 24 |
| | | | 16QAM | 22.57 | 22.40 | 22.20 | 23 |
| | 8RB | High | QPSK | 22.31 | 22.40 | 22.39 | 23 |
| | | | 16QAM | 21.28 | 21.35 | 21.48 | 22 |
| | | Middle | QPSK | 22.28 | 22.27 | 22.33 | 23 |
| | | | 16QAM | 21.35 | 21.39 | 21.55 | 22 |
| | | Low | QPSK | 22.17 | 22.27 | 22.26 | 23 |
| | | | 16QAM | 21.28 | 21.33 | 21.51 | 22 |
| | 15RB | / | QPSK | 22.20 | 22.32 | 22.33 | 23 |
| | | | 16QAM | 21.25 | 21.30 | 21.45 | 22 |

**Normal Power**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 1907.5MHz | 1880MHz | 1852.5MHz | |
| | 1RB | High | QPSK | 23.06 | 23.14 | 23.23 | 24 |
| | | | 16QAM | 22.24 | 22.41 | 22.79 | 23 |
| | | Middle | QPSK | 23.31 | 23.39 | 23.49 | 24 |
| | | | 16QAM | 22.51 | 22.62 | 23.02 | 23 |
| | | Low | QPSK | 23.07 | 23.14 | 23.24 | 24 |
| | | | 16QAM | 22.24 | 22.36 | 22.70 | 23 |
| | 12RB | High | QPSK | 22.27 | 22.31 | 22.36 | 23 |
| | | | 16QAM | 21.28 | 21.36 | 21.51 | 22 |
| | | Middle | QPSK | 22.26 | 22.34 | 22.39 | 23 |
| | | | 16QAM | 21.34 | 21.44 | 21.59 | 22 |
| | | Low | QPSK | 22.23 | 22.32 | 22.31 | 23 |
| | | | 16QAM | 21.29 | 21.40 | 21.55 | 22 |
| | 25RB | / | QPSK | 22.26 | 22.35 | 22.34 | 23 |
| | | | 16QAM | 21.19 | 21.36 | 21.48 | 22 |
| 10 MHz | | | | 1905MHz | 1880MHz | 1855MHz | / |
| | 1RB | High | QPSK | 23.19 | 23.31 | 23.38 | 24 |
| | | | 16QAM | 22.18 | 22.19 | 22.64 | 23 |
| | | Middle | QPSK | 23.29 | 23.49 | 23.51 | 24 |
| | | | 16QAM | 22.34 | 22.38 | 22.82 | 23 |
| | | Low | QPSK | 23.26 | 23.29 | 23.45 | 24 |
| | | | 16QAM | 22.19 | 22.14 | 22.62 | 23 |
| | 25RB | High | QPSK | 22.27 | 22.34 | 22.57 | 23 |
| | | | 16QAM | 21.32 | 21.39 | 21.52 | 22 |
| | | Middle | QPSK | 22.28 | 22.35 | 22.41 | 23 |
| | | | 16QAM | 21.37 | 21.41 | 21.47 | 22 |
| | | Low | QPSK | 22.34 | 22.38 | 22.33 | 23 |
| | | | 16QAM | 21.40 | 21.42 | 21.49 | 22 |
| | 50RB | / | QPSK | 22.28 | 22.39 | 22.46 | 23 |
| | | | 16QAM | 21.30 | 21.42 | 21.46 | 22 |

**Normal Power**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 1902.5MHz | 1880MHz | 1857.5MHz | |
| | 1RB | High | QPSK | 23.07 | 23.10 | 23.20 | **24** |
| | | | 16QAM | 22.51 | 22.11 | 22.53 | **23** |
| | | Middle | QPSK | 23.19 | 23.25 | 23.38 | **24** |
| | | | 16QAM | 22.59 | 22.26 | 22.73 | **23** |
| | | Low | QPSK | 23.11 | 23.20 | 23.33 | **24** |
| | | | 16QAM | 22.56 | 22.12 | 22.57 | **23** |
| | 36RB | High | QPSK | 22.28 | 22.35 | 22.42 | **23** |
| | | | 16QAM | 21.21 | 21.39 | 21.47 | **22** |
| | | Middle | QPSK | 22.29 | 22.37 | 22.43 | **23** |
| | | | 16QAM | 21.26 | 21.38 | 21.48 | **22** |
| | | Low | QPSK | 22.31 | 22.41 | 22.35 | **23** |
| | | | 16QAM | 21.22 | 21.38 | 21.44 | **22** |
| | 75RB | / | QPSK | 22.27 | 22.44 | 22.49 | **23** |
| | | | 16QAM | 21.20 | 21.38 | 21.45 | **22** |
| 20 MHz | | | | 1900MHz | 1880MHz | 1860MHz | / |
| | 1RB | High | QPSK | 23.10 | 23.15 | 23.29 | **24** |
| | | | 16QAM | 22.35 | 22.39 | 22.51 | **23** |
| | | Middle | QPSK | **23.23** | **23.33** | **23.40** | **24** |
| | | | 16QAM | 22.77 | 22.86 | 22.96 | **23** |
| | | Low | QPSK | 23.17 | 23.19 | 23.30 | **24** |
| | | | 16QAM | 22.47 | 22.41 | 22.53 | **23** |
| | 50RB | High | QPSK | 22.07 | 22.34 | 22.37 | **23** |
| | | | 16QAM | 21.09 | 21.30 | 21.40 | **22** |
| | | Middle | QPSK | 22.19 | 22.39 | 22.39 | **23** |
| | | | 16QAM | 21.22 | 21.34 | 21.41 | **22** |
| | | Low | QPSK | 22.13 | **22.42** | 22.31 | **23** |
| | | | 16QAM | 21.14 | 21.39 | 21.35 | **22** |
| | 100RB | / | QPSK | 22.14 | 22.44 | 22.33 | **23** |
| | | | 16QAM | 21.10 | 21.37 | 21.40 | **22** |

**Normal Power**

| LTE-FDD Band 5 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 848.3MHz | 836.5MHz | 824.7MHz | |
| | 1RB | High | QPSK | 23.19 | 23.25 | 23.31 | 24 |
| | | | 16QAM | 22.12 | 22.26 | 22.50 | 23 |
| | | Middle | QPSK | 23.43 | 23.46 | 23.49 | 24 |
| | | | 16QAM | 22.28 | 22.46 | 22.61 | 23 |
| | | Low | QPSK | 23.18 | 23.28 | 23.31 | 24 |
| | | | 16QAM | 22.08 | 22.29 | 22.50 | 23 |
| | 3RB | High | QPSK | 23.27 | 23.30 | 23.28 | 24 |
| | | | 16QAM | 22.32 | 22.29 | 22.37 | 23 |
| | | Middle | QPSK | 23.25 | 23.33 | 23.36 | 24 |
| | | | 16QAM | 22.38 | 22.31 | 22.44 | 23 |
| | | Low | QPSK | 23.22 | 23.28 | 23.31 | 24 |
| | | | 16QAM | 22.32 | 22.30 | 22.38 | 23 |
| | 6RB | / | QPSK | 22.33 | 22.31 | 22.34 | 23 |
| | | | 16QAM | 21.36 | 21.41 | 21.10 | 22 |
| 3 MHz | | | | 847.5MHz | 836.5MHz | 825.5MHz | / |
| | 1RB | High | QPSK | 23.27 | 23.35 | 23.39 | 24 |
| | | | 16QAM | 22.11 | 22.09 | 22.60 | 23 |
| | | Middle | QPSK | 23.37 | 23.40 | 23.53 | 24 |
| | | | 16QAM | 22.27 | 22.25 | 22.72 | 23 |
| | | Low | QPSK | 23.30 | 23.27 | 23.39 | 24 |
| | | | 16QAM | 22.16 | 22.17 | 22.50 | 23 |
| | 8RB | High | QPSK | 22.30 | 22.29 | 22.34 | 23 |
| | | | 16QAM | 21.22 | 21.31 | 21.34 | 22 |
| | | Middle | QPSK | 22.37 | 22.37 | 22.43 | 23 |
| | | | 16QAM | 21.28 | 21.38 | 21.37 | 22 |
| | | Low | QPSK | 22.30 | 22.29 | 22.32 | 23 |
| | | | 16QAM | 21.21 | 21.32 | 21.26 | 22 |
| | 15RB | / | QPSK | 22.26 | 22.29 | 22.24 | 23 |
| | | | 16QAM | 21.12 | 21.24 | 21.20 | 22 |

**Normal Power**

| LTE-FDD Band 5 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 846.5MHz | 836.5MHz | 826.5MHz | |
| | 1RB | High | QPSK | 23.19 | 23.29 | 23.24 | **24** |
| | | | 16QAM | 22.15 | 22.34 | 22.66 | **23** |
| | | Middle | QPSK | 23.43 | 23.53 | 23.50 | **24** |
| | | | 16QAM | 22.40 | 22.54 | 22.86 | **23** |
| | | Low | QPSK | 23.25 | 23.32 | 23.29 | **24** |
| | | | 16QAM | 22.20 | 22.31 | 22.58 | **23** |
| | 12RB | High | QPSK | 22.20 | 22.23 | 22.26 | **23** |
| | | | 16QAM | 21.21 | 21.26 | 21.36 | **22** |
| | | Middle | QPSK | 22.25 | 22.29 | 22.28 | **23** |
| | | | 16QAM | 21.29 | 21.35 | 21.42 | **22** |
| | | Low | QPSK | 22.21 | 22.24 | 22.22 | **23** |
| | | | 16QAM | 21.21 | 21.27 | 21.32 | **22** |
| | 25RB | / | QPSK | 22.19 | 22.24 | 22.23 | **23** |
| | | | 16QAM | 21.12 | 21.21 | 21.26 | **22** |
| 10 MHz | | | | 844MHz | 836.5MHz | 829MHz | / |
| | 1RB | High | QPSK | 23.28 | 23.27 | 23.30 | **24** |
| | | | 16QAM | 22.46 | 22.21 | 22.17 | **23** |
| | | Middle | QPSK | **23.35** | **23.34** | **23.45** | **24** |
| | | | 16QAM | 22.59 | 22.29 | 22.23 | **23** |
| | | Low | QPSK | 23.29 | 23.22 | 23.30 | **24** |
| | | | 16QAM | 22.54 | 22.20 | 22.05 | **23** |
| | 25RB | High | QPSK | 22.24 | **22.31** | 22.32 | **23** |
| | | | 16QAM | 21.23 | 21.34 | 21.29 | **22** |
| | | Middle | QPSK | 22.26 | 22.30 | 22.31 | **23** |
| | | | 16QAM | 21.22 | 21.35 | 21.27 | **22** |
| | | Low | QPSK | 22.25 | 22.30 | 22.24 | **23** |
| | | | 16QAM | 21.20 | 21.32 | 21.23 | **22** |
| | 50RB | / | QPSK | 22.24 | 22.28 | 22.31 | **23** |
| | | | 16QAM | 21.18 | 21.26 | 21.22 | **22** |

**Normal Power**

| LTE-FDD Band 7 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 2567.4MHz | 2535MHz | 2502.5MHz | |
| | 1RB | High | QPSK | 23.27 | 23.32 | 23.26 | 24 |
| | | | 16QAM | 22.27 | 22.29 | 22.70 | 23 |
| | | Middle | QPSK | 23.49 | 23.53 | 23.56 | 24 |
| | | | 16QAM | 22.44 | 22.56 | 22.91 | 23 |
| | | Low | QPSK | 23.25 | 23.34 | 23.31 | 24 |
| | | | 16QAM | 22.22 | 22.31 | 22.72 | 23 |
| | 12RB | High | QPSK | 22.25 | 22.27 | 22.31 | 23 |
| | | | 16QAM | 21.36 | 21.37 | 21.47 | 22 |
| | | Middle | QPSK | 22.31 | 22.30 | 22.31 | 23 |
| | | | 16QAM | 21.43 | 21.48 | 21.50 | 22 |
| | | Low | QPSK | 22.25 | 22.29 | 22.23 | 23 |
| | | | 16QAM | 21.36 | 21.45 | 21.46 | 22 |
| | 25RB | / | QPSK | 22.30 | 22.32 | 22.32 | 23 |
| | | | 16QAM | 21.29 | 21.36 | 21.43 | 22 |
| 10 MHz | | | | 2565MHz | 2535MHz | 2505MHz | / |
| | 1RB | High | QPSK | 23.26 | 23.26 | 23.38 | 24 |
| | | | 16QAM | 22.18 | 22.11 | 22.58 | 23 |
| | | Middle | QPSK | 23.40 | 23.50 | 23.58 | 24 |
| | | | 16QAM | 22.31 | 22.26 | 22.70 | 23 |
| | | Low | QPSK | 23.19 | 23.28 | 23.44 | 24 |
| | | | 16QAM | 22.21 | 22.12 | 22.59 | 23 |
| | 25RB | High | QPSK | 22.34 | 22.33 | 22.38 | 23 |
| | | | 16QAM | 21.45 | 21.39 | 21.44 | 22 |
| | | Middle | QPSK | 22.34 | 22.39 | 22.38 | 23 |
| | | | 16QAM | 21.46 | 21.44 | 21.43 | 22 |
| | | Low | QPSK | 22.29 | 22.34 | 22.35 | 23 |
| | | | 16QAM | 21.42 | 21.38 | 21.35 | 22 |
| | 50RB | / | QPSK | 22.34 | 22.32 | 22.39 | 23 |
| | | | 16QAM | 21.41 | 21.35 | 21.39 | 22 |

**Normal Power**

| LTE-FDD Band 7 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 2562.5MHz | 2535MHz | 2507.5MHz | |
| | 1RB | High | QPSK | 23.25 | 23.19 | 23.31 | **24** |
| | | | 16QAM | 22.44 | 22.01 | 22.51 | **23** |
| | | Middle | QPSK | 23.38 | 23.38 | 23.48 | **24** |
| | | | 16QAM | 22.65 | 22.18 | 22.65 | **23** |
| | | Low | QPSK | 23.24 | 23.25 | 23.36 | **24** |
| | | | 16QAM | 22.55 | 22.08 | 22.56 | **23** |
| | 36RB | High | QPSK | 22.42 | 22.39 | 22.48 | **23** |
| | | | 16QAM | 21.39 | 21.37 | 21.52 | **22** |
| | | Middle | QPSK | 22.37 | 22.40 | 22.44 | **23** |
| | | | 16QAM | 21.35 | 21.39 | 21.49 | **22** |
| | | Low | QPSK | 22.33 | 22.35 | 22.40 | **23** |
| | | | 16QAM | 21.30 | 21.34 | 21.42 | **22** |
| | 75RB | / | QPSK | 22.39 | 22.39 | 22.47 | **23** |
| | | | 16QAM | 21.34 | 21.39 | 21.45 | **22** |
| 20 MHz | | | | 2560MHz | 2535MHz | 2510MHz | / |
| | 1RB | High | QPSK | 23.02 | 22.97 | 23.04 | **24** |
| | | | 16QAM | 22.31 | 22.28 | 22.44 | **23** |
| | | Middle | QPSK | **23.44** | **23.51** | **23.60** | **24** |
| | | | 16QAM | 22.79 | 22.77 | 22.95 | **23** |
| | | Low | QPSK | 22.97 | 23.05 | 23.12 | **24** |
| | | | 16QAM | 22.43 | 22.34 | 22.52 | **23** |
| | 50RB | High | QPSK | 22.26 | 22.29 | 22.30 | **23** |
| | | | 16QAM | 21.34 | 21.34 | 21.33 | **22** |
| | | Middle | QPSK | 22.26 | **22.33** | 22.31 | **23** |
| | | | 16QAM | 21.40 | 21.38 | 21.36 | **22** |
| | | Low | QPSK | 22.27 | 22.27 | 22.19 | **23** |
| | | | 16QAM | 21.36 | 21.32 | 21.31 | **22** |
| | 100RB | / | QPSK | 22.27 | 22.27 | 22.25 | **23** |
| | | | 16QAM | 21.32 | 21.29 | 21.31 | **22** |

**Normal Power**

| LTE-FDD Band 12 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 715.3MHz | 707.5MHz | 699.7MHz | |
| | 1RB | High | QPSK | 23.41 | 23.49 | 23.53 | 24 |
| | | | 16QAM | 22.41 | 22.49 | 22.75 | 23 |
| | | Middle | QPSK | 23.59 | 23.70 | 23.70 | 24 |
| | | | 16QAM | 22.57 | 22.69 | 22.94 | 23 |
| | | Low | QPSK | 23.40 | 23.53 | 23.57 | 24 |
| | | | 16QAM | 22.40 | 22.52 | 22.74 | 23 |
| | 3RB | High | QPSK | 23.48 | 23.52 | 23.52 | 24 |
| | | | 16QAM | 22.58 | 22.46 | 22.60 | 23 |
| | | Middle | QPSK | 23.51 | 23.56 | 23.62 | 24 |
| | | | 16QAM | 22.66 | 22.53 | 22.63 | 23 |
| | | Low | QPSK | 23.47 | 23.51 | 23.58 | 24 |
| | | | 16QAM | 22.62 | 22.48 | 22.58 | 23 |
| | 6RB | / | QPSK | 22.60 | 22.60 | 22.57 | 23 |
| | | | 16QAM | 21.75 | 21.72 | 21.49 | 22 |
| 3 MHz | | | | 714.5MHz | 707.5MHz | 700.5MHz | / |
| | 1RB | High | QPSK | 23.40 | 23.49 | 23.53 | 24 |
| | | | 16QAM | 22.35 | 22.29 | 22.78 | 23 |
| | | Middle | QPSK | 23.55 | 23.60 | 23.67 | 24 |
| | | | 16QAM | 22.56 | 22.45 | 22.93 | 23 |
| | | Low | QPSK | 23.45 | 23.48 | 23.58 | 24 |
| | | | 16QAM | 22.46 | 22.36 | 22.75 | 23 |
| | 8RB | High | QPSK | 22.45 | 22.45 | 22.50 | 23 |
| | | | 16QAM | 21.51 | 21.58 | 21.59 | 22 |
| | | Middle | QPSK | 22.46 | 22.53 | 22.55 | 23 |
| | | | 16QAM | 21.56 | 21.64 | 21.62 | 22 |
| | | Low | QPSK | 22.45 | 22.46 | 22.52 | 23 |
| | | | 16QAM | 21.54 | 21.58 | 21.58 | 22 |
| | 15RB | / | QPSK | 22.39 | 22.42 | 22.46 | 23 |
| | | | 16QAM | 21.45 | 21.49 | 21.49 | 22 |

**Normal Power**

| LTE-FDD Band 12 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 713.5MHz | 707.5MHz | 701.5MHz | |
| | 1RB | High | QPSK | 23.43 | 23.46 | 23.45 | **24** |
| | | | 16QAM | 22.39 | 22.46 | 22.87 | **23** |
| | | Middle | QPSK | 23.64 | 23.71 | 23.67 | **24** |
| | | | 16QAM | 22.66 | 22.75 | 23.07 | **23** |
| | | Low | QPSK | 23.37 | 23.50 | 23.41 | **24** |
| | | | 16QAM | 22.38 | 22.48 | 22.77 | **23** |
| | 12RB | High | QPSK | 22.38 | 22.43 | 22.49 | **23** |
| | | | 16QAM | 21.48 | 21.56 | 21.67 | **22** |
| | | Middle | QPSK | 22.46 | 22.45 | 22.48 | **23** |
| | | | 16QAM | 21.59 | 21.63 | 21.68 | **22** |
| | | Low | QPSK | 22.47 | 22.38 | 22.39 | **23** |
| | | | 16QAM | 21.56 | 21.49 | 21.61 | **22** |
| | 25RB | / | QPSK | 22.44 | 22.43 | 22.46 | **23** |
| | | | 16QAM | 21.43 | 21.51 | 21.55 | **22** |
| 10 MHz | | | | 711MHz | 707.5MHz | 704MHz | / |
| | 1RB | High | QPSK | 23.40 | 23.47 | 23.39 | **24** |
| | | | 16QAM | 22.27 | 22.72 | 22.38 | **23** |
| | | Middle | QPSK | **23.62** | **23.62** | **23.61** | **24** |
| | | | 16QAM | 22.44 | 22.87 | 22.56 | **23** |
| | | Low | QPSK | 23.41 | 23.50 | 23.43 | **24** |
| | | | 16QAM | 22.28 | 22.76 | 22.31 | **23** |
| | 25RB | High | QPSK | 22.39 | **22.49** | 22.59 | **23** |
| | | | 16QAM | 21.47 | 21.55 | 21.72 | **22** |
| | | Middle | QPSK | 22.45 | 22.48 | 22.53 | **23** |
| | | | 16QAM | 21.56 | 21.56 | 21.67 | **22** |
| | | Low | QPSK | 22.40 | 22.47 | 22.51 | **23** |
| | | | 16QAM | 21.43 | 21.51 | 21.63 | **22** |
| | 50RB | / | QPSK | 22.41 | 22.44 | 22.53 | **23** |
| | | | 16QAM | 21.42 | 21.49 | 21.60 | **22** |

Note: SAR for LTE Band 17 is covered by LTE Band 12 due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

**Normal Power**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 1779.3MHz | 1745MHz | 1710.7MHz | |
| | 1RB | High | QPSK | 23.13 | 23.01 | 23.01 | 24 |
| | | | 16QAM | 22.17 | 22.35 | 22.07 | 23 |
| | | Middle | QPSK | 23.36 | 23.21 | 23.14 | 24 |
| | | | 16QAM | 22.34 | 22.49 | 22.21 | 23 |
| | | Low | QPSK | 23.15 | 23.06 | 23.02 | 24 |
| | | | 16QAM | 22.14 | 22.32 | 22.07 | 23 |
| | 3RB | High | QPSK | 23.14 | 23.07 | 23.13 | 24 |
| | | | 16QAM | 22.13 | 22.21 | 22.29 | 23 |
| | | Middle | QPSK | 23.18 | 23.13 | 23.16 | 24 |
| | | | 16QAM | 22.19 | 22.23 | 22.32 | 23 |
| | | Low | QPSK | 23.12 | 23.08 | 23.09 | 24 |
| | | | 16QAM | 22.14 | 22.21 | 22.27 | 23 |
| | 6RB | / | QPSK | 22.14 | 22.03 | 22.12 | 23 |
| | | | 16QAM | 21.34 | 21.00 | 21.40 | 22 |
| 3 MHz | | | | 1778.5MHz | 1745MHz | 1711.5MHz | / |
| | 1RB | High | QPSK | 23.20 | 23.11 | 23.09 | 24 |
| | | | 16QAM | 22.01 | 22.39 | 22.08 | 23 |
| | | Middle | QPSK | 23.33 | 23.25 | 23.22 | 24 |
| | | | 16QAM | 22.17 | 22.52 | 22.29 | 23 |
| | | Low | QPSK | 23.14 | 23.10 | 23.11 | 24 |
| | | | 16QAM | 22.05 | 22.34 | 22.14 | 23 |
| | 8RB | High | QPSK | 22.19 | 22.02 | 22.10 | 23 |
| | | | 16QAM | 21.29 | 21.13 | 21.16 | 22 |
| | | Middle | QPSK | 22.23 | 22.09 | 22.17 | 23 |
| | | | 16QAM | 21.34 | 21.20 | 21.26 | 22 |
| | | Low | QPSK | 22.17 | 22.05 | 22.11 | 23 |
| | | | 16QAM | 21.31 | 21.13 | 21.19 | 22 |
| | 15RB | / | QPSK | 22.18 | 21.99 | 22.09 | 23 |
| | | | 16QAM | 21.22 | 21.11 | 21.12 | 22 |

**Normal Power**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 1777.5MHz | 1745MHz | 1712.5MHz | |
| | 1RB | High | QPSK | 23.16 | 22.96 | 23.09 | 24 |
| | | | 16QAM | 22.18 | 22.44 | 22.10 | 23 |
| | | Middle | QPSK | 23.43 | 23.24 | 23.35 | 24 |
| | | | 16QAM | 22.45 | 22.71 | 22.36 | 23 |
| | | Low | QPSK | 23.14 | 22.93 | 23.08 | 24 |
| | | | 16QAM | 22.13 | 22.44 | 22.09 | 23 |
| | 12RB | High | QPSK | 22.09 | 21.99 | 22.11 | 23 |
| | | | 16QAM | 21.25 | 21.21 | 21.23 | 22 |
| | | Middle | QPSK | 22.16 | 22.06 | 22.18 | 23 |
| | | | 16QAM | 21.33 | 21.29 | 21.28 | 22 |
| | | Low | QPSK | 22.08 | 22.01 | 22.09 | 23 |
| | | | 16QAM | 21.27 | 21.23 | 21.23 | 22 |
| | 25RB | / | QPSK | 22.11 | 22.04 | 22.11 | 23 |
| | | | 16QAM | 21.19 | 21.15 | 21.12 | 22 |
| 10 MHz | | | | 1775MHz | 1745MHz | 1715MHz | / |
| | 1RB | High | QPSK | 23.14 | 23.06 | 23.04 | 24 |
| | | | 16QAM | 22.00 | 22.35 | 22.06 | 23 |
| | | Middle | QPSK | 23.25 | 23.17 | 23.21 | 24 |
| | | | 16QAM | 22.14 | 22.43 | 22.22 | 23 |
| | | Low | QPSK | 23.13 | 23.01 | 23.05 | 24 |
| | | | 16QAM | 21.98 | 22.28 | 22.10 | 23 |
| | 25RB | High | QPSK | 22.18 | 22.02 | 22.22 | 23 |
| | | | 16QAM | 21.25 | 21.14 | 21.37 | 22 |
| | | Middle | QPSK | 22.18 | 22.07 | 22.16 | 23 |
| | | | 16QAM | 21.23 | 21.18 | 21.34 | 22 |
| | | Low | QPSK | 22.18 | 22.05 | 22.11 | 23 |
| | | | 16QAM | 21.25 | 21.16 | 21.27 | 22 |
| | 50RB | / | QPSK | 22.19 | 22.04 | 22.18 | 23 |
| | | | 16QAM | 21.25 | 21.13 | 21.29 | 22 |

**Normal Power**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 1772.5MHz | 1745MHz | 1717.5MHz | |
| | 1RB | High | QPSK | 22.99 | 22.95 | 22.97 | **24** |
| | | | 16QAM | 21.88 | 22.30 | 22.31 | **23** |
| | | Middle | QPSK | 23.09 | 23.07 | 23.13 | **24** |
| | | | 16QAM | 21.98 | 22.38 | 22.55 | **23** |
| | | Low | QPSK | 23.00 | 22.96 | 23.04 | **24** |
| | | | 16QAM | 21.91 | 22.26 | 22.40 | **23** |
| | 36RB | High | QPSK | 22.17 | 22.05 | 22.17 | **23** |
| | | | 16QAM | 21.19 | 21.16 | 21.24 | **22** |
| | | Middle | QPSK | 22.18 | 22.03 | 22.13 | **23** |
| | | | 16QAM | 21.23 | 21.15 | 21.20 | **22** |
| | | Low | QPSK | 22.17 | 22.10 | 22.13 | **23** |
| | | | 16QAM | 21.22 | 21.18 | 21.16 | **22** |
| | 75RB | / | QPSK | 22.23 | 22.13 | 22.20 | **23** |
| | | | 16QAM | 21.22 | 21.15 | 21.24 | **22** |
| 20 MHz | | | | 1770MHz | 1745MHz | 1720MHz | / |
| | 1RB | High | QPSK | 22.76 | 22.72 | 22.74 | **24** |
| | | | 16QAM | 22.13 | 22.22 | 22.18 | **23** |
| | | Middle | QPSK | **23.23** | **23.17** | **23.23** | **24** |
| | | | 16QAM | 22.58 | 22.66 | 22.65 | **23** |
| | | Low | QPSK | 22.70 | 22.71 | 22.80 | **24** |
| | | | 16QAM | 22.13 | 22.19 | 22.20 | **23** |
| | 50RB | High | QPSK | 22.09 | 22.01 | 22.22 | **23** |
| | | | 16QAM | 21.15 | 21.07 | 21.31 | **22** |
| | | Middle | QPSK | 22.15 | 21.99 | 22.13 | **23** |
| | | | 16QAM | 21.19 | 21.10 | 21.18 | **22** |
| | | Low | QPSK | 22.09 | **22.08** | 22.02 | **23** |
| | | | 16QAM | 21.20 | 21.16 | 21.13 | **22** |
| | 100RB | / | QPSK | 22.12 | 21.99 | 22.16 | **23** |
| | | | 16QAM | 21.15 | 21.07 | 21.21 | **22** |

Note: SAR for LTE Band 4 is covered by LTE Band 66 due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

**Normal Power**

| LTE-FDD Band 71 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 695.5MHz | 680.5MHz | 665.5MHz | |
| | 1RB | High | QPSK | 23.13 | 23.13 | 23.19 | 24 |
| | | | 16QAM | 22.21 | 22.20 | 22.60 | 23 |
| | | Middle | QPSK | 23.36 | 23.40 | 23.48 | 24 |
| | | | 16QAM | 22.48 | 22.51 | 22.77 | 23 |
| | | Low | QPSK | 23.13 | 23.29 | 23.24 | 24 |
| | | | 16QAM | 22.17 | 22.22 | 22.62 | 23 |
| | 12RB | High | QPSK | 22.31 | 22.20 | 22.23 | 23 |
| | | | 16QAM | 21.33 | 21.23 | 21.31 | 22 |
| | | Middle | QPSK | 22.30 | 22.22 | 22.25 | 23 |
| | | | 16QAM | 21.27 | 21.27 | 21.36 | 22 |
| | | Low | QPSK | 22.16 | 22.15 | 22.18 | 23 |
| | | | 16QAM | 21.18 | 21.14 | 21.26 | 22 |
| | 25RB | / | QPSK | 22.24 | 22.20 | 22.17 | 23 |
| | | | 16QAM | 21.10 | 21.11 | 21.20 | 22 |
| 10 MHz | | | | 693MHz | 680.5MHz | 668MHz | / |
| | 1RB | High | QPSK | 23.16 | 23.14 | 23.30 | 24 |
| | | | 16QAM | 22.19 | 22.10 | 22.53 | 23 |
| | | Middle | QPSK | 23.27 | 23.29 | 23.43 | 24 |
| | | | 16QAM | 22.30 | 22.18 | 22.64 | 23 |
| | | Low | QPSK | 23.09 | 23.23 | 23.35 | 24 |
| | | | 16QAM | 22.20 | 22.04 | 22.51 | 23 |
| | 25RB | High | QPSK | 22.41 | 22.21 | 22.32 | 23 |
| | | | 16QAM | 21.42 | 21.20 | 21.27 | 22 |
| | | Middle | QPSK | 22.28 | 22.24 | 22.30 | 23 |
| | | | 16QAM | 21.33 | 21.21 | 21.24 | 22 |
| | | Low | QPSK | 22.27 | 22.21 | 22.21 | 23 |
| | | | 16QAM | 21.30 | 21.18 | 21.18 | 22 |
| | 50RB | / | QPSK | 22.34 | 22.21 | 22.26 | 23 |
| | | | 16QAM | 21.31 | 21.16 | 21.24 | 22 |

**Normal Power**

| LTE-FDD Band 71 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 690.5MHz | 680.5MHz | 670.5MHz | |
| | 1RB | High | QPSK | 23.19 | 23.13 | 23.25 | **24** |
| | | | 16QAM | 22.48 | 22.01 | 22.47 | **23** |
| | | Middle | QPSK | 23.23 | 23.17 | 23.33 | **24** |
| | | | 16QAM | 22.59 | 22.10 | 22.58 | **23** |
| | | Low | QPSK | 23.07 | 23.15 | 23.29 | **24** |
| | | | 16QAM | 22.42 | 21.97 | 22.44 | **23** |
| | 36RB | High | QPSK | 22.42 | 22.28 | 22.39 | **23** |
| | | | 16QAM | 21.31 | 21.19 | 21.38 | **22** |
| | | Middle | QPSK | 22.35 | 22.30 | 22.31 | **23** |
| | | | 16QAM | 21.22 | 21.22 | 21.27 | **22** |
| | | Low | QPSK | 22.25 | 22.22 | 22.30 | **23** |
| | | | 16QAM | 21.14 | 21.10 | 21.24 | **22** |
| | 75RB | / | QPSK | 22.35 | 22.26 | 22.33 | **23** |
| | | | 16QAM | 21.26 | 21.16 | 21.25 | **22** |
| 20 MHz | | | | 688MHz | 683MHz | 673MHz | / |
| | 1RB | High | QPSK | 22.95 | 22.94 | 22.91 | **24** |
| | | | 16QAM | 22.48 | 22.38 | 22.30 | **23** |
| | | Middle | QPSK | **23.34** | **23.28** | **23.38** | **24** |
| | | | 16QAM | 22.83 | 22.68 | 22.66 | **23** |
| | | Low | QPSK | 22.93 | 22.97 | 23.01 | **24** |
| | | | 16QAM | 22.36 | 22.30 | 22.25 | **23** |
| | 50RB | High | QPSK | 22.32 | **22.29** | 22.31 | **23** |
| | | | 16QAM | 21.28 | 21.21 | 21.22 | **22** |
| | | Middle | QPSK | 22.23 | 22.22 | 22.22 | **23** |
| | | | 16QAM | 21.23 | 21.17 | 21.10 | **22** |
| | | Low | QPSK | 22.16 | 22.04 | 22.11 | **23** |
| | | | 16QAM | 21.12 | 21.00 | 21.02 | **22** |
| | 100RB | / | QPSK | 22.24 | 22.16 | 22.24 | **23** |
| | | | 16QAM | 21.23 | 21.08 | 21.17 | **22** |

**Sensor-on**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 1909.3MHz | 1880MHz | 1850.7MHz | |
| | 1RB | High | QPSK | 12.17 | 12.21 | 12.24 | **13.5** |
| | | | 16QAM | 12.47 | 12.23 | 12.37 | **13.5** |
| | | Middle | QPSK | 12.22 | 12.41 | 12.43 | **13.5** |
| | | | 16QAM | 12.67 | 12.38 | 12.54 | **13.5** |
| | | Low | QPSK | 12.09 | 12.13 | 12.28 | **13.5** |
| | | | 16QAM | 12.47 | 12.21 | 12.35 | **13.5** |
| | 3RB | High | QPSK | 12.21 | 12.26 | 12.29 | **13.5** |
| | | | 16QAM | 12.44 | 12.44 | 12.37 | **13.5** |
| | | Middle | QPSK | 12.19 | 12.29 | 12.38 | **13.5** |
| | | | 16QAM | 12.43 | 12.47 | 12.43 | **13.5** |
| | | Low | QPSK | 12.18 | 12.22 | 12.28 | **13.5** |
| | | | 16QAM | 12.42 | 12.40 | 12.35 | **13.5** |
| | 6RB | / | QPSK | 12.19 | 12.20 | 12.29 | **13.5** |
| | | | 16QAM | 12.10 | 12.41 | 12.40 | **13.5** |
| 3 MHz | | | | 1908.5MHz | 1880MHz | 1851.5MHz | / |
| | 1RB | High | QPSK | 12.15 | 12.23 | 12.26 | **13.5** |
| | | | 16QAM | 12.18 | 12.13 | 12.66 | **13.5** |
| | | Middle | QPSK | 12.19 | 12.45 | 12.49 | **13.5** |
| | | | 16QAM | 12.35 | 12.31 | 12.83 | **13.5** |
| | | Low | QPSK | 12.16 | 12.29 | 12.36 | **13.5** |
| | | | 16QAM | 12.24 | 12.21 | 12.64 | **13.5** |
| | 8RB | High | QPSK | 12.21 | 12.19 | 12.33 | **13.5** |
| | | | 16QAM | 12.22 | 12.30 | 12.35 | **13.5** |
| | | Middle | QPSK | 12.19 | 12.26 | 12.37 | **13.5** |
| | | | 16QAM | 12.24 | 12.35 | 12.43 | **13.5** |
| | | Low | QPSK | 12.13 | 12.24 | 12.35 | **13.5** |
| | | | 16QAM | 12.20 | 12.31 | 12.39 | **13.5** |
| | 15RB | / | QPSK | 12.14 | 12.23 | 12.31 | **13.5** |
| | | | 16QAM | 12.10 | 12.29 | 12.37 | **13.5** |

**Sensor-on**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 1907.5MHz | 1880MHz | 1852.5MHz | |
| | 1RB | High | QPSK | 12.04 | 12.16 | 12.14 | 13.5 |
| | | | 16QAM | 12.22 | 12.30 | 12.68 | 13.5 |
| | | Middle | QPSK | 12.30 | 12.42 | 12.45 | 13.5 |
| | | | 16QAM | 12.45 | 12.56 | 12.92 | 13.5 |
| | | Low | QPSK | 12.04 | 12.12 | 12.19 | 13.5 |
| | | | 16QAM | 12.21 | 12.30 | 12.69 | 13.5 |
| | 12RB | High | QPSK | 12.15 | 12.18 | 12.24 | 13.5 |
| | | | 16QAM | 12.26 | 12.29 | 12.39 | 13.5 |
| | | Middle | QPSK | 12.18 | 12.23 | 12.31 | 13.5 |
| | | | 16QAM | 12.22 | 12.35 | 12.51 | 13.5 |
| | | Low | QPSK | 12.21 | 12.25 | 12.28 | 13.5 |
| | | | 16QAM | 12.27 | 12.33 | 12.52 | 13.5 |
| | 25RB | / | QPSK | 12.16 | 12.22 | 12.32 | 13.5 |
| | | | 16QAM | 12.14 | 12.26 | 12.39 | 13.5 |
| 10 MHz | | | | 1905MHz | 1880MHz | 1855MHz | / |
| | 1RB | High | QPSK | 12.13 | 12.23 | 12.18 | 13.5 |
| | | | 16QAM | 12.15 | 12.14 | 12.59 | 13.5 |
| | | Middle | QPSK | 12.41 | 12.38 | 12.40 | 13.5 |
| | | | 16QAM | 12.32 | 12.30 | 12.79 | 13.5 |
| | | Low | QPSK | 12.79 | 12.26 | 12.39 | 13.5 |
| | | | 16QAM | 12.10 | 12.10 | 12.62 | 13.5 |
| | 25RB | High | QPSK | 12.20 | 12.32 | 12.39 | 13.5 |
| | | | 16QAM | 12.27 | 12.27 | 12.39 | 13.5 |
| | | Middle | QPSK | 12.24 | 12.33 | 12.35 | 13.5 |
| | | | 16QAM | 12.28 | 12.31 | 12.36 | 13.5 |
| | | Low | QPSK | 12.29 | 12.35 | 12.39 | 13.5 |
| | | | 16QAM | 12.36 | 12.34 | 12.39 | 13.5 |
| | 50RB | / | QPSK | 12.28 | 12.33 | 12.38 | 13.5 |
| | | | 16QAM | 12.25 | 12.32 | 12.38 | 13.5 |

**Sensor-on**

| LTE-FDD Band 2 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 1902.5MHz | 1880MHz | 1857.5MHz | |
| | 1RB | High | QPSK | 12.02 | 11.98 | 12.13 | **13.5** |
| | | | 16QAM | 12.45 | 11.99 | 12.42 | **13.5** |
| | | Middle | QPSK | 12.11 | 12.16 | 12.26 | **13.5** |
| | | | 16QAM | 12.56 | 12.17 | 12.59 | **13.5** |
| | | Low | QPSK | 12.01 | 12.10 | 12.22 | **13.5** |
| | | | 16QAM | 12.47 | 12.04 | 12.58 | **13.5** |
| | 36RB | High | QPSK | 12.02 | 12.19 | 12.25 | **13.5** |
| | | | 16QAM | 12.11 | 12.23 | 12.35 | **13.5** |
| | | Middle | QPSK | 12.09 | 12.20 | 12.24 | **13.5** |
| | | | 16QAM | 12.10 | 12.23 | 12.36 | **13.5** |
| | | Low | QPSK | 12.13 | 12.24 | 12.26 | **13.5** |
| | | | 16QAM | 12.12 | 12.26 | 12.38 | **13.5** |
| | 75RB | / | QPSK | 12.09 | 12.19 | 12.26 | **13.5** |
| | | | 16QAM | 12.10 | 12.21 | 12.36 | **13.5** |
| 20 MHz | | | | 1900MHz | 1880MHz | 1860MHz | / |
| | 1RB | High | QPSK | 11.86 | 11.92 | 11.90 | **13.5** |
| | | | 16QAM | 12.24 | 12.40 | 12.43 | **13.5** |
| | | Middle | QPSK | **12.24** | **12.38** | **12.32** | **13.5** |
| | | | 16QAM | 12.60 | 12.87 | 12.93 | **13.5** |
| | | Low | QPSK | 11.82 | 11.94 | 11.99 | **13.5** |
| | | | 16QAM | 12.24 | 12.41 | 12.55 | **13.5** |
| | 50RB | High | QPSK | 11.99 | 12.21 | 12.26 | **13.5** |
| | | | 16QAM | 11.93 | 12.24 | 12.33 | **13.5** |
| | | Middle | QPSK | 12.14 | 12.23 | 12.25 | **13.5** |
| | | | 16QAM | 12.08 | 12.28 | 12.28 | **13.5** |
| | | Low | QPSK | 12.05 | **12.37** | 12.28 | **13.5** |
| | | | 16QAM | 12.04 | 12.40 | 12.28 | **13.5** |
| | 100RB | / | QPSK | 18.96 | 12.32 | 12.31 | **13.5** |
| | | | 16QAM | 12.04 | 12.35 | 12.29 | **13.5** |

**Sensor-on**

| LTE-FDD Band 5 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 848.3MHz | 836.5MHz | 824.7MHz | |
| | 1RB | High | QPSK | 17.17 | 17.20 | 17.25 | **19.0** |
| | | | 16QAM | 17.20 | 17.31 | 17.63 | **19.0** |
| | | Middle | QPSK | 17.31 | 17.40 | 17.37 | **19.0** |
| | | | 16QAM | 17.39 | 17.55 | 17.76 | **19.0** |
| | | Low | QPSK | 17.11 | 17.20 | 17.21 | **19.0** |
| | | | 16QAM | 17.23 | 17.34 | 17.62 | **19.0** |
| | 3RB | High | QPSK | 17.23 | 17.22 | 17.20 | **19.0** |
| | | | 16QAM | 17.43 | 17.34 | 17.51 | **19.0** |
| | | Middle | QPSK | 17.23 | 17.26 | 17.30 | **19.0** |
| | | | 16QAM | 17.49 | 17.39 | 17.55 | **19.0** |
| | | Low | QPSK | 17.18 | 17.21 | 17.26 | **19.0** |
| | | | 16QAM | 17.46 | 17.35 | 17.51 | **19.0** |
| | 6RB | / | QPSK | 17.37 | 17.30 | 17.36 | **19.0** |
| | | | 16QAM | 17.42 | 17.41 | 17.16 | **19.0** |
| 3 MHz | | | | 847.5MHz | 836.5MHz | 825.5MHz | / |
| | 1RB | High | QPSK | 17.20 | 17.26 | 17.32 | **19.0** |
| | | | 16QAM | 17.19 | 17.15 | 17.69 | **19.0** |
| | | Middle | QPSK | 17.31 | 17.34 | 17.46 | **19.0** |
| | | | 16QAM | 17.39 | 17.31 | 17.84 | **19.0** |
| | | Low | QPSK | 17.23 | 17.18 | 17.30 | **19.0** |
| | | | 16QAM | 17.26 | 17.23 | 17.65 | **19.0** |
| | 8RB | High | QPSK | 17.27 | 17.25 | 17.31 | **19.0** |
| | | | 16QAM | 17.28 | 17.35 | 17.38 | **19.0** |
| | | Middle | QPSK | 17.33 | 17.31 | 17.37 | **19.0** |
| | | | 16QAM | 17.32 | 17.41 | 17.41 | **19.0** |
| | | Low | QPSK | 17.27 | 17.29 | 17.30 | **19.0** |
| | | | 16QAM | 17.29 | 17.40 | 17.36 | **19.0** |
| | 15RB | / | QPSK | 17.21 | 17.24 | 17.22 | **19.0** |
| | | | 16QAM | 17.23 | 17.29 | 17.32 | **19.0** |

**Sensor-on**

| LTE-FDD Band 5 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 846.5MHz | 836.5MHz | 826.5MHz | |
| | 1RB | High | QPSK | 17.17 | 17.21 | 17.17 | **19.0** |
| | | | 16QAM | 17.29 | 17.35 | 17.71 | **19.0** |
| | | Middle | QPSK | 17.41 | 17.48 | 17.42 | **19.0** |
| | | | 16QAM | 17.50 | 17.50 | 17.88 | **19.0** |
| | | Low | QPSK | 17.15 | 17.24 | 17.15 | **19.0** |
| | | | 16QAM | 17.31 | 17.37 | 17.67 | **19.0** |
| | 12RB | High | QPSK | 17.16 | 17.17 | 17.16 | **19.0** |
| | | | 16QAM | 17.30 | 17.30 | 17.42 | **19.0** |
| | | Middle | QPSK | 17.22 | 17.23 | 17.26 | **19.0** |
| | | | 16QAM | 17.32 | 17.36 | 17.46 | **19.0** |
| | | Low | QPSK | 17.18 | 17.19 | 17.15 | **19.0** |
| | | | 16QAM | 17.25 | 17.31 | 17.37 | **19.0** |
| | 25RB | / | QPSK | 17.13 | 17.22 | 17.17 | **19.0** |
| | | | 16QAM | 17.13 | 17.23 | 17.29 | **19.0** |
| 10 MHz | | | | 844MHz | 836.5MHz | 829MHz | / |
| | 1RB | High | QPSK | 17.25 | 17.30 | 17.25 | **19.0** |
| | | | 16QAM | 17.16 | 17.61 | 17.31 | **19.0** |
| | | Middle | QPSK | **17.35** | **17.38** | **17.32** | **19.0** |
| | | | 16QAM | 17.29 | 17.77 | 17.40 | **19.0** |
| | | Low | QPSK | 17.21 | 17.25 | 17.19 | **19.0** |
| | | | 16QAM | 17.16 | 17.62 | 17.25 | **19.0** |
| | 25RB | High | QPSK | 17.21 | 17.27 | 17.25 | **19.0** |
| | | | 16QAM | 17.26 | 17.37 | 17.42 | **19.0** |
| | | Middle | QPSK | 17.25 | **17.29** | 17.27 | **19.0** |
| | | | 16QAM | 17.31 | 17.33 | 17.42 | **19.0** |
| | | Low | QPSK | 17.22 | 17.28 | 17.24 | **19.0** |
| | | | 16QAM | 17.31 | 17.38 | 17.39 | **19.0** |
| | 50RB | / | QPSK | 17.23 | 17.26 | 17.25 | **19.0** |
| | | | 16QAM | 17.29 | 17.33 | 17.32 | **19.0** |

**Sensor-on**

| LTE-FDD Band 7 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 2567.4MHz | 2535MHz | 2502.5MHz | |
| | 1RB | High | QPSK | 12.20 | 12.11 | 12.16 | **13.5** |
| | | | 16QAM | 12.20 | 12.22 | 12.64 | **13.5** |
| | | Middle | QPSK | 12.37 | 12.41 | 12.39 | **13.5** |
| | | | 16QAM | 12.42 | 12.46 | 12.85 | **13.5** |
| | | Low | QPSK | 12.17 | 12.12 | 12.19 | **13.5** |
| | | | 16QAM | 12.23 | 12.19 | 12.66 | **13.5** |
| | 12RB | High | QPSK | 12.19 | 12.08 | 12.20 | **13.5** |
| | | | 16QAM | 12.23 | 12.18 | 12.33 | **13.5** |
| | | Middle | QPSK | 12.24 | 12.13 | 12.27 | **13.5** |
| | | | 16QAM | 12.24 | 12.24 | 12.41 | **13.5** |
| | | Low | QPSK | 12.23 | 12.14 | 12.23 | **13.5** |
| | | | 16QAM | 12.24 | 12.18 | 12.34 | **13.5** |
| | 25RB | / | QPSK | 12.23 | 12.13 | 12.24 | **13.5** |
| | | | 16QAM | 12.14 | 12.15 | 12.27 | **13.5** |
| 10 MHz | | | | 2565MHz | 2535MHz | 2505MHz | / |
| | 1RB | High | QPSK | 12.15 | 12.07 | 12.30 | **13.5** |
| | | | 16QAM | 12.17 | 12.03 | 12.57 | **13.5** |
| | | Middle | QPSK | 12.31 | 12.21 | 12.41 | **13.5** |
| | | | 16QAM | 12.25 | 12.17 | 12.68 | **13.5** |
| | | Low | QPSK | 12.11 | 12.07 | 12.22 | **13.5** |
| | | | 16QAM | 12.14 | 12.07 | 12.61 | **13.5** |
| | 25RB | High | QPSK | 12.31 | 12.16 | 12.30 | **13.5** |
| | | | 16QAM | 12.33 | 12.18 | 12.30 | **13.5** |
| | | Middle | QPSK | 12.25 | 12.23 | 12.29 | **13.5** |
| | | | 16QAM | 12.32 | 12.26 | 12.29 | **13.5** |
| | | Low | QPSK | 12.21 | 12.11 | 12.20 | **13.5** |
| | | | 16QAM | 12.22 | 12.13 | 12.18 | **13.5** |
| | 50RB | / | QPSK | 12.32 | 12.16 | 12.28 | **13.5** |
| | | | 16QAM | 12.22 | 12.12 | 12.28 | **13.5** |

**Sensor-on**

| LTE-FDD Band 7 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 2562.5MHz | 2535MHz | 2507.5MHz | |
| | 1RB | High | QPSK | 12.23 | 12.02 | 12.16 | **13.5** |
| | | | 16QAM | 12.50 | 11.95 | 12.46 | **13.5** |
| | | Middle | QPSK | 12.20 | 12.15 | 12.31 | **13.5** |
| | | | 16QAM | 12.58 | 12.15 | 12.62 | **13.5** |
| | | Low | QPSK | 12.12 | 12.10 | 12.27 | **13.5** |
| | | | 16QAM | 12.48 | 12.00 | 12.58 | **13.5** |
| | 36RB | High | QPSK | 12.30 | 12.19 | 12.32 | **13.5** |
| | | | 16QAM | 12.25 | 12.16 | 12.35 | **13.5** |
| | | Middle | QPSK | 12.22 | 12.21 | 12.33 | **13.5** |
| | | | 16QAM | 12.20 | 12.21 | 12.37 | **13.5** |
| | | Low | QPSK | 12.23 | 12.18 | 12.25 | **13.5** |
| | | | 16QAM | 12.17 | 12.18 | 12.30 | **13.5** |
| | 75RB | / | QPSK | 12.27 | 12.20 | 12.35 | **13.5** |
| | | | 16QAM | 12.23 | 12.20 | 12.29 | **13.5** |
| 20 MHz | | | | 2560MHz | 2535MHz | 2510MHz | / |
| | 1RB | High | QPSK | 11.94 | 11.81 | 11.89 | **13.5** |
| | | | 16QAM | 12.41 | 12.31 | 12.29 | **13.5** |
| | | Middle | QPSK | **12.23** | **12.33** | **12.44** | **13.5** |
| | | | 16QAM | 12.79 | 12.83 | 12.71 | **13.5** |
| | | Low | QPSK | 11.91 | 11.89 | 12.03 | **13.5** |
| | | | 16QAM | 12.38 | 12.37 | 12.38 | **13.5** |
| | 50RB | High | QPSK | 12.25 | 12.17 | 12.25 | **13.5** |
| | | | 16QAM | 12.27 | 12.19 | 12.21 | **13.5** |
| | | Middle | QPSK | 12.22 | **12.21** | 12.28 | **13.5** |
| | | | 16QAM | 12.26 | 12.24 | 12.20 | **13.5** |
| | | Low | QPSK | 12.22 | 12.17 | 12.21 | **13.5** |
| | | | 16QAM | 12.23 | 12.18 | 12.17 | **13.5** |
| | 100RB | / | QPSK | 12.27 | 12.18 | 12.24 | **13.5** |
| | | | 16QAM | 12.25 | 12.17 | 12.18 | **13.5** |

**Sensor-on**

| LTE-FDD Band 12 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 715.3MHz | 707.5MHz | 699.7MHz | |
| | 1RB | High | QPSK | 18.41 | 18.46 | 18.55 | 19.5 |
| | | | 16QAM | 18.52 | 18.60 | 18.90 | 19.5 |
| | | Middle | QPSK | 18.76 | 18.74 | 18.75 | 19.5 |
| | | | 16QAM | 18.70 | 18.85 | 19.05 | 19.5 |
| | | Low | QPSK | 18.39 | 18.52 | 18.57 | 19.5 |
| | | | 16QAM | 18.50 | 18.61 | 18.88 | 19.5 |
| | 3RB | High | QPSK | 18.60 | 18.53 | 18.60 | 19.5 |
| | | | 16QAM | 18.76 | 18.60 | 18.80 | 19.5 |
| | | Middle | QPSK | 18.62 | 18.61 | 18.68 | 19.5 |
| | | | 16QAM | 18.77 | 18.67 | 18.84 | 19.5 |
| | | Low | QPSK | 18.54 | 18.54 | 18.58 | 19.5 |
| | | | 16QAM | 18.74 | 18.62 | 18.79 | 19.5 |
| | 6RB | / | QPSK | 18.58 | 18.59 | 18.60 | 19.5 |
| | | | 16QAM | 18.72 | 18.70 | 18.44 | 19.5 |
| 3 MHz | | | | 714.5MHz | 707.5MHz | 700.5MHz | / |
| | 1RB | High | QPSK | 18.45 | 18.50 | 18.58 | 19.5 |
| | | | 16QAM | 18.47 | 18.36 | 18.87 | 19.5 |
| | | Middle | QPSK | 18.59 | 18.62 | 18.70 | 19.5 |
| | | | 16QAM | 18.64 | 18.55 | 19.05 | 19.5 |
| | | Low | QPSK | 18.45 | 18.43 | 18.57 | 19.5 |
| | | | 16QAM | 18.52 | 18.40 | 18.86 | 19.5 |
| | 8RB | High | QPSK | 18.51 | 18.51 | 18.52 | 19.5 |
| | | | 16QAM | 18.51 | 18.60 | 18.58 | 19.5 |
| | | Middle | QPSK | 18.56 | 18.55 | 18.56 | 19.5 |
| | | | 16QAM | 18.56 | 18.65 | 18.65 | 19.5 |
| | | Low | QPSK | 18.51 | 18.51 | 18.52 | 19.5 |
| | | | 16QAM | 18.52 | 18.61 | 18.59 | 19.5 |
| | 15RB | / | QPSK | 18.49 | 18.49 | 18.50 | 19.5 |
| | | | 16QAM | 18.44 | 18.51 | 18.49 | 19.5 |

**Sensor-on**

| LTE-FDD Band 12 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 713.5MHz | 707.5MHz | 701.5MHz | |
| | 1RB | High | QPSK | 18.48 | 18.45 | 18.51 | **19.5** |
| | | | 16QAM | 18.55 | 18.56 | 18.98 | **19.5** |
| | | Middle | QPSK | 18.73 | 18.74 | 18.67 | **19.5** |
| | | | 16QAM | 18.74 | 18.84 | 19.11 | **19.5** |
| | | Low | QPSK | 18.45 | 18.53 | 18.46 | **19.5** |
| | | | 16QAM | 18.54 | 18.58 | 18.95 | **19.5** |
| | 12RB | High | QPSK | 18.42 | 18.47 | 18.54 | **19.5** |
| | | | 16QAM | 18.48 | 18.56 | 18.65 | **19.5** |
| | | Middle | QPSK | 18.56 | 18.52 | 18.54 | **19.5** |
| | | | 16QAM | 18.60 | 18.62 | 18.71 | **19.5** |
| | | Low | QPSK | 18.54 | 18.47 | 18.47 | **19.5** |
| | | | 16QAM | 18.61 | 18.53 | 18.61 | **19.5** |
| | 25RB | / | QPSK | 18.50 | 18.49 | 18.51 | **19.5** |
| | | | 16QAM | 18.43 | 18.49 | 18.56 | **19.5** |
| 10 MHz | | | | 711MHz | 707.5MHz | 704MHz | / |
| | 1RB | High | QPSK | 18.48 | 18.45 | 18.53 | **19.5** |
| | | | 16QAM | 18.50 | 18.40 | 18.84 | **19.5** |
| | | Middle | QPSK | **18.61** | **18.63** | **18.70** | **19.5** |
| | | | 16QAM | 18.61 | 18.57 | 19.03 | **19.5** |
| | | Low | QPSK | 18.43 | 18.47 | 18.54 | **19.5** |
| | | | 16QAM | 18.51 | 18.44 | 18.82 | **19.5** |
| | 25RB | High | QPSK | 18.45 | 18.56 | 18.67 | **19.5** |
| | | | 16QAM | 18.55 | 18.55 | 18.67 | **19.5** |
| | | Middle | QPSK | 18.56 | **18.57** | 18.63 | **19.5** |
| | | | 16QAM | 18.60 | 18.58 | 18.64 | **19.5** |
| | | Low | QPSK | 18.47 | 18.52 | 18.64 | **19.5** |
| | | | 16QAM | 18.54 | 18.52 | 18.64 | **19.5** |
| | 50RB | / | QPSK | 18.46 | 18.54 | 18.63 | **19.5** |
| | | | 16QAM | 18.50 | 18.51 | 18.61 | **19.5** |

Note: SAR for LTE Band 17 is covered by LTE Band 12 due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

**Sensor-on**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 1.4 MHz | | | | 1779.3MHz | 1745MHz | 1710.7MHz | |
| | 1RB | High | QPSK | 12.85 | 12.83 | 12.84 | **14.0** |
| | | | 16QAM | 13.04 | 13.23 | 13.03 | **14.0** |
| | | Middle | QPSK | 13.07 | 12.95 | 13.04 | **14.0** |
| | | | 16QAM | 13.25 | 13.41 | 13.19 | **14.0** |
| | | Low | QPSK | 12.88 | 12.81 | 12.82 | **14.0** |
| | | | 16QAM | 13.04 | 13.21 | 13.00 | **14.0** |
| | 3RB | High | QPSK | 12.98 | 12.90 | 13.01 | **14.0** |
| | | | 16QAM | 13.08 | 13.13 | 13.28 | **14.0** |
| | | Middle | QPSK | 13.01 | 12.97 | 13.02 | **14.0** |
| | | | 16QAM | 13.12 | 13.19 | 13.35 | **14.0** |
| | | Low | QPSK | 12.95 | 12.86 | 12.97 | **14.0** |
| | | | 16QAM | 13.10 | 13.11 | 13.27 | **14.0** |
| | 6RB | / | QPSK | 12.93 | 12.84 | 12.94 | **14.0** |
| | | | 16QAM | 13.12 | 12.77 | 13.15 | **14.0** |
| 3 MHz | | | | 1778.5MHz | 1745MHz | 1711.5MHz | / |
| | 1RB | High | QPSK | 12.94 | 12.88 | 12.87 | **14.0** |
| | | | 16QAM | 12.87 | 13.26 | 13.00 | **14.0** |
| | | Middle | QPSK | 13.04 | 12.99 | 13.04 | **14.0** |
| | | | 16QAM | 13.03 | 13.43 | 13.19 | **14.0** |
| | | Low | QPSK | 12.90 | 12.85 | 12.90 | **14.0** |
| | | | 16QAM | 12.88 | 13.26 | 13.08 | **14.0** |
| | 8RB | High | QPSK | 12.95 | 12.82 | 12.95 | **14.0** |
| | | | 16QAM | 13.06 | 12.97 | 13.01 | **14.0** |
| | | Middle | QPSK | 12.99 | 12.83 | 12.96 | **14.0** |
| | | | 16QAM | 13.10 | 13.03 | 13.10 | **14.0** |
| | | Low | QPSK | 12.95 | 12.83 | 12.92 | **14.0** |
| | | | 16QAM | 13.07 | 12.97 | 12.96 | **14.0** |
| | 15RB | / | QPSK | 12.96 | 12.87 | 12.95 | **14.0** |
| | | | 16QAM | 13.01 | 12.90 | 12.96 | **14.0** |

**Sensor-on**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 1777.5MHz | 1745MHz | 1712.5MHz | |
| | 1RB | High | QPSK | 12.89 | 12.75 | 12.89 | 14.0 |
| | | | 16QAM | 13.02 | 13.29 | 13.03 | 14.0 |
| | | Middle | QPSK | 13.16 | 13.02 | 13.15 | 14.0 |
| | | | 16QAM | 13.34 | 13.54 | 13.31 | 14.0 |
| | | Low | QPSK | 12.92 | 12.76 | 12.91 | 14.0 |
| | | | 16QAM | 13.01 | 13.27 | 13.05 | 14.0 |
| | 12RB | High | QPSK | 12.91 | 12.84 | 12.98 | 14.0 |
| | | | 16QAM | 13.07 | 13.03 | 13.06 | 14.0 |
| | | Middle | QPSK | 12.98 | 12.89 | 12.99 | 14.0 |
| | | | 16QAM | 13.13 | 13.10 | 13.12 | 14.0 |
| | | Low | QPSK | 12.92 | 12.92 | 12.92 | 14.0 |
| | | | 16QAM | 13.04 | 13.04 | 13.06 | 14.0 |
| | 25RB | / | QPSK | 12.94 | 12.89 | 12.97 | 14.0 |
| | | | 16QAM | 13.04 | 12.95 | 12.93 | 14.0 |
| 10 MHz | | | | 1775MHz | 1745MHz | 1715MHz | / |
| | 1RB | High | QPSK | 12.91 | 12.89 | 12.88 | 14.0 |
| | | | 16QAM | 12.92 | 13.24 | 12.95 | 14.0 |
| | | Middle | QPSK | 12.98 | 13.02 | 13.02 | 14.0 |
| | | | 16QAM | 12.97 | 13.33 | 13.11 | 14.0 |
| | | Low | QPSK | 12.89 | 12.87 | 12.88 | 14.0 |
| | | | 16QAM | 12.86 | 13.17 | 13.00 | 14.0 |
| | 25RB | High | QPSK | 12.97 | 12.87 | 13.03 | 14.0 |
| | | | 16QAM | 13.03 | 12.93 | 13.13 | 14.0 |
| | | Middle | QPSK | 13.01 | 12.91 | 13.01 | 14.0 |
| | | | 16QAM | 13.02 | 12.96 | 13.14 | 14.0 |
| | | Low | QPSK | 12.94 | 12.94 | 13.00 | 14.0 |
| | | | 16QAM | 13.01 | 12.97 | 13.09 | 14.0 |
| | 50RB | / | QPSK | 13.02 | 12.88 | 13.02 | 14.0 |
| | | | 16QAM | 13.06 | 12.93 | 13.05 | 14.0 |

**Sensor-on**

| LTE-FDD Band 66 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 1772.5MHz | 1745MHz | 1717.5MHz | |
| | 1RB | High | QPSK | 12.79 | 12.82 | 12.78 | **14.0** |
| | | | 16QAM | 12.80 | 13.14 | 13.32 | **14.0** |
| | | Middle | QPSK | 12.90 | 12.94 | 12.94 | **14.0** |
| | | | 16QAM | 12.90 | 13.28 | 13.54 | **14.0** |
| | | Low | QPSK | 12.79 | 12.77 | 12.84 | **14.0** |
| | | | 16QAM | 12.82 | 13.15 | 13.44 | **14.0** |
| | 36RB | High | QPSK | 12.90 | 12.80 | 12.96 | **14.0** |
| | | | 16QAM | 12.97 | 12.90 | 13.02 | **14.0** |
| | | Middle | QPSK | 12.97 | 12.83 | 12.96 | **14.0** |
| | | | 16QAM | 12.98 | 12.92 | 12.99 | **14.0** |
| | | Low | QPSK | 12.91 | 12.84 | 12.93 | **14.0** |
| | | | 16QAM | 13.01 | 12.96 | 12.97 | **14.0** |
| | 75RB | / | QPSK | 12.98 | 12.86 | 12.98 | **14.0** |
| | | | 16QAM | 12.97 | 12.90 | 13.00 | **14.0** |
| 20 MHz | | | | 1770MHz | 1745MHz | 1720MHz | / |
| | 1RB | High | QPSK | 12.66 | 12.55 | 12.56 | **14.0** |
| | | | 16QAM | 13.17 | 13.18 | 13.05 | **14.0** |
| | | Middle | QPSK | **13.07** | **12.99** | **13.00** | **14.0** |
| | | | 16QAM | 13.63 | 13.54 | 13.59 | **14.0** |
| | | Low | QPSK | 12.57 | 12.53 | 12.59 | **14.0** |
| | | | 16QAM | 13.14 | 13.10 | 13.11 | **14.0** |
| | 50RB | High | QPSK | 13.02 | 12.87 | 13.10 | **14.0** |
| | | | 16QAM | 13.08 | 12.91 | 13.08 | **14.0** |
| | | Middle | QPSK | 12.99 | 12.91 | 13.00 | **14.0** |
| | | | 16QAM | 13.04 | 12.94 | 13.03 | **14.0** |
| | | Low | QPSK | 13.04 | **12.95** | 12.99 | **14.0** |
| | | | 16QAM | 13.07 | 13.01 | 13.00 | **14.0** |
| | 100RB | / | QPSK | 13.04 | 12.91 | 13.07 | **14.0** |
| | | | 16QAM | 13.07 | 12.93 | 13.07 | **14.0** |

Note: SAR for LTE Band 4 is covered by LTE Band 66 due to similar frequency range, same maximum tune-up limit and same channel bandwidth.

**Sensor-on**

| LTE-FDD Band 71 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 5 MHz | | | | 695.5MHz | 680.5MHz | 665.5MHz | |
| | 1RB | High | QPSK | 17.88 | 17.81 | 17.80 | **19.0** |
| | | | 16QAM | 17.94 | 17.90 | 18.31 | **19.0** |
| | | Middle | QPSK | 18.11 | 18.08 | 18.07 | **19.0** |
| | | | 16QAM | 18.08 | 18.22 | 18.56 | **19.0** |
| | | Low | QPSK | 17.81 | 17.80 | 17.85 | **19.0** |
| | | | 16QAM | 17.92 | 17.91 | 18.34 | **19.0** |
| | 12RB | High | QPSK | 17.94 | 17.82 | 17.88 | **19.0** |
| | | | 16QAM | 17.99 | 17.97 | 18.09 | **19.0** |
| | | Middle | QPSK | 17.92 | 17.86 | 17.91 | **19.0** |
| | | | 16QAM | 18.05 | 17.97 | 18.09 | **19.0** |
| | | Low | QPSK | 17.79 | 17.77 | 17.77 | **19.0** |
| | | | 16QAM | 17.90 | 17.89 | 17.98 | **19.0** |
| | 25RB | / | QPSK | 17.90 | 17.87 | 17.87 | **19.0** |
| | | | 16QAM | 17.88 | 17.88 | 17.95 | **19.0** |
| 10 MHz | | | | 693MHz | 680.5MHz | 668MHz | / |
| | 1RB | High | QPSK | 17.87 | 17.84 | 17.92 | **19.0** |
| | | | 16QAM | 17.93 | 17.79 | 18.21 | **19.0** |
| | | Middle | QPSK | 17.99 | 17.97 | 18.04 | **19.0** |
| | | | 16QAM | 18.06 | 17.94 | 18.38 | **19.0** |
| | | Low | QPSK | 17.77 | 17.81 | 17.92 | **19.0** |
| | | | 16QAM | 17.88 | 17.75 | 18.24 | **19.0** |
| | 25RB | High | QPSK | 18.05 | 17.89 | 17.96 | **19.0** |
| | | | 16QAM | 18.15 | 17.92 | 17.98 | **19.0** |
| | | Middle | QPSK | 17.97 | 17.92 | 17.93 | **19.0** |
| | | | 16QAM | 18.06 | 17.92 | 17.97 | **19.0** |
| | | Low | QPSK | 17.91 | 17.88 | 17.87 | **19.0** |
| | | | 16QAM | 18.03 | 17.91 | 17.93 | **19.0** |
| | 50RB | / | QPSK | 17.99 | 17.94 | 17.93 | **19.0** |
| | | | 16QAM | 18.04 | 17.90 | 17.95 | **19.0** |

**Sensor-on**

| LTE-FDD Band 71 | | | | Actual output Power (dBm) | | | Tune up |
|---|---|---|---|---|---|---|---|
| Band-width | RB allocation | RB offset | Modulation | High | Middle | Low | |
| 15 MHz | | | | 690.5MHz | 680.5MHz | 670.5MHz | |
| | 1RB | High | QPSK | 17.83 | 17.76 | 17.85 | **19.0** |
| | | | 16QAM | 18.33 | 17.74 | 18.17 | **19.0** |
| | | Middle | QPSK | 17.89 | 17.83 | 17.95 | **19.0** |
| | | | 16QAM | 18.33 | 17.83 | 18.27 | **19.0** |
| | | Low | QPSK | 17.73 | 17.73 | 17.89 | **19.0** |
| | | | 16QAM | 18.24 | 17.66 | 18.22 | **19.0** |
| | 36RB | High | QPSK | 18.01 | 17.86 | 17.99 | **19.0** |
| | | | 16QAM | 17.98 | 17.90 | 18.09 | **19.0** |
| | | Middle | QPSK | 17.94 | 17.90 | 17.96 | **19.0** |
| | | | 16QAM | 17.95 | 17.92 | 17.98 | **19.0** |
| | | Low | QPSK | 17.87 | 17.82 | 17.91 | **19.0** |
| | | | 16QAM | 17.88 | 17.83 | 17.97 | **19.0** |
| | 75RB | / | QPSK | 17.94 | 17.85 | 17.92 | **19.0** |
| | | | 16QAM | 17.91 | 17.87 | 17.96 | **19.0** |
| 20 MHz | | | | 688MHz | 683MHz | 673MHz | / |
| | 1RB | High | QPSK | 17.67 | 17.58 | 17.57 | **19.0** |
| | | | 16QAM | 18.18 | 18.17 | 18.04 | **19.0** |
| | | Middle | QPSK | **18.08** | **17.86** | **17.99** | **19.0** |
| | | | 16QAM | 18.56 | 18.51 | 18.38 | **19.0** |
| | | Low | QPSK | 17.56 | 17.51 | 17.59 | **19.0** |
| | | | 16QAM | 18.05 | 18.03 | 18.00 | **19.0** |
| | 50RB | High | QPSK | 18.01 | **18.02** | 18.03 | **19.0** |
| | | | 16QAM | 18.08 | 17.99 | 17.98 | **19.0** |
| | | Middle | QPSK | 17.92 | 17.90 | 17.89 | **19.0** |
| | | | 16QAM | 17.94 | 17.87 | 17.87 | **19.0** |
| | | Low | QPSK | 17.87 | 17.74 | 17.84 | **19.0** |
| | | | 16QAM | 17.90 | 17.80 | 17.82 | **19.0** |
| | 100RB | / | QPSK | 17.98 | 17.86 | 17.97 | **19.0** |
| | | | 16QAM | 18.00 | 17.89 | 17.91 | **19.0** |

## 10.4 Wi-Fi Measurement result

**Table 10.5：The conducted Power measurement results for BT**

| BT | Averaged Power (dBm) | | | Tune up |
|---|---|---|---|---|
| Mode | Ch.0 (2402 MHz) | Ch39 (2441 MHz) | Ch78 (2480 MHz) | |
| GFSK | 5.29 | 5.95 | 5.87 | **6.5** |
| EDR2M-4_DQPSK | 4.35 | 4.90 | 4.82 | **5.0** |
| EDR3M-8DPSK | 4.42 | 4.95 | 4.88 | **5.0** |

**Table 10.6：The conducted Power measurement results for 2.4G WIFI**

802.11b (dBm)

| Channel / data rate | 1Mbps | 2Mbps | 5.5Mbps | 11Mbps |
|---|---|---|---|---|
| **Tune up** | **21** | **21** | **21** | **21** |
| 11 | 19.82 | / | / | 20.04 |
| 6 | 20.66 | 20.79 | 20.47 | **20.83** |
| 1 | 19.50 | / | / | 19.86 |

802.11g (dBm)

| Channel /data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **20** | **20** | **20** | **20** | **18** | **18** | **18** | **17** |
| 11 | 19.17 | / | / | / | / | / | / | / |
| 6 | **19.43** | 19.00 | 18.45 | 18.36 | 17.01 | 16.80 | 16.09 | 15.16 |
| 1 | 18.54 | / | / | / | / | / | / | / |

802.11n-HT20 (dBm)

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **20** | **20** | **20** | **18** | **18** | **17** | **17** | **17** |
| 11 | 19.04 | / | / | / | / | / | / | / |
| 6 | **19.28** | 18.14 | 18.33 | 17.47 | 17.46 | 15.51 | 15.47 | 15.44 |
| 1 | 18.49 | / | / | / | / | / | / | / |

802.11n-HT40 (dBm)

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **17** | **17** | **17** | **17** | **17** | **15** | **15** | **15** |
| 9 | 15.76 | / | / | / | / | / | / | / |
| 6 | **16.36** | 16.33 | 16.32 | 16.35 | 16.26 | 13.65 | 13.68 | 13.64 |
| 3 | 15.82 | / | / | / | / | / | / | / |

**Table 10.7：The Reduce conducted Power measurement results for 2.4G WIFI**

802.11b (dBm)

| Channel / data rate | 1Mbps | 2Mbps | 5.5Mbps | 11Mbps |
|---|---|---|---|---|
| **Tune up** | **11** | **11** | **11** | **11** |
| 11 | / | / | 10.68 | / |
| 6 | 10.63 | 10.68 | **10.92** | 10.91 |
| 1 | / | / | 10.41 | / |

802.11g (dBm)

| Channel /data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **10.5** | **10.5** | **10.5** | **10.5** | **10.5** | **10.5** | **7** | **7** |
| 11 | 9.70 | / | / | / | / | / | / | / |
| 6 | **9.93** | 9.89 | 8.71 | 8.86 | 8.94 | 8.96 | 6.72 | 5.72 |
| 1 | 9.48 | / | / | / | / | / | / | / |

802.11n-HT20 (dBm)

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **10.5** | **9.5** | **9.5** | **9.5** | **9.5** | **6.5** | **6.5** | **6.5** |
| 11 | **9.99** | 8.48 | 8.87 | 7.68 | 7.67 | 5.38 | 5.41 | 5.36 |
| 6 | 9.98 | / | / | / | / | / | / | / |
| 1 | 9.46 | / | / | / | / | / | / | / |

802.11n-HT40 (dBm)

| Channel\data rate | MCS0 | MCS1 | MCS2 | MCS3 | MCS4 | MCS5 | MCS6 | MCS7 |
|---|---|---|---|---|---|---|---|---|
| **Tune up** | **8** | **8** | **8** | **8** | **8** | **8** | **5** | **5** |
| 9 | 6.50 | / | / | / | / | / | / | / |
| 6 | 6.70 | 6.72 | **6.75** | 6.72 | 6.73 | 6.03 | 3.98 | 3.74 |
| 3 | 6.32 | / | / | / | / | / | / | / |

**Table 10.8：The conducted Power measurement results for 5G WIFI**

| 802.11a (dBm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Channel / data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
| **U-NII-1 / Tune up** | **19** | **19** | **18** | **18** | **18** | **18** | **15** | **15** |
| 36(5180 MHz) | 17.49 | / | / | / | / | / | / | / |
| 40(5200 MHz) | 17.94 | / | / | / | / | / | / | / |
| 44(5220 MHz) | 18.36 | 18.14 | 16.74 | 16.81 | 16.62 | 16.01 | 14.27 | 13.75 |
| 48(5240 MHz) | **18.33** | / | / | / | / | / | / | / |
| **U-NII-2A / Tune up** | **19** | **19** | **17** | **17** | **17** | **17** | **15** | **15** |
| 52(5260 MHz) | **18.98** | 18.61 | 16.80 | 16.81 | 16.71 | 15.97 | 14.38 | 13.18 |
| 56(5280 MHz) | 18.17 | / | / | / | / | / | / | / |
| 60(5300 MHz) | 17.64 | / | / | / | / | / | / | / |
| 64(5320 MHz) | 17.68 | / | / | / | / | / | / | / |
| **U-NII-3 / Tune up** | **19.5** | **19.5** | **18** | **18** | **18** | **18** | **15** | **15** |
| 149(5745 MHz) | **19.10** | 18.94 | 17.05 | 17.09 | 16.89 | 16.45 | 14.65 | 13.88 |
| 153(5765 MHz) | 18.83 | / | / | / | / | / | / | / |
| 157(5785 MHz) | 19.01 | / | / | / | / | / | / | / |
| 161(5805 MHz) | 18.51 | / | / | / | / | / | / | / |
| 165(5825 MHz) | 17.97 | / | / | / | / | / | / | / |

**Table 10.9：The Reduce conducted Power measurement results for 5G WIFI**

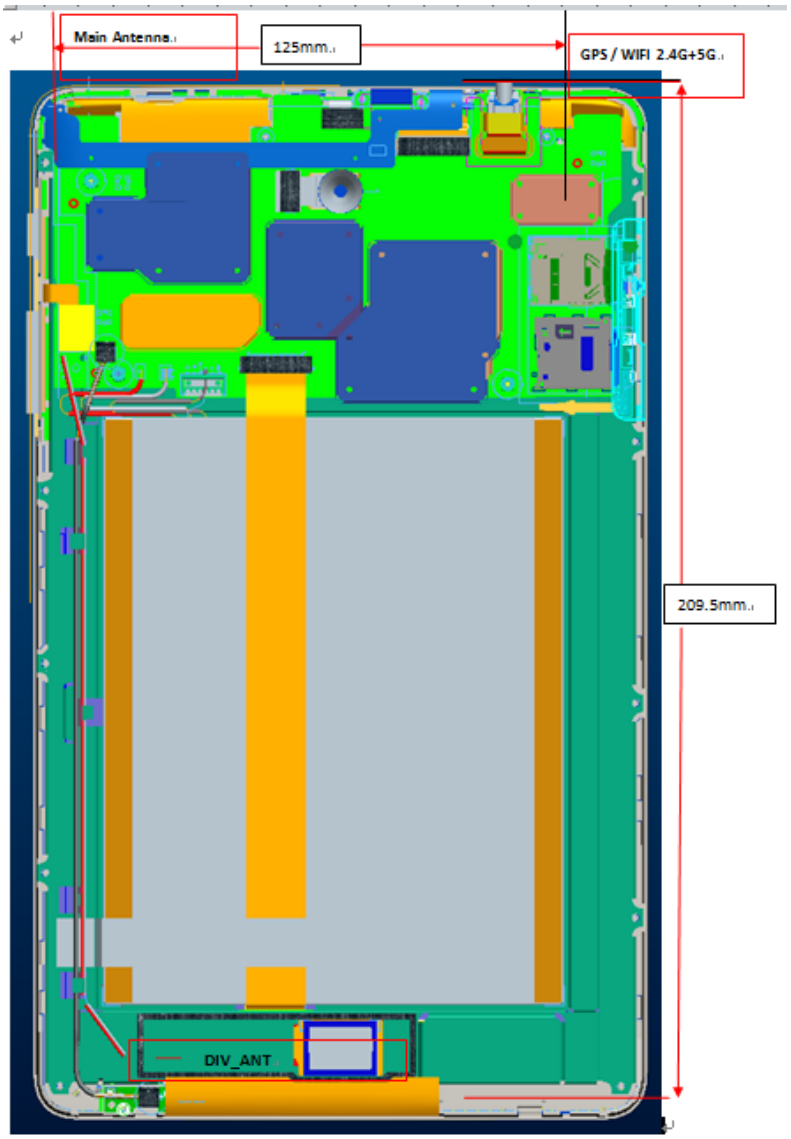
| 802.11a (dBm) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Channel / data rate | 6Mbps | 9Mbps | 12Mbps | 18Mbps | 24Mbps | 36Mbps | 48Mbps | 54Mbps |
| **U-NII-1 / Tune up** | **7** | **7** | **7** | **7** | **7** | **7** | **5** | **5** |
| 36(5180 MHz) | 5.30 | / | / | / | / | / | / | / |
| 40(5200 MHz) | 5.72 | / | / | / | / | / | / | / |
| 44(5220 MHz) | 6.26 | / | / | / | / | / | / | / |
| 48(5240 MHz) | **6.67** | 6.65 | 5.32 | 5.40 | 5.67 | 5.40 | 3.55 | 3.54 |
| **U-NII-2A / Tune up** | **7** | **7** | **6** | **6** | **6** | **6** | **4** | **4** |
| 52(5260 MHz) | **6.49** | 6.48 | 4.70 | 5.04 | 5.29 | 5.19 | 2.80 | 2.78 |
| 56(5280 MHz) | 5.88 | / | / | / | / | / | / | / |
| 60(5300 MHz) | 5.14 | / | / | / | / | / | / | / |
| 64(5320 MHz) | 5.08 | / | / | / | / | / | / | / |
| **U-NII-3 / Tune up** | **7** | **7** | **7** | **7** | **7** | **7** | **4** | **4** |
| 149(5745 MHz) | 6.30 | / | / | / | / | / | / | / |
| 153(5765 MHz) | **6.47** | 6.22 | 5.60 | 5.67 | 5.45 | 5.14 | 3.19 | 3.14 |
| 157(5785 MHz) | 6.09 | / | / | / | / | / | / | / |
| 161(5805 MHz) | 6.20 | / | / | / | / | / | / | / |
| 165(5825 MHz) | 6.00 | / | / | / | / | / | / | / |

# 11 Simultaneous TX SAR Considerations

## 11.1 Introduction

The following procedures adopted from “FCC SAR Considerations for Cell Phones with Multiple Transmitters” are applicable to handsets with built-in unlicensed transmitters such as 802.11 a/b/g devices which may simultaneously transmit with the licensed transmitter.
For this device, the Wi-Fi can transmit simultaneous with other transmitters.

## 11.2 Transmit Antenna Separation Distances




**Picture 12.1 Antenna Locations (Back View)**

## 11.3 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

**Table 11.1: Standalone SAR test exclusion considerations**

| Band/Mode | f(GHz) | Position | SAR test exclusion threshold (mW) | RF output power | | SAR test exclusion |
|---|---|---|---|---|---|---|
| | | | | dBm | mW | |
| Bluetooth | 2.44 | Body | 19.20 | 6.5 | 4.47 | Yes |
| 2.4GHz WLAN | 2.45 | | 19.17 | 21 | 125.9 | No |
| 5GHz WLAN | 5.2 | | 13.16 | 19 | 79.4 | No |
| | 5.3 | | 13.03 | 19 | 79.4 | No |
| | 5.8 | | 12.46 | 19.5 | 89.1 | No |

# 12 Evaluation of Simultaneous

**Table 12.1: The sum of reported SAR values for main antenna and Wi-Fi**

| / | Band | Position | Main antenna | WiFi | Sum | SPLSR |
|---|---|---|---|---|---|---|
| **Maximum reported SAR value for Body** | W850 | Rear | 1.33 | 0.27 | **1.60** | **Yes** |

According to the KDB 447498 D01, when the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. The ratio is determined by $(SAR1 + SAR2)^{1.5}/Ri$, rounded to two decimal digits, and must be ≤ 0.04 for all antenna pairs in the configuration to qualify for 1-g SAR test exclusion.

| Band | Position | SAR (W/kg) | Gap (cm) | SAR peak location (m) | | | 3D distance (mm) | Pair SAR sum (W/kg) | SPLSR | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | X | Y | Z | | | | |
| W850 | Rear | 1.44 | 0 | -0.0705 | 0.236 | -0.169 | 83.8 | 1.92 | 0.03 | Not required |
| WLAN 2.4G | | 0.482 | 0 | -0.04 | 0.314 | -0.169 | | | | |

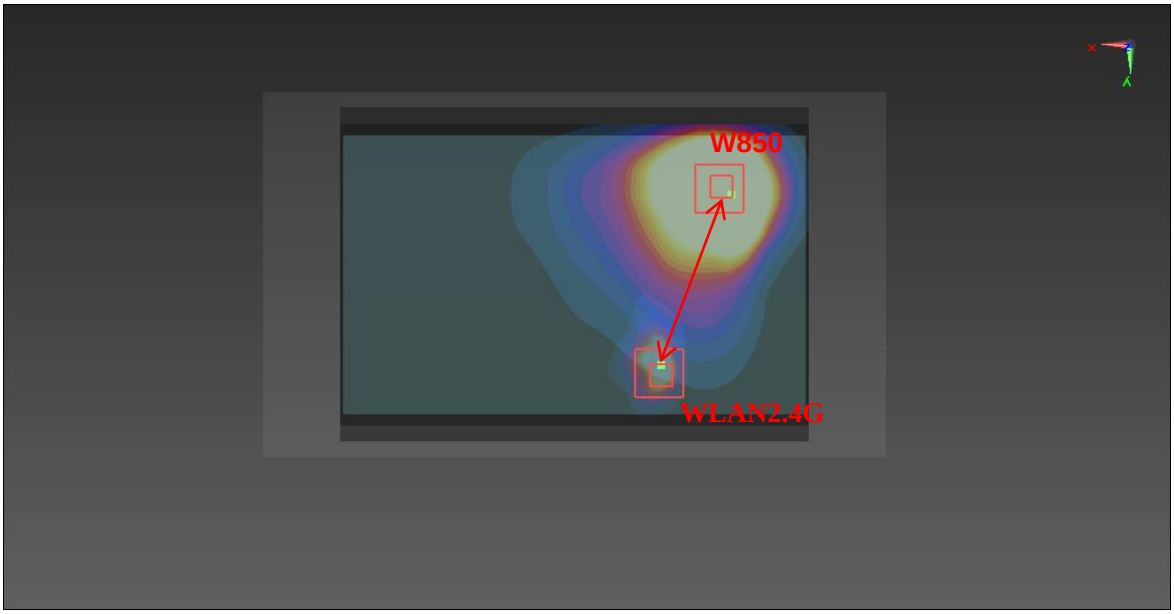


**Table 12.2: The sum of reported SAR values for main antenna and BT**

| / | Position | Main antenna | BT | Sum |
|---|---|---|---|---|
| Highest reported SAR value for Body | Rear | 1.33 | 0.19 | 1.52 |

BT* - Estimated SAR for Bluetooth (see the table 12.3)

**Table 12.3: Estimated SAR for Bluetooth**

| Position | f (GHz) | Distance (mm) | Upper limit of power * | | Estimated$_{1g}$ (W/kg) |
|---|---|---|---|---|---|
| | | | dBm | mW | |
| Body | 2.441 | 5 | 6.5 | 4.47 | 0.19 |

* - Maximum possible output power declared by manufacturer

When standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:
(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)]·[√f(GHz)/x] W/kg for test separation distances ≤ 50 mm;
Where x = 7.5 for 1-g SAR.
When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

**Conclusion:**
According to the above tables, the sum of reported SAR values is 1.6W/kg and the SPLSR < 0.04. So the simultaneous transmission SAR with volume scans is not required.