



# SAR TEST REPORT

No. I22Z61632-SEM01

For

**TCL Communication Ltd.**

**Tablet PC**

**Model Name: 9137W**

with

**Hardware Version: 04**

**Software Version: HUS1**

**FCC ID: 2ACCJB190**

**Issued Date: 2022-10-12**

**Note:**

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## **REPORT HISTORY**

<b>Report Number</b>	<b>Revision</b>	<b>Issue Date</b>	<b>Description</b>
I22Z61632-SEM01	Rev.0	2022-10-08	Initial creation of test report
I22Z61632-SEM01	Rev.1	2022-10-12	Update information on pages 6 and 9

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## 1 Test Laboratory

### 1.1 Testing Location

Company Name:	CTTL
Address:	No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191.

### 1.2 Testing Environment

Temperature:	18°C~25°C,
Relative humidity:	30%~ 70%
Ground system resistance:	< 0.5 $\Omega$
Ambient noise & Reflection:	< 0.012 W/kg

### 1.3 Project Data


Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	August 30, 2022
Testing End Date:	September 26, 2022

### 1.4 Signature



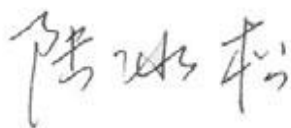
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**Lin Xiaojun**  
(Prepared this test report)



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**Qi Dianyuan**  
(Reviewed this test report)



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**Lu Bingsong**  
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 9137W are as follows:

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

Technology Band	Body SAR 1g (W/kg)	Equipment Class
GSM850	0.95	PCT
GSM1900	1.11	
WCDMA1900	1.03	
WCDMA1700	0.99	
WCDMA 850	0.66	
LTE Band7	1.07	
LTE Band12	0.81	
LTE Band13	0.76	
LTE Band25	0.96	
LTE Band26	0.72	
LTE Band30	1.19	
LTE Band66	1.05	
LTE Band71	0.66	
LTE Band41-PC2	0.88	
LTE Band41-PC3	0.65	
WLAN 2.4GHz	0.69	DTS
WLAN 5GHz	0.99	NII
Bluetooth	0.24	DSS

The SAR values found for the Mobile Phone 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 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 of 0mm/9mm/12mm/14mm 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:

**Body: 1.19 W/kg(1g)**

Remark:

This device supports both LTE B2/B4/B5/B17 and LTE B25/B66/B26/B12. Since the supported frequency span for LTE B2/B4/B5/B17 falls completely within the supports frequency span for LTE B25/B66/B26/B12, both LTE bands have the same target power, and both LTE bands share the same transmission path; therefore, SAR was only assessed for LTE B25/B66/B26/B12.

**Table 2.2: The sum of SAR values for Main antenna + WiFi-2.4G**

	Position	Main antenna	WiFi-2.4G	Sum
<b>Highest SAR value for Body</b>	REAR 0mm (LTEB41 PC2)	0.88	0.69	<b>1.57</b>

**Table 2.4: The sum of SAR values for Main antenna + WiFi-5G + BT**

	Position	Main antenna	WiFi-5G	BT	Sum
<b>Highest SAR value for Body</b>	Top 0mm (LTE B25)	0.80	0.65	<0.01	<b>1.45</b>

According to the above tables, the highest sum of reported SAR values is **1.57 W/kg (1g)**. The detail for simultaneous transmission consideration is described in chapter 15.

**Conclusion:**

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

### 3 Client Information

#### 3.1 Applicant Information

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#### 3.2 Manufacturer Information

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Telephone:	+86 755 3661 1621
Fax:	+86 755 3661 2000-81722



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

### 4.1 About EUT

Description:	Tablet PC
Model name:	9137W
Operating mode(s):	GSM850/900/1800/1900, WCDMA850/1700/1900 LTEBand2/4/5/7/12/13/17/25/26/29/30/41/66/71 BT, Wi-Fi(2.4G&5G)
Tested Tx Frequency:	824 – 849 MHz (GSM 850)
	1850 – 1910 MHz (GSM 1900)
	824 – 849 MHz (WCDMA 850 Band V)
	1710 – 1755 MHz (WCDMA1700 Band IV)
	1850–1910 MHz (WCDMA1900 Band II)
	2500 – 2570 MHz (LTE Band 7)
	699.7 – 715.3 MHz (LTE Band 12)
	779.5 – 784.5 MHz (LTE Band 13)
	814.7 – 848.3 MHz (LTE Band 26)
	2305 – 2315 MHz(LTE Band 30)
	2498.5 – 2687.5 MHz (LTE Band41)
	1710.7 –1779.3 MHz (LTE Band 66)
	665.5 – 695.5 MHz (LTE Band 71)
	2412 – 2462 MHz (Wi-Fi 2.4G)
	2400 – 2483.5 MHz (Bluetooth)
5150 – 5250 MHz (U-NII-1)	
5250 – 5350 MHz (U-NII-2A)	
5725 – 5850 MHz (U-NII-3)	
GPRS/EGPRS Multislot Class:	12
Test device production information:	Production unit
Device type:	Portable device
Antenna type:	Integrated antenna
Hotspot mode:	Support

### 4.2 Internal Identification of EUT used during the test

EUT ID*	IMEI/SN	HW Version	SW Version
EUT1	016307000001504	04	HUS1
EUT2	016307000001512	04	HUS1
EUT3	016307000001009	04	HUS1
EUT4	016307000000993	04	HUS1
EUT5	016307000000894	04	HUS1
EUT6	016307000001074	04	HUS1

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

**Note:** It is performed to test SAR with the EUT1-3 and conducted power with the EUT4-6.

### 4.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	TLp040M7	/	veken
AE2	Battery	TLp040M1	/	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: Measurement Techniques.

**KDB447498 D01: General RF Exposure Guidance v06:** Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

**KDB616217 D04 SAR for laptop and tablets v01r02** SAR Evaluation Considerations for Laptop, Notebook, Notebook and Tablet Computers.

**KDB941225 D01 SAR test for 3G devices v03r01:** SAR Measurement Procedures for 3G Devices

**KDB941225 D05 SAR for LTE Devices v02r05:** SAR Evaluation Considerations for LTE Devices

**KDB941225 D06 Hotspot Mode SAR v02r01:** SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities

**KDB248227 D01 802.11 Wi-Fi SAR v02r02:** SAR GUIDANCE FOR IEEE 802.11 (Wi-Fi) TRANSMITTERS

**KDB865664 D01 SAR measurement 100 MHz to 6 GHz v01r04:** SAR Measurement Requirements for 100 MHz to 6 GHz.

**KDB865664 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 heat 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**

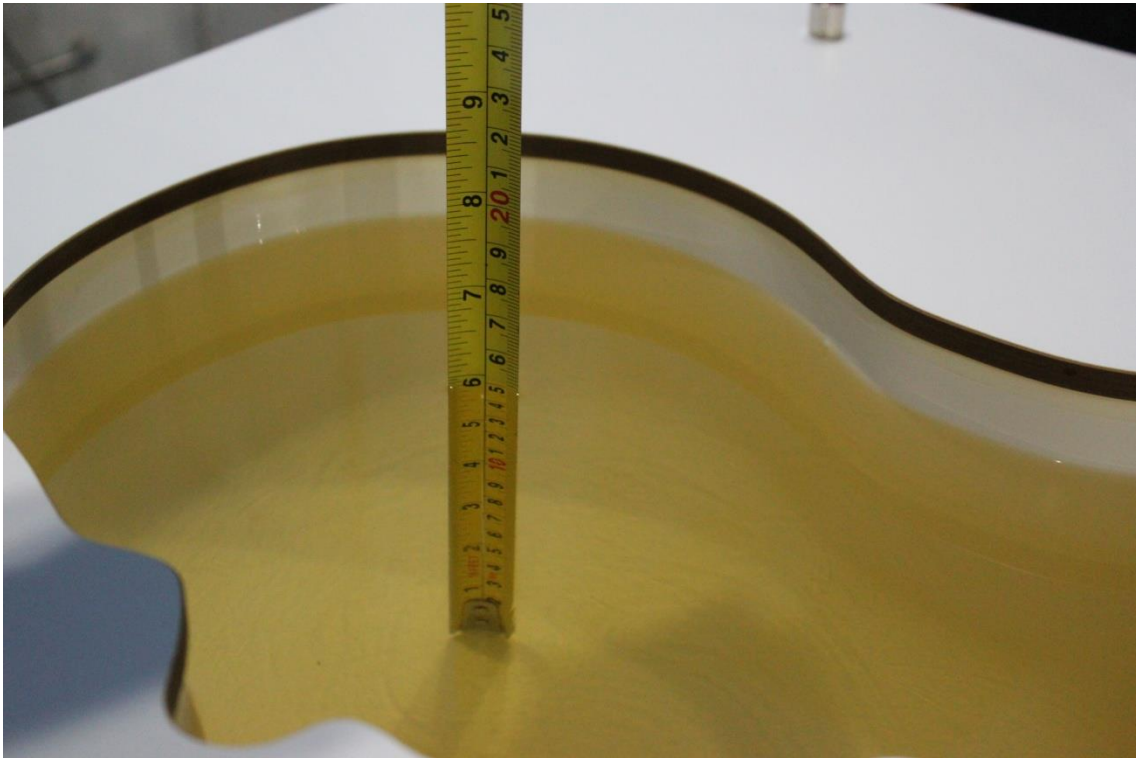
Frequency(MHz)	Liquid Type	Conductivity( $\sigma$ )	$\pm 5\%$ Range	Permittivity( $\epsilon$ )	$\pm 5\%$ Range
750	Head	0.89	0.85~0.93	41.94	39.8~44.0
835	Head	0.90	0.86~0.95	41.5	39.4~43.6
1750	Head	1.37	1.30~1.44	40.08	38.1~42.1
1900	Head	1.40	1.33~1.47	40.0	38.0~42.0
2300	Head	1.67	1.50~1.84	39.47	37.5~41.4
2450	Head	1.67	1.59~1.75	39.47	37.5~41.4
2600	Head	1.96	1.86~2.06	39.01	37.1~41.0
5250	Head	4.71	4.47~4.95	35.93	34.13~37.73
5750	Head	5.22	4.96~5.48	35.36	33.59~37.13

### 7.2 Dielectric Performance

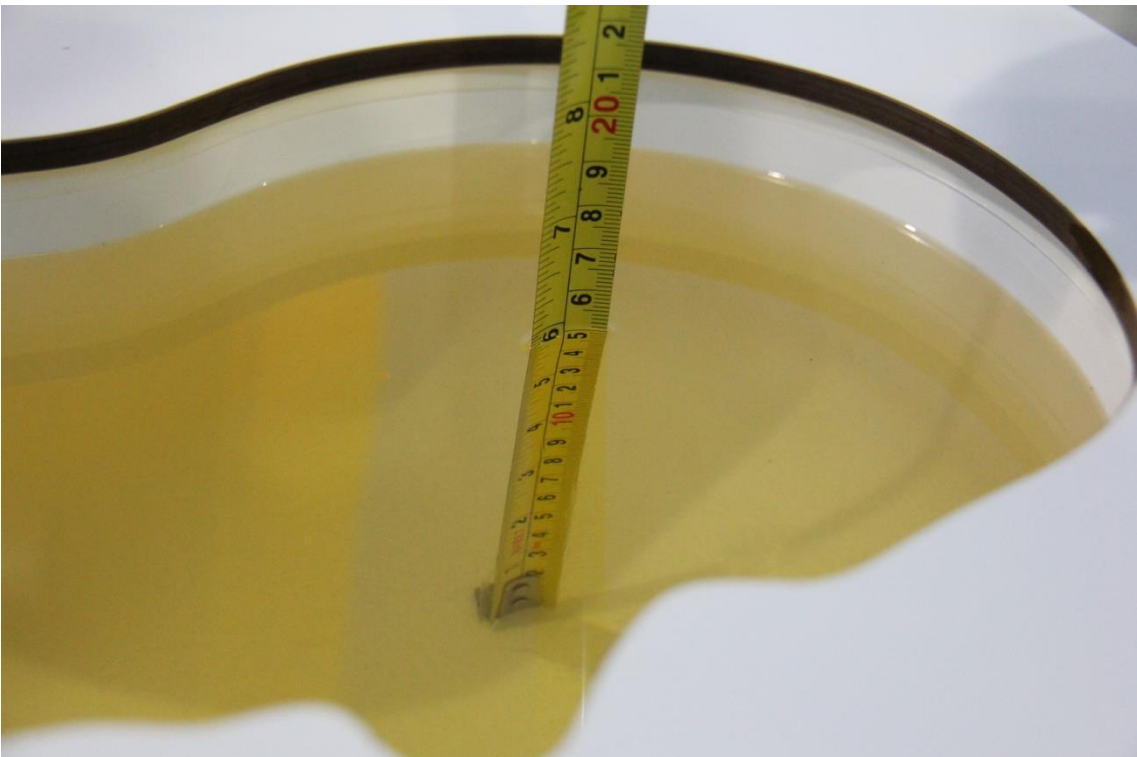
**Table 7.2: Dielectric Performance of Tissue Simulating Liquid**

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity $\epsilon$	Drift (%)	Conductivity $\sigma$ (S/m)	Drift (%)
2022/9/6	Head	750Mhz	43.89	4.65%	0.9182	3.17%
2022/9/8	Head	835 MHz	43.38	4.53%	0.9411	4.57%
2022/9/10	Head	1750Mhz	41.42	3.34%	1.432	4.53%
2022/9/12	Head	1900 MHz	41.11	2.78%	1.465	4.64%
2022/9/14	Head	2300Mhz	40.44	2.46%	1.745	4.49%
2022/9/16	Head	2450 MHz	40.09	2.27%	1.866	3.67%
2022/9/18	Head	2600 MHz	39.89	2.26%	2.051	4.64%
2022/9/21	Head	5250 MHz	34.72	-3.37%	4.656	-1.15%
2022/9/26	Head	5750 MHz	33.81	-4.38%	5.192	-0.54%

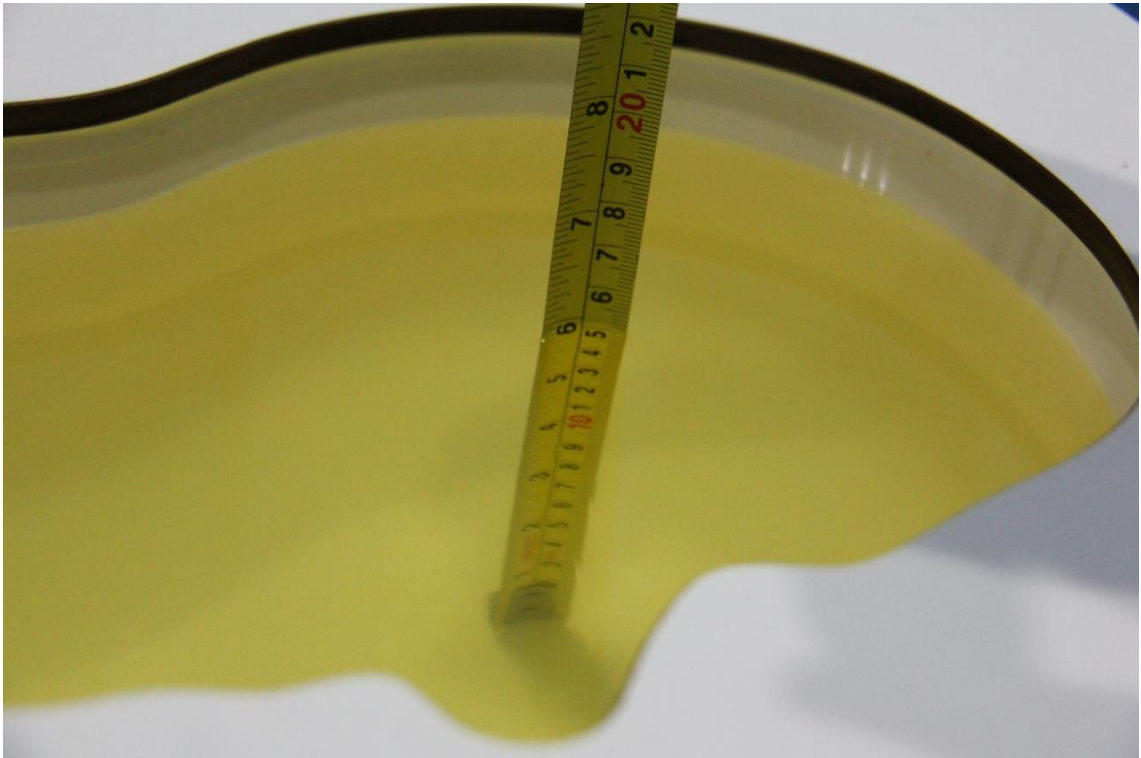
Note: The liquid temperature is 22.0°C



Picture 7-1 Liquid depth in the Head Phantom (750MHz)



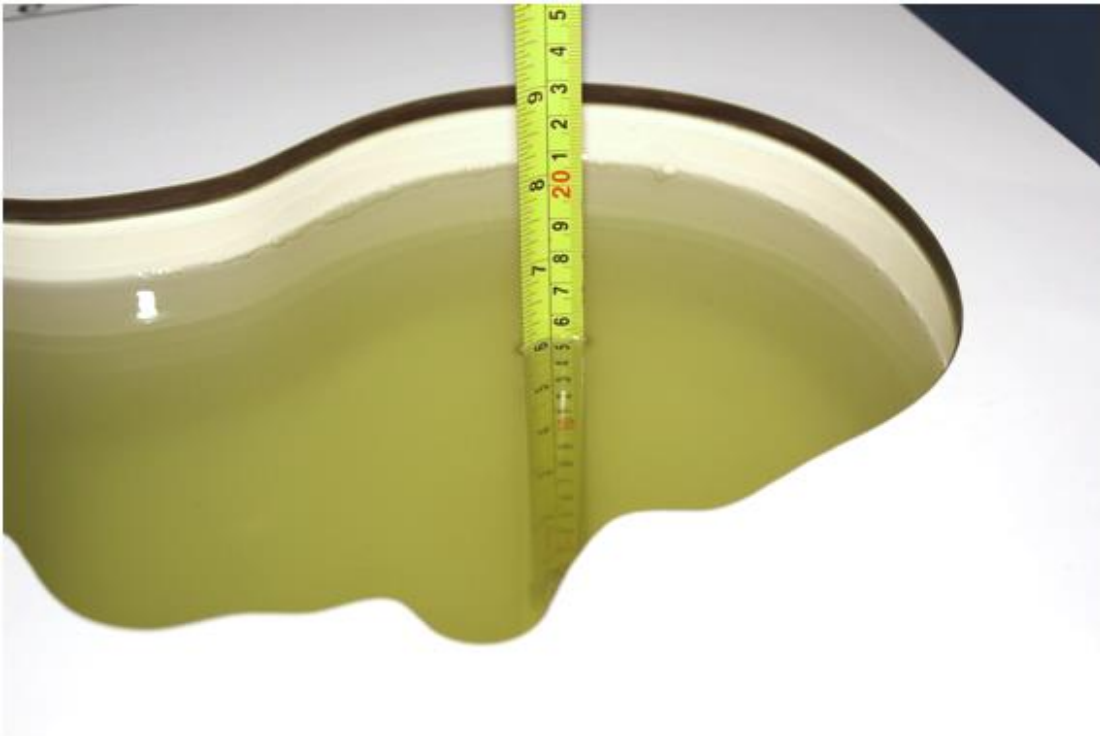
Picture 7-1 Liquid depth in the Head Phantom (835 MHz)



**Picture 7-2 Liquid depth in the Head Phantom (1900 MHz)**



**Picture 7-3 Liquid depth in the Head Phantom (2450MHz)**



Picture 7-4 Liquid depth in the Head Phantom (2600 MHz)

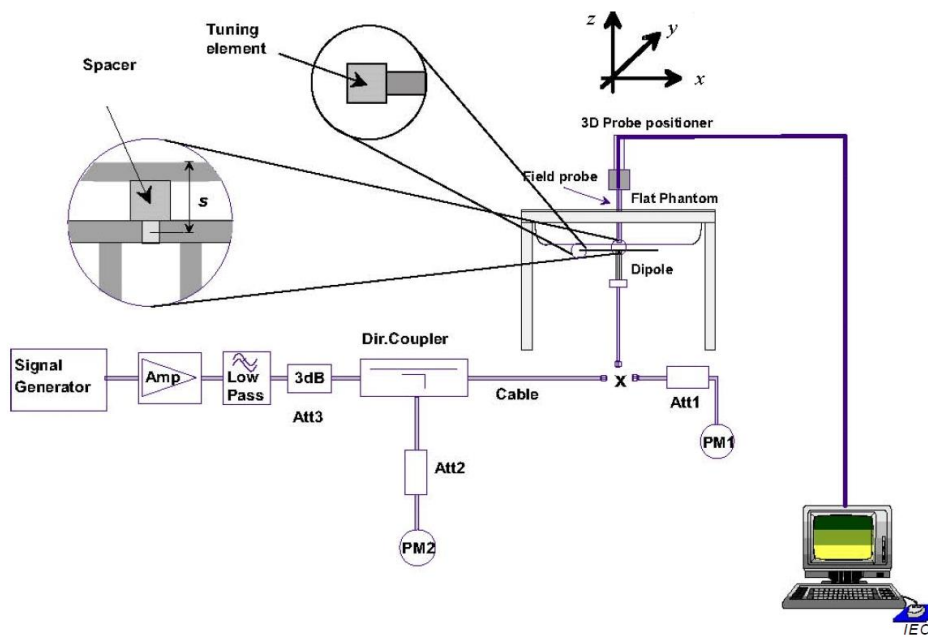


Picture 7-6 Liquid depth in the Head Phantom (5GHz)

## 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.

The system verification results are required that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR. The details are presented in annex B.

**Table 8.1: System Verification of Head**

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
2022/9/6	750Mhz	5.64	8.63	5.68	8.36	0.71%	-3.13%
2022/9/8	835 MHz	6.34	9.73	6.12	9.28	-3.47%	-4.62%
2022/9/10	1750Mhz	19.3	36.8	19.8	36.1	2.59%	-1.85%
2022/9/12	1900 MHz	20.7	39.7	20.8	39.2	0.29%	-1.36%
2022/9/14	2300Mhz	24.2	49.6	25.2	52.0	3.97%	4.84%
2022/9/16	2450 MHz	24.9	52.7	24.6	52.8	-1.20%	0.19%
2022/9/18	2600 MHz	25.2	55.8	26.4	58.0	4.92%	3.94%
2022/9/21	5250 MHz	22.3	78.1	22.0	77.2	-1.35%	-1.15%
2022/9/23	5600 MHz	22.8	80.4	23.0	81.9	0.88%	1.87%
2022/9/26	5750 MHz	5.64	8.63	5.68	8.36	0.71%	-3.13%

## 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.

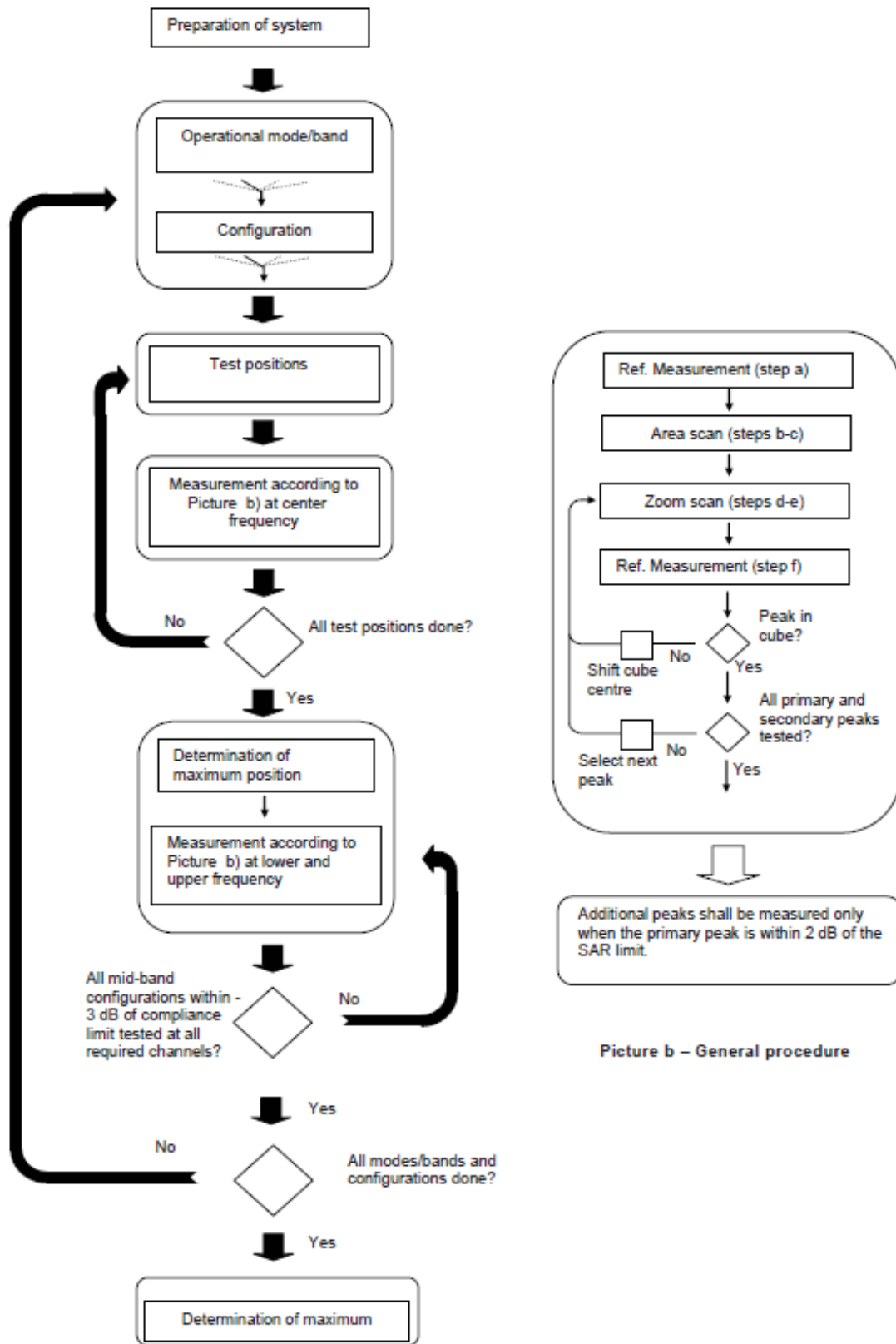
**Step 1:** The tests described in 9.2 shall be performed at the channel that is closest to the centre of the transmit frequency band ( $f_c$ ) for:

- 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 1528-2003. 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.

		$\leq 3$ GHz	$> 3$ GHz	
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		$5 \pm 1$ mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm	
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$	
Maximum area scan spatial resolution: $\Delta x_{Area}$ , $\Delta y_{Area}$		$\leq 2$ GHz: $\leq 15$ mm 2 – 3 GHz: $\leq 12$ mm	3 – 4 GHz: $\leq 12$ mm 4 – 6 GHz: $\leq 10$ mm	
		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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.		
Maximum zoom scan spatial resolution: $\Delta x_{Zoom}$ , $\Delta y_{Zoom}$		$\leq 2$ GHz: $\leq 8$ mm 2 – 3 GHz: $\leq 5$ mm*	3 – 4 GHz: $\leq 5$ mm* 4 – 6 GHz: $\leq 4$ mm*	
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$	$\leq 5$ mm	3 – 4 GHz: $\leq 4$ mm 4 – 5 GHz: $\leq 3$ mm 5 – 6 GHz: $\leq 2$ mm	
	graded grid	$\Delta z_{Zoom}(1)$ : between 1 <sup>st</sup> two points closest to phantom surface	$\leq 4$ mm	3 – 4 GHz: $\leq 3$ mm 4 – 5 GHz: $\leq 2.5$ mm 5 – 6 GHz: $\leq 2$ mm
		$\Delta z_{Zoom}(n>1)$ : between subsequent points	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z	$\geq 30$ mm	3 – 4 GHz: $\geq 28$ mm 4 – 5 GHz: $\geq 25$ mm 5 – 6 GHz: $\geq 22$ mm	
Note: $\delta$ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the <i>reported</i> SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is $\leq 1.4$ W/kg, $\leq 8$ mm, $\leq 7$ mm and $\leq 5$ 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.				

### 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<sub>n</sub>), 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	1.5	1.5	20	75
2	6/15	15/15	64	6/15	12/15	12/15	12/15	4	1	1.5	1.5	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}:47/15$ $\beta_{ed2}:47/15$	4	2	1.5	1.5	15	92
4	2/15	15/15	64	2/15	4/15	4/15	56/75	4	1	1.5	1.5	17	71
5	15/15	15/15	64	15/15	24/15	30/15	134/15	4	1	1.5	1.5	21	81

#### Rel.8 DC-HSDPA (Cat 24)

SAR test exclusion for Rel.8 DC-HSDPA must satisfy the SAR test exclusion requirements of Rel.5 HSDPA. SAR test exclusion for DC-HSDPA devices is determined by power measurements according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1. A primary and a secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to qualify for SAR test exclusion.

## 9.4 SAR Measurement for LTE

SAR tests for LTE are performed with a base station simulator, Rohde & Schwarz CMW500. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. All powers were measured with the CMW 500.

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  $\leq 0.8$  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

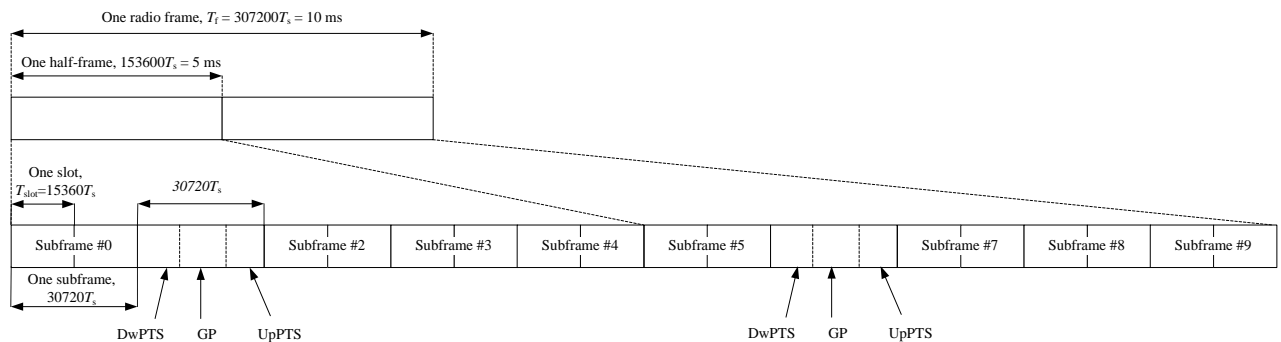
The procedures required for 1 RB allocation in 1) are applied to measure the SAR for QPSK with 50% RB allocation.

### 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  $\leq 0.8$  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.

## TDD test:

TDD testing is performed using guidance from FCC KDB 941225 D05 and the SAR test guidance provided in April 2013 TCB works hop notes. TDD is tested at the highest duty factor using UL-DL configuration 0 with special subframe configuration 6 and applying the FDD LTE procedures in KDB 941225 D05. SAR testing is performed using the extended cyclic prefix listed in 3GPP TS 36.211.



**Figure 9.2: Frame structure type 2 (for 5 ms switch-point periodicity)**

**Table 9.1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)**

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-		
9	$13168 \cdot T_s$			-		

**Table 9.2: Uplink-downlink configurations**

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

Duty factor is calculated by:

$$\begin{aligned}
 \text{Duty factor} &= \text{uplink frame} \cdot 6 + \text{UpPTS} \cdot 2 / \text{one frame length} \\
 &= (30720 \cdot T_s \cdot 6 + 5120 \cdot T_s \cdot 2) / 307200 \cdot T_s \\
 &= 0.633
 \end{aligned}$$

## 9.5 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.

## 9.6 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 section14 labeled as: (Power Drift [dB]). This ensures that the power drift during one measurement is within 5%.



## 10 Area Scan Based 1-g SAR

### 10.1 Requirement of KDB

According to the KDB447498 D01, when the implementation is based the specific polynomial fit algorithm as presented at the 29th Bioelectromagnetics Society meeting (2007) and the estimated 1-gSAR is  $\leq 1.2$  W/kg, a zoom scan measurement is not required provided it is also not needed for any other purpose; for example, if the peak SAR location required for simultaneous transmission SAR test exclusion can be determined accurately by the SAR system or manually to discriminate between distinctive peaks and scattered noisy SAR distributions from area scans.

There must not be any warning or alert messages due to various measurement concerns identified by the SAR system; for example, noise in measurements, peaks too close to scan boundary, peaks are too sharp, spatial resolution and uncertainty issues etc. The SAR system verification must also demonstrate that the area scan estimated 1-g SAR is within 3% of the zoom scan 1-g SAR (See Annex B). When all the SAR results for each exposure condition in a frequency band and wireless mode are based on estimated 1-g SAR, the 1-g SAR for the highest SAR configuration must be determined by a zoom scan.

### 10.2 Fast SAR Algorithms

The approach is based on the area scan measurement applying a frequency dependent attenuation parameter. This attenuation parameter was empirically determined by analyzing a large number of phones. The MOTOROLA FAST SAR was developed and validated by the MOTOROLA Research Group in Ft. Lauderdale.

In the initial study, an approximation algorithm based on Linear fit was developed. The accuracy of the algorithm has been demonstrated across a broad frequency range (136-2450 MHz) and for both 1- and 10-g averaged SAR using a sample of 264 SAR measurements from 55 wireless handsets. For the sample size studied, the root-mean-squared errors of the algorithm are 1.2% and 5.8% for 1- and 10-g averaged SAR, respectively. The paper describing the algorithm in detail is expected to be published in August 2004 within the Special Issue of Transactions on MTT.

In the second step, the same research group optimized the fitting algorithm to an Polynomial fit whereby the frequency validity was extended to cover the range 30-6000MHz. Details of this study can be found in the BEMS 2007 Proceedings.

Both algorithms are implemented in DASY software.

## 11 Conducted Output Power

There are two sets of tune-up power, Normal power and Low power, for all bands by proximity sensor. The detail of proximity sensor is presented in Annex I.

### 11.1 GSM Measurement result

#### GSM850

GSM 850 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	32.27	32.25	32.12	33.50	-9.03	23.24	23.22	23.09
2 Txslots	31.25	31.21	31.08	32.00	-6.02	25.23	25.19	25.06
3Txslots	29.02	28.96	28.79	30.00	-4.26	24.76	24.70	24.53
4 Txslots	27.66	27.62	27.48	28.50	-3.01	24.65	24.61	24.47
GSM 850 EGPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	32.21	32.18	32.08	33.50	-9.03	23.18	23.15	23.05
2 Txslots	31.19	31.15	31.04	32.00	-6.02	25.17	25.13	25.02
3Txslots	28.96	28.90	28.76	30.00	-4.26	24.70	24.64	24.50
4 Txslots	27.60	27.57	27.45	28.50	-3.01	24.59	24.56	24.44
GSM 850 EGPRS (8PSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	25.09	24.99	25.40	26.00	-9.03	16.06	15.96	16.37
2 Txslots	24.04	24.33	24.29	25.00	-6.02	18.02	18.31	18.27
3Txslots	22.34	21.93	22.17	23.00	-4.26	18.08	17.67	17.91
4 Txslots	21.17	20.84	21.22	22.00	-3.01	18.16	17.83	18.21

#### GSM850 Sensor on

GSM 850 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	25.84	25.86	25.82	27.00	-9.03	16.81	16.83	16.79
2 Txslots	24.73	24.75	24.74	25.00	-6.02	18.71	18.73	18.72
3Txslots	22.36	22.47	22.53	23.50	-4.26	18.10	18.21	18.27
4 Txslots	21.17	21.24	21.25	22.00	-3.01	18.16	18.23	18.24
GSM 850 EGPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	25.77	25.83	25.80	27.00	-9.03	16.74	16.80	16.77

2 Txslots	24.68	24.72	24.73	25.00	-6.02	18.66	18.70	18.71
3Txslots	22.33	22.45	22.52	23.50	-4.26	18.07	18.19	18.26
4 Txslots	21.15	21.23	21.24	22.00	-3.01	18.14	18.22	18.23
GSM 850 EGPRS (8PSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	23.25	23.08	23.42	24.00	-9.03	14.22	14.05	14.39
2 Txslots	22.21	22.04	22.41	23.00	-6.02	16.19	16.02	16.39
3Txslots	20.07	19.93	20.25	21.00	-4.26	15.81	15.67	15.99
4 Txslots	19.11	18.96	19.29	20.00	-3.01	16.10	15.95	16.28

### GSM1900

GSM 1900 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	28.94	28.96	28.78	30.00	-9.03	19.91	19.93	19.75
2 Txslots	28.24	28.25	28.07	29.00	-6.02	22.22	22.23	22.05
3Txslots	26.42	26.40	26.26	27.50	-4.26	22.16	22.14	22.00
4 Txslots	25.34	25.32	25.15	26.00	-3.01	22.33	22.31	22.14
GSM 1900 EGPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	29.01	29.01	28.82	30.00	-9.03	19.98	19.98	19.79
2 Txslots	28.32	28.30	28.11	29.00	-6.02	22.30	22.28	22.09
3Txslots	26.49	26.44	26.29	27.50	-4.26	22.23	22.18	22.03
4 Txslots	25.40	25.36	25.17	26.00	-3.01	22.39	22.35	22.16
GSM 1900 EGPRS (8PSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	26.25	26.37	26.25	27.50	-9.03	17.22	17.34	17.22
2 Txslots	25.34	26.17	25.34	26.50	-6.02	19.32	20.15	19.32
3Txslots	23.41	23.47	23.35	24.50	-4.26	19.15	19.21	19.09
4 Txslots	23.09	22.45	22.32	23.50	-3.01	20.08	19.44	19.31

### GSM1900 Sensor on

GSM 1900 GPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	251	190	128			251	190	128
1 Txslot	19.81	19.69	19.32	20.50	-9.03	10.78	10.66	10.29
2 Txslots	18.89	18.79	18.44	19.50	-6.02	12.87	12.77	12.42
3Txslots	17.04	16.82	16.44	17.50	-4.26	12.78	12.56	12.18
4 Txslots	15.72	15.69	15.27	16.50	-3.01	12.71	12.68	12.26
GSM 1900 EGPRS (GMSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512

1 Txslot	19.54	19.52	19.19	20.50	-9.03	10.51	10.49	10.16
2 Txslots	18.68	18.64	18.33	19.50	-6.02	12.66	12.62	12.31
3Txslots	16.85	16.69	16.34	17.50	-4.26	12.59	12.43	12.08
4 Txslots	15.62	15.61	15.17	16.50	-3.01	12.61	12.60	12.16
GSM 1900 EGPRS (8PSK)	Measured Power (dBm)				calculation	Averaged Power (dBm)		
	810	661	512			810	661	512
1 Txslot	18.02	18.12	18.27	19.50	-9.03	8.99	9.09	9.24
2 Txslots	17.02	17.17	17.18	18.50	-6.02	11.00	11.15	11.16
3Txslots	15.04	15.46	15.02	16.50	-4.26	10.78	11.20	10.76
4 Txslots	13.97	14.07	13.98	15.50	-3.01	10.96	11.06	10.97

## 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

## 11.2 WCDMA Measurement result

### WCDMA1900

Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	Tune up
WCDMA	\	23.04	23.24	23.29	24.00
HSUPA	1	19.03	19.18	19.25	20.50
	2	19.05	19.18	19.20	20.50
	3	19.55	19.56	19.58	20.50
	4	18.37	18.46	18.53	20.00
	5	19.87	20.06	20.11	21.50
HSPA+		20.46	20.77	20.68	22.00
DC-HSDPA	1	21.06	21.19	21.17	22.00
	2	21.06	21.05	21.08	22.00
	3	20.54	20.65	20.71	21.50
	4	20.52	20.64	20.66	21.50

### WCDMA1900 Sensor on

Item	band	FDDII result			
	ARFCN	9538 (1907.6MHz)	9400 (1880MHz)	9262 (1852.4MHz)	Tune up
WCDMA	\	13.84	14.04	14.09	14.50
HSUPA	1	9.99	10.09	10.13	11.00
	2	10.13	10.29	10.14	11.00
	3	11.06	11.13	11.16	12.00
	4	9.53	9.62	9.63	11.00
	5	11.01	11.13	11.15	12.00
HSPA+		12.52	12.69	11.70	13.00
DC-HSDPA	1	11.17	11.31	11.23	12.50
	2	11.04	11.16	11.18	12.50
	3	10.61	10.67	10.72	12.00
	4	10.62	10.75	10.70	12.00

## WCDMA1700

Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	Tune up
WCDMA	\	23.18	23.07	23.06	23.50
HSUPA	1	18.93	18.92	18.98	20.00
	2	18.95	18.82	18.96	20.00
	3	20.01	19.86	19.94	21.00
	4	18.47	18.34	18.41	19.50
	5	19.97	19.83	19.92	21.00
HSPA+		20.71	20.45	20.52	21.50
DC-HSDPA	1	21.01	20.94	21.08	22.00
	2	21.88	20.78	20.87	22.00
	3	20.49	20.44	20.39	21.50
	4	20.48	20.49	20.36	21.50

## WCDMA1700 Sensor on

Item	band	FDDIV result			
	ARFCN	1513 (1752.6MHz)	1412 (1732.4MHz)	1312 (1712.4MHz)	Tune up
WCDMA	\	12.87	12.84	12.78	13.50
HSUPA	1	8.92	8.86	8.96	10.00
	2	9.16	8.93	8.99	10.00
	3	9.97	9.90	9.96	10.00
	4	8.48	8.41	8.52	10.00
	5	9.98	9.92	9.97	11.00
HSPA+		10.51	10.41	10.54	11.50
DC-HSDPA	1	10.04	10.06	10.13	11.00
	2	9.82	9.92	10.02	11.00
	3	9.46	9.47	9.58	11.00
	4	9.58	9.65	9.68	11.00

## WCDMA850

Item	band	FDDV result			
	ARFCN	4233 (846.6MHz)	4183 (836.6MHz)	4132 (826.4MHz)	Tune up
WCDMA	\	23.26	23.20	23.24	24.00
HSUPA	1	19.37	19.43	19.42	20.50
	2	19.35	19.34	19.38	20.50
	3	20.34	20.30	20.37	21.50
	4	18.87	18.82	18.96	20.00
	5	20.31	20.38	20.37	21.50
HSPA+		21.05	21.09	21.02	22.00
DC-HSDPA	1	21.41	21.46	21.43	22.50
	2	21.32	21.36	21.48	22.50
	3	20.89	20.94	20.81	22.00
	4	20.93	20.94	20.96	22.00

## WCDMA850 Sensor on

Item	band	FDDV result			
	ARFCN	4233 (846.6MHz)	4183 (836.6MHz)	4132 (826.4MHz)	Tune up
WCDMA	\	17.35	17.34	17.47	18.00
HSUPA	1	13.92	13.65	13.61	14.50
	2	13.49	13.59	13.72	14.50
	3	14.32	14.47	14.64	15.50
	4	13.26	13.24	13.34	14.00
	5	14.32	14.40	14.64	15.50
HSPA+		15.24	15.06	15.18	16.00
DC-HSDPA	1	14.42	14.48	14.72	15.50
	2	14.22	14.14	14.57	15.50
	3	13.96	14.03	14.22	15.00
	4	13.91	13.93	14.14	15.00

### 11.3 LTE Measurement result

**Table 11.3-1: Maximum Power Reduction (MPR) for LTE- Normal power**

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4	3	5	10	15	20	
	MHz	MHz	MHz	MHz	MHz	MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	2

**Table 11.3-2: Maximum Power Reduction (MPR) for LTE-Low power**

Modulation	Channel bandwidth / Transmission bandwidth configuration [RB]						MPR (dB)
	1.4	3	5	10	15	20	
	MHz	MHz	MHz	MHz	MHz	MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	0
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	0
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	0

**Table 11.3-3: The tune up for LTE**

Band	Tune up	
	Normal power	Low power(Sensor on)
LTEB7	24	15.5
LTEB12/17	24	21
LTEB13	24	19
LTEB2/25	24	14.5
LTEB5/26	24	19
LTEB30	24	14
LTEB41 PC2	27	19
LTEB41 PC3	24	16
LTEB4/66	24	14
LTEB71	24	21



## LTE B7

Band 7					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	
5MHz	1RB-High (24)	2567.5	23.46	22.64	
		2535	23.39	22.59	
		2502.5	23.58	22.80	
	1RB-Middle (12)	2567.5	23.74	22.96	
		2535	23.63	22.76	
		2502.5	23.84	22.64	
	1RB-Low (0)	2567.5	23.48	22.76	
		2535	23.45	22.55	
		2502.5	23.61	22.73	
	12RB-High (13)	2567.5	22.61	21.56	
		2535	22.54	21.51	
		2502.5	22.75	21.73	
	12RB-Middle (6)	2567.5	22.69	21.64	
		2535	22.59	21.55	
		2502.5	22.77	21.75	
	12RB-Low (0)	2567.5	22.66	21.64	
		2535	22.55	21.50	
		2502.5	22.71	21.72	
	25RB (0)	2567.5	22.66	21.65	
		2535	22.58	21.56	
		2502.5	22.74	21.72	
	10MHz	1RB-High (49)	2565	23.52	22.75
			2535	23.44	22.70
			2505	23.58	22.87
1RB-Middle (24)		2565	23.70	22.77	
		2535	23.59	22.86	
		2505	23.76	22.95	
1RB-Low (0)		2565	23.52	22.85	
		2535	23.49	22.72	
		2505	23.66	22.79	
25RB-High (25)		2565	22.67	21.66	
		2535	22.66	21.62	
		2505	22.74	21.74	
25RB-Middle (12)		2565	22.70	21.68	
		2535	22.64	21.59	
		2505	22.82	21.79	
25RB-Low (0)	2565	22.74	21.69		

	50RB (0)	2535	22.62	21.58
		2505	22.76	21.75
		2565	22.70	21.68
		2535	22.68	21.62
		2505	22.79	21.75
15MHz	1RB-High (74)	2562.5	23.47	22.67
		2535	23.40	22.65
		2507.5	23.56	22.79
	1RB-Middle (37)	2562.5	23.58	22.85
		2535	23.52	22.63
		2507.5	23.65	22.97
	1RB-Low (0)	2562.5	23.51	22.76
		2535	23.47	22.64
		2507.5	23.60	22.85
	36RB-High (38)	2562.5	22.65	21.59
		2535	22.61	21.54
		2507.5	22.72	21.66
	36RB-Middle (19)	2562.5	22.69	21.65
		2535	22.67	21.55
		2507.5	22.75	21.70
	36RB-Low (0)	2562.5	22.67	21.62
		2535	22.61	21.55
		2507.5	22.73	21.70
	75RB (0)	2562.5	22.66	21.64
		2535	22.61	21.57
		2507.5	22.70	21.68
20MHz	1RB-High (99)	2560	23.37	22.64
		2535	23.29	22.60
		2510	23.38	22.71
	1RB-Middle (50)	2560	23.61	22.83
		2535	23.53	22.75
		2510	23.67	22.84
	1RB-Low (0)	2560	23.46	22.80
		2535	23.36	22.65
		2510	23.48	22.79
	50RB-High (50)	2560	22.58	21.58
		2535	22.53	21.50
		2510	22.56	21.56
	50RB-Middle (25)	2560	22.64	21.67
		2535	22.62	21.57
		2510	22.69	21.67
	50RB-Low (0)	2560	22.65	21.63
		2535	22.52	21.47
		2510	22.63	21.65

	100RB (0)	2560	22.64	21.61
		2535	22.51	21.46
		2510	22.61	21.59

## LTE B7 Sensor on

Band 7				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	2567.5	14.43	14.47
		2535	14.35	14.55
		2502.5	14.55	14.60
	1RB-Middle (12)	2567.5	14.64	14.89
		2535	14.65	14.82
		2502.5	14.66	14.81
	1RB-Low (0)	2567.5	14.47	14.49
		2535	14.40	14.60
		2502.5	14.54	14.65
	12RB-High (13)	2567.5	14.54	14.36
		2535	14.51	14.31
		2502.5	14.69	14.46
	12RB-Middle (6)	2567.5	14.65	14.42
		2535	14.56	14.40
		2502.5	14.68	14.48
	12RB-Low (0)	2567.5	14.65	14.43
		2535	14.53	14.31
		2502.5	14.67	14.45
	25RB (0)	2567.5	14.61	14.41
		2535	14.53	14.34
		2502.5	14.66	14.46
10MHz	1RB-High (49)	2565	14.54	14.64
		2535	14.47	14.47
		2505	14.56	14.59
	1RB-Middle (24)	2565	14.67	14.64
		2535	14.60	14.77
		2505	14.67	14.92
	1RB-Low (0)	2565	14.59	14.70
2535		14.51	14.56	

	25RB-High (25)	2505	14.65	14.82
		2565	14.61	14.44
		2535	14.59	14.44
	25RB-Middle (12)	2505	14.67	14.48
		2565	14.64	14.44
		2535	14.59	14.38
	25RB-Low (0)	2505	14.71	14.51
		2565	14.65	14.50
		2535	14.56	14.38
	50RB (0)	2505	14.69	14.51
		2565	14.60	14.41
		2535	14.62	14.44
15MHz	1RB-High (74)	2505	14.73	14.52
		2562.5	14.46	14.50
		2535	14.39	14.41
	1RB-Middle (37)	2507.5	14.48	14.51
		2562.5	14.60	14.74
		2535	14.51	14.62
	1RB-Low (0)	2507.5	14.63	14.77
		2562.5	14.50	14.68
		2535	14.53	14.70
	36RB-High (38)	2507.5	14.59	14.69
		2562.5	14.58	14.38
		2535	14.56	14.32
36RB-Middle (19)	2507.5	14.60	14.38	
	2562.5	14.64	14.39	
	2535	14.59	14.37	
36RB-Low (0)	2507.5	14.67	14.44	
	2562.5	14.63	14.41	
	2535	14.56	14.33	
75RB (0)	2507.5	14.64	14.41	
	2562.5	14.59	14.41	
	2535	14.55	14.36	
20MHz	1RB-High (99)	2507.5	14.63	14.43
		2560	14.40	14.48
		2535	14.35	14.50
	1RB-Middle (50)	2510	14.40	14.56
		2560	14.72	14.72
		2535	14.64	14.72
	1RB-Low (0)	2510	14.68	14.66
		2560	14.46	14.63
		2535	14.45	14.61
	50RB-High (50)	2510	14.52	14.66
		2560	14.54	14.35
			2535	14.50

		2510	14.57	14.37
50RB-Middle (25)		2560	14.64	14.43
		2535	14.59	14.41
		2510	14.64	14.43
50RB-Low (0)		2560	14.68	14.46
		2535	14.48	14.30
		2510	14.65	14.44
100RB (0)		2560	14.58	14.40
		2535	14.49	14.33
		2510	14.59	14.38

## LTE B12

Band 12				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	715.3	22.88	22.04
		707.5	22.94	22.09
		699.7	22.97	22.24
	1RB-Middle (3)	715.3	23.02	22.26
		707.5	23.08	22.23
		699.7	23.08	22.25
	1RB-Low (0)	715.3	22.92	22.15
		707.5	22.94	22.12
		699.7	22.94	22.26
	3RB-High (3)	715.3	23.07	21.94
		707.5	23.04	21.97
		699.7	23.08	22.07
	3RB-Middle (1)	715.3	23.09	21.96
		707.5	23.13	22.01
		699.7	23.09	22.07
	3RB-Low (0)	715.3	23.03	21.91
		707.5	23.04	21.92
		699.7	23.05	22.04
	6RB (0)	715.3	22.06	21.14
		707.5	22.06	21.13
		699.7	22.12	21.19
3MHz	1RB-High (14)	714.5	22.91	22.13
		707.5	22.94	22.16
		700.5	22.98	22.17
	1RB-Middle (7)	714.5	23.12	22.26

		707.5	23.09	22.21	
		700.5	23.15	22.32	
		714.5	22.93	22.23	
	1RB-Low (0)	707.5	22.98	22.12	
		700.5	22.98	22.23	
		714.5	21.95	21.07	
	8RB-High (7)	707.5	21.98	21.05	
		700.5	22.06	21.07	
		714.5	22.03	21.09	
	8RB-Middle (4)	707.5	22.01	21.10	
		700.5	22.09	21.15	
		714.5	22.02	21.11	
	8RB-Low (0)	707.5	22.00	21.06	
		700.5	22.05	21.08	
		714.5	22.01	21.04	
15RB (0)	707.5	22.02	21.05		
	700.5	22.09	21.08		
	713.5	22.77	21.97		
5MHz	1RB-High (24)	707.5	22.82	22.05	
		701.5	22.84	21.89	
		713.5	23.07	22.31	
	1RB-Middle (12)	707.5	23.09	22.17	
		701.5	23.15	22.29	
		713.5	22.83	22.10	
	1RB-Low (0)	707.5	22.84	21.93	
		701.5	22.86	22.10	
		713.5	21.97	20.98	
	12RB-High (13)	707.5	21.95	20.96	
		701.5	21.98	20.98	
		713.5	22.03	21.07	
	12RB-Middle (6)	707.5	22.04	21.04	
		701.5	22.08	21.09	
		713.5	21.99	21.02	
	12RB-Low (0)	707.5	22.01	21.01	
		701.5	22.03	21.04	
		713.5	22.00	21.05	
	25RB (0)	707.5	22.00	21.02	
		701.5	22.01	21.06	
		711	22.84	22.07	
	10MHz	1RB-High (49)	707.5	22.85	22.15
			704	22.90	22.04
			711	22.97	22.29
		1RB-Middle (24)	707.5	23.00	22.19
			704	23.03	22.04
			711	22.95	22.03
1RB-Low (0)		707.5	22.97	22.09	

	25RB-High (25)	704	22.95	22.17
		711	22.00	21.05
		707.5	22.05	21.07
	25RB-Middle (12)	704	22.01	21.00
		711	21.99	21.05
		707.5	22.02	21.02
	25RB-Low (0)	704	22.04	21.00
		711	22.04	21.04
		707.5	22.06	21.05
	50RB (0)	704	22.07	21.05
		711	22.01	21.06
		707.5	22.05	21.05
			704	22.03

## LTE B12 Sensor on

Band 12				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	715.3	19.94	20.31
		707.5	19.94	20.28
		699.7	20.02	20.24
	1RB-Middle (3)	715.3	20.07	20.44
		707.5	20.07	20.34
		699.7	20.11	20.49
	1RB-Low (0)	715.3	19.94	20.29
		707.5	19.90	20.29
		699.7	19.99	20.32
	3RB-High (3)	715.3	20.08	20.11
		707.5	20.10	20.12
		699.7	20.15	20.15
	3RB-Middle (1)	715.3	20.11	20.15
		707.5	20.09	20.05
		699.7	20.16	20.10
	3RB-Low (0)	715.3	20.07	20.11
		707.5	20.04	20.08
		699.7	20.09	20.07
	6RB (0)	715.3	20.08	20.19
		707.5	20.10	20.18
		699.7	20.08	20.16

3MHz	1RB-High (14)	714.5	19.97	20.31
		707.5	20.03	20.37
		700.5	20.03	20.30
	1RB-Middle (7)	714.5	20.12	20.51
		707.5	20.22	20.48
		700.5	20.21	20.47
	1RB-Low (0)	714.5	20.00	20.31
		707.5	20.01	20.29
		700.5	20.04	20.45
	8RB-High (7)	714.5	20.02	20.10
		707.5	20.03	20.11
		700.5	20.05	20.18
	8RB-Middle (4)	714.5	20.07	20.18
		707.5	20.08	20.16
		700.5	20.11	20.22
	8RB-Low (0)	714.5	20.04	20.12
		707.5	20.01	20.14
		700.5	20.06	20.17
	15RB (0)	714.5	20.02	20.05
		707.5	20.06	20.09
		700.5	20.09	20.13
5MHz	1RB-High (24)	713.5	19.89	20.25
		707.5	19.86	20.30
		701.5	19.90	20.23
	1RB-Middle (12)	713.5	20.13	20.46
		707.5	20.13	20.50
		701.5	20.28	20.54
	1RB-Low (0)	713.5	19.91	20.30
		707.5	19.91	20.18
		701.5	19.96	20.32
	12RB-High (13)	713.5	20.01	20.04
		707.5	20.05	20.07
		701.5	20.08	20.09
	12RB-Middle (6)	713.5	20.05	20.07
		707.5	20.09	20.13
		701.5	20.12	20.14
	12RB-Low (0)	713.5	20.07	20.06
		707.5	20.05	20.08
		701.5	20.08	20.06
	25RB (0)	713.5	20.04	20.07
		707.5	20.05	20.09
		701.5	20.07	20.08
10MHz	1RB-High (49)	711	19.97	20.20
		707.5	19.98	20.36
		704	19.97	20.24
	1RB-Middle	711	20.31	20.34



	(24)	707.5	20.21	20.36
		704	20.39	20.37
	1RB-Low (0)	711	20.03	20.33
		707.5	20.03	20.37
		704	20.06	20.45
	25RB-High (25)	711	20.10	20.12
		707.5	20.09	20.12
		704	20.13	20.12
	25RB-Middle (12)	711	20.26	20.11
		707.5	20.23	20.13
		704	20.34	20.14
	25RB-Low (0)	711	20.14	20.14
		707.5	20.15	20.12
		704	20.12	20.12
	50RB (0)	711	20.08	20.16
		707.5	20.12	20.11
		704	20.13	20.13

**LTE B13**

Band 13				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	784.5	22.89	22.28
		782	22.88	22.15
		779.5	22.91	22.21
	1RB-Middle (12)	784.5	23.22	22.54
		782	23.21	22.54
		779.5	23.24	22.62
	1RB-Low (0)	784.5	22.89	22.26
		782	22.97	22.28
		779.5	22.95	22.31
	12RB-High (13)	784.5	22.06	21.08
		782	22.03	21.07
		779.5	22.08	21.09
	12RB-Middle (6)	784.5	22.11	21.16
		782	22.13	21.13
		779.5	22.15	21.18
	12RB-Low (0)	784.5	22.12	21.12
		782	22.11	21.12
		779.5	22.06	21.07

	25RB (0)	784.5	22.07	21.09
		782	22.06	21.08
		779.5	22.05	21.08
10MHz	1RB-High (49)	782	22.97	22.25
	1RB-Middle (24)	782	23.13	22.35
	1RB-Low (0)	782	23.06	22.35
	25RB-High (25)	782	22.05	21.07
	25RB-Middle (12)	782	22.10	21.15
	25RB-Low (0)	782	22.14	21.16
	50RB (0)	782	22.09	21.12

## LTE B13 Sensor on

Band 13				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	784.5	17.93	18.25
		782	17.94	18.27
		779.5	17.99	18.35
	1RB-Middle (12)	784.5	18.24	18.42
		782	18.24	18.45
		779.5	18.28	18.47
	1RB-Low (0)	784.5	18.01	18.41
		782	18.01	18.35
		779.5	17.96	18.30
	12RB-High (13)	784.5	18.08	18.07
		782	18.13	18.15
		779.5	18.09	18.10
	12RB-Middle (6)	784.5	18.16	18.14
		782	18.18	18.19
		779.5	18.18	18.16
	12RB-Low (0)	784.5	18.08	18.10
		782	18.12	18.12
		779.5	18.09	18.14
	25RB (0)	784.5	18.08	18.12
		782	18.13	18.16
		779.5	18.12	18.12
10MHz	1RB-High (49)	782	18.01	18.32

	1RB-Middle (24)	782	18.32	18.46
	1RB-Low (0)	782	18.10	18.48
	25RB-High (25)	782	18.14	18.15
	25RB-Middle (12)	782	18.17	18.15
	25RB-Low (0)	782	18.27	18.18
	50RB (0)	782	18.16	18.17

## LTE B25

Band 25				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	1914.3 (26683)	22.83	22.07
		1882.5 (26365)	22.69	21.91
		1850.7 (26047)	22.77	22.05
	1RB-Middle (3)	1914.3 (26683)	22.96	22.24
		1882.5 (26365)	22.78	22.00
		1850.7 (26047)	22.90	22.16
	1RB-Low (0)	1914.3 (26683)	22.83	22.06
		1882.5 (26365)	22.67	21.87
		1850.7 (26047)	22.76	22.07
	3RB-High (3)	1914.3 (26683)	22.95	21.95
		1882.5 (26365)	22.79	21.79
		1850.7 (26047)	22.88	21.85
	3RB-Middle (1)	1914.3 (26683)	23.04	22.03

		1882.5 (26365)	22.83	21.79	
		1850.7 (26047)	22.94	21.88	
	3RB-Low (0)	1914.3 (26683)	22.99	21.91	
		1882.5 (26365)	22.78	21.73	
		1850.7 (26047)	22.88	21.86	
	6RB (0)	1914.3 (26683)	22.04	21.06	
		1882.5 (26365)	21.81	20.88	
		1850.7 (26047)	21.88	20.98	
	3MHz	1RB-High (14)	1913.5 (26675)	22.87	22.05
			1882.5 (26365)	22.71	21.97
1851.5 (26055)			22.75	22.10	
1RB-Middle (7)		1913.5 (26675)	23.03	22.24	
		1882.5 (26365)	22.81	22.08	
		1851.5 (26055)	22.93	22.21	
1RB-Low (0)		1913.5 (26675)	22.90	22.06	
		1882.5 (26365)	22.73	21.98	
		1851.5 (26055)	22.81	22.14	
8RB-High (7)		1913.5 (26675)	21.94	21.03	
		1882.5 (26365)	21.76	20.84	
		1851.5 (26055)	21.87	20.91	
8RB-Middle (4)		1913.5 (26675)	22.01	21.05	
		1882.5	21.79	20.88	

		(26365)		
		1851.5 (26055)	21.89	20.94
		1913.5 (26675)	21.98	21.03
	8RB-Low (0)	1882.5 (26365)	21.75	20.84
		1851.5 (26055)	21.86	20.91
		1913.5 (26675)	21.99	20.98
	15RB (0)	1882.5 (26365)	21.75	20.79
		1851.5 (26055)	21.84	20.86
		1912.5 (26665)	22.78	21.99
	5MHz	1RB-High (24)	1882.5 (26365)	22.63
1852.5 (26065)			22.66	21.99
1912.5 (26665)			23.06	22.27
1RB-Middle (12)		1882.5 (26365)	22.92	22.04
		1852.5 (26065)	22.90	22.17
		1912.5 (26665)	22.80	22.07
1RB-Low (0)		1882.5 (26365)	22.60	21.89
		1852.5 (26065)	22.69	22.00
		1912.5 (26665)	21.90	20.88
12RB-High (13)		1882.5 (26365)	21.74	20.75
		1852.5 (26065)	21.82	20.82
		1912.5 (26665)	22.02	21.00
12RB-Middle (6)		1882.5 (26365)	21.81	20.80

	12RB-Low (0)	1852.5 (26065)	21.89	20.91	
		1912.5 (26665)	22.00	21.00	
		1882.5 (26365)	21.78	20.76	
		1852.5 (26065)	21.81	20.82	
	25RB (0)	1912.5 (26665)	21.96	20.95	
		1882.5 (26365)	21.77	20.80	
		1852.5 (26065)	21.83	20.84	
	10MHz	1RB-High (49)	1910 (26640)	22.85	22.14
			1882.5 (26365)	22.66	21.86
1855 (26090)			22.68	21.98	
1RB-Middle (24)		1910 (26640)	22.99	22.26	
		1882.5 (26365)	22.85	22.14	
		1855 (26090)	22.91	22.15	
1RB-Low (0)		1910 (26640)	22.80	22.03	
		1882.5 (26365)	22.69	21.95	
		1855 (26090)	22.75	21.96	
25RB-High (25)		1910 (26640)	21.95	20.94	
		1882.5 (26365)	21.77	20.79	
		1855 (26090)	21.82	20.85	
25RB-Middle (12)		1910 (26640)	22.02	21.01	
		1882.5 (26365)	21.81	20.81	
		1855	21.83	20.88	

	25RB-Low (0)	(26090)			
		1910 (26640)	22.03	21.01	
		1882.5 (26365)	21.82	20.83	
	50RB (0)	1855 (26090)	21.88	20.84	
		1910 (26640)	22.00	20.97	
		1882.5 (26365)	21.83	20.83	
	15MHz	1RB-High (74)	1855 (26090)	21.86	20.85
			1910 (26640)	22.00	20.97
			1882.5 (26365)	21.83	20.83
1RB-Middle (37)		1907.5 (26615)	22.87	22.14	
		1882.5 (26365)	22.68	22.03	
		1857.5 (26115)	22.63	21.85	
1RB-Low (0)		1907.5 (26615)	22.88	22.19	
		1882.5 (26365)	22.69	22.01	
		1857.5 (26115)	22.76	22.09	
36RB-High (38)		1907.5 (26615)	22.77	21.99	
		1882.5 (26365)	22.66	21.96	
		1857.5 (26115)	22.77	22.05	
36RB-Middle (19)		1907.5 (26615)	21.95	20.91	
		1882.5 (26365)	21.76	20.75	
		1857.5 (26115)	21.80	20.77	
		1907.5 (26615)	21.96	20.94	
		1882.5 (26365)	21.79	20.78	
		1857.5 (26115)	21.83	20.80	

	36RB-Low (0)	1907.5 (26615)	21.97	20.97
		1882.5 (26365)	21.81	20.80
		1857.5 (26115)	21.85	20.82
	75RB (0)	1907.5 (26615)	21.97	20.97
		1882.5 (26365)	21.79	20.79
		1857.5 (26115)	21.80	20.80
20MHz	1RB-High (99)	1905 (26590)	22.79	21.97
		1882.5 (26365)	22.66	21.89
		1860 (26140)	22.61	21.94
	1RB-Middle (50)	1905 (26590)	22.97	22.27
		1882.5 (26365)	22.84	22.04
		1860 (26140)	22.80	21.99
	1RB-Low (0)	1905 (26590)	22.70	21.89
		1882.5 (26365)	22.62	21.87
		1860 (26140)	22.74	21.96
	50RB-High (50)	1905 (26590)	21.88	20.86
		1882.5 (26365)	21.78	20.80
		1860 (26140)	21.79	20.77
	50RB-Middle (25)	1905 (26590)	21.95	20.97
		1882.5 (26365)	21.81	20.81
		1860 (26140)	21.79	20.80
	50RB-Low (0)	1905	21.97	20.99



		(26590)		
		1882.5 (26365)	21.85	20.86
		1860 (26140)	21.78	20.80
	100RB (0)	1905 (26590)	21.94	20.88
		1882.5 (26365)	21.81	20.77
		1860 (26140)	21.78	20.77

## LTE B25 Sensor on

Band 25				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	1914.3 (26683)	13.67	13.97
		1882.5 (26365)	13.56	13.85
		1850.7 (26047)	13.66	13.96
	1RB-Middle (3)	1914.3 (26683)	13.76	14.02
		1882.5 (26365)	13.70	13.95
		1850.7 (26047)	13.83	14.10
	1RB-Low (0)	1914.3 (26683)	13.67	13.97
		1882.5 (26365)	13.58	13.77
		1850.7 (26047)	13.66	13.92
	3RB-High (3)	1914.3 (26683)	13.83	13.78
		1882.5 (26365)	13.68	13.59

		1850.7 (26047)	13.81	13.83	
	3RB-Middle (1)	1914.3 (26683)	13.83	13.87	
		1882.5 (26365)	13.73	13.68	
		1850.7 (26047)	13.85	13.79	
	3RB-Low (0)	1914.3 (26683)	13.79	13.76	
		1882.5 (26365)	13.66	13.59	
		1850.7 (26047)	13.77	13.72	
	6RB (0)	1914.3 (26683)	13.79	13.86	
		1882.5 (26365)	13.67	13.74	
		1850.7 (26047)	13.79	13.81	
	3MHz	1RB-High (14)	1913.5 (26675)	13.70	13.97
			1882.5 (26365)	13.62	13.90
1851.5 (26055)			13.68	13.96	
1RB-Middle (7)		1913.5 (26675)	13.84	14.24	
		1882.5 (26365)	13.81	14.04	
		1851.5 (26055)	13.93	14.00	
1RB-Low (0)		1913.5 (26675)	13.69	13.99	
		1882.5 (26365)	13.62	13.87	
		1851.5 (26055)	13.73	14.05	
8RB-High (7)		1913.5 (26675)	13.75	13.77	
		1882.5 (26365)	13.64	13.70	
		1851.5	13.74	13.81	

	8RB-Middle (4)	(26055)			
		1913.5 (26675)	13.77	13.84	
		1882.5 (26365)	13.67	13.71	
	8RB-Low (0)	1851.5 (26055)	13.77	13.84	
		1913.5 (26675)	13.73	13.81	
		1882.5 (26365)	13.64	13.68	
	15RB (0)	1851.5 (26055)	13.77	13.80	
		1913.5 (26675)	13.75	13.73	
		1882.5 (26365)	13.61	13.65	
	5MHz	1RB-High (24)	1851.5 (26055)	13.71	13.75
			1912.5 (26665)	13.61	13.97
			1882.5 (26365)	13.52	13.85
1RB-Middle (12)		1852.5 (26065)	13.59	13.91	
		1912.5 (26665)	13.90	14.05	
		1882.5 (26365)	13.79	14.07	
1RB-Low (0)		1852.5 (26065)	13.90	14.25	
		1912.5 (26665)	13.64	13.85	
		1882.5 (26365)	13.52	13.73	
12RB-High (13)		1852.5 (26065)	13.62	13.89	
		1912.5 (26665)	13.74	13.72	
		1882.5 (26365)	13.66	13.63	
		1852.5 (26065)	13.73	13.72	

	12RB-Middle (6)	1912.5 (26665)	13.80	13.77
		1882.5 (26365)	13.70	13.66
		1852.5 (26065)	13.83	13.76
	12RB-Low (0)	1912.5 (26665)	13.74	13.71
		1882.5 (26365)	13.67	13.64
		1852.5 (26065)	13.75	13.71
	25RB (0)	1912.5 (26665)	13.76	13.77
		1882.5 (26365)	13.65	13.66
		1852.5 (26065)	13.74	13.75
10MHz	1RB-High (49)	1910 (26640)	13.72	14.04
		1882.5 (26365)	13.63	13.90
		1855 (26090)	13.65	13.87
	1RB-Middle (24)	1910 (26640)	13.83	14.11
		1882.5 (26365)	13.75	13.93
		1855 (26090)	13.85	14.02
	1RB-Low (0)	1910 (26640)	13.71	13.93
		1882.5 (26365)	13.64	13.90
		1855 (26090)	13.74	13.99
	25RB-High (25)	1910 (26640)	13.85	13.84
		1882.5 (26365)	13.72	13.75
		1855 (26090)	13.79	13.80
25RB-Middle (12)	1910	13.83	13.83	

		(26640)		
		1882.5 (26365)	13.74	13.74
		1855 (26090)	13.80	13.79
	25RB-Low (0)	1910 (26640)	13.88	13.88
		1882.5 (26365)	13.76	13.73
		1855 (26090)	13.82	13.80
	50RB (0)	1910 (26640)	13.89	13.84
		1882.5 (26365)	13.74	13.73
		1855 (26090)	13.79	13.79
15MHz	1RB-High (74)	1907.5 (26615)	13.75	14.09
		1882.5 (26365)	13.68	13.94
		1857.5 (26115)	13.64	13.79
	1RB-Middle (37)	1907.5 (26615)	13.83	14.00
		1882.5 (26365)	13.77	14.00
		1857.5 (26115)	13.79	13.98
	1RB-Low (0)	1907.5 (26615)	13.71	13.95
		1882.5 (26365)	13.64	13.84
		1857.5 (26115)	13.75	14.00
	36RB-High (38)	1907.5 (26615)	13.89	13.80
		1882.5 (26365)	13.81	13.70
		1857.5 (26115)	13.79	13.73
	36RB-Middle (19)	1907.5 (26615)	13.90	13.85

		1882.5 (26365)	13.77	13.70
		1857.5 (26115)	13.83	13.74
		1907.5 (26615)	13.93	13.86
	36RB-Low (0)	1882.5 (26365)	13.81	13.72
		1857.5 (26115)	13.83	13.79
		1907.5 (26615)	13.91	13.84
	75RB (0)	1882.5 (26365)	13.80	13.74
		1857.5 (26115)	13.77	13.77
		1905 (26590)	13.64	13.89
	20MHz	1RB-High (99)	1882.5 (26365)	13.52
1860 (26140)			13.51	13.82
1905 (26590)			13.93	14.08
1RB-Middle (50)		1882.5 (26365)	13.87	14.09
		1860 (26140)	13.84	14.05
		1905 (26590)	13.56	13.88
1RB-Low (0)		1882.5 (26365)	13.51	13.84
		1860 (26140)	13.66	13.87
		1905 (26590)	13.78	13.76
50RB-High (50)		1882.5 (26365)	13.74	13.74
		1860 (26140)	13.66	13.64
		1905 (26590)	13.86	13.81
50RB-Middle (25)		1882.5	13.81	13.68

		(26365)		
		1860 (26140)	13.82	13.70
		1905 (26590)	13.81	13.79
	50RB-Low (0)	1882.5 (26365)	13.75	13.74
		1860 (26140)	13.68	13.68
		1905 (26590)	13.79	13.76
	100RB (0)	1882.5 (26365)	13.72	13.73
		1860 (26140)	13.69	13.65

## LTE B26

Band 26				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	848.3 (27033)	22.71	21.91
		831.5 (26865)	22.73	21.87
		814.7 (26697)	22.83	21.99
	1RB-Middle (3)	848.3 (27033)	22.83	22.00
		831.5 (26865)	22.85	22.05
		814.7 (26697)	22.96	22.09
	1RB-Low (0)	848.3 (27033)	22.72	21.89
		831.5 (26865)	22.75	22.01

		814.7 (26697)	22.86	21.96	
	3RB-High (3)	848.3 (27033)	22.85	21.84	
		831.5 (26865)	22.82	21.83	
		814.7 (26697)	22.96	21.84	
	3RB-Middle (1)	848.3 (27033)	22.88	21.76	
		831.5 (26865)	22.90	21.85	
		814.7 (26697)	23.00	21.91	
	3RB-Low (0)	848.3 (27033)	22.81	21.78	
		831.5 (26865)	22.85	21.81	
		814.7 (26697)	22.95	21.86	
	6RB (0)	848.3 (27033)	21.83	20.92	
		831.5 (26865)	21.86	20.93	
		814.7 (26697)	21.98	21.00	
	3MHz	1RB-High (14)	847.5 (27025)	22.79	22.07
			831.5	22.83	21.98
815.5			22.47	21.67	
1RB-Middle (7)		847.5 (27025)	22.93	22.12	
		831.5	23.00	22.24	
		815.5	22.62	21.94	
1RB-Low (0)		847.5 (27025)	22.84	22.02	
		831.5	22.86	22.07	
		815.5	22.48	21.70	
8RB-High (7)		847.5 (27025)	21.84	20.91	
		831.5	21.85	20.91	
		815.5	21.50	20.55	
8RB-Middle (4)		847.5 (27025)	21.88	20.97	



		831.5	21.89	20.95	
		815.5	21.53	20.61	
	8RB-Low (0)	847.5 (27025)	21.88	20.91	
		831.5	21.88	20.91	
	15RB (0)	815.5	21.53	20.59	
		847.5 (27025)	21.87	20.89	
		831.5	21.88	20.86	
	5MHz	1RB-High (24)	815.5	21.54	20.55
			846.5 (27015)	22.69	21.90
			831.5 (26865)	22.68	21.96
1RB-Middle (12)		816.5 (26715)	22.74	21.94	
		846.5 (27015)	23.03	22.24	
		831.5 (26865)	22.99	22.18	
1RB-Low (0)		816.5 (26715)	23.09	22.27	
		846.5 (27015)	22.73	22.07	
		831.5 (26865)	22.73	21.99	
12RB-High (13)		816.5 (26715)	22.86	22.11	
		846.5 (27015)	21.83	20.83	
		831.5 (26865)	21.81	20.79	
12RB-Middle (6)		816.5 (26715)	21.90	20.85	
		846.5 (27015)	21.95	20.93	
		831.5 (26865)	21.91	20.90	
12RB-Low (0)		816.5 (26715)	22.01	20.97	
		846.5 (27015)	21.95	20.89	

		831.5 (26865)	21.86	20.85	
		816.5 (26715)	21.95	20.91	
		846.5 (27015)	21.90	20.87	
		831.5 (26865)	21.86	20.88	
		816.5 (26715)	21.95	20.91	
10MHz	1RB-High (49)	844 (26990)	22.80	22.02	
		831.5 (26865)	22.82	21.99	
		820 (26750)	22.85	22.00	
	1RB-Middle (24)	844 (26990)	23.00	22.19	
		831.5 (26865)	22.96	22.17	
		820 (26750)	22.98	22.17	
	1RB-Low (0)	844 (26990)	22.88	22.04	
		831.5 (26865)	22.84	22.03	
		820 (26750)	22.96	22.08	
	25RB-High (25)	844 (26990)	21.93	20.91	
		831.5 (26865)	21.87	20.88	
		820 (26750)	21.96	20.95	
	25RB-Middle (12)	844 (26990)	21.99	21.00	
		831.5 (26865)	21.92	20.92	
		820 (26750)	21.97	20.95	
	25RB-Low (0)	844 (26990)	21.98	20.98	
		831.5 (26865)	21.94	20.92	
		820 (26750)	22.05	21.00	
	50RB (0)	844 (26990)	21.96	20.94	
		831.5 (26865)	21.93	20.93	
		820 (26750)	22.00	20.98	
	15MHz	1RB-High (74)	841.5 (26965)	22.70	21.98
			831.5 (26865)	22.69	21.90

		822.5 (26775)	22.69	21.87
	1RB-Middle (37)	841.5 (26965)	22.85	22.02
		831.5 (26865)	22.83	22.03
		822.5	22.86	22.07
	1RB-Low (0)	841.5 (26965)	22.73	21.99
		831.5 (26865)	22.76	22.03
		822.5	22.87	22.03
	36RB-High (38)	841.5 (26965)	21.89	20.85
		831.5 (26865)	21.85	20.81
		822.5 (26775)	21.88	20.82
	36RB-Middle (19)	841.5 (26965)	21.91	20.88
		831.5 (26865)	21.88	20.84
		822.5 (26775)	21.92	20.88
	36RB-Low (0)	841.5 (26965)	21.92	20.90
		831.5 (26865)	21.90	20.85
		822.5 (26775)	21.94	20.90
	75RB (0)	841.5 (26965)	21.91	20.89
		831.5 (26865)	21.89	20.85
		822.5 (26775)	21.91	20.89

LTE B26 Sensor on

Band 26
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Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	848.3 (27033)	17.83	18.12
		831.5 (26865)	17.84	18.06
		814.7 (26697)	17.91	18.19
	1RB-Middle (3)	848.3 (27033)	17.94	18.28
		831.5 (26865)	17.97	18.21
		814.7 (26697)	18.07	18.30
	1RB-Low (0)	848.3 (27033)	17.84	17.99
		831.5 (26865)	17.85	18.07
		814.7 (26697)	17.94	18.22
	3RB-High (3)	848.3 (27033)	17.95	17.89
		831.5 (26865)	17.91	17.88
		814.7 (26697)	18.08	18.00
	3RB-Middle (1)	848.3 (27033)	17.99	17.96
		831.5 (26865)	18.00	17.99
		814.7 (26697)	18.11	18.11
	3RB-Low (0)	848.3 (27033)	17.92	17.93
		831.5 (26865)	17.95	17.90
		814.7 (26697)	18.05	18.06
	6RB (0)	848.3 (27033)	17.91	18.04

		831.5 (26865)	17.92	17.99
		814.7 (26697)	18.06	18.12
3MHz	1RB-High (14)	847.5 (27025)	17.88	18.18
		831.5	17.90	18.19
		815.5	17.44	13.64
	1RB-Middle (7)	847.5 (27025)	18.07	18.27
		831.5	18.04	18.26
		815.5	17.62	13.86
	1RB-Low (0)	847.5 (27025)	17.88	18.23
		831.5	17.89	18.12
		815.5	17.45	13.81
	8RB-High (7)	847.5 (27025)	17.90	17.97
		831.5	17.91	17.97
		815.5	17.47	13.48
	8RB-Middle (4)	847.5 (27025)	17.95	17.99
		831.5	17.96	18.02
		815.5	17.51	13.51
	8RB-Low (0)	847.5 (27025)	17.93	17.99
		831.5	17.91	17.96
		815.5	17.49	13.51
	15RB (0)	847.5 (27025)	17.91	17.91
		831.5	17.92	17.93
		815.5	17.46	13.45
5MHz	1RB-High (24)	846.5 (27015)	17.77	17.96
		831.5 (26865)	17.79	18.09
		816.5 (26715)	17.80	18.08
	1RB-Middle (12)	846.5 (27015)	18.08	18.24
		831.5 (26865)	17.99	18.32
		816.5 (26715)	18.15	18.44

	1RB-Low (0)	846.5 (27015)	17.75	17.98
		831.5 (26865)	17.77	18.11
		816.5 (26715)	17.92	18.11
	12RB-High (13)	846.5 (27015)	17.87	17.86
		831.5 (26865)	17.89	17.89
		816.5 (26715)	17.96	17.97
	12RB-Middle (6)	846.5 (27015)	17.96	17.97
		831.5 (26865)	17.96	17.92
		816.5 (26715)	18.07	18.05
	12RB-Low (0)	846.5 (27015)	17.94	17.93
		831.5 (26865)	17.89	17.85
		816.5 (26715)	18.01	17.97
	25RB (0)	846.5 (27015)	17.93	17.93
		831.5 (26865)	17.90	17.88
		816.5 (26715)	17.98	17.98
10MHz	1RB-High (49)	844 (26990)	17.87	18.07
		831.5 (26865)	17.85	18.04
		820 (26750)	17.88	18.19
	1RB-Middle (24)	844 (26990)	17.98	18.32
		831.5 (26865)	18.03	18.28
		820 (26750)	18.00	18.32
	1RB-Low (0)	844 (26990)	17.90	18.16
		831.5 (26865)	17.89	18.10
		820 (26750)	18.03	18.28
	25RB-High (25)	844 (26990)	17.91	17.95

		831.5 (26865)	17.95	17.98
		820 (26750)	17.98	17.96
		844 (26990)	17.97	18.01
	25RB-Middle (12)	831.5 (26865)	17.97	17.95
		820 (26750)	17.99	17.98
	25RB-Low (0)	844 (26990)	18.01	18.03
		831.5 (26865)	17.97	17.97
		820 (26750)	18.04	18.05
	50RB (0)	844 (26990)	17.94	17.97
		831.5 (26865)	17.94	17.95
		820 (26750)	18.01	18.02
	15MHz	1RB-High (74)	841.5 (26965)	18.10
831.5 (26865)			18.07	18.10
822.5 (26775)			18.07	18.10
1RB-Middle (37)		841.5 (26965)	18.21	18.21
		831.5 (26865)	18.21	18.15
		822.5	18.22	18.21
1RB-Low (0)		841.5 (26965)	18.41	18.03
		831.5 (26865)	18.34	18.12
		822.5	18.69	18.24
36RB-High (38)		841.5 (26965)	18.21	17.87
		831.5 (26865)	18.18	17.85
		822.5 (26775)	18.17	17.86
36RB-Middle (19)		841.5 (26965)	18.23	17.89
		831.5 (26865)	18.24	17.92
		822.5 (26775)	18.24	17.93

	36RB-Low (0)	841.5 (26965)	18.26	17.92
		831.5 (26865)	18.21	17.86
		822.5 (26775)	18.31	17.94
	75RB (0)	841.5 (26965)	18.22	17.93
		831.5 (26865)	18.21	17.91
		822.5 (26775)	18.19	17.90

## LTE B30

Band 30				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	2312.5 (27735)	22.99	22.19
		2310 (27710)	23.02	22.25
		2307.5	23.04	22.35
	1RB-Middle (12)	2312.5 (27735)	23.20	22.60
		2310 (27710)	23.27	22.69
		2307.5	23.28	22.51
	1RB-Low (0)	2312.5 (27735)	23.06	22.29
		2310 (27710)	23.10	22.44
		2307.5	23.14	22.46
	12RB-High (13)	2312.5 (27735)	22.14	21.12
		2310 (27710)	22.19	21.18
		2307.5	22.18	21.20
	12RB-Middle (6)	2312.5 (27735)	22.23	21.23
		2310 (27710)	22.25	21.28
		2307.5	22.28	21.31
	12RB-Low (0)	2312.5 (27735)	22.19	21.21
		2310 (27710)	22.24	21.26



	25RB (0)	2307.5	22.30	21.30
		2312.5 (27735)	22.17	21.20
		2310 (27710)	22.23	21.26
		2307.5	22.23	21.26
10MHz	1RB-High (49)	2310 (27710)	23.03	22.38
	1RB-Middle (24)	2310 (27710)	23.33	22.58
	1RB-Low (0)	2310 (27710)	23.19	22.43
	25RB-High (25)	2310 (27710)	22.19	21.24
	25RB-Middle (12)	2310 (27710)	22.24	21.27
	25RB-Low (0)	2310 (27710)	22.31	21.34
	50RB (0)	2310 (27710)	22.26	21.30

## LTE B30 Sensor on

Band 30				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	2312.5 (27735)	13.07	13.42
		2310 (27710)	13.11	13.42
		2307.5	13.10	13.37
	1RB-Middle (12)	2312.5 (27735)	13.42	13.67
		2310 (27710)	13.48	13.76
		2307.5	13.44	13.75
	1RB-Low (0)	2312.5 (27735)	13.15	13.35
		2310 (27710)	13.20	13.55
		2307.5	13.19	13.56
	12RB-High (13)	2312.5 (27735)	13.26	13.28
		2310 (27710)	13.28	13.32
		2307.5	13.27	13.28
	12RB-Middle (6)	2312.5 (27735)	13.31	13.33
		2310 (27710)	13.34	13.35
		2307.5	13.35	13.38

	12RB-Low (0)	2312.5 (27735)	13.41	13.30
		2310 (27710)	13.36	13.34
		2307.5	13.33	13.35
	25RB (0)	2312.5 (27735)	13.28	13.31
		2310 (27710)	13.33	13.34
		2307.5	13.33	13.34
10MHz	1RB-High (49)	2310 (27710)	13.22	13.48
	1RB-Middle (24)	2310 (27710)	13.68	13.71
	1RB-Low (0)	2310 (27710)	13.36	13.61
	25RB-High (25)	2310 (27710)	13.33	13.36
	25RB-Middle (12)	2310 (27710)	13.38	13.39
	25RB-Low (0)	2310 (27710)	13.43	13.46
	50RB (0)	2310 (27710)	13.38	13.40

## LTE B41 PC2

Band 41					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	
5MHz	1RB-High (24)	2687.5 (41565)	25.91	25.00	
		2640.3(41093)	25.91	25.03	
		2593 (40620)	26.29	25.41	
		2545.8(40148)	26.38	25.45	
		2498.5 (39675)	26.42	25.49	
	1RB-Middle (12)	2687.5 (41565)	26.09	25.15	
		2640.3(41093)	26.11	25.19	
		2593 (40620)	26.50	25.58	
		2545.8(40148)	26.54	25.63	
		2498.5 (39675)	26.63	25.64	
	1RB-Low (0)	2687.5 (41565)	25.96	25.04	
		2640.3(41093)	25.98	25.08	
		2593 (40620)	26.36	25.48	
		2545.8(40148)	26.37	25.45	
		2498.5 (39675)	26.43	25.46	
			2687.5 (41565)	25.10	24.11

	12RB-High (13)	2640.3(41093)	25.09	24.11	
		2593 (40620)	25.47	24.47	
		2545.8(40148)	25.51	24.52	
		2498.5 (39675)	25.65	24.62	
	12RB-Middle (6)	2687.5 (41565)	25.22	24.19	
		2640.3(41093)	25.16	24.18	
		2593 (40620)	25.54	24.56	
		2545.8(40148)	25.60	24.59	
	12RB-Low (0)	2498.5 (39675)	25.65	24.61	
		2687.5 (41565)	25.14	24.11	
		2640.3(41093)	25.12	24.14	
		2593 (40620)	25.54	24.50	
	25RB (0)	2545.8(40148)	25.51	24.52	
		2498.5 (39675)	25.57	24.52	
		2687.5 (41565)	25.12	24.17	
		2640.3(41093)	25.11	24.15	
	10MHz	1RB-High (49)	2593 (40620)	25.47	24.55
			2545.8(40148)	25.49	24.52
			2498.5 (39675)	25.52	24.59
			2685 (41540)	26.02	25.11
2639(41080)			26.00	25.11	
1RB-Middle (24)		2593 (40620)	26.37	25.49	
		2547(40160)	26.49	25.61	
		2501 (39700)	26.50	25.58	
		2685 (41540)	26.15	25.27	
1RB-Low (0)		2639(41080)	26.18	25.29	
		2593 (40620)	26.55	25.67	
		2547(40160)	26.60	25.69	
		2501 (39700)	26.62	25.69	
25RB-High (25)		2685 (41540)	26.09	25.18	
		2639(41080)	26.13	25.25	
		2593 (40620)	26.51	25.65	
		2547(40160)	26.51	25.59	
25RB-Middle (12)		2501 (39700)	26.53	25.58	
		2685 (41540)	25.13	24.19	
		2639(41080)	25.14	24.19	
	2593 (40620)	25.54	24.57		
25RB-Low (0)	2547(40160)	25.59	24.61		
	2501 (39700)	25.63	24.67		
	2685 (41540)	25.17	24.22		
	2639(41080)	25.17	24.22		
		2593 (40620)	25.53	24.58	
		2547(40160)	25.60	24.65	
		2501 (39700)	25.62	24.63	
		2685 (41540)	25.22	24.28	
		2639(41080)	25.23	24.26	
		2593 (40620)	25.50	24.57	
		2547(40160)	25.55	24.59	

		2501 (39700)	25.55	24.58
	50RB (0)	2685 (41540)	25.19	24.25
		2639(41080)	25.19	24.25
		2593 (40620)	25.56	24.62
		2547(40160)	25.61	24.63
		2501 (39700)	25.66	24.67
15MHz	1RB-High (74)	2682.5 (41515)	25.91	25.01
		2637.8(41068)	25.88	25.03
		2593 (40620)	26.24	25.39
		2548.3(40173)	26.38	25.48
		2503.5 (39725)	26.44	25.50
	1RB-Middle (37)	2682.5 (41515)	26.00	25.13
		2637.8(41068)	26.06	25.21
		2593 (40620)	26.43	25.56
		2548.3(40173)	26.47	25.57
		2503.5 (39725)	26.51	25.64
	1RB-Low (0)	2682.5 (41515)	25.94	25.12
		2637.8(41068)	26.07	25.21
		2593 (40620)	26.44	25.57
		2548.3(40173)	26.40	25.50
		2503.5 (39725)	26.42	25.51
	36RB-High (38)	2682.5 (41515)	25.04	24.03
		2637.8(41068)	25.09	24.05
		2593 (40620)	25.46	24.42
		2548.3(40173)	25.53	24.49
		2503.5 (39725)	25.58	24.55
	36RB-Middle (19)	2682.5 (41515)	25.13	24.13
		2637.8(41068)	25.14	24.11
		2593 (40620)	25.51	24.49
		2548.3(40173)	25.53	24.50
		2503.5 (39725)	25.57	24.54
	36RB-Low (0)	2682.5 (41515)	25.13	24.13
		2637.8(41068)	25.18	24.18
		2593 (40620)	25.53	24.51
		2548.3(40173)	25.54	24.49
		2503.5 (39725)	25.55	24.50
	75RB (0)	2682.5 (41515)	25.13	24.15
		2637.8(41068)	25.13	24.17
		2593 (40620)	25.47	24.52
2548.3(40173)		25.54	24.55	
2503.5 (39725)		25.54	24.55	
20MHz	1RB-High (99)	2680 (41490)	25.82	24.95
		2636.5(41055)	25.79	24.91
		2593 (40620)	26.12	25.25
		2549.5(40185)	26.29	25.40
		2506 (39750)	26.25	25.35
	1RB-Middle	2680 (41490)	26.10	25.19
		2636.5(41055)	26.11	25.22

	(50)	2593 (40620)	26.47	25.58
		2549.5(40185)	26.53	25.61
		2506 (39750)	26.52	25.60
	1RB-Low (0)	2680 (41490)	25.90	25.01
		2636.5(41055)	26.04	25.18
		2593 (40620)	26.38	25.50
		2549.5(40185)	26.32	25.40
		2506 (39750)	26.35	25.42
	50RB-High (50)	2680 (41490)	24.99	24.05
		2636.5(41055)	25.01	24.07
		2593 (40620)	25.38	24.43
		2549.5(40185)	25.46	24.50
		2506 (39750)	25.52	24.54
	50RB-Middle (25)	2680 (41490)	25.11	24.18
		2636.5(41055)	25.12	24.17
		2593 (40620)	25.46	24.52
		2549.5(40185)	25.48	24.52
		2506 (39750)	25.55	24.58
	50RB-Low (0)	2680 (41490)	25.11	24.15
		2636.5(41055)	25.16	24.21
		2593 (40620)	25.46	24.49
		2549.5(40185)	25.50	24.52
		2506 (39750)	25.44	24.46
	100RB (0)	2680 (41490)	25.10	24.13
		2636.5(41055)	25.14	24.17
2593 (40620)		25.45	24.47	
2549.5(40185)		25.50	24.52	
2506 (39750)		25.50	24.53	

## LTE B41 PC2 Sensor on

Band 41				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	18.09	18.31
		2640.3(41093)	18.13	18.35
		2593 (40620)	18.41	18.62
		2545.8(40148)	18.38	18.59
		2498.5 (39675)	18.42	18.62
	1RB-Middle (12)	2687.5 (41565)	18.23	18.43
		2640.3(41093)	18.25	18.44
		2593 (40620)	18.52	18.72

		2545.8(40148)	18.48	18.68
		2498.5 (39675)	18.49	18.72
	1RB-Low (0)	2687.5 (41565)	18.16	18.38
		2640.3(41093)	18.19	18.43
		2593 (40620)	18.48	18.69
		2545.8(40148)	18.40	18.59
		2498.5 (39675)	18.41	18.62
	12RB-High (13)	2687.5 (41565)	18.12	18.13
		2640.3(41093)	18.19	18.19
		2593 (40620)	18.47	18.45
		2545.8(40148)	18.43	18.47
		2498.5 (39675)	18.49	18.48
	12RB-Middle (6)	2687.5 (41565)	18.22	18.21
		2640.3(41093)	18.25	18.24
		2593 (40620)	18.53	18.56
		2545.8(40148)	18.48	18.54
		2498.5 (39675)	18.52	18.51
	12RB-Low (0)	2687.5 (41565)	18.18	18.20
		2640.3(41093)	18.22	18.22
		2593 (40620)	18.50	18.48
2545.8(40148)		18.43	18.40	
2498.5 (39675)		18.44	18.43	
25RB (0)	2687.5 (41565)	18.15	18.21	
	2640.3(41093)	18.21	18.24	
	2593 (40620)	18.48	18.50	
	2545.8(40148)	18.42	18.40	
	2498.5 (39675)	18.46	18.50	
10MHz	1RB-High (49)	2685 (41540)	18.16	18.38
		2639(41080)	18.18	18.43
		2593 (40620)	18.45	18.70
		2547(40160)	18.48	18.70
		2501 (39700)	18.45	18.69
	1RB-Middle (24)	2685 (41540)	18.33	18.56
		2639(41080)	18.35	18.58
		2593 (40620)	18.64	18.87
		2547(40160)	18.59	18.82
		2501 (39700)	18.63	18.82
	1RB-Low (0)	2685 (41540)	18.23	18.47
		2639(41080)	18.31	18.55
		2593 (40620)	18.59	18.84
		2547(40160)	18.48	18.73
		2501 (39700)	18.50	18.74
	25RB-High (25)	2685 (41540)	18.19	18.24
		2639(41080)	18.25	18.28
		2593 (40620)	18.55	18.58
		2547(40160)	18.49	18.53
		2501 (39700)	18.56	18.63
		2685 (41540)	18.25	18.29

	25RB-Middle (12)	2639(41080)	18.29	18.30
		2593 (40620)	18.56	18.64
		2547(40160)	18.50	18.56
		2501 (39700)	18.50	18.54
	25RB-Low (0)	2685 (41540)	18.31	18.35
		2639(41080)	18.33	18.38
		2593 (40620)	18.58	18.63
		2547(40160)	18.51	18.55
		2501 (39700)	18.47	18.49
	50RB (0)	2685 (41540)	18.25	18.30
		2639(41080)	18.28	18.30
		2593 (40620)	18.54	18.58
		2547(40160)	18.48	18.56
		2501 (39700)	18.47	18.56
	15MHz	1RB-High (74)	2682.5 (41515)	18.05
2637.8(41068)			18.11	18.28
2593 (40620)			18.32	18.53
2548.3(40173)			18.40	18.59
2503.5 (39725)			18.35	18.55
1RB-Middle (37)		2682.5 (41515)	18.20	18.39
		2637.8(41068)	18.28	18.47
		2593 (40620)	18.53	18.74
		2548.3(40173)	18.49	18.69
		2503.5 (39725)	18.47	18.70
1RB-Low (0)		2682.5 (41515)	18.19	18.39
		2637.8(41068)	18.25	18.47
		2593 (40620)	18.51	18.72
		2548.3(40173)	18.41	18.63
		2503.5 (39725)	18.40	18.61
36RB-High (38)		2682.5 (41515)	18.12	18.09
		2637.8(41068)	18.18	18.15
		2593 (40620)	18.47	18.43
		2548.3(40173)	18.44	18.41
		2503.5 (39725)	18.44	18.41
36RB-Middle (19)		2682.5 (41515)	18.23	18.18
		2637.8(41068)	18.24	18.21
		2593 (40620)	18.52	18.47
		2548.3(40173)	18.47	18.42
		2503.5 (39725)	18.46	18.43
36RB-Low (0)		2682.5 (41515)	18.21	18.16
		2637.8(41068)	18.27	18.24
		2593 (40620)	18.51	18.47
		2548.3(40173)	18.44	18.40
		2503.5 (39725)	18.39	18.35
75RB (0)	2682.5 (41515)	18.17	18.16	
	2637.8(41068)	18.20	18.24	
	2593 (40620)	18.48	18.51	
	2548.3(40173)	18.43	18.45	

		2503.5 (39725)	18.42	18.45
20MHz	1RB-High (99)	2680 (41490)	17.98	18.20
		2636.5(41055)	18.00	18.26
		2593 (40620)	18.26	18.51
		2549.5(40185)	18.33	18.57
		2506 (39750)	18.34	18.53
	1RB-Middle (50)	2680 (41490)	18.26	18.49
		2636.5(41055)	18.33	18.51
		2593 (40620)	18.69	18.82
		2549.5(40185)	18.56	18.79
		2506 (39750)	18.53	18.76
	1RB-Low (0)	2680 (41490)	18.11	18.35
		2636.5(41055)	18.23	18.40
		2593 (40620)	18.46	18.68
		2549.5(40185)	18.36	18.59
		2506 (39750)	18.35	18.59
	50RB-High (50)	2680 (41490)	18.06	18.13
		2636.5(41055)	18.14	18.18
		2593 (40620)	18.45	18.52
		2549.5(40185)	18.44	18.45
		2506 (39750)	18.43	18.50
	50RB-Middle (25)	2680 (41490)	18.22	18.27
		2636.5(41055)	18.23	18.31
		2593 (40620)	18.58	18.54
		2549.5(40185)	18.44	18.49
		2506 (39750)	18.42	18.48
50RB-Low (0)	2680 (41490)	18.21	18.21	
	2636.5(41055)	18.27	18.32	
	2593 (40620)	18.43	18.51	
	2549.5(40185)	18.45	18.49	
	2506 (39750)	18.29	18.35	
100RB (0)	2680 (41490)	18.14	18.18	
	2636.5(41055)	18.18	18.22	
	2593 (40620)	18.43	18.48	
	2549.5(40185)	18.41	18.48	
	2506 (39750)	18.39	18.45	

## LTE B41 PC3

Band 41				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
		2687.5 (41565)	23.04	22.07



5MHz	1RB-High (24)	2640.3(41093)	22.98	22.05
		2593 (40620)	23.39	22.44
		2545.8(40148)	23.38	22.50
		2498.5 (39675)	23.53	22.62
	1RB-Middle (12)	2687.5 (41565)	23.33	22.38
		2640.3(41093)	23.24	22.33
		2593 (40620)	23.71	22.79
		2545.8(40148)	23.81	22.75
	1RB-Low (0)	2498.5 (39675)	23.77	22.81
		2687.5 (41565)	23.05	22.13
		2640.3(41093)	23.06	22.13
		2593 (40620)	23.45	22.52
	12RB-High (13)	2545.8(40148)	23.40	22.50
		2498.5 (39675)	23.50	22.56
		2687.5 (41565)	22.09	21.06
		2640.3(41093)	22.13	21.09
	12RB-Middle (6)	2593 (40620)	22.40	21.43
		2545.8(40148)	22.53	21.52
		2498.5 (39675)	22.64	21.60
		2687.5 (41565)	22.19	21.16
	12RB-Low (0)	2640.3(41093)	22.13	21.10
		2593 (40620)	22.50	21.49
		2545.8(40148)	22.56	21.51
		2498.5 (39675)	22.61	21.59
25RB (0)	2687.5 (41565)	22.11	21.14	
	2640.3(41093)	22.14	21.08	
	2593 (40620)	22.46	21.51	
	2545.8(40148)	22.51	21.46	
10MHz	1RB-High (49)	2498.5 (39675)	22.56	21.58
		2687.5 (41565)	22.11	21.19
		2640.3(41093)	22.06	21.16
		2593 (40620)	22.49	21.56
		2545.8(40148)	22.45	21.55
	1RB-Middle (24)	2501 (39700)	22.57	21.61
		2685 (41540)	23.16	22.20
		2639(41080)	23.07	22.09
		2593 (40620)	23.39	22.48
		2547(40160)	23.55	22.61
	1RB-Low (0)	2501 (39700)	23.62	22.71
		2685 (41540)	23.28	22.25
2639(41080)		23.26	22.33	
2593 (40620)		23.64	22.64	
1RB-Low (0)	2547(40160)	23.56	22.67	
	2501 (39700)	23.77	22.81	
	2685 (41540)	23.14	22.26	
	2639(41080)	23.19	22.31	
1RB-Low (0)	2593 (40620)	23.60	22.67	
	2547(40160)	23.54	22.63	

		2501 (39700)	23.64	22.73
	25RB-High (25)	2685 (41540)	22.09	21.17
		2639(41080)	22.11	21.14
		2593 (40620)	22.46	21.51
		2547(40160)	22.52	21.55
		2501 (39700)	22.65	21.68
	25RB-Middle (12)	2685 (41540)	22.13	21.26
		2639(41080)	22.16	21.20
		2593 (40620)	22.57	21.54
		2547(40160)	22.58	21.66
		2501 (39700)	22.64	21.67
	25RB-Low (0)	2685 (41540)	22.22	21.27
		2639(41080)	22.12	21.18
		2593 (40620)	22.51	21.61
		2547(40160)	22.53	21.62
		2501 (39700)	22.59	21.59
	50RB (0)	2685 (41540)	22.26	21.34
		2639(41080)	22.17	21.29
		2593 (40620)	22.57	21.67
		2547(40160)	22.58	21.66
2501 (39700)		22.65	21.75	
15MHz	1RB-High (74)	2682.5 (41515)	23.06	22.09
		2637.8(41068)	23.00	22.02
		2593 (40620)	23.34	22.41
		2548.3(40173)	23.45	22.51
		2503.5 (39725)	23.51	22.58
	1RB-Middle (37)	2682.5 (41515)	23.16	22.18
		2637.8(41068)	23.17	22.21
		2593 (40620)	23.54	22.63
		2548.3(40173)	23.58	22.65
		2503.5 (39725)	23.66	22.68
	1RB-Low (0)	2682.5 (41515)	23.12	22.16
		2637.8(41068)	23.21	22.25
		2593 (40620)	23.55	22.56
		2548.3(40173)	23.49	22.54
		2503.5 (39725)	23.56	22.60
	36RB-High (38)	2682.5 (41515)	22.08	21.07
		2637.8(41068)	21.99	21.09
		2593 (40620)	22.45	21.43
		2548.3(40173)	22.56	21.41
		2503.5 (39725)	22.58	21.54
36RB-Middle (19)	2682.5 (41515)	22.15	21.14	
	2637.8(41068)	22.18	21.16	
	2593 (40620)	22.51	21.49	
	2548.3(40173)	22.51	21.54	
	2503.5 (39725)	22.57	21.58	
36RB-Low (0)	2682.5 (41515)	22.13	21.11	
	2637.8(41068)	22.08	21.18	

		2593 (40620)	22.52	21.51
		2548.3(40173)	22.49	21.46
		2503.5 (39725)	22.56	21.45
	75RB (0)	2682.5 (41515)	22.10	21.26
		2637.8(41068)	22.19	21.27
		2593 (40620)	22.51	21.61
		2548.3(40173)	22.55	21.64
20MHz	1RB-High (99)	2503.5 (39725)	22.54	21.63
		2680 (41490)	22.98	21.97
		2636.5(41055)	22.87	21.96
		2593 (40620)	23.21	22.21
		2549.5(40185)	23.37	22.37
	1RB-Middle (50)	2506 (39750)	23.26	22.39
		2680 (41490)	23.29	22.34
		2636.5(41055)	23.22	22.29
		2593 (40620)	23.65	22.64
	1RB-Low (0)	2549.5(40185)	23.64	22.66
		2506 (39750)	23.64	22.68
		2680 (41490)	22.95	22.06
		2636.5(41055)	23.10	22.11
	50RB-High (50)	2593 (40620)	23.47	22.50
		2549.5(40185)	23.40	22.44
		2506 (39750)	23.47	22.49
		2680 (41490)	22.07	21.16
		2636.5(41055)	22.09	21.18
	50RB-Middle (25)	2593 (40620)	22.47	21.55
		2549.5(40185)	22.48	21.57
2506 (39750)		22.53	21.65	
2680 (41490)		22.18	21.33	
2636.5(41055)		22.19	21.27	
50RB-Low (0)	2593 (40620)	22.48	21.57	
	2549.5(40185)	22.53	21.65	
	2506 (39750)	22.53	21.62	
	2680 (41490)	22.21	21.31	
	2636.5(41055)	22.22	21.31	
100RB (0)	2593 (40620)	22.54	21.63	
	2549.5(40185)	22.52	21.58	
	2506 (39750)	22.45	21.57	
	2680 (41490)	22.12	21.16	
	2636.5(41055)	22.14	21.24	
		2593 (40620)	22.45	21.55
		2549.5(40185)	22.49	21.58
		2506 (39750)	22.47	21.57

## LTE B41 PC3 Sensor on

Band 41				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
5MHz	1RB-High (24)	2687.5 (41565)	15.09	15.16
		2640.3(41093)	15.12	15.22
		2593 (40620)	15.37	15.48
		2545.8(40148)	15.40	15.46
		2498.5 (39675)	15.42	15.49
	1RB-Middle (12)	2687.5 (41565)	15.30	15.36
		2640.3(41093)	15.32	15.43
		2593 (40620)	15.60	15.67
		2545.8(40148)	15.57	15.64
	1RB-Low (0)	2498.5 (39675)	15.59	15.74
		2687.5 (41565)	15.16	15.25
		2640.3(41093)	15.20	15.30
		2593 (40620)	15.45	15.53
	12RB-High (13)	2545.8(40148)	15.41	15.50
		2498.5 (39675)	15.43	15.50
		2687.5 (41565)	15.12	15.02
		2640.3(41093)	15.12	15.07
		2593 (40620)	15.44	15.43
	12RB-Middle (6)	2545.8(40148)	15.47	15.37
		2498.5 (39675)	15.44	15.44
		2687.5 (41565)	15.21	15.20
		2640.3(41093)	15.27	15.24
		2593 (40620)	15.58	15.46
	12RB-Low (0)	2545.8(40148)	15.45	15.49
		2498.5 (39675)	15.47	15.43
		2687.5 (41565)	15.14	15.07
		2640.3(41093)	15.20	15.16
		2593 (40620)	15.46	15.45
	25RB (0)	2545.8(40148)	15.44	15.37
		2498.5 (39675)	15.44	15.39
2687.5 (41565)		15.21	15.25	
2640.3(41093)		15.28	15.27	
2593 (40620)		15.49	15.58	
10MHz	1RB-High (49)	2545.8(40148)	15.43	15.45
		2498.5 (39675)	15.50	15.50
		2685 (41540)	15.19	15.22
		2639(41080)	15.17	15.24
		2593 (40620)	15.45	15.52

		2547(40160)	15.47	15.56	
		2501 (39700)	15.46	15.52	
	1RB-Middle (24)	2685 (41540)	15.33	15.40	
		2639(41080)	15.35	15.45	
		2593 (40620)	15.63	15.72	
		2547(40160)	15.60	15.68	
		2501 (39700)	15.62	15.70	
	1RB-Low (0)	2685 (41540)	15.24	15.34	
		2639(41080)	15.28	15.36	
		2593 (40620)	15.56	15.66	
		2547(40160)	15.47	15.58	
		2501 (39700)	15.49	15.59	
	25RB-High (25)	2685 (41540)	15.19	15.19	
		2639(41080)	15.22	15.19	
		2593 (40620)	15.52	15.52	
		2547(40160)	15.49	15.47	
		2501 (39700)	15.58	15.56	
	25RB-Middle (12)	2685 (41540)	15.26	15.30	
		2639(41080)	15.28	15.29	
		2593 (40620)	15.54	15.56	
		2547(40160)	15.52	15.53	
		2501 (39700)	15.50	15.48	
	25RB-Low (0)	2685 (41540)	15.29	15.30	
		2639(41080)	15.36	15.33	
		2593 (40620)	15.54	15.61	
		2547(40160)	15.50	15.55	
		2501 (39700)	15.46	15.50	
	50RB (0)	2685 (41540)	15.19	15.22	
		2639(41080)	15.23	15.25	
		2593 (40620)	15.49	15.59	
2547(40160)		15.46	15.53		
2501 (39700)		15.53	15.48		
15MHz	1RB-High (74)	2682.5 (41515)	15.07	15.09	
		2637.8(41068)	15.09	15.14	
		2593 (40620)	15.34	15.41	
		2548.3(40173)	15.40	15.50	
		2503.5 (39725)	15.34	15.42	
	1RB-Middle (37)	2682.5 (41515)	15.23	15.26	
		2637.8(41068)	15.28	15.38	
		2593 (40620)	15.51	15.62	
		2548.3(40173)	15.52	15.55	
		2503.5 (39725)	15.48	15.56	
	1RB-Low (0)	2682.5 (41515)	15.17	15.29	
		2637.8(41068)	15.29	15.34	
		2593 (40620)	15.55	15.61	
		2548.3(40173)	15.38	15.52	
		2503.5 (39725)	15.40	15.48	
			2682.5 (41515)	15.21	15.14

	36RB-High (38)	2637.8(41068)	15.15	15.16	
		2593 (40620)	15.49	15.43	
		2548.3(40173)	15.48	15.40	
		2503.5 (39725)	15.43	15.40	
	36RB-Middle (19)	2682.5 (41515)	15.21	15.15	
		2637.8(41068)	15.22	15.26	
		2593 (40620)	15.50	15.46	
		2548.3(40173)	15.46	15.44	
	36RB-Low (0)	2503.5 (39725)	15.44	15.44	
		2682.5 (41515)	15.18	15.16	
		2637.8(41068)	15.33	15.19	
		2593 (40620)	15.52	15.48	
	75RB (0)	2548.3(40173)	15.44	15.41	
		2503.5 (39725)	15.36	15.35	
		2682.5 (41515)	15.18	15.19	
		2637.8(41068)	15.18	15.18	
	20MHz	1RB-High (99)	2593 (40620)	15.48	15.50
			2548.3(40173)	15.38	15.46
			2503.5 (39725)	15.37	15.47
2680 (41490)			14.98	15.06	
2636.5(41055)			15.01	15.04	
1RB-Middle (50)		2593 (40620)	15.29	15.36	
		2549.5(40185)	15.32	15.42	
		2506 (39750)	15.35	15.37	
		2680 (41490)	15.30	15.35	
1RB-Low (0)		2636.5(41055)	15.32	15.42	
		2593 (40620)	15.66	15.68	
		2549.5(40185)	15.59	15.65	
		2506 (39750)	15.51	15.63	
50RB-High (50)		2680 (41490)	15.16	15.24	
		2636.5(41055)	15.29	15.29	
		2593 (40620)	15.44	15.56	
		2549.5(40185)	15.35	15.44	
50RB-Middle (25)		2506 (39750)	15.36	15.43	
		2680 (41490)	15.04	15.06	
	2636.5(41055)	15.11	15.18		
	2593 (40620)	15.41	15.55		
50RB-Low (0)	2549.5(40185)	15.43	15.48		
	2506 (39750)	15.45	15.49		
	2680 (41490)	15.15	15.17		
	2636.5(41055)	15.18	15.20		
	50RB-High (50)	2593 (40620)	15.58	15.53	
		2549.5(40185)	15.41	15.44	
		2506 (39750)	15.41	15.41	
		2680 (41490)	15.17	15.21	
	50RB-Middle (25)	2636.5(41055)	15.24	15.29	
		2593 (40620)	15.45	15.49	
		2549.5(40185)	15.45	15.51	
		2680 (41490)	15.17	15.21	
	50RB-Low (0)	2636.5(41055)	15.24	15.29	
		2593 (40620)	15.45	15.49	
		2549.5(40185)	15.45	15.51	
		2680 (41490)	15.17	15.21	

		2506 (39750)	15.33	15.33
	100RB (0)	2680 (41490)	15.21	15.23
		2636.5(41055)	15.27	15.29
		2593 (40620)	15.50	15.61
		2549.5(40185)	15.49	15.57
		2506 (39750)	15.39	15.45

## LTE B66

Band 66				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	1779.3	23.14	22.35
		1745	23.08	22.38
		1710.7	23.13	22.52
	1RB-Middle (3)	1779.3	23.24	22.59
		1745	23.20	22.34
		1710.7	23.23	22.24
	1RB-Low (0)	1779.3	23.13	22.46
		1745	23.05	22.23
		1710.7	23.13	22.12
	3RB-High (3)	1779.3	23.24	22.25
		1745	23.20	22.19
		1710.7	23.23	22.20
	3RB-Middle (1)	1779.3	23.28	22.29
		1745	23.24	22.12
		1710.7	23.28	22.19
	3RB-Low (0)	1779.3	23.27	22.27
		1745	23.19	22.16
		1710.7	23.26	22.19
6RB (0)	1779.3	22.24	21.34	
	1745	22.21	21.26	
	1710.7	22.25	21.35	
3MHz	1RB-High (14)	1778.5	23.23	22.52
		1745	23.18	22.45
		1711.5	23.23	22.20
	1RB-Middle (7)	1778.5	23.48	22.67
		1745	23.31	22.64
		1711.5	23.33	22.37
	1RB-Low (0)	1778.5	23.27	22.55
		1745	23.22	22.45
		1711.5	23.26	22.25
		1778.5	22.28	21.35

	8RB-High (7)	1745	22.22	21.26	
		1711.5	22.27	21.39	
		1778.5	22.34	21.37	
	8RB-Middle (4)	1745	22.26	21.33	
		1711.5	22.33	21.37	
		1778.5	22.31	21.38	
	8RB-Low (0)	1745	22.24	21.27	
		1711.5	22.28	21.31	
		1778.5	22.30	21.32	
	15RB (0)	1745	22.24	21.23	
		1711.5	22.28	21.30	
		1777.5	23.18	22.43	
5MHz	1RB-High (24)	1745	23.09	22.42	
		1712.5	23.12	22.36	
		1777.5	23.42	22.66	
	1RB-Middle (12)	1745	23.41	22.61	
		1712.5	23.40	22.64	
		1777.5	23.16	22.45	
	1RB-Low (0)	1745	23.12	22.35	
		1712.5	23.17	22.38	
		1777.5	22.29	21.29	
	12RB-High (13)	1745	22.23	21.20	
		1712.5	22.28	21.26	
		1777.5	22.35	21.36	
	12RB-Middle (6)	1745	22.29	21.26	
		1712.5	22.32	21.31	
		1777.5	22.32	21.29	
	12RB-Low (0)	1745	22.22	21.20	
		1712.5	22.24	21.18	
		1777.5	22.32	21.31	
	25RB (0)	1745	22.25	21.25	
		1712.5	22.28	21.26	
		1775	23.23	22.40	
	10MHz	1RB-High (49)	1745	23.15	22.48
			1715	23.20	22.52
			1775	23.34	22.72
1RB-Middle (24)		1745	23.33	22.56	
		1715	23.33	22.58	
		1775	23.27	22.49	
1RB-Low (0)		1745	23.20	22.41	
		1715	23.21	22.44	
		1775	22.32	21.32	
25RB-High (25)		1745	22.33	21.28	
		1715	22.34	21.31	
		1775	22.37	21.35	
25RB-Middle (12)		1745	22.29	21.30	
		1715	22.33	21.31	
		1775	22.39	21.38	



	25RB-Low (0)	1745	22.29	21.29	
		1715	22.27	21.27	
	50RB (0)	1775	22.38	21.36	
		1745	22.34	21.31	
		1715	22.34	21.32	
15MHz	1RB-High (74)	1772.5	23.18	22.46	
		1745	23.16	22.42	
		1717.5	23.19	22.40	
	1RB-Middle (37)	1772.5	23.27	22.60	
		1745	23.24	22.46	
		1717.5	23.27	22.44	
	1RB-Low (0)	1772.5	23.23	22.47	
		1745	23.21	22.49	
		1717.5	23.22	22.44	
	36RB-High (38)	1772.5	22.30	21.26	
		1745	22.30	21.27	
		1717.5	22.34	21.33	
	36RB-Middle (19)	1772.5	22.36	21.34	
		1745	22.33	21.28	
		1717.5	22.34	21.30	
	36RB-Low (0)	1772.5	22.38	21.34	
		1745	22.30	21.24	
		1717.5	22.30	21.26	
	75RB (0)	1772.5	22.36	21.34	
		1745	22.31	21.28	
		1717.5	22.29	21.29	
	20MHz	1RB-High (99)	1770	23.14	22.41
1745			23.11	22.42	
1720			23.12	22.43	
1RB-Middle (50)		1770	23.36	22.64	
		1745	23.28	22.48	
		1720	23.37	22.61	
1RB-Low (0)		1770	23.18	22.55	
		1745	23.16	22.40	
		1720	23.16	22.34	
50RB-High (50)		1770	22.30	21.31	
		1745	22.26	21.22	
		1720	22.32	21.35	
50RB-Middle (25)		1770	22.38	21.37	
		1745	22.33	21.34	
		1720	22.32	21.31	
50RB-Low (0)		1770	22.36	21.38	
		1745	22.28	21.23	
		1720	22.30	21.27	
100RB (0)		1770	22.34	21.33	
		1745	22.26	21.23	
		1720	22.30	21.28	

## LTE B66 Sensor on

Band 66				
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)	
	RB offset		QPSK	16QAM
1.4MHz	1RB-High (5)	1779.3	13.32	13.67
		1745	13.26	13.58
		1710.7	13.27	13.62
	1RB-Middle (3)	1779.3	13.46	13.78
		1745	13.39	13.77
		1710.7	13.39	13.75
	1RB-Low (0)	1779.3	13.32	13.62
		1745	13.26	13.51
		1710.7	13.25	13.53
	3RB-High (3)	1779.3	13.43	13.42
		1745	13.34	13.33
		1710.7	13.38	13.35
	3RB-Middle (1)	1779.3	13.48	13.50
		1745	13.38	13.44
		1710.7	13.43	13.48
	3RB-Low (0)	1779.3	13.43	13.46
		1745	13.37	13.37
		1710.7	13.36	13.39
	6RB (0)	1779.3	13.44	13.47
		1745	13.34	13.45
		1710.7	13.35	13.49
3MHz	1RB-High (14)	1778.5	13.36	13.72
		1745	13.29	13.55
		1711.5	13.29	13.57
	1RB-Middle (7)	1778.5	13.53	13.74
		1745	13.45	13.79
		1711.5	13.45	13.70
	1RB-Low (0)	1778.5	13.34	13.58
		1745	13.27	13.67
		1711.5	13.33	13.53
	8RB-High (7)	1778.5	13.37	13.45
		1745	13.31	13.35
		1711.5	13.32	13.40
	8RB-Middle (4)	1778.5	13.42	13.49
		1745	13.32	13.40
		1711.5	13.35	13.41
8RB-Low (0)	1778.5	13.40	13.45	
	1745	13.30	13.43	

		1711.5	13.30	13.37
	15RB (0)	1778.5	13.34	13.40
		1745	13.28	13.32
		1711.5	13.30	13.31
5MHz	1RB-High (24)	1777.5	13.28	13.61
		1745	13.17	13.56
		1712.5	13.16	13.53
	1RB-Middle (12)	1777.5	13.53	13.89
		1745	13.47	13.83
		1712.5	13.46	13.81
	1RB-Low (0)	1777.5	13.29	13.51
		1745	13.21	13.55
		1712.5	13.24	13.62
	12RB-High (13)	1777.5	13.37	13.33
		1745	13.30	13.28
		1712.5	13.35	13.36
	12RB-Middle (6)	1777.5	13.43	13.43
		1745	13.38	13.35
		1712.5	13.37	13.36
	12RB-Low (0)	1777.5	13.44	13.38
		1745	13.29	13.30
		1712.5	13.26	13.27
	25RB (0)	1777.5	13.41	13.39
		1745	13.31	13.32
		1712.5	13.31	13.32
10MHz	1RB-High (49)	1775	13.37	13.64
		1745	13.27	13.55
		1715	13.31	13.62
	1RB-Middle (24)	1775	13.48	13.83
		1745	13.39	13.73
		1715	13.43	13.78
	1RB-Low (0)	1775	13.38	13.62
		1745	13.34	13.57
		1715	13.31	13.64
	25RB-High (25)	1775	13.45	13.43
		1745	13.37	13.38
		1715	13.37	13.40
	25RB-Middle (12)	1775	13.46	13.45
		1745	13.39	13.41
		1715	13.38	13.38
	25RB-Low (0)	1775	13.47	13.47
		1745	13.32	13.36
		1715	13.32	13.30
	50RB (0)	1775	13.44	13.44
		1745	13.33	13.35
		1715	13.37	13.38
15MHz	1RB-High (74)	1772.5	13.29	13.60
		1745	13.18	13.55

	1RB-Middle (37)	1717.5	13.22	13.61	
		1772.5	13.39	13.71	
		1745	13.32	13.58	
	1RB-Low (0)	1717.5	13.31	13.71	
		1772.5	13.30	13.53	
		1745	13.27	13.65	
	36RB-High (38)	1717.5	13.25	13.64	
		1772.5	13.40	13.37	
		1745	13.34	13.29	
	36RB-Middle (19)	1717.5	13.33	13.30	
		1772.5	13.45	13.40	
		1745	13.33	13.30	
	36RB-Low (0)	1717.5	13.37	13.33	
		1772.5	13.42	13.39	
		1745	13.31	13.30	
	75RB (0)	1717.5	13.32	13.27	
		1772.5	13.40	13.39	
		1745	13.32	13.32	
	20MHz	1RB-High (99)	1717.5	13.30	13.31
			1770	13.25	13.45
			1745	13.16	13.42
		1RB-Middle (50)	1720	13.18	13.44
			1770	13.61	13.81
			1745	13.56	13.67
		1RB-Low (0)	1720	13.58	13.64
			1770	13.26	13.51
			1745	13.27	13.54
		50RB-High (50)	1720	13.18	13.46
			1770	13.36	13.41
			1745	13.25	13.28
50RB-Middle (25)		1720	13.26	13.28	
		1770	13.59	13.43	
		1745	13.57	13.34	
50RB-Low (0)		1720	13.48	13.34	
		1770	13.41	13.41	
		1745	13.23	13.23	
100RB (0)		1720	13.29	13.30	
		1770	13.38	13.40	
		1745	13.27	13.27	
			1720	13.23	13.25

LTE B71

Band 71

Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	
5MHz	1RB-High (24)	695.5	22.91	22.07	
		680.5	22.88	22.85	
		665.5	22.88	22.85	
	1RB-Middle (12)	695.5 (133447)	23.06	22.37	
		680.5	23.11	22.68	
		665.5	23.11	22.47	
	1RB-Low (0)	695.5 (133447)	22.89	22.25	
		680.5	22.87	22.86	
		665.5	22.89	22.87	
	12RB-High (13)	695.5 (133447)	21.96	21.00	
		680.5	21.98	20.98	
		665.5	22.01	20.96	
	12RB-Middle (6)	695.5 (133447)	22.04	21.08	
		680.5	22.07	21.04	
		665.5	22.09	21.09	
	12RB-Low (0)	695.5 (133447)	22.04	21.04	
		680.5	22.08	21.09	
		665.5	21.98	20.91	
	25RB (0)	695.5 (133447)	22.01	21.04	
		680.5	22.08	21.05	
		665.5	21.99	21.00	
	10MHz	1RB-High (49)	693 (132422)	22.92	22.07
			680.5	22.89	22.92
			668	22.96	22.23
1RB-Middle (24)		693 (132422)	23.09	22.38	
		680.5	23.10	22.36	
		668	23.10	22.45	
1RB-Low (0)		693 (132422)	22.91	22.21	
		680.5	22.98	22.96	
		668	22.93	22.17	
25RB-High (25)		693 (132422)	21.99	21.01	
		680.5	22.03	21.02	

		668	22.17	21.18
	25RB-Middle (12)	693 (132422)	22.05	21.04
		680.5	22.12	21.09
		668	22.15	21.13
	25RB-Low (0)	693 (132422)	22.08	21.05
		680.5	22.15	21.16
		668	22.16	21.16
	50RB (0)	693 (132422)	22.04	21.02
		680.5	22.14	21.13
		668	22.19	21.19
15MHz	1RB-High (74)	690.5 (133397)	22.89	22.15
		680.5	22.88	22.12
		670.5	22.83	22.18
	1RB-Middle (37)	690.5 (133397)	22.99	22.28
		680.5	22.99	22.24
		670.5	23.04	22.38
	1RB-Low (0)	690.5 (133397)	22.93	22.21
		680.5	22.98	22.26
		670.5	22.92	22.23
	36RB-High (38)	690.5 (133397)	22.05	21.03
		680.5	22.07	21.02
		670.5	22.20	21.18
	36RB-Middle (19)	690.5 (133397)	22.10	21.10
		680.5	22.13	21.11
		670.5	22.17	21.14
	36RB-Low (0)	690.5 (133397)	22.05	21.02
		680.5	22.10	21.06
		670.5	22.18	21.14
	75RB (0)	690.5 (133397)	22.07	21.05
		680.5	22.08	21.07
		670.5	22.16	21.15
20MHz	1RB-High (99)	688 (133372)	22.76	21.98
		683 (133322)	22.75	22.02

		673 (133222)	22.72	22.02
1RB-Middle (50)		688 (133372)	23.01	22.42
		683 (133322)	23.01	22.32
		673 (133222)	23.07	22.39
1RB-Low (0)		688 (133372)	22.87	22.17
		683 (133322)	22.90	22.14
		673 (133222)	22.83	22.12
50RB-High (50)		688 (133372)	22.08	21.09
		683 (133322)	22.13	21.12
		673 (133222)	22.03	21.01
50RB-Middle (25)		688 (133372)	22.12	21.11
		683 (133322)	22.14	21.10
		673 (133222)	22.08	21.08
50RB-Low (0)		688 (133372)	22.21	21.20
		683 (133322)	22.16	21.13
		673 (133222)	22.07	21.07
100RB (0)		688 (133372)	22.11	21.10
		683 (133322)	22.15	21.15
		673 (133222)	22.05	21.03

## LTE B71 Sensor on

Band 71					
Bandwidth (MHz)	RB allocation	Frequency (MHz)	Actual output power (dBm)		
	RB offset		QPSK	16QAM	
5MHz	1RB-High (24)	695.5	20.02	20.34	
		680.5	20.04	20.27	
		665.5	20.02	20.01	
	1RB-Middle (12)	695.5 (133447)	20.23	20.51	
		680.5	20.23	20.67	
		665.5	20.30	20.27	
	1RB-Low (0)	695.5 (133447)	20.03	20.40	
		680.5	20.04	20.42	
		665.5	20.05	20.00	
	12RB-High (13)	695.5 (133447)	20.09	20.08	
		680.5	20.09	20.10	
		665.5	20.12	20.13	
	12RB-Middle (6)	695.5 (133447)	20.20	20.19	
		680.5	20.21	20.22	
		665.5	20.20	20.22	
	12RB-Low (0)	695.5 (133447)	20.15	20.13	
		680.5	20.19	20.20	
		665.5	20.04	20.08	
	25RB (0)	695.5 (133447)	20.12	20.13	
		680.5	20.18	20.16	
		665.5	20.08	20.12	
	10MHz	1RB-High (49)	693 (132422)	20.15	20.43
			680.5	20.14	20.47
			668	20.11	20.14
1RB-Middle (24)		693 (132422)	20.19	20.52	
		680.5	20.21	20.50	
		668	20.27	20.28	



	1RB-Low (0)	693 (132422)	20.05	20.32
		680.5	20.17	20.45
		668	20.16	20.16
	25RB-High (25)	693 (132422)	20.15	20.12
		680.5	20.20	20.14
		668	20.27	20.31
	25RB-Middle (12)	693 (132422)	20.19	20.16
		680.5	20.19	20.21
		668	20.26	20.27
	25RB-Low (0)	693 (132422)	20.23	20.23
		680.5	20.27	20.28
		668	20.22	20.28
	50RB (0)	693 (132422)	20.16	20.14
		680.5	20.21	20.20
		668	20.27	20.30
15MHz	1RB-High (74)	690.5 (133397)	20.04	20.39
		680.5	20.16	20.15
		670.5	20.05	20.44
	1RB-Middle (37)	690.5 (133397)	20.13	20.54
		680.5	20.13	20.14
		670.5	20.22	20.53
	1RB-Low (0)	690.5 (133397)	20.10	20.45
		680.5	20.18	20.18
		670.5	20.14	20.41
	36RB-High (38)	690.5 (133397)	20.18	20.15
		680.5	20.15	20.17
		670.5	20.33	20.28
	36RB-Middle (19)	690.5 (133397)	20.22	20.21
		680.5	20.23	20.21
		670.5	20.27	20.27
	36RB-Low (0)	690.5 (133397)	20.19	20.18
		680.5	20.18	20.16
		670.5	20.29	20.29

	75RB (0)	690.5 (133397)	20.19	20.18
		680.5	20.19	20.20
		670.5	20.27	20.32
20MHz	1RB-High (99)	688 (133372)	20.26	20.26
		683 (133322)	20.15	20.36
		673 (133222)	20.06	20.06
	1RB-Middle (50)	688 (133372)	20.48	20.55
		683 (133322)	20.57	20.53
		673 (133222)	20.41	20.25
	1RB-Low (0)	688 (133372)	20.08	20.38
		683 (133322)	20.10	20.43
		673 (133222)	20.04	20.05
	50RB-High (50)	688 (133372)	20.23	20.25
		683 (133322)	20.23	20.24
		673 (133222)	20.19	20.20
	50RB-Middle (25)	688 (133372)	20.25	20.26
		683 (133322)	20.23	20.26
		673 (133222)	20.21	20.21
	50RB-Low (0)	688 (133372)	20.55	20.39
		683 (133322)	20.48	20.27
		673 (133222)	20.43	20.27
	100RB (0)	688 (133372)	20.27	20.26

		683 (133322)	20.25	20.27
		673 (133222)	20.20	20.20

#### 11.4 Wi-Fi and BT Measurement result

The maximum output power of BT is 10.04dBm.

The maximum tune up of BT is 10.5dBm.

The average conducted power of Wi-Fi for normal power is as following:

2.4GHz	
FCC	
802.11b(dBm)	
Channel\data rate	1Mbps
11(2462MHz)	20.85
6(2437MHz)	20.04
1(2412MHz)	20.58
<b>Tune up</b>	<b>21.00</b>
802.11g(dBm)	
Channel\data rate	6Mbps
11(2462MHz)	17.77
6(2437MHz)	18.02
1(2412MHz)	17.79
<b>Tune up</b>	<b>19.00</b>
802.11n(dBm)-20MHz	
Channel\data rate	MCS0
11(2462MHz)	17.19
<b>Tune up</b>	<b>18.00</b>
6(2437MHz)	17.92
<b>Tune up</b>	<b>19.00</b>
1(2412MHz)	17.20
<b>Tune up</b>	<b>18.00</b>
802.11n(dBm)-40MHz	
Channel\data rate	MCS0
9(2452MHz)	14.94
<b>Tune up</b>	<b>16.00</b>
6(2437MHz)	15.95
<b>Tune up</b>	<b>17.00</b>
3(2422MHz)	15.10
<b>Tune up</b>	<b>16.00</b>

5GHz	
802.11n(dBm)-20MHz	
Channel\data rate	MCS0
36(5180 MHz)	16.65
40(5200 MHz)	16.76
44(5220 MHz)	16.43
48(5240 MHz)	16.48
52(5260 MHz)	16.71
56(5280 MHz)	16.81
60(5300 MHz)	16.92
64(5320 MHz)	16.91
<b>Tune up</b>	<b>17.50</b>
149(5745 MHz)	17.49
153(5765 MHz)	17.51
157(5785 MHz)	17.82
161(5805 MHz)	18.09
165(5825 MHz)	18.32
<b>Tune up</b>	<b>18.50</b>

The average conducted power of Wi-Fi for Low power is as following:

2.4GHz	
802.11b(dBm)	
Channel\data rate	1Mbps
11(2462MHz)	13.68
6(2437MHz)	13.35
1(2412MHz)	13.65
<b>tune up</b>	<b>14.00</b>
802.11g(dBm)	
Channel\data rate	6Mbps
11(2462MHz)	10.95
6(2437MHz)	11.22
1(2412MHz)	10.81
<b>tune up</b>	<b>12.00</b>
802.11n(dBm)-20MHz	
Channel\data rate	MCS0
11(2462MHz)	10.28
<b>tune up</b>	<b>11.00</b>
6(2437MHz)	11.11
<b>tune up</b>	<b>12.00</b>
1(2412MHz)	10.34
<b>tune up</b>	<b>11.00</b>
802.11n(dBm)-40MHz	
Channel\data rate	MCS0
9(2452MHz)	8.08
<b>tune up</b>	<b>9.00</b>
6(2437MHz)	8.88
<b>tune up</b>	<b>10.00</b>
3(2422MHz)	8.32
<b>tune up</b>	<b>9.00</b>

5GHz	
802.11n(dBm)-20MHz	
Channel\data rate	MCS0
36(5180 MHz)	7.07
40(5200 MHz)	6.84
44(5220 MHz)	6.93
48(5240 MHz)	6.94
52(5260 MHz)	7.03
56(5280 MHz)	6.84
60(5300 MHz)	6.96
64(5320 MHz)	7.16
<b>tune up</b>	<b>8.00</b>
149(5745 MHz)	8.09
153(5765 MHz)	7.91
157(5785 MHz)	8.29
161(5805 MHz)	8.49
165(5825 MHz)	8.57
<b>tune up</b>	<b>9.00</b>

## 12 Antenna Location

### 12.1 Transmit Antenna Separation Distances

The detail for transmit antenna separation distance is described in the additional document:

Appendix to test report No.I22Z61632-SEM01

The photos of SAR test

### 12.2 SAR Measurement Positions

According to the KDB941225 D06 Hot Spot SAR v01, the edges with less than 2.5 cm distance to the antennas need to be tested for SAR.

SAR measurement positions						
Mode	Front	Rear	Left edge	Right edge	Top edge	Bottom edge
ANT0	No	Yes	No	Yes	Yes	No
ANT2	No	Yes	Yes	No	Yes	No

## 13 SAR Test Result

### Note:

#### **KDB 447498 D01 General RF Exposure Guidance:**

For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)\*Tune-up Scaling Factor

For BT/WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)\* Duty Cycle scaling factor \* Tune-up scaling factor

Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

$\leq 0.8$  W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\leq 100$  MHz

$\leq 0.6$  W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz

$\leq 0.4$  W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is  $\geq 200$  MHz

#### **KDB 941225 D01 SAR test for 3G devices:**

When the maximum output power and tune-up tolerance specified for production units in a secondary mode is  $\leq \frac{1}{4}$  dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is  $\leq 1.2$  W/kg, SAR measurement is not required for the secondary mode.

#### **KDB 941225 D05 SAR for LTE Devices:**

SAR test reduction is applied using the following criteria:

Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% 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 for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.

Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are  $> 0.8$  W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation  $< 1.45$  W/kg.

Testing for 16-QAM modulation is not required because the reported SAR for QPSK is  $< 1.45$  W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.

Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is  $< 1.45$  W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

#### **KDB 248227 D01 SAR meas for 802.11:**

SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required

for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

To determine the initial test position, Area Scans were performed to determine the position with the Maximum Value of SAR (measured). The position that produced the highest Maximum Value of SAR is considered the worst case position; thus used as the initial test position.

The multiple test positions require SAR measurements in head, hotspot mode or UMPC mini-tablet configurations may be reduced according to the highest reported SAR determined using the initial test position(s) by applying the DSSS or OFDM SAR measurement procedures in the required wireless mode test configuration(s). The initial test position(s) is measured using the highest measured maximum output power channel in the required wireless mode test configuration(s).

When the reported SAR for the initial test position is:

$\leq 0.4$  W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.

$> 0.4$  W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is  $\leq 0.8$  W/kg or all required test positions are tested.

- For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
- When it is unclear, all equivalent conditions must be tested.

For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is  $> 0.8$  W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is  $\leq 1.2$  W/kg or all required test channels are considered.

• The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.

When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is  $\leq 1.2$  W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.

When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is  $\leq 1.2$  W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

Table 13.1: Duty Cycle

Mode	Duty Cycle
GPRS/EGPRS 850/1900	1:4 or 1:2
WCDMA&LTE FDD	1:1
LTE TDD_PC3	1:1.58
LTE TDD_PC2	1:2.309





### 13.1 SAR results for 2G/3G/4G

B1: Tlp040M1

sensor	Test Position	Phantom position L/R/F	Frequency Band	Channel Number	Frequency (MHz)	Test setup	Fig	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
off	Body	F	GSM850	190	836.6	Rear GPRS 14mm 2TX	\	31.21	32.00	0.313	0.38	0.241	0.29	-0.09
off	Body	F	GSM850	190	836.6	Right Edge GPRS 9mm 2TX	\	31.21	32.00	0.092	0.11	0.067	0.08	-0.05
off	Body	F	GSM850	190	836.6	Top Edge GPRS 14mm 2TX	\	31.21	32.00	0.179	0.21	0.130	0.16	0.06
on	Body	F	GSM850	251	848.8	Rear GPRS 0mm 2TX	\	24.73	25.00	0.657	0.70	0.360	0.38	-0.18
on	Body	F	GSM850	190	836.6	Rear GPRS 0mm 2TX	F.1	24.75	25.00	0.895	0.95	0.436	0.46	-0.04
on	Body	F	GSM850	128	824.2	Rear GPRS 0mm 2TX	\	24.74	25.00	0.656	0.70	0.337	0.36	0.10
on	Body	F	GSM850	190	836.6	Right Edge GPRS 0mm 2TX	\	24.75	25.00	0.270	0.29	0.157	0.17	-0.03
on	Body	F	GSM850	190	836.6	TOP Edge GPRS 0mm 2TX	\	24.75	25.00	0.326	0.35	0.173	0.18	0.03
on	Body	F	GSM850	190	836.6	Rear EGPRS 0mm 2TX	\	24.72	25.00	0.614	0.65	0.303	0.32	0.09
off	Body	F	GSM1900	661	1880	Rear GPRS 14mm 4TX	\	25.32	26.00	0.542	0.63	0.304	0.36	-0.08
off	Body	F	GSM1900	661	1880	Right Edge GPRS 9mm 4TX	\	25.32	26.00	0.283	0.33	0.155	0.18	0.11
off	Body	F	GSM1900	661	1880	Top Edge GPRS 14mm 4TX	\	25.32	26.00	0.583	0.68	0.313	0.37	0.04
on	Body	F	GSM1900	810	1909.8	Rear GPRS 0mm 2TX	\	18.89	19.50	0.908	1.04	0.369	0.42	0.07
on	Body	F	GSM1900	661	1880	Rear GPRS 0mm 2TX	F.2	18.79	19.50	0.940	1.11	0.375	0.44	-0.09
on	Body	F	GSM1900	512	1850.2	Rear GPRS 0mm 2TX	\	18.44	19.50	0.844	1.08	0.321	0.41	0.03
on	Body	F	GSM1900	661	1880	Right Edge GPRS 0mm 2TX	\	18.79	19.50	0.318	0.37	0.148	0.17	0.12
on	Body	F	GSM1900	661	1880	TOP Edge GPRS 0mm 2TX	\	18.79	19.50	0.637	0.75	0.273	0.32	0.06
on	Body	F	GSM1900	661	1880	Rear EGPRS 0mm 2TX	\	18.64	19.50	0.776	0.95	0.292	0.36	0.07
off	Body	F	WCDMA 850	4183	836.6	Rear 14mm	\	23.20	24.00	0.126	0.15	0.078	0.09	-0.07
off	Body	F	WCDMA 850	4183	836.6	Right Edge 9mm	\	23.20	24.00	0.029	0.03	0.018	0.02	-0.13
off	Body	F	WCDMA 850	4183	836.6	Top Edge 14mm	\	23.20	24.00	0.075	0.09	0.046	0.06	-0.18
on	Body	F	WCDMA 850	4233	846.6	Rear 0mm	\	17.35	18.00	0.524	0.61	0.255	0.30	-0.04
on	Body	F	WCDMA 850	4183	836.6	Rear 0mm	\	17.34	18.00	0.543	0.63	0.262	0.31	-0.09
on	Body	F	WCDMA 850	4132	826.4	Rear 0mm	F.3	17.47	18.00	0.584	0.66	0.273	0.31	-0.2
on	Body	F	WCDMA 850	4183	836.6	Right Edge 0mm	\	17.34	18.00	0.157	0.18	0.082	0.10	-0.16
on	Body	F	WCDMA 850	4183	836.6	TOP Edge 0mm	\	17.34	18.00	0.308	0.36	0.138	0.16	0.04
off	Body	F	WCDMA1700	1412	1732.4	Rear 14mm	\	23.07	23.50	0.709	0.78	0.403	0.44	0.15
off	Body	F	WCDMA1700	1412	1732.4	Right Edge 9mm	\	23.07	23.50	0.546	0.60	0.283	0.31	-0.04
off	Body	F	WCDMA1700	1412	1732.4	Top Edge 14mm	\	23.07	23.50	0.782	0.86	0.340	0.38	-0.19
off	Body	F	WCDMA1700	1513	1752.6	Top Edge 14mm	\	23.18	23.50	0.842	0.91	0.320	0.34	-0.02
off	Body	F	WCDMA1700	1312	1712.4	Top Edge 14mm	\	23.06	23.50	0.617	0.68	0.347	0.38	0.10
on	Body	F	WCDMA1700	1513	1752.6	Rear 0mm	\	12.87	13.50	0.819	0.95	0.379	0.44	-0.10
on	Body	F	WCDMA1700	1412	1732.5	Rear 0mm	F.4	12.84	13.50	0.850	0.99	0.361	0.42	0.03
on	Body	F	WCDMA1700	1312	1712.4	Rear 0mm	\	12.78	13.50	0.644	0.76	0.310	0.37	-0.09
on	Body	F	WCDMA1700	1412	1732.5	Right Edge 0mm	\	12.84	13.50	0.400	0.47	0.147	0.17	-0.11
on	Body	F	WCDMA1700	1412	1732.5	TOP Edge 0mm	\	12.84	13.50	0.627	0.73	0.289	0.34	0.19
off	Body	F	WCDMA1900	9400	1880	Rear 14mm	\	23.24	24.00	0.636	0.76	0.311	0.37	-0.19
off	Body	F	WCDMA1900	9400	1880	Right Edge 9mm	\	23.24	24.00	0.203	0.24	0.116	0.14	0.02
off	Body	F	WCDMA1900	9400	1880	Top Edge 14mm	\	23.24	24.00	0.699	0.83	0.376	0.45	-0.18
off	Body	F	WCDMA1900	9538	1907.6	Top Edge 14mm	\	23.04	24.00	0.676	0.84	0.367	0.46	0.18
off	Body	F	WCDMA1900	9262	1852.4	Top Edge 14mm	\	23.29	24.00	0.746	0.88	0.401	0.47	-0.09
on	Body	F	WCDMA1900	9538	1907.6	Rear 0mm	\	13.84	14.50	0.873	1.02	0.370	0.43	0.07
on	Body	F	WCDMA1900	9400	1880	Rear 0mm	\	14.04	14.50	0.808	0.90	0.350	0.39	-0.14
on	Body	F	WCDMA1900	9262	1852.4	Rear 0mm	F.5	14.09	14.50	0.938	1.03	0.370	0.41	-0.03
on	Body	F	WCDMA1900	9400	1880	Right Edge 0mm	\	14.04	14.50	0.225	0.25	0.108	0.12	0.03
on	Body	F	WCDMA1900	9400	1880	TOP Edge 0mm	\	14.04	14.50	0.677	0.75	0.252	0.28	-0.09
off	Body	F	LTE Band7	20850	2510	1RB-Middle Rear 14mm	\	23.67	24.00	0.521	0.56	0.288	0.31	0.14
off	Body	F	LTE Band7	20850	2510	1RB-Middle Right Edge 9mm	\	23.67	24.00	0.207	0.22	0.111	0.12	-0.07
off	Body	F	LTE Band7	20850	2510	1RB-Middle Top Edge 14mm	\	23.67	24.00	0.495	0.53	0.264	0.28	0.03
off	Body	F	LTE Band7	20850	2510	50RB-Mid Rear 14mm	\	22.69	23.00	0.401	0.43	0.222	0.24	0.18
off	Body	F	LTE Band7	20850	2510	50RB-Mid Right Edge 9mm	\	22.69	23.00	0.199	0.21	0.103	0.11	0.17
off	Body	F	LTE Band7	20850	2510	50RB-Mid Top Edge 14mm	\	22.69	23.00	0.380	0.41	0.203	0.22	0.03
on	Body	F	LTE Band7	21350	2560	1RB-middle Rear 0mm	F.6	14.72	15.50	0.891	1.07	0.365	0.44	0.04
on	Body	F	LTE Band7	21100	2535	1RB-middle Rear 0mm	\	14.64	15.50	0.804	0.98	0.315	0.38	0.07
on	Body	F	LTE Band7	20850	2510	1RB-middle Rear 0mm	\	14.68	15.50	0.812	0.98	0.317	0.38	0.03
on	Body	F	LTE Band7	21350	2560	1RB-middle Right Edge 0mm	\	14.72	15.50	0.220	0.26	0.097	0.12	-0.06
on	Body	F	LTE Band7	21350	2560	1RB-middle Top Edge 0mm	\	14.72	15.50	0.618	0.74	0.271	0.32	0.00
on	Body	F	LTE Band7	21350	2560	50RB-low Rear 0mm	\	14.68	15.50	0.643	0.78	0.298	0.36	-0.11
on	Body	F	LTE Band7	21350	2560	50RB-low Right Edge 0mm	\	14.68	15.50	0.224	0.27	0.091	0.11	-0.19
on	Body	F	LTE Band7	21350	2560	50RB-low Top Edge 0mm	\	14.68	15.50	0.606	0.73	0.272	0.33	-0.09
on	Body	F	LTE Band7	21350	2560	100RB Rear 0mm	\	14.58	15.50	0.782	0.97	0.263	0.33	-0.09
off	Body	F	LTE Band12	23060	704	1RB-Middle Rear 14mm	\	23.03	24.00	0.148	0.19	0.130	0.16	0.02
off	Body	F	LTE Band12	23060	704	1RB-Middle Right Edge 9mm	\	23.03	24.00	0.040	0.05	0.032	0.04	0.15
off	Body	F	LTE Band12	23060	704	1RB-Middle Top Edge 14mm	\	23.03	24.00	0.082	0.10	0.073	0.09	-0.17
off	Body	F	LTE Band12	23060	704	25RB-Low Rear 14mm	\	22.07	23.00	0.120	0.15	0.106	0.13	0.05
off	Body	F	LTE Band12	23060	704	25RB-Low Right Edge 9mm	\	22.07	23.00	0.032	0.04	0.027	0.03	0.11
off	Body	F	LTE Band12	23060	704	25RB-Low Top Edge 14mm	\	22.07	23.00	0.066	0.08	0.059	0.07	-0.11
on	Body	F	LTE Band12	23130	711	1RB-Middle Rear 0mm	F.7	20.31	21.00	0.691	0.81	0.352	0.41	0.07
on	Body	F	LTE Band12	23095	707.5	1RB-Middle Rear 0mm	\	20.21	21.00	0.666	0.80	0.331	0.40	-0.19
on	Body	F	LTE Band12	23060	704	1RB-Middle Rear 0mm	\	20.39	21.00	0.640	0.74	0.330	0.38	0.11
on	Body	F	LTE Band12	23095	704	1RB-Middle Right Edge 0mm	\	20.39	21.00	0.204	0.23	0.118	0.14	0.18
on	Body	F	LTE Band12	23095	704	1RB-Middle top Edge 0mm	\	20.39	21.00	0.448	0.52	0.273	0.31	0.04
on	Body	F	LTE Band12	23130	711	25RB-middle Rear 0mm	\	20.26	21.00	0.601	0.71	0.282	0.33	0.08
on	Body	F	LTE Band12	23095	707.5	25RB-middle Rear 0mm	\	20.23	21.00	0.585	0.70	0.271	0.32	-0.12
on	Body	F	LTE Band12	23130	704	25RB-middle Rear 0mm	\	20.34	21.00	0.619	0.72	0.310	0.36	0.10
on	Body	F	LTE Band12	23130	704	25RB-middle Right Edge 0mm	\	20.34	21.00	0.148	0.17	0.101	0.12	-0.17
on	Body	F	LTE Band12	23130	704	25RB-middle top Edge 0mm	\	20.34	21.00	0.447	0.52	0.233	0.27	-0.13
on	Body	F	LTE Band12	23130	704	50RB Rear 0mm	\	20.13	21.00	0.653	0.80	0.326	0.40	-0.09



off	Body	F	LTE Band13	23230	782	1RB-Middle Rear 14mm	\	23.13	24.00	0.268	0.33	0.218	0.27	0.14
off	Body	F	LTE Band13	23230	782	1RB-Middle Right Edge 9mm	\	23.13	24.00	0.072	0.09	0.054	0.07	-0.19
off	Body	F	LTE Band13	23230	782	1RB-Middle Top Edge 14mm	\	23.13	24.00	0.171	0.21	0.138	0.17	-0.06
off	Body	F	LTE Band13	23230	782	25RB-Low Rear 14mm	\	22.14	23.00	0.209	0.25	0.170	0.21	0.18
off	Body	F	LTE Band13	23230	782	25RB-Low Right Edge 9mm	\	22.14	23.00	0.050	0.06	0.042	0.05	-0.10
off	Body	F	LTE Band13	23230	782	25RB-Low Top Edge 14mm	\	22.14	23.00	0.134	0.16	0.108	0.13	-0.14
on	Body	F	LTE Band13	23230	782	1RB-Middle Rear 0mm	F.8	18.32	19.00	0.646	0.76	0.323	0.38	-0.02
on	Body	F	LTE Band13	23230	782	1RB-Middle Right Edge 0mm	\	18.32	19.00	0.198	0.23	0.126	0.15	-0.12
on	Body	F	LTE Band13	23230	782	1RB-Middle top Edge 0mm	\	18.32	19.00	0.300	0.35	0.188	0.22	-0.06
on	Body	F	LTE Band13	23230	782	25RB-low Rear 0mm	\	18.27	19.00	0.597	0.71	0.309	0.37	-0.01
on	Body	F	LTE Band13	23230	782	25RB-low Right Edge 0mm	\	18.27	19.00	0.204	0.24	0.116	0.14	-0.14
on	Body	F	LTE Band13	23230	782	25RB-low top Edge 0mm	\	18.27	19.00	0.300	0.35	0.192	0.23	-0.10
off	Body	F	LTE Band25	26590	1905	1RB-Middle Rear 14mm	\	22.97	24.00	0.618	0.78	0.355	0.45	0.09
off	Body	F	LTE Band25	26590	1905	1RB-Middle Right Edge 9mm	\	22.97	24.00	0.275	0.35	0.162	0.21	0.19
off	Body	F	LTE Band25	26590	1905	1RB-Middle Top Edge 14mm	\	22.97	24.00	0.601	0.76	0.314	0.40	0.19
off	Body	F	LTE Band25	26590	1905	50RB-Low Rear 14mm	\	21.97	23.00	0.479	0.61	0.274	0.35	0.05
off	Body	F	LTE Band25	26590	1905	50RB-Low Right Edge 9mm	\	21.97	23.00	0.246	0.31	0.146	0.19	-0.02
off	Body	F	LTE Band25	26590	1905	50RB-Low Top Edge 14mm	\	21.97	23.00	0.545	0.69	0.306	0.39	0.19
on	Body	F	LTE Band25	26590	1905	1RB-Middle Rear 0mm	F.9	13.97	14.50	0.848	0.96	0.347	0.39	-0.06
on	Body	F	LTE Band25	26385	1882.5	1RB-Middle Rear 0mm	\	13.87	14.50	0.804	0.93	0.340	0.39	-0.13
on	Body	F	LTE Band25	26140	1860	1RB-Middle Rear 0mm	\	13.84	14.50	0.812	0.95	0.348	0.41	-0.10
on	Body	F	LTE Band25	26590	1905	1RB-Middle Right Edge 0mm	\	13.97	14.50	0.258	0.29	0.125	0.14	0.04
on	Body	F	LTE Band25	26590	1905	1RB-Middle top Edge 0mm	\	13.97	14.50	0.711	0.80	0.324	0.37	0.04
on	Body	F	LTE Band25	26590	1905	50RB-middle Rear 0mm	\	13.86	14.50	0.792	0.92	0.337	0.39	-0.12
on	Body	F	LTE Band25	26385	1882.5	50RB-middle Rear 0mm	\	13.81	14.50	0.734	0.86	0.311	0.36	0.08
on	Body	F	LTE Band25	26140	1860	50RB-middle Rear 0mm	\	13.82	14.50	0.743	0.87	0.321	0.38	0.06
on	Body	F	LTE Band25	26140	1905	50RB-middle Right Edge 0mm	\	13.86	14.50	0.261	0.30	0.122	0.14	-0.19
on	Body	F	LTE Band25	26140	1905	50RB-middle top Edge 0mm	\	13.86	14.50	0.610	0.71	0.287	0.33	-0.16
on	Body	F	LTE Band25	26140	1905	100RB Rear 0mm	\	13.79	14.50	0.721	0.85	0.316	0.37	0.08
off	Body	F	LTE Band26	26775	822.5	1RB-Low Rear 14mm	\	22.87	24.00	0.174	0.23	0.135	0.18	0.10
off	Body	F	LTE Band26	26775	822.5	1RB-Low Right Edge 9mm	\	22.87	24.00	0.065	0.08	0.046	0.06	-0.05
off	Body	F	LTE Band26	26775	822.5	1RB-Low Top Edge 14mm	\	22.87	24.00	0.111	0.14	0.086	0.11	-0.16
off	Body	F	LTE Band26	26775	822.5	36RB-Low Rear 14mm	\	21.94	23.00	0.137	0.17	0.106	0.14	0.05
off	Body	F	LTE Band26	26775	822.5	36RB-Low Right Edge 9mm	\	21.94	23.00	0.052	0.07	0.037	0.05	-0.10
off	Body	F	LTE Band26	26775	822.5	36RB-Low Top Edge 14mm	\	21.94	23.00	0.086	0.11	0.066	0.08	-0.01
on	Body	F	LTE Band26	26965	822.5	1RB-low Rear 0mm	\	18.69	19.00	0.528	0.57	0.302	0.32	0.00
on	Body	F	LTE Band26	26885	831.5	1RB-low Rear 0mm	\	18.34	19.00	0.612	0.71	0.302	0.35	0.09
on	Body	F	LTE Band26	26775	841.5	1RB-low Rear 0mm	F.10	18.41	19.00	0.628	0.72	0.306	0.35	-0.02
on	Body	F	LTE Band26	26775	822.5	1RB-low Right Edge 0mm	\	18.69	19.00	0.246	0.26	0.158	0.17	-0.06
on	Body	F	LTE Band26	26775	822.5	1RB-low top Edge 0mm	\	18.69	19.00	0.369	0.40	0.162	0.17	-0.14
on	Body	F	LTE Band26	26775	822.5	36RB-low Rear 0mm	\	18.31	19.00	0.509	0.60	0.293	0.34	-0.02
on	Body	F	LTE Band26	26775	822.5	36RB-low Right Edge 0mm	\	18.31	19.00	0.249	0.29	0.162	0.19	-0.10
on	Body	F	LTE Band26	26775	822.5	36RB-low top Edge 0mm	\	18.31	19.00	0.371	0.43	0.162	0.19	-0.05
on	Body	F	LTE Band26	26775	841.5	75RB Rear 0mm	\	18.22	19.00	0.649	0.78	0.317	0.38	0.04
off	Body	F	LTE Band30	27710	2310	1RB-Mid Rear 14mm	\	23.33	24.00	0.424	0.49	0.184	0.21	-0.09
off	Body	F	LTE Band30	27710	2310	1RB-Mid Right Edge 9mm	\	23.33	24.00	0.152	0.18	0.069	0.08	0.19
off	Body	F	LTE Band30	27710	2310	1RB-Mid Top Edge 14mm	\	23.33	24.00	0.036	0.04	0.010	0.01	-0.14
off	Body	F	LTE Band30	27710	2310	25RB-Low Rear 14mm	\	22.31	23.00	0.349	0.41	0.150	0.18	0.11
off	Body	F	LTE Band30	27710	2310	25RB-Low Right Edge 9mm	\	22.31	23.00	0.155	0.18	0.070	0.08	0.09
off	Body	F	LTE Band30	27710	2310	25RB-Low Top Edge 14mm	\	22.31	23.00	0.000	0.00	0.000	0.00	-0.07
on	Body	F	LTE Band30	27710	2310	1RB-Mid Rear 0mm	F.11	13.68	14.00	1.110	1.19	0.391	0.42	-0.19
on	Body	F	LTE Band30	27710	2310	1RB-Mid Right Edge 0mm	\	13.68	14.00	0.454	0.49	0.135	0.15	0.04
on	Body	F	LTE Band30	27710	2310	1RB-Mid top Edge 0mm	\	13.68	14.00	0.246	0.26	0.090	0.10	-0.07
on	Body	F	LTE Band30	27710	2310	25RB-low Rear 0mm	\	13.43	14.00	0.920	1.05	0.345	0.39	-0.12
on	Body	F	LTE Band30	27710	2310	25RB-low Right Edge 0mm	\	13.43	14.00	0.460	0.52	0.137	0.16	0.14
on	Body	F	LTE Band30	27710	2310	25RB-low top Edge 0mm	\	13.43	14.00	0.251	0.29	0.093	0.11	0.13
on	Body	F	LTE Band30	27710	2310	50RB Rear 0mm	\	13.38	14.00	0.933	1.08	0.341	0.39	0.08
on	Body	F	LTE Band30	27710	2310	1RB-Mid Rear 0mm	B1	13.68	14.00	0.934	1.01	0.350	0.38	0.04
off	Body	F	LTE Band66	132072	1720	1RB-Middle Rear 14mm	\	23.37	24.00	0.679	0.79	0.419	0.48	0.02
off	Body	F	LTE Band66	132072	1720	1RB-Middle Right Edge 9mm	\	23.37	24.00	0.457	0.53	0.236	0.27	0.15
off	Body	F	LTE Band66	132072	1720	1RB-Middle Top Edge 14mm	\	23.37	24.00	0.626	0.72	0.448	0.52	-0.07
off	Body	F	LTE Band66	132572	1770	50RB-Mid Rear 14mm	\	22.38	23.00	0.621	0.72	0.352	0.41	0.05
off	Body	F	LTE Band66	132572	1770	50RB-Mid Right Edge 9mm	\	22.38	23.00	0.347	0.40	0.179	0.21	0.15
off	Body	F	LTE Band66	132572	1770	50RB-Mid Top Edge 14mm	\	22.38	23.00	0.624	0.72	0.341	0.39	-0.15
on	Body	F	LTE Band66	132572	1770	1RB-middle Rear 0mm	\	13.61	14.00	0.894	0.98	0.382	0.42	0.14
on	Body	F	LTE Band66	132322	1745	1RB-middle Rear 0mm	\	13.56	14.00	0.823	0.91	0.336	0.37	0.08
on	Body	F	LTE Band66	132072	1720	1RB-middle Rear 0mm	\	13.58	14.00	0.814	0.90	0.321	0.35	0.06
on	Body	F	LTE Band66	132322	1770	1RB-middle Right Edge 0mm	\	13.61	14.00	0.235	0.26	0.098	0.11	-0.10
on	Body	F	LTE Band66	132322	1770	1RB-middle top Edge 0mm	\	13.61	14.00	0.610	0.67	0.336	0.37	0.08
on	Body	F	LTE Band66	132572	1770	50RB-middle Rear 0mm	F.12	13.59	14.00	0.955	1.05	0.387	0.43	-0.03
on	Body	F	LTE Band66	132322	1745	50RB-Middle Rear 0mm	\	13.57	14.00	0.927	1.02	0.396	0.44	-0.06
on	Body	F	LTE Band66	132072	1720	50RB-Middle Rear 0mm	\	13.48	14.00	0.753	0.85	0.353	0.40	0.13
on	Body	F	LTE Band66	132572	1770	50RB-Middle Right Edge 0mm	\	13.59	14.00	0.253	0.28	0.110	0.12	-0.05
on	Body	F	LTE Band66	132572	1770	50RB-Middle top Edge 0mm	\	13.59	14.00	0.675	0.74	0.341	0.37	-0.19
on	Body	F	LTE Band66	132572	1770	100RB Rear 0mm	\	13.38	14.00	0.758	0.87	0.356	0.41	0.00
off	Body	F	LTE Band71	133222	673	1RB-Middle Rear 14mm	\	23.07	24.00	0.187	0.23	0.128	0.16	0.19
off	Body	F	LTE Band71	133222	673	1RB-Middle Right Edge 9mm	\	23.07	24.00	0.048	0.06	0.029	0.04	0.02
off	Body	F	LTE Band71	133222	673	1RB-Middle Top Edge 14mm	\	23.07	24.00	0.110	0.14	0.074	0.09	-0.01
off	Body	F	LTE Band71	133372	688	50RB-Lowdle Rear 14mm	\	22.21	23.00	0.144	0.17	0.099	0.12	-0.12
off	Body	F	LTE Band71	133372	688	50RB-Lowdle Right Edge 9mm	\	22.21	23.00	0.038	0.05	0.022	0.03	-0.10
off	Body	F	LTE Band71	133372	688	50RB-Lowdle Top Edge 14mm	\	22.21	23.00	0.085	0.10	0.057	0.07	-0.12
on	Body	F	LTE Band71	133322	683	1RB-middle Rear 0mm	F.13	20.57	21.00	0.600	0.66	0.298	0.33	-0.07
on	Body	F	LTE Band71	133222	683	1RB-middle Right Edge 0mm	\	20.57	21.00	0.176	0.19	0.097	0.11	-0.13
on	Body	F	LTE Band71	133222	683	1RB-middle top Edge 0mm	\	20.57	21.00	0.416	0.46	0.247	0.27	-0.19
on	Body	F	LTE Band71	133322	688	50RB-low Rear 0mm	\	20.55	21.00	0.594	0.66	0.295	0.33	0.05
on	Body	F	LTE Band71	133322	688	50RB-low Right Edge 0mm	\	20.55	21.00	0.180	0.20	0.098	0.11	-0.10
on	Body	F	LTE Band71	133322	688	50RB-low top Edge 0mm	\	20.55	21.00	0.435	0.48	0.252	0.28	-0.04



		PC2													
off	Body	F	LTE Band41	40185	2549.5	1RB-Middle Rear 14mm	\	26.53	27.00	0.406	<b>0.45</b>	0.230	<b>0.26</b>	-0.1	
off	Body	F	LTE Band41	40185	2549.5	1RB-Middle Right Edge 9mm	\	26.53	27.00	0.292	<b>0.33</b>	0.145	<b>0.16</b>	-0.01	
off	Body	F	LTE Band41	40185	2549.5	1RB-Middle Top Edge 14mm	\	26.53	27.00	0.469	<b>0.52</b>	0.242	<b>0.27</b>	0.13	
off	Body	F	LTE Band41	39750	2506	50RB-Middle Rear 14mm	\	25.55	26.00	0.304	<b>0.34</b>	0.168	<b>0.19</b>	-0.1	
off	Body	F	LTE Band41	39750	2506	50RB-Middle Right Edge 9mm	\	25.55	26.00	0.213	<b>0.24</b>	0.108	<b>0.12</b>	0.11	
off	Body	F	LTE Band41	39750	2506	50RB-Middle Top Edge 14mm	\	25.55	26.00	0.348	<b>0.39</b>	0.179	<b>0.20</b>	0.04	
on	Body	F	LTE Band41	41490	2680	1RB-Middle Rear 0mm	\	18.26	19.00	0.732	<b>0.87</b>	0.316	<b>0.37</b>	0.04	
on	Body	F	LTE Band41	41055	2636.5	1RB-Middle Rear 0mm	\	18.33	19.00	0.708	<b>0.83</b>	0.304	<b>0.35</b>	0.07	
on	Body	F	LTE Band41	40620	2593	1RB-Middle Rear 0mm	F.14	18.69	19.00	0.818	<b>0.88</b>	0.341	<b>0.37</b>	0.19	
on	Body	F	LTE Band41	40185	2549.5	1RB-Middle Rear 0mm	\	18.56	19.00	0.725	<b>0.80</b>	0.313	<b>0.35</b>	-0.15	
on	Body	F	LTE Band41	39750	2506	1RB-Middle Rear 0mm	\	18.53	19.00	0.741	<b>0.83</b>	0.326	<b>0.36</b>	-0.08	
on	Body	F	LTE Band41	40620	2593	1RB-Middle Right Edge 0mm	\	18.69	19.00	0.213	<b>0.23</b>	0.101	<b>0.11</b>	-0.02	
on	Body	F	LTE Band41	40620	2593	1RB-Middle top Edge 0mm	\	18.69	19.00	0.608	<b>0.65</b>	0.268	<b>0.29</b>	-0.19	
on	Body	F	LTE Band41	40620	2593	50RB-middle Rear 0mm	\	18.58	19.00	0.713	<b>0.79</b>	0.301	<b>0.33</b>	-0.18	
on	Body	F	LTE Band41	40620	2593	50RB-middle Right Edge 0mm	\	18.58	19.00	0.203	<b>0.22</b>	0.096	<b>0.11</b>	-0.08	
on	Body	F	LTE Band41	40620	2593	50RB-middle top Edge 0mm	\	18.58	19.00	0.581	<b>0.64</b>	0.254	<b>0.28</b>	-0.05	
on	Body	F	LTE Band41	40620	2593	100RB Rear 0mm	\	18.43	19.00	0.703	<b>0.80</b>	0.298	<b>0.34</b>	0.08	
		PC3													
off	Body	F	LTE Band41	40620	2593	1RB-Middle Rear 14mm	\	23.65	24.00	0.278	<b>0.30</b>	0.151	<b>0.16</b>	0.1	
off	Body	F	LTE Band41	40620	2593	1RB-Middle Right Edge 9mm	\	23.65	24.00	0.237	<b>0.26</b>	0.111	<b>0.12</b>	-0.12	
off	Body	F	LTE Band41	40620	2593	1RB-Middle Top Edge 14mm	\	23.65	24.00	0.363	<b>0.39</b>	0.176	<b>0.19</b>	-0.19	
off	Body	F	LTE Band41	40620	2593	50RB-Lowdle Rear 14mm	\	22.54	23.00	0.214	<b>0.24</b>	0.116	<b>0.13</b>	0	
off	Body	F	LTE Band41	40620	2593	50RB-Lowdle Right Edge 9mm	\	22.54	23.00	0.177	<b>0.20</b>	0.085	<b>0.09</b>	0.16	
off	Body	F	LTE Band41	40620	2593	50RB-Lowdle Top Edge 14mm	\	22.54	23.00	0.277	<b>0.31</b>	0.135	<b>0.15</b>	-0.12	
on	Body	F	LTE Band41	40620	2593	1RB-Middle Rear 0mm	F.15	15.66	16.00	0.603	<b>0.65</b>	0.251	<b>0.27</b>	0.06	
on	Body	F	LTE Band41	40620	2593	1RB-middle Right Edge 0mm	\	15.66	16.00	0.166	<b>0.18</b>	0.069	<b>0.07</b>	0.17	
on	Body	F	LTE Band41	40620	2593	1RB-middle top Edge 0mm	\	15.66	16.00	0.444	<b>0.48</b>	0.187	<b>0.20</b>	0.10	
on	Body	F	LTE Band41	40620	2593	50RB-middle Rear 0mm	\	15.58	16.00	0.540	<b>0.59</b>	0.233	<b>0.26</b>	0.01	
on	Body	F	LTE Band41	40620	2593	50RB-middle Right Edge 0mm	\	15.58	16.00	0.174	<b>0.19</b>	0.068	<b>0.07</b>	0.18	
on	Body	F	LTE Band41	40620	2593	50RB-middle top Edge 0mm	\	15.58	16.00	0.419	<b>0.46</b>	0.177	<b>0.19</b>	-0.05	

### 13.2 SAR results for WLAN

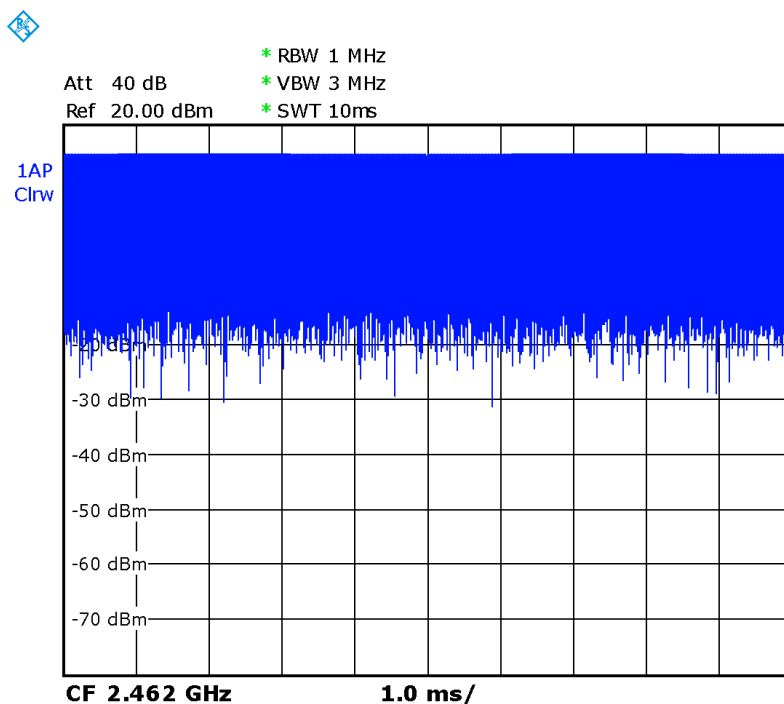
The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures.

When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.

SAR Test reduction was applied from KDB 248227 guidance, when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.

#### Duty factor plot

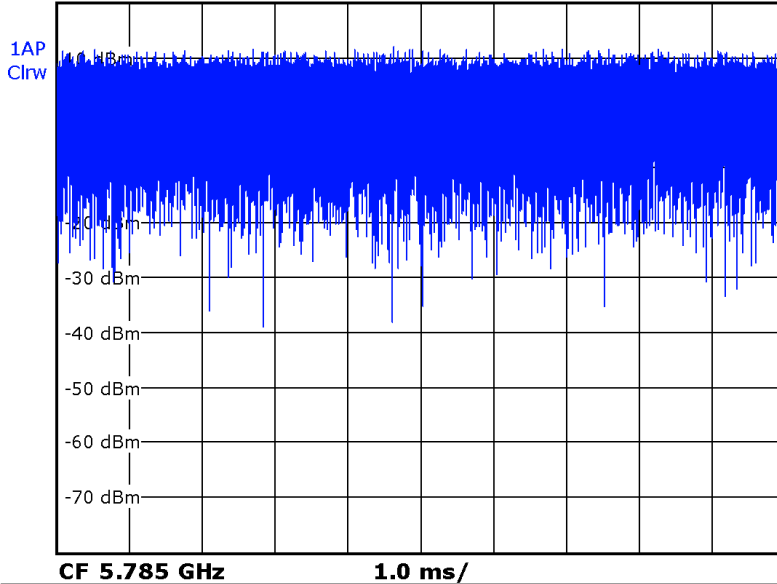
CH11



**CH157**



Att 40 dB  
Ref 20.00 dBm  
\* RBW 1 MHz  
\* VBW 3 MHz  
\* SWT 10ms



sensor	Test Position	Phantom position L/R/F	Frequency Band	Channel Number	Frequency (MHz)	Test setup	Fig	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
off	Body	F	WLAN	11	2462	Rear 14mm Area Scan	\	20.85	21	0.217	0.22	0.107	0.11	-0.03
off	Body	F	WLAN	11	2462	Left Edge 12mm	\	20.85	21	0.142	0.15	0.072	0.07	-0.11
off	Body	F	WLAN	11	2462	Top Edge 12mm	\	20.85	21	0.136	0.14	0.068	0.07	-0.01
on	Body	F	WLAN	11	2462	Rear 0mm	F.16	13.68	14	0.644	0.69	0.270	0.29	0.04
on	Body	F	WLAN	11	2462	Left Edge 0mm	\	13.68	14	0.254	0.27	0.107	0.12	-0.01
on	Body	F	WLAN	11	2462	Top Edge 0mm	\	13.68	14	0.280	0.30	0.115	0.12	0.07
off	Body	F	WLAN	64	5320	Rear 14mm 11n 20M	\	16.91	17.5	0.392	0.45	0.158	0.18	-0.02
off	Body	F	WLAN	64	5320	Left Edge 12mm	\	16.91	17.5	0.243	0.28	0.108	0.12	0.12
off	Body	F	WLAN	64	5320	Top Edge 12mm	\	16.91	17.5	0.617	0.71	0.237	0.27	0.15
on	Body	F	WLAN	52	5260	Rear 0mm 11n 20M	\	7.07	8	0.632	0.78	0.133	0.16	0.08
on	Body	F	WLAN	64	5320	Rear 0mm 11n 20M	\	7.16	8	0.803	0.97	0.164	0.20	0.02
on	Body	F	WLAN	64	5320	Left Edge 0mm	\	7.16	8	0.340	0.41	0.082	0.10	0.15
on	Body	F	WLAN	64	5320	Top Edge 0mm	\	7.16	8	0.447	0.54	0.093	0.11	-0.17
off	Body	F	WLAN	165	5825	Rear 14mm 11n 20M	\	18.32	18.5	0.379	0.40	0.150	0.16	0.15
off	Body	F	WLAN	165	5825	Left Edge 12mm	\	18.32	18.5	0.207	0.22	0.087	0.09	0.08
off	Body	F	WLAN	165	5825	Top Edge 12mm	\	18.32	18.5	0.541	0.56	0.212	0.22	-0.12
on	Body	F	WLAN	161	5805	Rear 0mm 11n 20M	\	8.49	9	0.702	0.79	0.143	0.16	0.02
on	Body	F	WLAN	165	5825	Rear 0mm 11n 20M	F.17	8.57	9	0.896	0.99	0.166	0.18	0.19
on	Body	F	WLAN	165	5825	Left Edge 0mm	\	8.57	9	0.340	0.38	0.080	0.09	0.14
on	Body	F	WLAN	165	5825	Top Edge 0mm	\	8.57	9	0.590	0.65	0.122	0.13	-0.18

**13.3 SAR results for BT**

sensor	Test Position	Phantom position L/R/F	Frequency Band	Channel Number	Frequency (MHz)	Test setup	Fig	EUT Measured Power (dBm)	Tune up (dBm)	Measured SAR 1g (W/kg)	Calculated SAR 1g (W/kg)	Measured SAR 10g (W/kg)	Calculated SAR 10g (W/kg)	Power Drift
off	Body	F	BT	78	2480	Rear 0mm	F.18	10.04	10.5	0.212	0.24	0.087	0.10	-0.01
off	Body	F	BT	78	2480	Left Edge 0mm	\	10.04	10.5	<0.01	<0.01	<0.01	<0.01	\
off	Body	F	BT	78	2480	Top Edge 0mm	\	10.04	10.5	<0.01	<0.01	<0.01	<0.01	\

## 14 SAR Measurement Variability

SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required.

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

**Table 14.1: SAR Measurement Variability for Body (1g)**

Frequency Band	Channel Number	Frequency (MHz)	Test setup	Original SAR (W/kg)	First Repeated SAR	The Ratio	Second Repeated SAR
GSM850	190	836.6	Rear GPRS 0mm 2TX	0.895	0.886	1.01	/
GSM1900	810	1909.8	Rear GPRS 0mm2TX	0.908	0.783	1.16	/
GSM1900	661	1880	Rear GPRS 0mm2TX	0.940	0.803	1.17	/
GSM1900	512	1850.2	Rear GPRS 0mm2TX	0.844	0.740	1.14	/
WCDMA1700	1513	1752.6	Top Edge 14mm	0.842	0.772	1.09	/
WCDMA1700	1513	1752.6	Rear 0mm	0.819	0.745	1.1	/
WCDMA1700	1412	1732.5	Rear 0mm	0.850	0.733	1.16	/
WCDMA1900	9538	1907.6	Rear 0mm	0.873	0.746	1.17	/
WCDMA1900	9400	1880	Rear 0mm	0.808	0.784	1.03	/
WCDMA1900	9262	1852.4	Rear 0mm	0.938	0.823	1.14	/
LTE Band7	21350	2560	1RB-middle Rear 0mm	0.891	0.833	1.07	/
LTE Band7	21100	2535	1RB-middle Rear 0mm	0.804	0.744	1.08	/
LTE Band7	20850	2510	1RB-middle Rear 0mm	0.812	0.732	1.11	/
LTE Band25	26590	1905	1RB-Middle Rear 0mm	0.848	0.840	1.01	/
LTE Band25	26365	1882.5	1RB-Middle Rear 0mm	0.804	0.766	1.05	/
LTE Band25	26140	1860	1RB-Middle Rear 0mm	0.812	0.788	1.03	/
LTE Band30	27710	2310	1RB-Mid Rear 0mm	1.110	1.090	1.02	/
LTE Band30	27710	2310	25RB-low Rear 0mm	0.920	0.814	1.13	/
LTE Band30	27710	2310	50RB Rear 0mm	0.933	0.897	1.04	/
LTE Band30	27710	2310	1RB-Mid Rear 0mm	0.934	0.841	1.11	/
LTE Band66	132572	1770	1RB-middle Rear 0mm	0.894	0.851	1.05	/
LTE Band66	132322	1745	1RB-middle Rear 0mm	0.823	0.791	1.04	/
LTE Band66	132072	1720	1RB-middle Rear 0mm	0.814	0.798	1.02	/
LTE Band66	132572	1770	50RB-middle Rear 0mm	0.955	0.853	1.12	/
LTE Band66	132322	1745	50RB-Middle Rear 0mm	0.927	0.835	1.11	/
LTE Band41	40620	2593	1RB-Middle Rear 0mm	0.818	0.730	1.12	/
WLAN	64	5320	Rear 0mm 11n 20M	0.803	0.737	1.09	/
WLAN	165	5825	Rear 0mm 11n 20M	0.896	0.772	1.16	/

## 15 Evaluation of Simultaneous

### 15.1 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 WLAN and Bluetooth devices which may simultaneously transmit with the licensed transmitter. KDB 447498 D01 provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

#### 15.1.1 Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

#### 15.1.2 SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR1 + SAR2)^{1.5} / Ri$$

Where:

*SAR1* is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition.

*SAR2* is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first .

*Ri* is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

$$[(x1-x2)^2 + (y1-y2)^2 + (z1-z2)^2]$$

In order for a pair of simultaneous transmitting antennas with the sum of 1-g SAR > 1.6 W/kg to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR1 + SAR2)^{1.5} / Ri \leq 0.04$$

When an individual antenna transmits at on two bands simultaneously, the sum of the highest reported SAR for the frequency bands should be used to determine *SAR1* or *SAR2*. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

### 15.2 Simultaneous Transmission Capabilities

The simultaneous transmission possibilities for this device are listed as below:

NO	If support: WWAN*1TX and WLAN*1TX	Y or N
1	WWAN + WLAN 2.4GHz	Y
2	WWAN + WLAN 2.4GHz +BT	N
3	WWAN + WLAN 5GHz	Y
4	WWAN + WLAN 5GHz +BT	Y

**Note:**

1. The reported SAR summation is calculated based on the same configuration and test position.
2. For the devices edges with antennas more than 2.5 cm from edge are not required to be evaluated for SAR, we determined the SAR of this edges were less than 0.01. For the convenience of simultaneous transmission calculation, all SAR values less than or equal to 0.01 are uniformly written as 0.00

### 15.3 Evaluation of Simultaneous

reported SAR 1g (W/kg)									
	WWAN(W/Kg)	BT(W/Kg)	WIFI2.4G(W/Kg)	WIFI5G(W/Kg)	+2.4GWIFI(W/Kg)	SPLSP	+WIFI5G+BT(W/Kg)	SPLSP	
Rear (OMM)	GSM850	0.95	0.24	0.69	0.99	1.64	Yes	2.18	Yes
	GSM1900	1.11	0.24	0.69	0.99	1.80	Yes	2.34	Yes
	WCDMA1900	1.03	0.24	0.69	0.99	1.72	Yes	2.26	Yes
	WCDMA1700	0.99	0.24	0.69	0.99	1.68	Yes	2.22	Yes
	WCDMA850	0.66	0.24	0.69	0.99	1.35	\	1.89	Yes
	LTE Band7	1.07	0.24	0.69	0.99	1.76	Yes	2.30	Yes
	LTE Band12	0.81	0.24	0.69	0.99	1.50	\	2.04	Yes
	LTE Band13	0.76	0.24	0.69	0.99	1.45	\	1.99	Yes
	LTE Band25	0.96	0.24	0.69	0.99	1.65	Yes	2.19	Yes
	LTE Band26	0.72	0.24	0.69	0.99	1.41	\	1.95	Yes
	LTE Band30	1.24	0.24	0.69	0.99	1.93	Yes	2.47	Yes
	LTE Band66	1.05	0.24	0.69	0.99	1.74	Yes	2.28	Yes
	LTE Band71	0.66	0.24	0.69	0.99	1.35	\	1.89	Yes
LTE Band41 PC2	0.88	0.24	0.69	0.99	1.57	\	2.11	Yes	
LTE Band41 PC3	0.65	0.24	0.69	0.99	1.34	\	1.88	Yes	

reported SAR 1g (W/kg)																				
Body	GSM850	GSM1900	WCDMA1900	WCDMA1700	WCDMA850	LTE Band7	LTE Band12	LTE Band13	LTE Band26	LTE Band26	LTE Band30	LTE Band66	LTE Band71	LTE Band41 PC2	LTE Band41 PC3	WIFI2.4G	WIFI5G	BT	+WIFI2.4G	+WIFI5G+BT
Right 0mm	0.29	0.37	0.25	0.47	0.18	0.27	0.23	0.24	0.30	0.29	0.52	0.28	0.20	0.23	0.19	0.00	0.00	0.00	0.52	0.52
Top 0mm	0.35	0.75	0.75	0.73	0.36	0.74	0.52	0.35	0.80	0.43	0.29	0.74	0.48	0.65	0.48	0.30	0.65	0.00	1.10	1.45
Rear 14mm	0.38	0.71	0.76	0.78	0.15	0.56	0.19	0.33	0.78	0.23	0.49	0.94	0.23	0.45	0.30	0.22	0.45	0.00	1.16	1.39
Right 9mm	0.11	0.37	0.24	0.60	0.03	0.22	0.05	0.09	0.35	0.08	0.18	0.53	0.06	0.33	0.26	0.00	0.00	0.00	0.60	0.60
Top 14mm	0.21	0.77	0.88	0.92	0.09	0.61	0.10	0.21	0.89	0.14	0.04	0.72	0.14	0.52	0.39	0.00	0.00	0.00	0.92	0.92



Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM850	Rear 0mm	0.95	84.32	2.18	0.038	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM1900	Rear 0mm	1.11	102.33	2.35	0.035	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA850	Rear 0mm	0.66	78.64	1.89	0.033	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1700	Rear 0mm	0.99	99.25	2.22	0.033	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1900	Rear 0mm	1.03	99.47	2.26	0.034	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB7	Rear 0mm	1.07	93.23	2.3	0.037	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB12	Rear 0mm	0.81	107	2.04	0.027	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB13	Rear 0mm	0.76	78.1	1.99	0.036	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB25	Rear 0mm	0.96	96.55	2.19	0.034	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB26	Rear 0mm	0.72	69.37	1.95	0.039	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB30	Rear 0mm	1.19	110.17	2.42	0.034	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB66	Rear 0mm	1.05	96.43	2.28	0.036	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB71	Rear 0mm	0.66	83.95	1.89	0.031	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB41 PC2	Rear 0mm	0.88	91.97	2.11	0.033	Not required
WLAN 5G		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB41 PC3	Rear 0mm	0.65	91.73	1.88	0.028	Not required
WLAN 5G		1.23				

Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM850	Rear Omm	0.95	96.37	2.18	0.0334	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM1900	Rear Omm	1.11	114.43	2.35	0.031	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA850	Rear Omm	0.66	90.8	1.89	0.029	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1700	Rear Omm	0.99	111.22	2.22	0.030	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1900	Rear Omm	1.03	111.61	2.26	0.030	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB7	Rear Omm	1.07	105.4	2.3	0.033	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB12	Rear Omm	0.81	118.99	2.04	0.024	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB13	Rear Omm	0.76	90.32	1.99	0.031	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB25	Rear Omm	0.96	108.64	2.19	0.030	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB26	Rear Omm	0.72	81.38	1.95	0.033	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB30	Rear Omm	1.19	122.18	2.42	0.031	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB66	Rear Omm	1.05	108.6	2.28	0.032	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB71	Rear Omm	0.66	95.95	1.89	0.027	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB41 PC2	Rear Omm	0.88	103.74	2.11	0.030	Not required
BT		1.23				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB41 PC3	Rear Omm	0.65	103.74	1.88	0.025	Not required
BT		1.23				

Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM850	Rear 0mm	0.95	70.94	1.64	0.030	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
GSM1900	Rear 0mm	1.11	89.01	1.8	0.027	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1700	Rear 0mm	0.99	85.8	1.68	0.025	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
WCDMA1900	Rear 0mm	1.03	86.2	1.72	0.026	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB7	Rear 0mm	1.07	80.1	1.76	0.029	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB25	Rear 0mm	0.96	83.22	1.65	0.025	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB30	Rear 0mm	1.19	96.75	1.88	0.027	Not required
WLAN 2.4G		0.69				
Band	Position	SAR(W/kg)	distance	Pair SAR sum(W/kg)	SPLSR	Simultaneous SAR
LTEB66	Rear 0mm	1.05	83.21	1.74	0.028	Not required
WLAN 2.4G		0.69				

## 15.4 Conclusion

According to the above tables, the highest simultaneous transmission reported SAR values is **1.57W/kg (1g)**. The sum of reported SAR values is < 1.6W/kg.

## 16 Measurement Uncertainty

### 16.1 Measurement Uncertainty for Normal SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	N	1	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	$\infty$
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
<b>Test sample related</b>										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	$\infty$
<b>Phantom and set-up</b>										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	$\infty$
21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521

Combined standard uncertainty	$u_c = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						9.55	9.43	257
Expanded uncertainty (confidence interval of 95 %)	$u_e = 2u_c$						19.1	18.9	

**16.2 Measurement Uncertainty for Normal SAR Tests (3~6GHz)**

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	$\infty$
13	Post-processing	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
<b>Test sample related</b>										
14	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
15	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
16	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	$\infty$
<b>Phantom and set-up</b>										
17	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
18	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
19	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
20	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	$\infty$

21	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{21} c_i^2 u_i^2}$						10.7	10.6	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						21.4	21.1	

### 16.3 Measurement Uncertainty for Fast SAR Tests (300MHz~3GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	6.0	N	1	1	1	6.0	6.0	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. Restrictions	B	0.4	R	$\sqrt{3}$	1	1	0.2	0.2	$\infty$
12	Probe positioning with respect to phantom shell	B	2.9	R	$\sqrt{3}$	1	1	1.7	1.7	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
14	Fast SAR z-Approximation	B	7.0	R	$\sqrt{3}$	1	1	4.0	4.0	$\infty$
<b>Test sample related</b>										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5
17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	$\infty$
<b>Phantom and set-up</b>										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$

20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	$\infty$
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						10.4	10.3	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						20.8	20.6	

#### 16.4 Measurement Uncertainty for Fast SAR Tests (3~6GHz)

No.	Error Description	Type	Uncertainty value	Probably Distribution	Div.	(Ci) 1g	(Ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	Degree of freedom
<b>Measurement system</b>										
1	Probe calibration	B	6.55	N	1	1	1	6.55	6.55	$\infty$
2	Isotropy	B	4.7	R	$\sqrt{3}$	0.7	0.7	1.9	1.9	$\infty$
3	Boundary effect	B	2.0	R	$\sqrt{3}$	1	1	1.2	1.2	$\infty$
4	Linearity	B	4.7	R	$\sqrt{3}$	1	1	2.7	2.7	$\infty$
5	Detection limit	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
6	Readout electronics	B	0.3	R	$\sqrt{3}$	1	1	0.3	0.3	$\infty$
7	Response time	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
8	Integration time	B	2.6	R	$\sqrt{3}$	1	1	1.5	1.5	$\infty$
9	RF ambient conditions-noise	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
10	RFambient conditions-reflection	B	0	R	$\sqrt{3}$	1	1	0	0	$\infty$
11	Probe positioned mech. Restrictions	B	0.8	R	$\sqrt{3}$	1	1	0.5	0.5	$\infty$
12	Probe positioning with respect to phantom shell	B	6.7	R	$\sqrt{3}$	1	1	3.9	3.9	$\infty$
13	Post-processing	B	1.0	R	$\sqrt{3}$	1	1	0.6	0.6	$\infty$
14	Fast SAR z-Approximation	B	14.0	R	$\sqrt{3}$	1	1	8.1	8.1	$\infty$
<b>Test sample related</b>										
15	Test sample positioning	A	3.3	N	1	1	1	3.3	3.3	71
16	Device holder uncertainty	A	3.4	N	1	1	1	3.4	3.4	5

17	Drift of output power	B	5.0	R	$\sqrt{3}$	1	1	2.9	2.9	$\infty$
<b>Phantom and set-up</b>										
18	Phantom uncertainty	B	4.0	R	$\sqrt{3}$	1	1	2.3	2.3	$\infty$
19	Liquid conductivity (target)	B	5.0	R	$\sqrt{3}$	0.64	0.43	1.8	1.2	$\infty$
20	Liquid conductivity (meas.)	A	2.06	N	1	0.64	0.43	1.32	0.89	43
21	Liquid permittivity (target)	B	5.0	R	$\sqrt{3}$	0.6	0.49	1.7	1.4	$\infty$
22	Liquid permittivity (meas.)	A	1.6	N	1	0.6	0.49	1.0	0.8	521
Combined standard uncertainty		$u_c = \sqrt{\sum_{i=1}^{22} c_i^2 u_i^2}$						13.5	13.4	257
Expanded uncertainty (confidence interval of 95 %)		$u_e = 2u_c$						27.0	26.8	

## 17 MAIN TEST INSTRUMENTS

**Table 17.1: List of Main Instruments**

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	E5071C	MY46110673	January 14, 2022	One year
02	Power sensor	NRP110T	101139	January 13, 2022	One year
03	Power sensor	NRP110T	101159		
04	Signal Generator	E4438C	MY49071430	January 13, 2022	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	159890	January 24, 2022	One year
09	E-field Probe	SPEAG EX3DV4	7517	January 19, 2022	One year
10	DAE	SPEAG DAE4	1525	September 15, 2022	One year
11	Dipole Validation Kit	SPEAG D750V3	1017	July 20,2022	One year
12	Dipole Validation Kit	SPEAG D835V2	4d062	July 5,2022	One year
13	Dipole Validation Kit	SPEAG D1750V2	1003	July 18,2022	One year
14	Dipole Validation Kit	SPEAG D1900V2	5d142	July 6,2022	One year
15	Dipole Validation Kit	SPEAG D2300V2	1018	July 20,2022	One year
16	Dipole Validation Kit	SPEAG D2450V2	853	July 20,2022	One year
17	Dipole Validation Kit	SPEAG D2600V2	1012	July 20,2022	One year
18	Dipole Validation Kit	SPEAG D5GHzV2	1060	July 05,2022	One year

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





## Appendixes

Refer to separated files for the following appendixes

**ANNEX A Graph Results**

**ANNEX B System Verification Results**

**ANNEX C SAR Measurement Setup**

**ANNEX D Position of the wireless device in relation to the phantom**

**ANNEX E Equivalent Media Recipes**

**ANNEX F System Validation**

**ANNEX G Probe Calibration Certificate**

**ANNEX H Dipole Calibration Certificate**

**ANNEX I Sensor Triggering Data Summary**

**ANNEX J Accreditation Certificate**