FCC SAR Test Report

APPLICANT	:	SIERRA WIRELESS
EQUIPMENT	:	PCIe wireless WAN card
BRAND NAME	:	Sierra Wireless Inc.
MODEL NAME	:	EM7355
FCC ID	:	N7NEM7355-D4
STANDARD	:	FCC 47 CFR Part 2 (2.1093) ANSI/IEEE C95.1-1992 IEEE 1528-2013

The product was installed into Tablet PC (Brand Name: DELL, Model Name: T16G) during test.

We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and had been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by: Eric Huang / Deputy Manager

Approved by: Jones Tsai / Manager

Testing Laboratory
1190

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA583130	Rev. 01	Initial issue of report	Oct. 13, 2015
FA583130	Rev. 02	Added phantom, liquid depth in the report.	Nov. 09, 2015

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **SIERRA WIRELESS, PCIe wireless WAN card, EM7355**, are as follows.

Equipment Class	Frequency Band	Highest SAR Summary	
		Body 1g SAR (W/kg)	Simultaneous Transmission 1g SAR (W/kg)
PCB	GSM850	1.32	1.58
	GSM1900	1.19	
	WCDMA Band V	1.28	
	WCDMA Band IV	1.34	
	WCDMA Band II	1.30	
	CDMA 2000 BC10	1.32	
	CDMA 2000 BC0	1.35	
	CDMA 2000 BC1	1.31	
	LTE Band 17	1.05	
	LTE Band 13	1.18	
	LTE Band 5	1.38	
	LTE Band 4	1.35	
	LTE Band 2		
	LTE Band 25	1.34	
Date of Testing:		2015/9/8 ~ 2015/9/16	

Remark:

1. The simultaneous transmission 1g SAR list above table is the EM7355 standalone reported SAR summation with the 8260D2W.
2. In this report, the EM7355 transmit simultaneous with 8260D2W on this device for the SPLSR analysis are both less than 0.04.
3. LTE band 2 SAR test was covered by Band 25 ; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg) specified in FCC 47 CFR part 2 (2.1093) and ANSI/IEEE C95.1-1992, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications

2. Administration Data

Testing Laboratory	
Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978

Applicant	
Company Name	SIERRA WIRELESS
Address	13811 Wireless Way Richmond, BC Canada V6V 3A4

Manufacturer	
Company Name	Dell
Address	One Dell Way, Round Rock, TX 78682 U.S.A.

3. Guidance Standard

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

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r01
- FCC KDB 447498 D01 General RF Exposure Guidance v05r02
- FCC KDB 616217 D04 SAR for laptop and tablets v01r01
- FCC KDB 941225 D01 3G SAR Procedures v03
- FCC KDB 941225 D05 SAR for LTE Devices v02r03

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	PCIe wireless WAN card
Brand Name	Sierra Wireless Inc.
Model Name	EM7355
FCC ID	N7NEM7355-D4
IMEI Code	359340050260188
Wireless Technology and Frequency Range	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz WCDMA Band IV: 1712.4 MHz ~ 1752.6 MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz CDMA2000 BC0: 824.7 MHz ~ 848.31 MHz CDMA 2000 BC1: 1851.25 MHz ~ 1908.75 MHz CDMA 2000 BC10: 817.9 MHz ~ 823.1 MHz LTE Band 2: 1850.7 MHz ~ 1909.3 MHz LTE Band 4: 1710.7 MHz ~ 1754.3 MHz LTE Band 5: 824.7 MHz ~ 848.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
Mode	· GPRS/EGPRS · RMC 12.2Kbps · HSDPA · HSUPA · DC-HSDPA · CDMA2000 : 1xRTT/1xEv-Do(Rev.0)/1xEv-Do(Rev.A) · LTE: QPSK, 16QAM
EUT Stage	Identical Prototype
Remark: 1. WLAN/Bluetooth module, Brand Name: Intel, Model Name: 8260D2W, FCC ID: PD98260D2W, is also integrated into this host, WLAN/Bluetooth power and WLAN SAR testing data which can be refer to RF Exposure Lab SAR Report, Report No: SAR.20150809.	

Host Information	
Equipment Name	Tablet PC
Brand Name	DELL
Model Name	T16G
Integrated Module	Brand Name: Intel Model Name: 8260D2W FCC ID: PD98260D2 Report No: SAR.20150809
Mode	· 802.11a/b/g/n/ac HT20/HT40/VHT20/VHT40/VHT80 · Bluetooth v3.0+EDR，Bluetooth v4.0-LE · NFC:ASK

4.2 General LTE SAR Test and Reporting Considerations

Summarized necessary items addressed in KDB 941225 D05 v02r03	
FCC ID	N7NEM7355-D4
Equipment Name	PCIe wireless WAN card
Operating Frequency Range of each LTE transmission band	LTE Band 02: 1850.7 MHz ~ 1909.3 MHz LTE Band 04: 1710.7 MHz ~ 1754.3 MHz LTE Band 05: 824.7 MHz ~ 848.3 MHz LTE Band 13: 779.5 MHz ~ 784.5 MHz LTE Band 17: 706.5 MHz ~ 713.5 MHz LTE Band 25: 1850.7 MHz ~ 1914.3 MHz
Channel Bandwidth	LTE Band 02: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 04: 5MHz, 10MHz, 15MHz, 20MHz LTE Band 05: 5MHz, 10MHz LTE Band 13: 5MHz, 10MHz LTE Band 17: 5MHz, 10MHz LTE Band 25: 5MHz, 10MHz, 15MHz, 20MHz
uplink modulations used	QPSK, and 16QAM
LTE Voice / Data requirements	Data only
LTE MPR permanently built-in by design	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3**
LTE A-MPR	In the base station simulator configuration, Network Setting value is set to NS_01 to disable A-MPR during SAR testing and the LTE SAR tests was transmitting on all TTI frames (Maximum TTI)
Spectrum plots for RB configuration	A properly configured base station simulator was used for the SAR and power measurement; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.
Power reduction applied to satisfy SAR compliance	Yes, Proximity Sensor.

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

Transmission (H, M, L) channel numbers and frequencies in each LTE band

LTE Band 2

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	18625	1852.5	18650	1855	18675	1857.5	18700	1860
M	18900	1880	18900	1880	18900	1880	18900	1880
H	19175	1907.5	19150	1905	19125	1902.5	19100	1900

LTE Band 4

	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	19975	1712.5	20000	1715	20025	1717.5	20050	1720
M	20175	1732.5	20175	1732.5	20175	1732.5	20175	1732.5
H	20375	1752.5	20350	1750	20325	1747.5	20300	1745

LTE Band 5

	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	20425	826.5	20450	829
M	20525	836.5	20525	836.5
H	20625	846.5	20600	844

LTE Band 13				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq.(MHz)
L	23205	779.5	23230	782
M	23230	782		
H	23255	784.5		

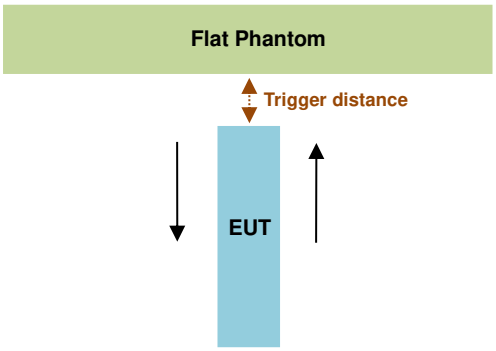
LTE Band 17				
	Bandwidth 5 MHz		Bandwidth 10 MHz	
	Channel #	Freq.(MHz)	Channel #	Freq. (MHz)
L	23755	706.5	23780	709
M	23790	710	23790	710
H	23825	713.5	23800	711

LTE Band 25								
	Bandwidth 5 MHz		Bandwidth 10 MHz		Bandwidth 15 MHz		Bandwidth 20 MHz	
	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)	Ch. #	Freq. (MHz)
L	26065	1852.5	26090	1855	26115	1857.5	26140	1860
M	26340	1880	26340	1880	26340	1880	26340	1880
H	26665	1912.5	26640	1910	26615	1907.5	26590	1905

5. Proximity Sensor Triggering Test

<Proximity Sensor Triggering Distance (KDB 616217 D04 section 6.2)>:

Proximity sensor triggering distance testing was performed according to the procedures outlined in KDB 616217 D04 section 6.2, and EUT moving further away from the flat phantom and EUT moving toward the flat phantom were both assessed. The details are illustrated in the exhibit “P-Sensor operational description”, and the shortest triggering distances were reported and used for SAR assessment.
In the preliminary triggering distance testing, the tissue-equivalent medium for different frequency bands were used for verification; no other frequency bands tissue-equivalent medium was found to result in shortest triggering distance than that for 1900MHz, and the tissue-equivalent medium for 1900MHz was used for formal proximity sensor triggering testing.



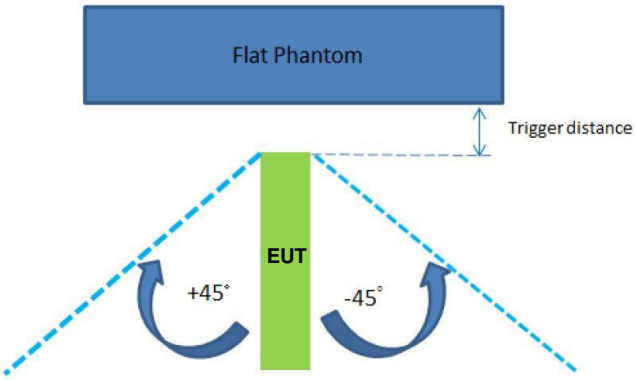
Proximity Sensor Trigger Distance (mm)		
Position	Bottom Face	Edge 1
Minimum	27	14

<Proximity Sensor Triggering Coverage (KDB 616217 D04 section 6.3)>:

If a sensor is spatially offset from the antenna(s), it is necessary to verify sensor triggering for conditions where the antenna is next to the user but the sensor is laterally further away to ensure sensor coverage is sufficient for reducing the power to maintain compliance. For p-sensor coverage testing, the device is moved and “along the direction of maximum antenna and sensor offset”.
Illustrated in the internal photo exhibit, although the senor is spatially offset, there is no trigger condition where the antenna is next to the user but the sensor is laterally further away, therefore proximity sensor coverage testing is not required.
This procedure is not required because antenna and sensor are collocated and the peak SAR location is overlapping with the sensor.

<Tablet Tilt angle influences to proximity sensor triggering (KDB 616217 D04 section 6.4)>:

The influence of table tilt angles to proximity sensor triggering was determined by positioning each tablet edge that contains a transmitting antenna, perpendicular to the flat phantom, at 13 mm separation.
Rotating the tablet around the edge next to the phantom in ≤ 10° increments until the tablet is ± 45° from the vertical position at 0°, and the maximum output power remains in the reduced mode.



The Sensor Trigger Distance (mm)	
Position	Edge 1
Minimum	13

Proximity sensor power reduction

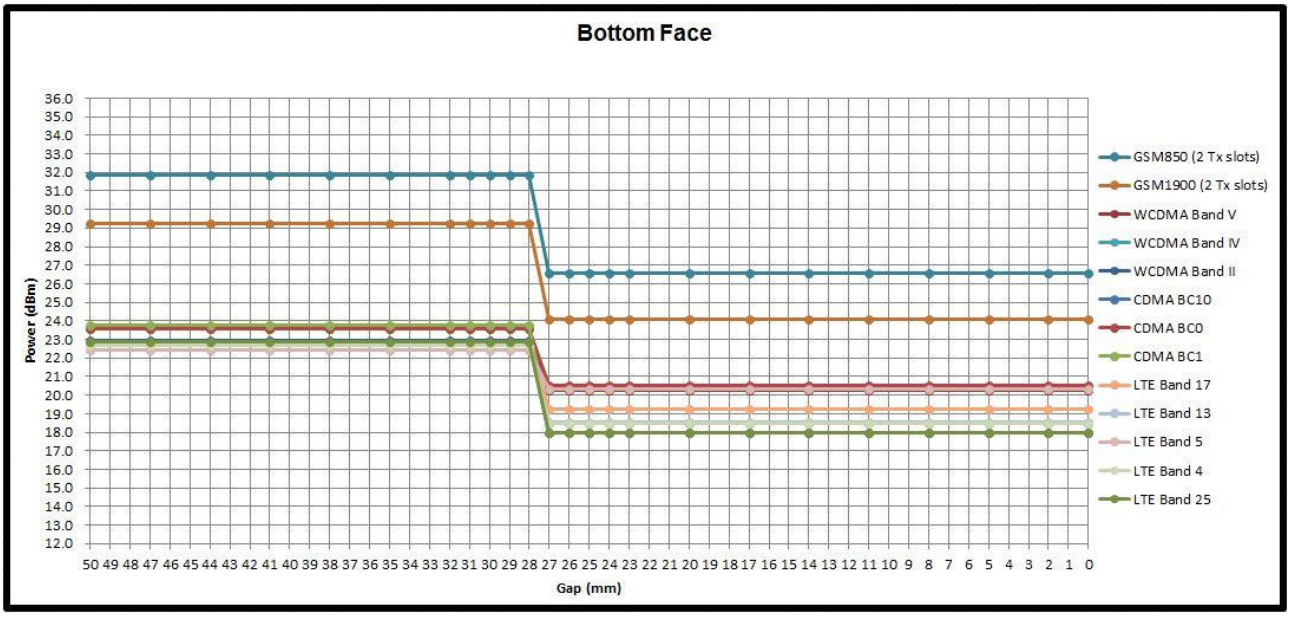
Exposure Position / wireless mode	Bottom Face(1)	Edge 1(1)	Edge 2	Edge 3	Edge 4
GSM850 GPRS (GMSK 1 Tx slot) - CS1	4.0 dB	4.0 dB	0 dB	0 dB	0 dB
GSM850 GPRS (GMSK 2 Tx slot) - CS1	5.0 dB	5.0 dB			
GSM850 EDGE (8PSK 1 Tx slot) - MCS5	0.0 dB	0.0 dB			
GSM850 EDGE (8PSK 2 Tx slot) - MCS5	0.0 dB	0.0 dB			
GSM850 EDGE (8PSK 3 Tx slot) - MCS5	1.0 dB	1.0 dB			
GSM850 EDGE (8PSK 4 Tx slot) - MCS5	2.5 dB	2.5 dB			
GSM1900 GPRS (GMSK 1 Tx slot) - CS1	3.5 dB	3.5 dB			
GSM1900 GPRS (GMSK 2 Tx slot) - CS1	4.5 dB	4.5 dB			
GSM1900 EDGE (8PSK 1 Tx slot) - MCS5	0.0 dB	0.0 dB			
GSM1900 EDGE (8PSK 2 Tx slot) - MCS5	2.0 dB	2.0 dB			
GSM1900 EDGE (8PSK 3 Tx slot) - MCS5	4.0 dB	4.0 dB			
GSM1900 EDGE (8PSK 4 Tx slot) - MCS5	5.0 dB	5.0 dB			
WCDMA Band V	2.5 dB	2.5 dB			
WCDMA Band II	5.0 dB	5.0 dB			
WCDMA Band IV	4.5 dB	4.5 dB			
CDMA2000 BC10	3.0 dB	3.0 dB			
CDMA2000 BC0	3.0 dB	3.0 dB			
CDMA2000 BC1	5.0 dB	5.0 dB			
LTE Band 13	4.0 dB	4.0 dB			
LTE Band 17	3.5 dB	3.5 dB			
LTE Band 5	2.5 dB	2.5 dB			
LTE Band 4	4.5 dB	4.5 dB			
LTE Band 2	5.0 dB	5.0 dB			
LTE Band 25	5.0 dB	5.0 dB			

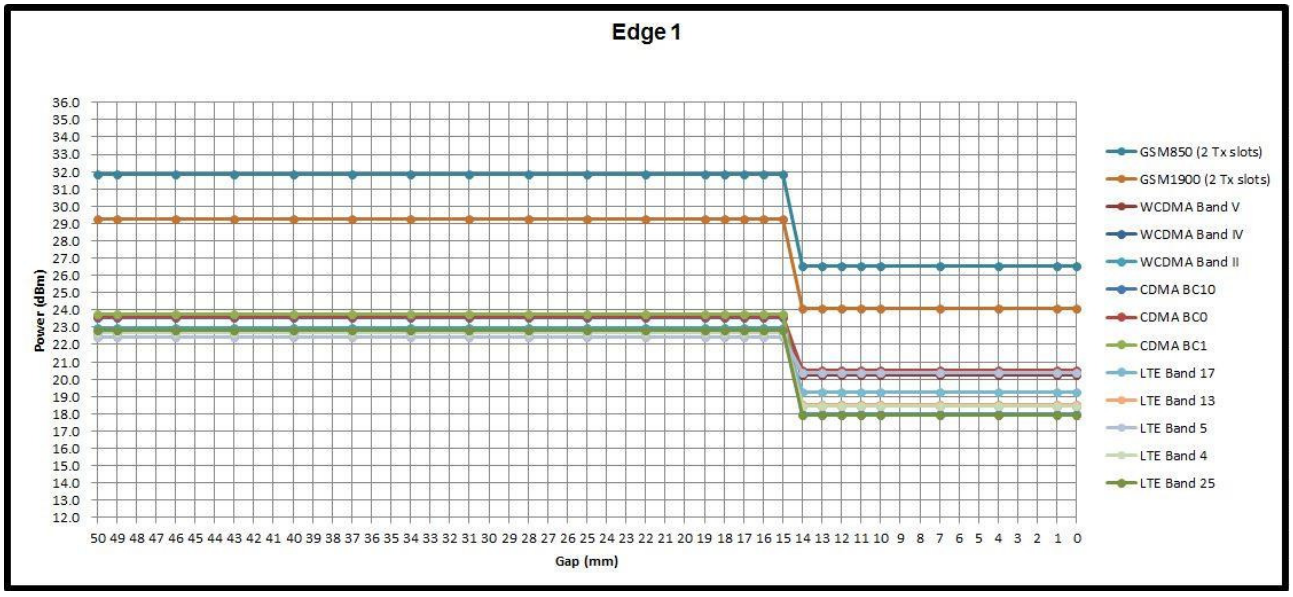
Remark:

1. (1): Reduced maximum limit applied by activation of proximity sensor.
2. Power reduction is not applicable for WLAN and Bluetooth.
3. Tests were performed in accordance with KDB 616217 D04 section 6.1, 6.2, 6.3, 6.4 and 6.5 and compliant results are shown and described in exhibit “P-Sensor operational description
4. For verification of compliance of power reduction scheme, additional SAR testing with EUT transmitting at full RF power at a conservative trigger distance was performed:
   - Bottom Face: 10 mm
   - Edge1: 10 mm

Power Measurement during Sensor Trigger distance testing

Band/Mode	Ch #	Measured power reduction (dBm)		Reduction Levels
		w/o power back-off	w/ power back-off	(dB)
GSM850 (GMSK 2 Tx slot)	128	31.84	26.55	5.29
GSM1900 (GMSK 2 Tx slot)	810	29.25	24.08	5.17
WCDMA Band V	4182	22.72	20.25	2.47
WCDMA Band IV	1413	22.83	18.46	4.37
WCDMA Band II	9538	22.94	17.99	4.95
CDMA BC10	580	23.59	20.38	3.21
CDMA BC0	384	23.60	20.49	3.11
CDMA BC1	600	23.78	18.49	5.29
LTE Band 17	23790	20.80	19.25	3.55
LTE Band 13	23230	22.78	18.53	4.25
LTE Band 5	20525	22.42	20.35	2.07
LTE Band 4	20175	22.71	18.47	4.24
LTE Band 25	26590	22.85	17.95	4.90





6. RF Exposure Limits

6.1 Uncontrolled Environment

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

6.2 Controlled Environment

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

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

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

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

7. Specific Absorption Rate (SAR)

7.1 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.

7.2 SAR Definition

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

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

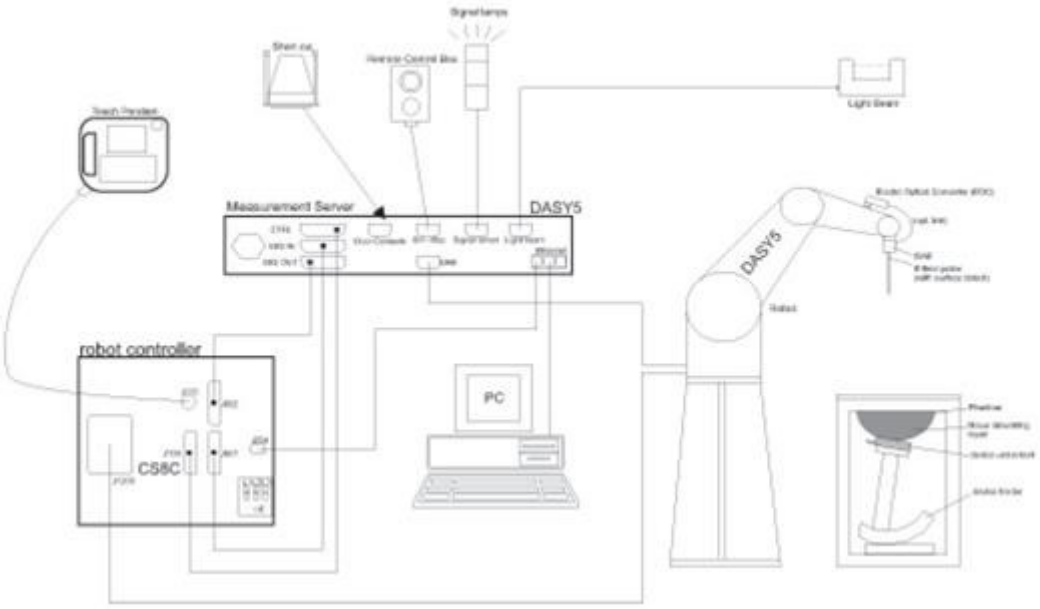
SAR is expressed in units of Watts per kilogram (W/kg)

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

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

8. System Description and Setup

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



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
- The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running WinXP or Win7 and the DASY5 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

The SAR measurement is conducted with the dosimetric probe (manufactured by SPEAG).The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency. This probe has a built in optical surface detection system to prevent from collision with phantom.

E-Field Probe Specification

<ES3DV3 Probe >

Construction	Symmetrical design with triangular core Built-in optical fiber for surface detection system. Built-in shielding against static charges. PEEK enclosure material (resistant to organic solvents, e.g., DGBE)
Frequency	10 MHz to 3 GHz; Linearity: ± 0.2 dB
Directivity	± 0.2 dB in HSL (rotation around probe axis) ± 0.4 dB in HSL (rotation normal to probe axis)
Dynamic Range	10 µW/g to 100 mW/g; Linearity: ± 0.2 dB
Dimensions	Overall length: 337 mm (Tip: 10 mm) Tip diameter: 4 mm (Body: 10 mm) Distance from probe tip to dipole centers: 3 mm

Fig 5.1 Photo of ES3DV3

E-Field Probe Calibration

Each probe needs to be calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy shall be evaluated and within ± 0.25dB. The sensitivity parameters (NormX, NormY, and NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested. The calibration data can be referred to appendix C of this report.

8.1 Data Acquisition Electronics (DAE)

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.
The input impedance of the DAE is 200 MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

Fig 5.2 Photo of DAE

8.2 Robot

The SPEAG DASY system uses the high precision robots (DASY4: RX90BL; DASY5: TX90XL) type from Stäubli SA (France). For the 6-axis controller system, the robot controller version (DASY4: CS7MB; DASY5: CS8c) from Stäubli is used. The Stäubli robot series have many features that are important for our application:

- High precision (repeatability ±0.035 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)

Fig 5.3 Photo of DASY4

Fig 5.4 Photo of DASY5

8.3 Measurement Server

The measurement server is based on a PC/104 CPU board with CPU (DASY4: 166 MHz, Intel Pentium; DASY5: 400 MHz, Intel Celeron), chipdisk (DASY4: 32 MB; DASY5: 128 MB), RAM (DASY4: 64 MB, DASY5: 128 MB). The necessary circuits for communication with the DAE electronic box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY I/O board, which is directly connected to the PC/104 bus of the CPU board.

The measurement server performs all the real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operations.

Fig 5.5 Photo of Server for DASY4

Fig 5.6 Photo of Server for DASY5

8.4 Phantom

<SAM Twin Phantom>

Shell Thickness	2 ± 0.2 mm; Center ear point: 6 ± 0.2 mm
Filling Volume	Approx. 25 liters
Dimensions	Length: 1000 mm; Width: 500 mm; Height: adjustable feet
Measurement Areas	Left Hand, Right Hand, Flat Phantom

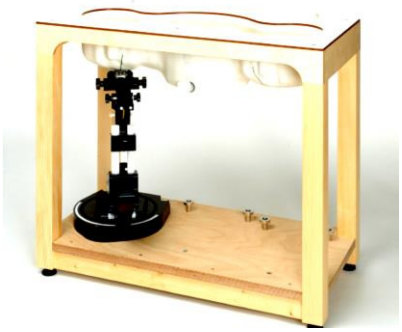


Fig 5.7 Photo of SAM Phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

<ELI4 Phantom>

Shell Thickness	2 ± 0.2 mm (sagging: <1%)
Filling Volume	Approx. 30 liters
Dimensions	Major ellipse axis: 600 mm Minor axis: 400 mm

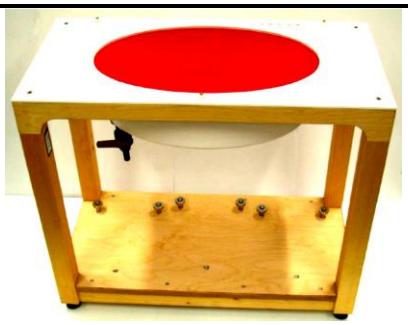


Fig 5.8 Photo of ELI4 Phantom

The ELI4 phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

8.5 Device Holder

<Device Holder for SAM Twin Phantom>

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

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

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

Fig 5.9 Device Holder

<Laptop Extension Kit>

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

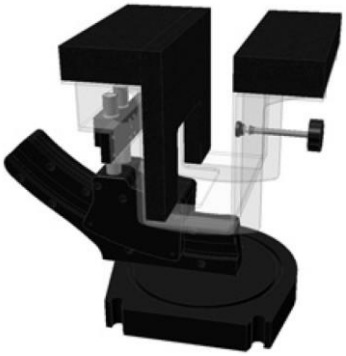


Fig 5.10 Laptop Extension Kit

8.6 Data Storage and Evaluation

5.7.1 Data Storage

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

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

5.7.2 Data Evaluation

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

Probe parameters：	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters：	- Frequency	f
	- Crest factor	cf
Media parameters：	- Conductivity	σ
	- Density	ρ

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

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power.

The formula for each channel can be given as：

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

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

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

E-field Probes：$$\mathbf{E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}}$$

H-field Probes：$$\mathbf{H_i = \sqrt{V_i} \cdot \frac{a_{i0} + a_{i1} f + a_{i2} f^2}{f}}$$

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

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

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

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

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

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

Note that the density is set to 1, to account for actual head tissue density rather than the density of the tissue simulating liquid.

9. Measurement Procedures

The measurement procedures are as follows:

<Conducted power measurement>

(a) For WWAN power measurement, use base station simulator to configure EUT WWAN transmission in conducted connection with RF cable, at maximum power in each supported wireless interface and frequency band.
(b) Read the WWAN RF power level from the base station simulator.
(c) For WLAN/BT power measurement, use engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power in each supported wireless interface and frequency band
(d) Connect EUT RF port through RF cable to the power meter, and measure WLAN/BT output power

<SAR measurement>

(a) Use base station simulator to configure EUT WWAN transmission in radiated connection, and engineering software to configure EUT WLAN/BT continuously transmission, at maximum RF power, in the highest power channel.
(b) Place the EUT in the positions as Appendix D demonstrates.
(c) Set scan area, grid size and other setting on the DASY software.
(d) Measure SAR results for the highest power channel on each testing position.
(e) Find out the largest SAR result on these testing positions of each band
(f) Measure SAR results for other channels in worst SAR testing position if the reported SAR of highest power channel is larger than 0.8 W/kg

According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

(a) Power reference measurement
(b) Area scan
(c) Zoom scan
(d) Power drift measurement

9.1 Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a "cube" measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

(a) Extraction of the measured data (grid and values) from the Zoom Scan
(b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
(c) Generation of a high-resolution mesh within the measured volume
(d) Interpolation of all measured values form the measurement grid to the high-resolution grid
(e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
(f) Calculation of the averaged SAR within masses of 1g and 10g

9.2 Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

9.3 Area Scan

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum found in the scanned area, within a range of the global maximum. The range (in dB0 is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan), if only one zoom scan follows the area scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of zoom scans has to be increased accordingly.

Area scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 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 ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

9.4 Zoom Scan

Zoom scans are used assess the peak spatial SAR values within a cubic averaging volume containing 1 gram and 10 gram of simulated tissue. The zoom scan measures points (refer to table below) within a cube shoes base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the zoom scan evaluates the averaged SAR for 1 gram and 10 gram and displays these values next to the job's label.

Zoom scan parameters extracted from FCC KDB 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz.

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the *reported* SAR from the *area scan based 1-g SAR estimation* procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

9.5 Volume Scan Procedures

The volume scan is used for assess overlapping SAR distributions for antennas transmitting in different frequency bands. It is equivalent to an oversized zoom scan used in standalone measurements. The measurement volume will be used to enclose all the simultaneous transmitting antennas. For antennas transmitting simultaneously in different frequency bands, the volume scan is measured separately in each frequency band. In order to sum correctly to compute the 1g aggregate SAR, the EUT remain in the same test position for all measurements and all volume scan use the same spatial resolution and grid spacing. When all volume scan were completed, the software, SEMCAD postprocessor can combine and subsequently superpose these measurement data to calculating the multiband SAR.

9.6 Power Drift Monitoring

All SAR testing is under the EUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of EUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drifts more than 5%, the SAR will be retested.

10. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	750MHz System Validation Kit	D750V3	1012	May. 28, 2015	May. 27, 2016
SPEAG	835MHz System Validation Kit	D835V2	499	Mar. 20, 2015	Mar. 19, 2016
SPEAG	1750MHz System Validation Kit	D1750V2	1068	Nov. 14, 2014	Nov. 13, 2015
SPEAG	1900MHz System Validation Kit	D1900V2	5d041	Mar. 24, 2015	Mar. 23, 2016
SPEAG	Data Acquisition Electronics	DAE4	1399	Nov. 13, 2014	Nov. 12, 2015
SPEAG	Data Acquisition Electronics	DAE4	915	Jun. 11, 2015	Jun. 10, 2016
SPEAG	Dosimetric E-Field Probe	EX3DV4	3955	Nov. 21, 2014	Nov. 20, 2015
H.M.IRIS	Thermometer	TH-08	TM658	Oct. 21, 2014	Oct. 20, 2015
Agilent	Wireless Communication Test Set	E5515C	MY50266977	May. 14, 2015	May. 13, 2016
R&S	Radio communication Tester	CMW500	113998	Sep. 30, 2014	Sep. 29, 2015
SPEAG	Device Holder	N/A	N/A	N/A	N/A
R&S	Signal Generator	MG3710A	6201502524	May. 25, 2015	May. 24, 2016
Agilent	ENA Network Analyzer	E5071C	MY46316648	Feb. 11, 2015	Feb. 10, 2016
SPEAG	Dielectric Probe Kit	DAK-3.5	1138	Nov. 18, 2014	Nov. 17, 2015
LINE SEIKI	Digital Thermometer	LKMelectronic	DTM3000SPEZIAL	Jul. 17, 2015	Jul. 16, 2016
Anritsu	Power Meter	ML2495A	1419002	May. 13, 2015	May. 12, 2016
Anritsu	Power Sensor	MA2411B	1339124	May. 13, 2015	May. 12, 2016
Anritsu	Spectrum Analyzer	MS2830A	6201396378	Jun. 17, 2015	Jun. 16, 2016
Agilent	Dual Directional Coupler	778D	50422	Note 1	
Woken	Attenuator 1	WK0602-XX	N/A	Note 1	
PE	Attenuator 2	PE7005-10	N/A	Note 1	
PE	Attenuator 3	PE7005- 3	N/A	Note 1	
AR	Power Amplifier	5S1G4M2	0328767	Note 1	
Mini-Circuits	Power Amplifier	ZVE-3W	162601250	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.

11. System Verification

11.1 Tissue Verification

For the measurement of the field distribution inside the SAM phantom with DASY, the phantom must be filled with around 25 liters of homogeneous body tissue simulating liquid. For head SAR testing, the liquid height from the ear reference point (ERP) of the phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.1. For body SAR testing, the liquid height from the center of the flat phantom to the liquid top surface is larger than 15 cm, which is shown in Fig. 6.2.

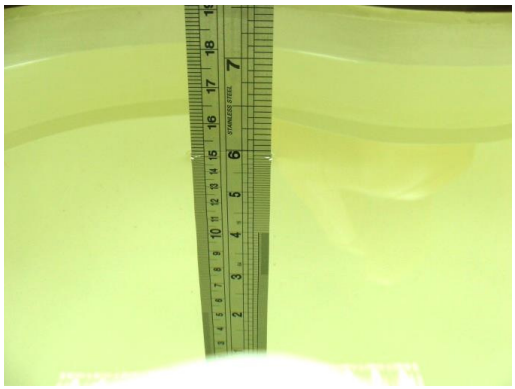


Fig 6.1 Photo of Liquid Height for Head SAR

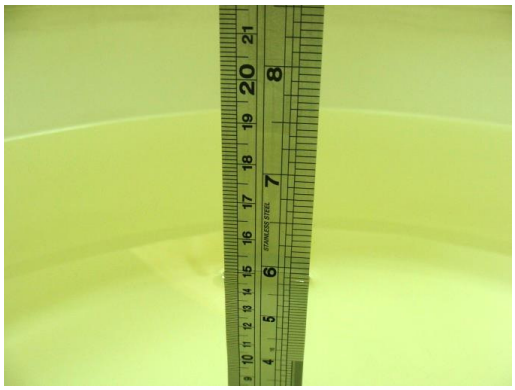


Fig 6.2 Photo of Liquid Height for Body SAR

The following tissue formulations are provided for reference only as some of the parameters have not been thoroughly verified. The composition of ingredients may be modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation.

Frequency (MHz)	Water (%)	Sugar (%)	Cellulose (%)	Salt (%)	Preventol (%)	DGBE (%)	Conductivity (σ)	Permittivity (εr)
For Head								
750	41.1	57.0	0.2	1.4	0.2	0	0.89	41.9
835	40.3	57.9	0.2	1.4	0.2	0	0.90	41.5
900	40.3	57.9	0.2	1.4	0.2	0	0.97	41.5
1800, 1900, 2000	55.2	0	0	0.3	0	44.5	1.40	40.0
2450	55.0	0	0	0	0	45.0	1.80	39.2
2600	54.8	0	0	0.1	0	45.1	1.96	39.0
For Body								
750	51.7	47.2	0	0.9	0.1	0	0.96	55.5
835	50.8	48.2	0	0.9	0.1	0	0.97	55.2
900	50.8	48.2	0	0.9	0.1	0	1.05	55.0
1800, 1900, 2000	70.2	0	0	0.4	0	29.4	1.52	53.3
2450	68.6	0	0	0	0	31.4	1.95	52.7
2600	68.1	0	0	0.1	0	31.8	2.16	52.5

Simulating Liquid for 5GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	64~78%
Mineral oil	11~18%
Emulsifiers	9~15%
Additives and Salt	2~3%

<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
750	MSL	22.3	0.970	54.646	0.96	55.50	1.04	-1.54	±5	2015/9/11
750	MSL	22.5	0.973	56.995	0.96	55.50	1.35	2.69	±5	2015/9/16
835	MSL	22.3	0.969	55.828	0.97	55.20	-0.10	1.14	±5	2015/9/10
835	MSL	22.6	0.979	55.479	0.97	55.20	0.93	0.51	±5	2015/9/16
835	MSL	22.6	0.979	55.479	0.97	55.20	0.93	0.51	±5	2015/9/16
1750	MSL	22.5	1.472	54.991	1.49	53.40	-1.21	2.98	±5	2015/9/8
1750	MSL	22.4	1.469	53.151	1.49	53.40	-1.41	-0.47	±5	2015/9/15
1900	MSL	22.5	1.545	54.527	1.52	53.30	1.64	2.30	±5	2015/9/9
1900	MSL	22.4	1.566	54.349	1.52	53.30	3.03	1.97	±5	2015/9/14

11.2 System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)2	Tissue Type2	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2015/9/11	750	MSL	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn1399	2.30	8.61	9.20	6.85
2015/9/16	750	MSL	250	D750V3-1012	EX3DV4 - SN3955	DAE4 Sn915	2.31	8.61	9.24	7.32
2015/9/10	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.30	9.30	9.20	-1.08
2015/9/16	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn1399	2.33	9.30	9.32	0.22
2015/9/16	835	MSL	250	D835V2-499	EX3DV4 - SN3955	DAE4 Sn915	2.45	9.30	9.80	5.38
2015/9/8	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	9.16	38.00	36.64	-3.58
2015/9/15	1750	MSL	250	D1750V2-1068	EX3DV4 - SN3955	DAE4 Sn1399	8.88	38.00	35.52	-6.53
2015/9/9	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	10.30	39.80	41.20	3.52
2015/9/14	1900	MSL	250	D1900V2-5d041	EX3DV4 - SN3955	DAE4 Sn1399	10.20	39.80	40.80	2.51

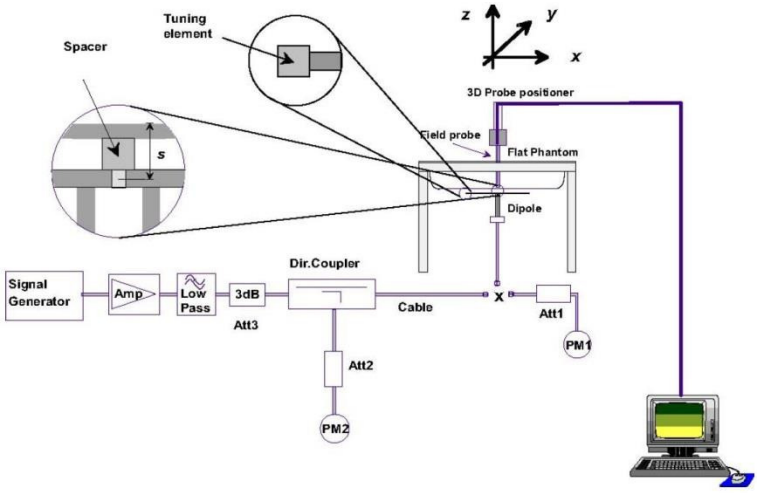


Fig 8.3.1 System Performance Check Setup

Fig 8.3.2 Setup Photo

12. RF Exposure Positions

12.1 SAR Testing for Tablet

This device can be used also in full sized tablet exposure conditions, due to its size. Per FCC KDB 616217, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR exclusion threshold in KDB 447498 D01v05r02 can be applied to determine SAR test exclusion for adjacent edge configurations. The closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

13. Conducted RF Output Power (Unit: dBm)

<GSM Conducted Power>

General Note:

1. Per KDB 447498 D01v05r02, the maximum output power channel is used for SAR testing and for further SAR test reduction.
2. Per KDB 941225 D01v03, for Body SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the GPRS 2Tx slots modes was selected when EUT operating without power back-off, the GPRS 2Tx slots modes was selected when EUT operating with power back-off, according to the highest source-based time-averaged output power.

Maximum Average RF Power (Proximity Sensor Inactive)

Band GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS (GMSK, 1 Tx slot)	32.00	31.95	31.87	33.50	23.00	22.95	22.87	24.50
GPRS (GMSK, 2 Tx slots)	31.84	31.82	31.81	33.00	25.84	25.82	25.81	27.00
EDGE (8PSK, 1 Tx slot)	26.45	26.43	26.41	28.00	17.45	17.43	17.41	19.00
EDGE (8PSK, 2 Tx slots)	26.32	26.27	26.35	27.00	20.32	20.27	20.35	21.00
EDGE (8PSK, 3 Tx slots)	26.16	26.12	26.15	27.00	21.90	21.86	21.89	22.74
EDGE (8PSK, 4 Tx slots)	25.95	25.90	25.94	27.00	22.95	22.90	22.94	24.00

Band GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS (GMSK, 1 Tx slot)	28.95	29.12	29.28	30.50	19.95	20.12	20.28	21.50
GPRS (GMSK, 2 Tx slots)	29.12	28.96	29.25	30.00	23.12	22.96	23.25	24.00
EDGE (8PSK, 1 Tx slot)	24.97	25.04	25.06	27.00	15.97	16.04	16.06	18.00
EDGE (8PSK, 2 Tx slots)	24.86	24.92	24.90	26.00	18.86	18.92	18.90	20.00
EDGE (8PSK, 3 Tx slots)	24.76	24.82	24.82	26.00	20.50	20.56	20.56	21.74
EDGE (8PSK, 4 Tx slots)	24.68	24.74	24.74	26.00	21.68	21.74	21.74	23.00

Reduced Average RF Power (Proximity Sensor active)

Band GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	128	189	251		128	189	251	
Frequency (MHz)	824.2	836.4	848.8		824.2	836.4	848.8	
GPRS (GMSK, 1 Tx slot)	29.32	29.11	29.31	29.50	20.32	20.11	20.31	20.50
GPRS (GMSK, 2 Tx slots)	26.55	26.49	26.51	28.00	20.55	20.49	20.51	22.00
EDGE (8PSK, 1 Tx slot)	26.45	26.43	26.41	28.00	17.45	17.43	17.41	19.00
EDGE (8PSK, 2 Tx slots)	26.32	26.27	26.35	27.00	20.32	20.27	20.35	21.00
EDGE (8PSK, 3 Tx slots)	24.52	24.58	24.55	26.00	20.26	20.32	20.29	21.74
EDGE (8PSK, 4 Tx slots)	23.41	23.59	23.45	24.50	20.41	20.59	20.45	21.50

Band GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
TX Channel	512	661	810		512	661	810	
Frequency (MHz)	1850.2	1880	1909.8		1850.2	1880	1909.8	
GPRS (GMSK, 1 Tx slot)	26.03	26.09	26.11	27.00	17.03	17.09	17.11	18.00
GPRS (GMSK, 2 Tx slots)	24.00	23.96	24.08	25.50	18.00	17.96	18.08	19.50
EDGE (8PSK, 1 Tx slot)	24.97	25.04	25.06	27.00	15.97	16.04	16.06	18.00
EDGE (8PSK, 2 Tx slots)	23.47	23.45	23.50	24.00	17.47	17.45	17.50	18.00
EDGE (8PSK, 3 Tx slots)	21.40	21.31	21.39	22.00	17.14	17.05	17.13	17.74
EDGE (8PSK, 4 Tx slots)	20.58	20.64	20.65	21.00	17.58	17.64	17.65	18.00

<WCDMA Conducted Power>

1. The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
2. The procedures in KDB 941225 D01 are applied for 3GPP Rel. 6 HSPA to configure the device in the required sub-test mode(s) to determine SAR test exclusion.
3. For DC-HSDPA, the device was configured according to the H-Set 12, Fixed Reference Channel (FRC) configuration in Table C.8.1.12 of 3GPP TS 34.121-1, with the primary and the secondary serving HS-DSCH Cell enabled during the power measurement.

A summary of these settings are illustrated below:

HSDPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set Gain Factors (β_c and β_d) and parameters were set according to each
   ii. Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
   iii. Set RMC 12.2Kbps + HSDPA mode.
   iv. Set Cell Power = -86 dBm
   v. Set HS-DSCH Configuration Type to FRC (H-set 1, QPSK)
   vi. Select HSDPA Uplink Parameters
   vii. Set Delta ACK, Delta NACK and Delta CQI = 8
   viii. Set Ack-Nack Repetition Factor to 3
   ix. Set CQI Feedback Cycle (k) to 4 ms
   x. Set CQI Repetition Factor to 2
   xi. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} *(Note1, Note 2)*	**CM** (dB) *(Note 3)*	**MPR** (dB) *(Note 3)*
1	2/15	15/15	64	2/15	4/15	0.0	0.0
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0
3	15/15	8/15	64	15/8	30/15	1.5	0.5
4	15/15	4/15	64	15/4	30/15	1.5	0.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.

Note 2: For the HS-DPCCH power mask requirement test in clause 5.2C, 5.7A, and the Error Vector Magnitude (EVM) with HS-DPCCH test in clause 5.13.1A, and HSDPA EVM with phase discontinuity in clause 5.13.1AA, Δ_{ACK} and Δ_{NACK} = 30/15 with β_{hs} = 30/15 * β_c, and Δ_{CQI} = 24/15 with β_{hs} = 24/15 * β_c.

Note 3: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH and HS-DPCCH the MPR is based on the relative CM difference. This is applicable for only UEs that support HSDPA in release 6 and later releases.

Note 4: For subtest 2 the β_c/β_d ratio of 12/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 11/15 and β_d = 15/15.

Setup Configuration

HSUPA Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration.
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting * :
   i. Call Configs = 5.2B, 5.9B, 5.10B, and 5.13.2B with QPSK
   ii. Set the Gain Factors (β_c and β_d) and parameters (AG Index) were set according to each specific sub-test in the following table, C11.1.3, quoted from the TS 34.121
   iii. Set Cell Power = -86 dBm
   iv. Set Channel Type = 12.2k + HSPA
   v. Set UE Target Power
   vi. Power Ctrl Mode= Alternating bits
   vii. Set and observe the E-TFCI
   viii. Confirm that E-TFCI is equal to the target E-TFCI of 75 for sub-test 1, and other subtest's E-TFCI
d. The transmitted maximum output power was recorded.

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	β_{ed}1: 47/15 β_{ed}2: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 1 for β_c/β_d =12/15, β_{hs}/β_c=24/15. For all other combinations of DPDCH, DPCCH, HS- DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.
Note 3: For subtest 1 the β_c/β_d ratio of 11/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 10/15 and β_d = 15/15.
Note 4: For subtest 5 the β_c/β_d ratio of 15/15 for the TFC during the measurement period (TF1, TF0) is achieved by setting the signalled gain factors for the reference TFC (TF1, TF1) to β_c = 14/15 and β_d = 15/15.
Note 5: In case of testing by UE using E-DPDCH Physical Layer category 1, Sub-test 3 is omitted according to TS25.306 Table 5.1g.
Note 6: β_{ed} can not be set directly, it is set by Absolute Grant Value.

Setup Configuration

DC-HSDPA 3GPP release 8 Setup Configuration:

a. The EUT was connected to Base Station Agilent E5515C referred to the Setup Configuration below
b. The RF path losses were compensated into the measurements.
c. A call was established between EUT and Base Station with following setting:
   i. Set RMC 12.2Kbps + HSDPA mode.
   ii. Set Cell Power = -25 dBm
   iii. Set HS-DSCH Configuration Type to FRC (H-set 12, QPSK)
   iv. Select HSDPA Uplink Parameters
   v. Set Gain Factors (β_c and β_d) and parameters were set according to each Specific sub-test in the following table, C10.1.4, quoted from the TS 34.121
      a). Subtest 1: β_c/β_d=2/15
      b). Subtest 2: β_c/β_d=12/15
      c). Subtest 3: β_c/β_d=15/8
      d). Subtest 4: β_c/β_d=15/4
   vi. Set Delta ACK, Delta NACK and Delta CQI = 8
   vii. Set Ack-Nack Repetition Factor to 3
   viii. Set CQI Feedback Cycle (k) to 4 ms
   ix. Set CQI Repetition Factor to 2
   x. Power Ctrl Mode = All Up bits
d. The transmitted maximum output power was recorded.

The following tests were conducted according to the test requirements outlines in 3GPP TS 34.121 specification.
A summary of these settings are illustrated below:

C.8.1.12 Fixed Reference Channel Definition H-Set 12

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

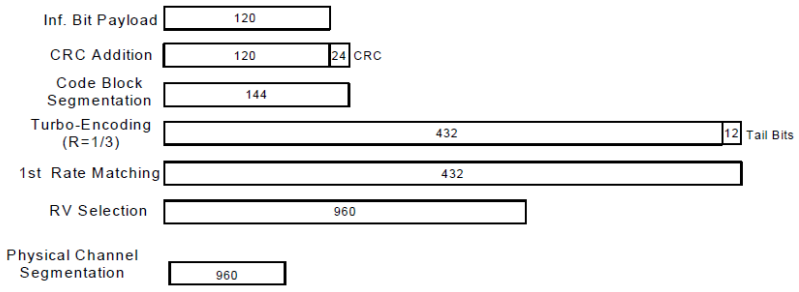


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

Setup Configuration

<WCDMA Conducted Power>

General Note:

1. Per KDB 941225 D01v03, SAR for Body exposure is measured using a 12.2 kbps RMC with TPC bits configured to all "1's".
2. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

Maximum Average RF Power (Proximity Sensor Inactive)

Band			WCDMA V			Tune-up Limit (dBm)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel			4132	4182	4233		9262	9400	9538		1312	1413	1513	
Rx Channel			4357	4407	4458		9662	9800	9938		1537	1638	1738	
Frequency (MHz)			826.4	836.4	846.6		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
MPR (dB)	3GPP Rel 99	RMC 12.2Kbps	22.60	22.72	22.62	24.00	22.89	22.87	22.94	24.00	22.60	22.83	22.82	24.00
0	3GPP Rel 6	HSDPA Subtest-1	22.00	22.07	22.10	24.00	22.44	22.39	22.35	24.00	22.33	22.30	22.30	24.00
0	3GPP Rel 6	HSDPA Subtest-2	22.02	22.05	22.06	24.00	22.41	22.38	22.33	24.00	22.31	22.28	22.27	24.00
0.5	3GPP Rel 6	HSDPA Subtest-3	21.52	21.63	21.65	23.50	22.02	21.94	21.91	23.50	21.94	21.91	21.90	23.50
0.5	3GPP Rel 6	HSDPA Subtest-4	21.50	21.57	21.64	23.50	22.00	21.94	21.90	23.50	21.92	21.89	21.90	23.50
0	3GPP Rel 8	DC-HSDPA Subtest-1	22.00	22.06	22.09	24.00	22.43	22.38	22.34	24.00	22.32	22.30	22.29	24.00
0	3GPP Rel 8	DC-HSDPA Subtest-2	22.00	22.05	22.06	24.00	22.00	22.38	22.32	24.00	22.30	22.28	22.28	24.00
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	21.51	21.62	21.63	23.50	22.01	21.93	21.90	23.50	21.93	21.90	21.90	23.50
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	21.50	21.55	21.63	23.50	22.01	21.92	21.90	23.50	21.92	21.90	21.96	23.50
0	3GPP Rel 6	HSUPA Subtest-1	22.07	22.04	22.05	24.00	22.01	22.00	22.00	24.00	22.08	22.03	22.06	24.00
2	3GPP Rel 6	HSUPA Subtest-2	20.71	20.79	20.87	22.00	20.51	20.74	20.88	22.00	20.29	20.28	20.32	22.00
1	3GPP Rel 6	HSUPA Subtest-3	21.04	21.02	21.11	23.00	21.02	21.17	21.18	23.00	21.17	21.15	21.28	23.00
2	3GPP Rel 6	HSUPA Subtest-4	20.75	20.82	20.91	22.00	20.63	20.62	20.94	22.00	20.34	20.39	20.33	22.00
0	3GPP Rel 6	HSUPA Subtest-5	22.20	22.13	22.15	24.00	22.02	22.14	22.10	24.00	22.10	22.13	22.13	24.00

Reduced Average RF Power (Proximity Sensor active)

Band			WCDMA V			Tune-up Limit (dBm)	WCDMA II			Tune-up Limit (dBm)	WCDMA IV			Tune-up Limit (dBm)
TX Channel			4132	4182	4233		9262	9400	9538		1312	1413	1513	
Rx Channel			4357	4407	4458		9662	9800	9938		1537	1638	1738	
Frequency (MHz)			826.4	836.4	846.6		1852.4	1880	1907.6		1712.4	1732.6	1752.6	
MPR (dB)	3GPP Rel 99	RMC 12.2Kbps	20.13	20.25	20.20	21.50	17.92	17.94	17.99	19.00	18.39	18.46	18.44	19.50
0	3GPP Rel 6	HSDPA Subtest-1	19.58	19.63	19.61	21.50	17.40	17.42	17.48	19.00	17.88	17.94	17.91	19.50
0	3GPP Rel 6	HSDPA Subtest-2	19.58	19.67	19.64	21.50	17.35	17.39	17.46	19.00	17.85	17.92	17.89	19.50
0.5	3GPP Rel 6	HSDPA Subtest-3	19.09	19.20	19.18	21.00	16.88	16.93	16.98	18.50	17.38	17.43	17.41	19.00
0.5	3GPP Rel 6	HSDPA Subtest-4	19.22	19.30	19.28	21.00	16.85	16.91	16.96	18.50	17.35	17.40	17.38	19.00
0	3GPP Rel 8	DC-HSDPA Subtest-1	19.48	19.56	19.57	21.50	17.39	17.38	17.47	19.00	17.84	17.89	17.84	19.50
0	3GPP Rel 8	DC-HSDPA Subtest-2	19.49	19.64	19.58	21.50	17.32	17.39	17.38	19.00	17.82	17.89	17.87	19.50
0.5	3GPP Rel 8	DC-HSDPA Subtest-3	19.08	19.11	19.17	21.00	16.78	16.86	16.95	18.50	17.37	17.40	17.41	19.00
0.5	3GPP Rel 8	DC-HSDPA Subtest-4	19.21	19.21	19.27	21.00	16.76	16.83	16.91	18.50	17.28	17.35	17.29	19.00
0	3GPP Rel 6	HSUPA Subtest-1	19.01	19.14	19.10	21.50	16.79	16.82	16.89	19.00	17.38	17.42	17.40	19.50
2	3GPP Rel 6	HSUPA Subtest-2	18.41	18.53	18.48	19.50	15.88	15.90	15.99	17.00	16.25	16.30	16.29	17.50
1	3GPP Rel 6	HSUPA Subtest-3	18.58	18.71	18.65	20.50	16.00	16.03	16.11	18.00	16.36	16.38	16.35	18.50
2	3GPP Rel 6	HSUPA Subtest-4	18.65	18.80	18.71	19.50	16.18	16.20	16.29	17.00	16.48	16.35	16.38	17.50
0	3GPP Rel 6	HSUPA Subtest-5	19.61	19.77	19.70	21.50	17.39	17.43	17.48	19.00	17.85	17.90	17.88	19.50

<CDMA2000 Conducted Power>

General Note:

1. Per KDB 941225 D01v03, for Body exposure condition, EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.

Maximum Average RF Power (Proximity Sensor Inactive)

Band	CDMA2000 BC10			Tune-up Limit (dBm)	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)
TX Channel	476	580	684		1013	384	777		25	600	1175	
Frequency (MHz)	817.9	820.5	823.1		824.7	836.52	848.31		1851.25	1880	1908.75	
1xRTT RC1 SO55	23.62	23.67	23.45	24.50	23.48	23.59	23.51	24.50	23.70	23.75	23.77	24.50
1xRTT RC3 SO55	23.64	23.45	23.58	24.50	23.50	23.53	23.35	24.50	23.69	23.83	23.71	24.50
1xEVDO RTAP 153.6Kbps	23.52	23.59	23.48	24.50	23.42	23.60	23.43	24.50	23.74	23.78	23.68	24.50
1xEVDO RETAP 4096Bits	23.61	23.57	23.39	24.50	23.38	23.57	23.49	24.50	23.68	23.66	23.77	24.50

Reduced Average RF Power (Proximity Sensor active)

Band	CDMA2000 BC10			Tune-up Limit (dBm)	CDMA2000 BC0			Tune-up Limit (dBm)	CDMA2000 BC1			Tune-up Limit (dBm)
TX Channel	476	580	684		1013	384	777		25	600	1175	
Frequency (MHz)	817.9	820.5	823.1		824.7	836.52	848.31		1851.25	1880	1908.75	
1xRTT RC1 SO55	20.36	20.27	20.27	21.50	20.19	20.34	20.11	21.50	18.36	18.40	18.48	19.50
1xRTT RC3 SO55	20.32	20.30	20.27	21.50	20.15	20.32	20.16	21.50	18.41	18.47	18.42	19.50
1xEVDO RTAP 153.6Kbps	20.35	20.38	20.31	21.50	20.29	20.49	20.32	21.50	18.45	18.49	18.48	19.50
1xEVDO RETAP 4096Bits	20.37	20.35	20.28	21.50	20.16	20.35	20.14	21.50	18.35	18.44	18.39	19.50

<LTE Conducted Power>

General Note:

1. Anritsu MT8820C base station simulator was used to setup the connection with EUT; the frequency band, channel bandwidth, RB allocation configuration, modulation type are set in the base station simulator to configure EUT transmitting at maximum power and at different configurations which are requested to be reported to FCC, for conducted power measurement and SAR testing.
2. Per KDB 941225 D05v02r03, when a properly configured base station simulator is used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration is not required.
3. Per KDB 941225 D05v02r03, 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 for RB offsets at the upper edge, middle and lower edge of each required test channel.
4. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
5. Per KDB 941225 D05v02r03, 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 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
6. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
7. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.
8. For LTE B13 / B17 / B5 / B4 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r03, 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.
9. LTE band 2 SAR test was covered by Band 25; according to April 2015 TCB workshop, SAR test for overlapping LTE bands can be reduced if
    c. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
    d. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band

Maximum Average RF Power (Proximity Sensor Inactive)

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	22.76	22.80	22.68	24	0
10	QPSK	1	24	22.52	22.53	22.56		
10	QPSK	1	49	22.59	22.51	22.42		
10	QPSK	25	0	21.66	21.73	21.68	23	1
10	QPSK	25	12	21.71	21.70	21.65		
10	QPSK	25	24	21.72	21.60	21.50		
10	QPSK	50	0	21.47	21.57	21.56		
10	16QAM	1	0	21.42	21.51	21.59	23	1
10	16QAM	1	24	21.78	21.84	21.75		
10	16QAM	1	49	21.55	21.51	21.31		
10	16QAM	25	0	20.60	20.59	20.65	22	2
10	16QAM	25	12	20.70	20.65	20.65		
10	16QAM	25	24	20.66	20.62	20.49		
10	16QAM	50	0	20.42	20.44	20.47		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	22.39	22.65	22.64	24	0
5	QPSK	1	12	22.64	22.69	22.62		
5	QPSK	1	24	22.77	22.59	22.32		
5	QPSK	12	0	21.54	21.80	21.55	23	1
5	QPSK	12	6	21.62	21.84	21.67		
5	QPSK	12	11	21.78	21.64	21.49		
5	QPSK	25	0	21.59	21.75	21.57		
5	16QAM	1	0	21.35	21.64	21.62	23	1
5	16QAM	1	12	21.61	21.67	21.56		
5	16QAM	1	24	21.76	21.61	21.23		
5	16QAM	12	0	20.54	20.74	20.60	22	2
5	16QAM	12	6	20.65	20.79	20.59		
5	16QAM	12	11	20.72	20.69	20.44		
5	16QAM	25	0	20.61	20.69	20.47		

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23230				
Frequency (MHz)				782				
10	QPSK	1	0	22.78			24	0
10	QPSK	1	24	22.48				
10	QPSK	1	49	22.67				
10	QPSK	25	0	21.55			23	1
10	QPSK	25	12	21.50				
10	QPSK	25	24	21.55				
10	QPSK	50	0	21.46				
10	16QAM	1	0	21.78			23	1
10	16QAM	1	24	21.66				
10	16QAM	1	49	21.57				
10	16QAM	25	0	20.39			22	2
10	16QAM	25	12	20.60				
10	16QAM	25	24	20.50				
10	16QAM	50	0	20.41				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	22.66	22.34	22.75	24	0
5	QPSK	1	12	22.41	22.67	22.69		
5	QPSK	1	24	22.39	22.52	22.56		
5	QPSK	12	0	21.41	21.58	21.66	23	1
5	QPSK	12	6	21.45	21.68	21.75		
5	QPSK	12	11	21.51	21.65	21.57		
5	QPSK	25	0	21.42	21.53	21.57		
5	16QAM	1	0	21.72	21.34	21.83	23	1
5	16QAM	1	12	21.41	21.74	21.68		
5	16QAM	1	24	21.55	21.58	21.57		
5	16QAM	12	0	20.46	20.69	20.70	22	2
5	16QAM	12	6	20.45	20.66	20.67		
5	16QAM	12	11	20.59	20.64	20.71		
5	16QAM	25	0	20.41	20.61	20.61		

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	22.40	22.42	22.39	24	0
10	QPSK	1	24	22.26	22.34	22.31		
10	QPSK	1	49	22.20	22.31	22.33		
10	QPSK	25	0	21.39	21.40	21.36	23	1
10	QPSK	25	12	21.35	21.30	21.31		
10	QPSK	25	24	21.32	21.16	21.37		
10	QPSK	50	0	21.31	21.36	21.35		
10	16QAM	1	0	21.21	21.38	21.49	23	1
10	16QAM	1	24	21.30	21.35	21.46		
10	16QAM	1	49	21.24	21.31	21.35		
10	16QAM	25	0	20.35	20.36	20.33	22	2
10	16QAM	25	12	20.25	20.36	20.32		
10	16QAM	25	24	20.20	20.21	20.33		
10	16QAM	50	0	20.19	20.23	20.24		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	22.28	22.23	22.16	24	0
5	QPSK	1	12	22.33	22.17	22.39		
5	QPSK	1	24	22.27	22.16	22.36		
5	QPSK	12	0	21.44	21.29	21.41	23	1
5	QPSK	12	6	21.40	21.42	21.42		
5	QPSK	12	11	21.42	21.21	21.48		
5	QPSK	25	0	21.28	21.36	21.35		
5	16QAM	1	0	21.36	21.32	21.32	23	1
5	16QAM	1	12	21.30	21.21	21.47		
5	16QAM	1	24	21.31	21.22	21.27		
5	16QAM	12	0	20.34	20.31	20.47	22	2
5	16QAM	12	6	20.36	20.35	20.45		
5	16QAM	12	11	20.43	20.25	20.38		
5	16QAM	25	0	20.19	20.32	20.36		

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	22.67	22.71	22.61	24	0
20	QPSK	1	49	22.65	22.56	22.57		
20	QPSK	1	99	22.64	22.60	22.52		
20	QPSK	50	0	21.35	21.52	21.45	23	1
20	QPSK	50	24	21.40	21.37	21.35		
20	QPSK	50	49	21.33	21.50	21.37		
20	QPSK	100	0	21.34	21.40	21.32		
20	16QAM	1	0	21.69	21.74	21.74	23	1
20	16QAM	1	49	21.70	21.75	21.65		
20	16QAM	1	99	21.73	21.70	21.60		
20	16QAM	50	0	20.38	20.44	20.40	22	2
20	16QAM	50	24	20.39	20.43	20.43		
20	16QAM	50	49	20.34	20.43	20.42		
20	16QAM	100	0	20.39	20.38	20.36		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	22.64	22.61	22.65	24	0
15	QPSK	1	37	22.62	22.60	22.69		
15	QPSK	1	74	22.47	22.59	22.41		
15	QPSK	36	0	21.40	21.48	21.34	23	1
15	QPSK	36	18	21.43	21.48	21.50		
15	QPSK	36	37	21.45	21.38	21.39		
15	QPSK	75	0	21.43	21.53	21.32		
15	16QAM	1	0	21.58	21.72	21.60	23	1
15	16QAM	1	37	21.63	21.72	21.63		
15	16QAM	1	74	21.52	21.70	21.44		
15	16QAM	36	0	20.34	20.59	20.38	22	2
15	16QAM	36	18	20.35	20.48	20.49		
15	16QAM	36	37	20.33	20.44	20.50		
15	16QAM	75	0	20.35	20.40	20.35		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	22.68	22.66	22.63	24	0
10	QPSK	1	24	22.60	22.63	22.62		
10	QPSK	1	49	22.66	22.58	22.48		
10	QPSK	25	0	21.51	21.73	21.51	23	1
10	QPSK	25	12	21.46	21.56	21.55		
10	QPSK	25	24	21.38	21.55	21.56		
10	QPSK	50	0	21.33	21.51	21.32		
10	16QAM	1	0	21.71	21.90	21.65	23	1
10	16QAM	1	24	21.63	21.58	21.58		
10	16QAM	1	49	21.63	21.63	21.56		
10	16QAM	25	0	20.50	20.57	20.55	22	2
10	16QAM	25	12	20.55	20.51	20.59		
10	16QAM	25	24	20.47	20.48	20.59		
10	16QAM	50	0	20.48	20.46	20.42		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	22.61	22.64	22.59	24	0
5	QPSK	1	12	22.57	22.63	22.65		
5	QPSK	1	24	22.57	22.69	22.50		
5	QPSK	12	0	21.63	21.77	21.66	23	1
5	QPSK	12	6	21.62	21.68	21.65		
5	QPSK	12	11	21.51	21.65	21.52		
5	QPSK	25	0	21.43	21.67	21.48		
5	16QAM	1	0	21.62	21.68	21.68	23	1
5	16QAM	1	12	21.64	21.68	21.60		
5	16QAM	1	24	21.65	21.72	21.57		
5	16QAM	12	0	20.54	20.88	20.58	22	2
5	16QAM	12	6	20.59	20.65	20.75		
5	16QAM	12	11	20.48	20.57	20.65		
5	16QAM	25	0	20.42	20.61	20.55		

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	22.67	22.70	22.75	24	0
20	QPSK	1	49	22.61	22.62	22.62		
20	QPSK	1	99	22.54	22.50	22.56		
20	QPSK	50	0	21.39	21.36	21.42	23	1
20	QPSK	50	24	21.36	21.35	21.41		
20	QPSK	50	49	21.40	21.40	21.39		
20	QPSK	100	0	21.51	21.46	21.52		
20	16QAM	1	0	21.65	21.82	21.66	23	1
20	16QAM	1	49	21.64	21.77	21.67		
20	16QAM	1	99	21.68	21.66	21.78		
20	16QAM	50	0	20.54	20.46	20.35	22	2
20	16QAM	50	24	20.32	20.39	20.41		
20	16QAM	50	49	20.39	20.33	20.40		
20	16QAM	100	0	20.41	20.44	20.36		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	22.65	22.58	22.60	24	0
15	QPSK	1	37	22.74	22.64	22.69		
15	QPSK	1	74	22.51	22.59	22.68		
15	QPSK	36	0	21.58	21.58	21.42	23	1
15	QPSK	36	18	21.37	21.51	21.52		
15	QPSK	36	37	21.44	21.35	21.50		
15	QPSK	75	0	21.42	21.50	21.48		
15	16QAM	1	0	21.62	21.65	21.64	23	1
15	16QAM	1	37	21.67	21.65	21.70		
15	16QAM	1	74	21.58	21.70	21.82		
15	16QAM	36	0	20.55	20.45	20.47	22	2
15	16QAM	36	18	20.46	20.36	20.51		
15	16QAM	36	37	20.48	20.54	20.53		
15	16QAM	75	0	20.43	20.38	20.46		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	22.61	22.64	22.58	24	0
10	QPSK	1	24	22.54	22.70	22.63		
10	QPSK	1	49	22.57	22.58	22.65		
10	QPSK	25	0	21.60	21.65	21.61	23	1
10	QPSK	25	12	21.64	21.55	21.58		
10	QPSK	25	24	21.48	21.61	21.65		
10	QPSK	50	0	21.40	21.48	21.51		
10	16QAM	1	0	21.40	21.67	21.67	23	1
10	16QAM	1	24	21.39	21.74	21.71		
10	16QAM	1	49	21.40	21.79	21.83		
10	16QAM	25	0	20.99	20.65	20.63	22	2
10	16QAM	25	12	20.73	20.47	20.61		
10	16QAM	25	24	20.57	20.48	20.63		
10	16QAM	50	0	20.38	20.48	20.46		

Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	22.62	22.61	22.68	24	0
5	QPSK	1	12	22.44	22.63	22.71		
5	QPSK	1	24	22.57	22.70	22.72		
5	QPSK	12	0	21.50	21.77	21.77	23	1
5	QPSK	12	6	21.42	21.66	21.74		
5	QPSK	12	11	21.59	21.60	21.78		
5	QPSK	25	0	21.47	21.58	21.63		
5	16QAM	1	0	21.53	21.61	21.69	23	1
5	16QAM	1	12	21.48	21.68	21.85		
5	16QAM	1	24	21.45	21.68	21.88		
5	16QAM	12	0	20.61	20.77	20.74	22	2
5	16QAM	12	6	20.42	20.68	20.72		
5	16QAM	12	11	20.63	20.76	20.87		
5	16QAM	25	0	20.31	20.54	20.61		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	22.67	22.60	22.85	24	0
20	QPSK	1	49	22.62	22.52	22.73		
20	QPSK	1	99	22.60	22.60	22.65		
20	QPSK	50	0	21.33	21.53	21.59	23	1
20	QPSK	50	24	21.41	21.38	21.40		
20	QPSK	50	49	21.41	21.46	21.49		
20	QPSK	100	0	21.62	21.52	21.63		
20	16QAM	1	0	21.70	21.79	21.76	23	1
20	16QAM	1	49	21.81	21.52	21.75		
20	16QAM	1	99	21.60	21.60	21.69		
20	16QAM	50	0	20.34	20.39	20.56	22	2
20	16QAM	50	24	20.41	20.44	20.54		
20	16QAM	50	49	20.44	20.54	20.48		
20	16QAM	100	0	20.72	20.52	20.60		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	22.65	22.62	22.78	24	0
15	QPSK	1	37	22.78	22.46	22.74		
15	QPSK	1	74	22.58	22.52	22.73		
15	QPSK	36	0	21.39	21.46	21.60	23	1
15	QPSK	36	18	21.51	21.38	21.58		
15	QPSK	36	37	21.36	21.61	21.75		
15	QPSK	75	0	21.58	21.42	21.51		
15	16QAM	1	0	21.65	21.72	21.93	23	1
15	16QAM	1	37	21.72	21.67	21.79		
15	16QAM	1	74	21.64	21.64	21.89		
15	16QAM	36	0	20.46	20.60	20.64	22	2
15	16QAM	36	18	20.51	20.37	20.61		
15	16QAM	36	37	20.43	20.56	20.64		
15	16QAM	75	0	20.54	20.53	20.60		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	22.56	22.69	22.81	24	0
10	QPSK	1	24	22.72	22.56	22.68		
10	QPSK	1	49	22.46	22.64	22.76		
10	QPSK	25	0	21.41	21.59	21.82	23	1
10	QPSK	25	12	21.52	21.39	21.74		
10	QPSK	25	24	21.39	21.68	21.73		
10	QPSK	50	0	21.59	21.48	21.68		
10	16QAM	1	0	21.53	21.67	21.83	23	1
10	16QAM	1	24	21.73	21.51	21.76		
10	16QAM	1	49	21.50	21.65	21.86		
10	16QAM	25	0	20.48	20.62	20.84	22	2
10	16QAM	25	12	20.65	20.45	20.76		
10	16QAM	25	24	20.48	20.66	20.76		
10	16QAM	50	0	20.70	20.53	20.64		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	22.56	22.66	22.81	24	0
5	QPSK	1	12	22.71	22.54	22.72		
5	QPSK	1	24	22.53	22.69	22.79		
5	QPSK	12	0	21.66	21.73	21.96	23	1
5	QPSK	12	6	21.58	21.62	21.89		
5	QPSK	12	11	21.49	21.87	21.83		
5	QPSK	25	0	21.63	21.73	21.87		
5	16QAM	1	0	21.51	21.60	21.81	23	1
5	16QAM	1	12	21.62	21.69	21.83		
5	16QAM	1	24	21.47	21.81	21.87		
5	16QAM	12	0	20.68	20.72	21.02	22	2
5	16QAM	12	6	20.78	20.57	20.88		
5	16QAM	12	11	20.67	20.84	20.89		
5	16QAM	25	0	20.58	20.78	20.94		

Reduced Average RF Power (Proximity Sensor active)

<LTE Band 17>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23780	23790	23800		
Frequency (MHz)				709	710	711		
10	QPSK	1	0	19.24	19.25	19.20	20.5	0
10	QPSK	1	24	19.00	19.07	19.08		
10	QPSK	1	49	19.07	19.05	18.94		
10	QPSK	25	0	19.15	19.21	19.14	20.5	0
10	QPSK	25	12	19.05	19.08	19.07		
10	QPSK	25	24	19.01	19.01	18.99		
10	QPSK	50	0	18.95	19.11	18.96		
10	16QAM	1	0	18.90	19.01	18.87	20.5	0
10	16QAM	1	24	18.76	18.88	18.77		
10	16QAM	1	49	19.03	19.04	18.83		
10	16QAM	25	0	18.58	19.01	18.67	20.5	0
10	16QAM	25	12	18.68	18.87	18.67		
10	16QAM	25	24	18.64	18.96	18.88		
10	16QAM	50	0	18.90	18.98	18.99		
Channel				23755	23790	23825	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				706.5	710	713.5		
5	QPSK	1	0	18.87	19.19	19.16	20.5	0
5	QPSK	1	12	19.12	19.23	19.14		
5	QPSK	1	24	19.25	19.13	18.84		
5	QPSK	12	0	19.02	18.84	18.57	20.5	0
5	QPSK	12	6	18.60	18.88	18.69		
5	QPSK	12	11	18.76	18.68	18.51		
5	QPSK	25	0	18.57	18.79	18.59		
5	16QAM	1	0	18.83	18.68	18.64	20.5	0
5	16QAM	1	12	18.59	18.71	18.58		
5	16QAM	1	24	18.74	18.65	18.75		
5	16QAM	12	0	19.02	18.78	18.62	20.5	0
5	16QAM	12	6	18.63	18.83	18.61		
5	16QAM	12	11	18.70	18.73	18.96		
5	16QAM	25	0	18.59	18.73	18.54		

<LTE Band 13>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				23230				
Frequency (MHz)				782				
10	QPSK	1	0	18.53			20	0
10	QPSK	1	24	18.23				
10	QPSK	1	49	18.42				
10	QPSK	25	0	18.48			20	0
10	QPSK	25	12	18.35				
10	QPSK	25	24	18.20				
10	QPSK	50	0	18.34				
10	16QAM	1	0	18.13			20	0
10	16QAM	1	24	18.31				
10	16QAM	1	49	18.22				
10	16QAM	25	0	18.24			20	0
10	16QAM	25	12	18.15				
10	16QAM	25	24	18.05				
10	16QAM	50	0	18.26				
Channel				23205	23230	23255	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				779.5	782	784.5		
5	QPSK	1	0	18.41	18.09	18.50	20	0
5	QPSK	1	12	18.16	18.42	18.44		
5	QPSK	1	24	18.14	18.27	18.31		
5	QPSK	12	0	18.16	18.13	18.11	20	0
5	QPSK	12	6	18.20	18.03	18.00		
5	QPSK	12	11	18.26	18.00	18.02		
5	QPSK	25	0	18.17	18.18	18.02		
5	16QAM	1	0	18.01	18.19	18.08	20	0
5	16QAM	1	12	18.16	18.09	18.13		
5	16QAM	1	24	18.30	18.13	18.02		
5	16QAM	12	0	18.21	18.14	18.15	20	0
5	16QAM	12	6	18.20	18.21	18.12		
5	16QAM	12	11	18.34	18.19	18.16		
5	16QAM	25	0	18.16	18.16	18.06		

<LTE Band 5>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20450	20525	20600		
Frequency (MHz)				829	836.5	844		
10	QPSK	1	0	20.27	20.35	20.25	21.5	0
10	QPSK	1	24	20.24	20.15	20.24		
10	QPSK	1	49	20.07	20.01	19.99		
10	QPSK	25	0	20.13	20.15	20.13	21.5	0
10	QPSK	25	12	20.10	20.05	20.08		
10	QPSK	25	24	20.05	20.00	20.04		
10	QPSK	50	0	19.93	19.95	19.91		
10	16QAM	1	0	20.26	20.19	20.19	21.5	0
10	16QAM	1	24	20.09	20.04	19.99		
10	16QAM	1	49	20.11	20.09	20.08		
10	16QAM	25	0	20.10	20.09	20.00	21.5	0
10	16QAM	25	12	19.98	19.98	19.90		
10	16QAM	25	24	20.11	20.01	20.09		
10	16QAM	50	0	19.95	19.90	19.90		
Channel				20425	20525	20625	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	QPSK	1	0	20.29	20.21	20.21	21.5	0
5	QPSK	1	12	20.21	20.19	20.18		
5	QPSK	1	24	20.04	20.01	20.00		
5	QPSK	12	0	20.11	20.08	20.09	21.5	0
5	QPSK	12	6	20.22	20.13	20.16		
5	QPSK	12	11	20.26	20.21	20.23		
5	QPSK	25	0	20.07	20.03	20.01		
5	16QAM	1	0	20.05	19.97	20.04	21.5	0
5	16QAM	1	12	20.13	20.08	20.03		
5	16QAM	1	24	20.22	20.18	20.21		
5	16QAM	12	0	20.06	20.04	19.99	21.5	0
5	16QAM	12	6	20.23	20.21	20.16		
5	16QAM	12	11	20.24	20.15	20.18		
5	16QAM	25	0	20.10	20.02	20.06		

<LTE Band 4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				20050	20175	20300		
Frequency (MHz)				1720	1732.5	1745		
20	QPSK	1	0	18.45	18.47	18.40	19.5	0
20	QPSK	1	49	18.12	18.03	18.01		
20	QPSK	1	99	18.02	17.85	18.09		
20	QPSK	50	0	18.16	18.17	18.10	19.5	0
20	QPSK	50	24	18.06	17.95	17.87		
20	QPSK	50	49	17.89	17.90	17.85		
20	QPSK	100	0	17.96	18.00	17.95		
20	16QAM	1	0	18.15	18.27	18.09	19.5	0
20	16QAM	1	49	18.28	18.04	17.98		
20	16QAM	1	99	18.16	17.95	18.07		
20	16QAM	50	0	17.98	18.09	18.00	19.5	0
20	16QAM	50	24	18.09	17.83	17.94		
20	16QAM	50	49	17.87	17.91	17.85		
20	16QAM	100	0	17.90	17.91	17.91		
Channel				20025	20175	20325	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1732.5	1747.5		
15	QPSK	1	0	18.39	18.26	18.09	19.5	0
15	QPSK	1	37	18.33	18.16	18.16		
15	QPSK	1	74	18.10	18.14	18.41		
15	QPSK	36	0	17.97	17.98	18.03	19.5	0
15	QPSK	36	18	18.15	18.14	18.05		
15	QPSK	36	37	18.09	17.93	18.01		
15	QPSK	75	0	18.21	18.11	17.91		
15	16QAM	1	0	18.24	18.20	18.12	19.5	0
15	16QAM	1	37	18.26	18.20	18.24		
15	16QAM	1	74	18.20	18.08	18.37		
15	16QAM	36	0	17.95	18.00	17.96	19.5	0
15	16QAM	36	18	18.03	18.00	17.97		
15	16QAM	36	37	17.97	17.97	18.05		
15	16QAM	75	0	18.22	18.01	17.91		
Channel				20000	20175	20350	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1732.5	1750		
10	QPSK	1	0	18.28	18.21	18.03	19.5	0
10	QPSK	1	24	18.27	18.19	18.15		
10	QPSK	1	49	18.16	18.00	18.29		
10	QPSK	25	0	18.09	18.06	18.10	19.5	0
10	QPSK	25	12	18.13	18.12	18.00		
10	QPSK	25	24	18.20	18.10	18.20		
10	QPSK	50	0	17.94	18.05	17.97		
10	16QAM	1	0	18.30	18.20	18.13	19.5	0
10	16QAM	1	24	18.17	18.18	18.13		
10	16QAM	1	49	18.15	18.13	18.30		
10	16QAM	25	0	18.15	18.11	18.14	19.5	0
10	16QAM	25	12	18.07	18.03	17.98		
10	16QAM	25	24	18.17	18.08	18.21		
10	16QAM	50	0	18.00	18.09	17.93		

Channel				19975	20175	20375	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1732.5	1752.5		
5	QPSK	1	0	18.20	18.07	18.16	19.5	0
5	QPSK	1	12	18.22	18.05	18.23		
5	QPSK	1	24	18.08	18.09	18.35		
5	QPSK	12	0	18.17	18.09	18.27	19.5	0
5	QPSK	12	6	18.29	18.20	18.14		
5	QPSK	12	11	18.31	18.23	18.19		
5	QPSK	25	0	18.07	18.10	18.19		
5	16QAM	1	0	18.10	18.17	18.24	19.5	0
5	16QAM	1	12	18.14	18.07	18.28		
5	16QAM	1	24	18.23	18.20	18.32		
5	16QAM	12	0	18.16	18.29	18.13	19.5	0
5	16QAM	12	6	18.26	18.15	18.22		
5	16QAM	12	11	18.27	18.20	18.26		
5	16QAM	25	0	18.13	17.93	18.05		

<LTE Band 2>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				18700	18900	19100		
Frequency (MHz)				1860	1880	1900		
20	QPSK	1	0	18.12	18.00	17.83	19	0
20	QPSK	1	49	18.02	17.93	17.80		
20	QPSK	1	99	17.85	17.64	17.96		
20	QPSK	50	0	17.86	17.81	17.73	19	0
20	QPSK	50	24	17.78	17.77	17.66		
20	QPSK	50	49	17.70	17.71	17.70		
20	QPSK	100	0	17.78	17.75	17.77		
20	16QAM	1	0	17.98	18.05	17.86	19	0
20	16QAM	1	49	18.03	17.92	17.82		
20	16QAM	1	99	17.93	17.74	17.97		
20	16QAM	50	0	17.77	17.82	17.59	19	0
20	16QAM	50	24	17.83	17.71	17.66		
20	16QAM	50	49	17.67	17.63	17.65		
20	16QAM	100	0	17.71	17.73	17.70		
Channel				18675	18900	19125	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	QPSK	1	0	18.10	18.10	17.91	19	0
15	QPSK	1	37	18.16	18.04	17.99		
15	QPSK	1	74	17.99	17.89	18.11		
15	QPSK	36	0	17.85	17.88	17.78	19	0
15	QPSK	36	18	17.99	17.84	17.84		
15	QPSK	36	37	17.82	17.76	17.81		
15	QPSK	75	0	17.97	17.86	17.73		
15	16QAM	1	0	18.06	18.04	17.85	19	0
15	16QAM	1	37	18.14	18.00	17.97		
15	16QAM	1	74	18.06	17.87	18.10		
15	16QAM	36	0	17.84	17.86	17.78	19	0
15	16QAM	36	18	17.91	17.84	17.80		
15	16QAM	36	37	17.85	17.77	17.83		
15	16QAM	75	0	17.93	17.75	17.77		
Channel				18650	18900	19150	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	QPSK	1	0	17.98	18.00	17.88	19	0
10	QPSK	1	24	18.03	17.99	17.99		
10	QPSK	1	49	18.05	17.88	18.13		
10	QPSK	25	0	17.91	17.92	17.91	19	0
10	QPSK	25	12	17.88	17.91	17.89		
10	QPSK	25	24	18.00	17.84	17.96		
10	QPSK	50	0	17.84	17.77	17.84		
10	16QAM	1	0	18.01	18.02	17.91	19	0
10	16QAM	1	24	18.00	18.04	17.98		
10	16QAM	1	49	17.98	17.89	18.14		
10	16QAM	25	0	17.90	17.81	17.85	19	0
10	16QAM	25	12	17.84	17.85	17.84		
10	16QAM	25	24	17.94	17.84	17.93		
10	16QAM	50	0	17.84	17.79	17.80		

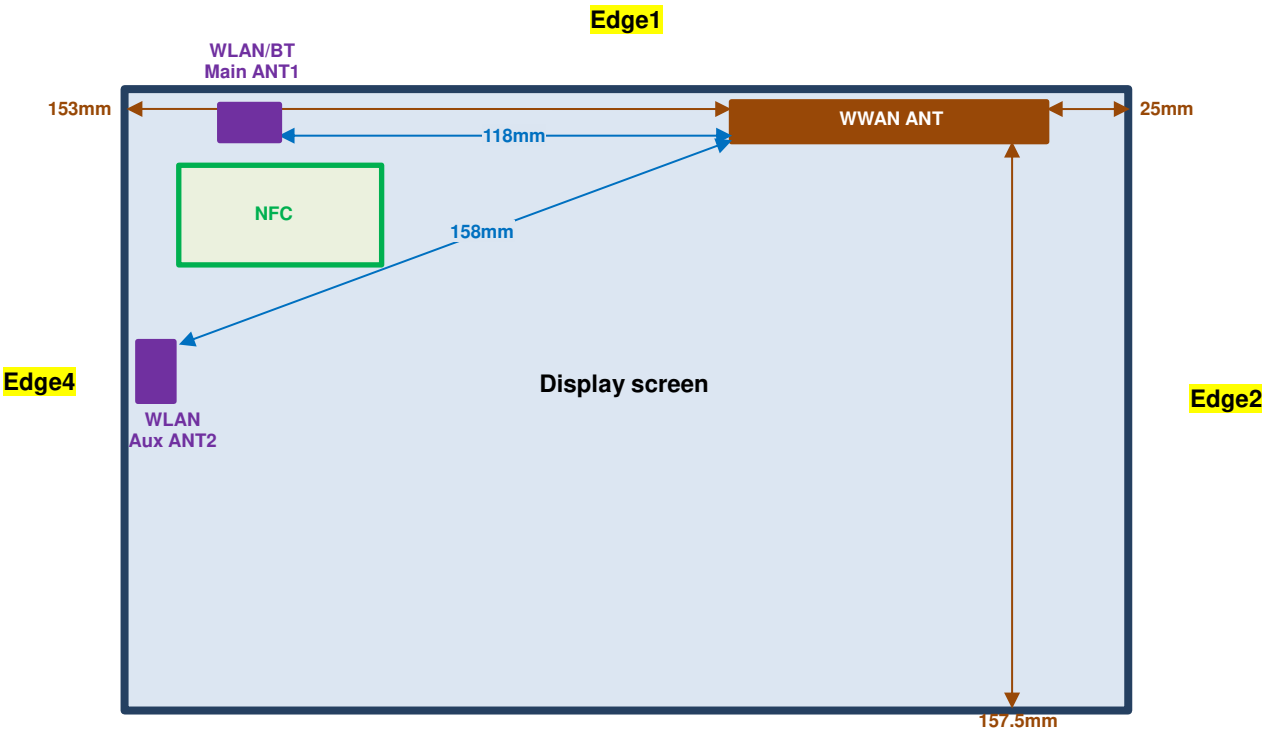
Channel				18625	18900	19175	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	QPSK	1	0	18.01	17.97	17.94	19	0
5	QPSK	1	12	18.01	17.95	18.00		
5	QPSK	1	24	17.97	17.90	18.16		
5	QPSK	12	0	18.03	17.96	18.03	19	0
5	QPSK	12	6	18.06	18.02	18.04		
5	QPSK	12	11	18.07	17.98	18.09		
5	QPSK	25	0	17.95	17.91	18.01		
5	16QAM	1	0	17.91	18.01	17.98	19	0
5	16QAM	1	12	18.01	17.97	18.10		
5	16QAM	1	24	17.98	17.93	18.17		
5	16QAM	12	0	18.00	18.00	18.00	19	0
5	16QAM	12	6	18.03	17.95	18.01		
5	16QAM	12	11	18.05	17.98	18.04		
5	16QAM	25	0	17.88	17.82	17.93		

<LTE Band 25>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				26140	26340	26590		
Frequency (MHz)				1860	1880	1905		
20	QPSK	1	0	17.89	17.78	17.95	19	0
20	QPSK	1	49	17.78	17.70	17.54		
20	QPSK	1	99	17.55	17.34	17.64		
20	QPSK	50	0	17.64	17.59	17.66	19	0
20	QPSK	50	24	17.48	17.49	17.36		
20	QPSK	50	49	17.38	17.44	17.46		
20	QPSK	100	0	17.47	17.48	17.50		
20	16QAM	1	0	17.70	17.82	17.61	19	0
20	16QAM	1	49	17.74	17.69	17.58		
20	16QAM	1	99	17.61	17.52	17.69		
20	16QAM	50	0	17.47	17.57	17.28	19	0
20	16QAM	50	24	17.54	17.44	17.43		
20	16QAM	50	49	17.42	17.35	17.35		
20	16QAM	100	0	17.39	17.49	17.44		
Channel				26115	26340	26615	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1907.5		
15	QPSK	1	0	17.81	17.81	17.66	19	0
15	QPSK	1	37	17.93	17.78	17.76		
15	QPSK	1	74	17.69	17.61	17.84		
15	QPSK	36	0	17.56	17.56	17.47	19	0
15	QPSK	36	18	17.67	17.62	17.57		
15	QPSK	36	37	17.59	17.49	17.52		
15	QPSK	75	0	17.74	17.59	17.44		
15	16QAM	1	0	17.78	17.78	17.57	19	0
15	16QAM	1	37	17.85	17.71	17.73		
15	16QAM	1	74	17.83	17.60	17.87		
15	16QAM	36	0	17.59	17.54	17.49	19	0
15	16QAM	36	18	17.69	17.53	17.52		
15	16QAM	36	37	17.63	17.55	17.57		
15	16QAM	75	0	17.70	17.52	17.51		
Channel				26090	26340	26640	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1910		
10	QPSK	1	0	17.67	17.70	17.62	19	0
10	QPSK	1	24	17.74	17.74	17.73		
10	QPSK	1	49	17.74	17.66	17.90		
10	QPSK	25	0	17.65	17.65	17.60	19	0
10	QPSK	25	12	17.64	17.66	17.59		
10	QPSK	25	24	17.72	17.53	17.71		
10	QPSK	50	0	17.57	17.48	17.58		
10	16QAM	1	0	17.77	17.79	17.65	19	0
10	16QAM	1	24	17.74	17.82	17.74		
10	16QAM	1	49	17.68	17.61	17.90		
10	16QAM	25	0	17.63	17.54	17.54	19	0
10	16QAM	25	12	17.57	17.59	17.60		
10	16QAM	25	24	17.70	17.62	17.64		
10	16QAM	50	0	17.53	17.55	17.57		

Channel				26065	26340	26665	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1912.5		
5	QPSK	1	0	17.73	17.67	17.70	19	0
5	QPSK	1	12	17.70	17.67	17.73		
5	QPSK	1	24	17.71	17.61	17.86		
5	QPSK	12	0	17.79	17.65	17.76	19	0
5	QPSK	12	6	17.82	17.75	17.73		
5	QPSK	12	11	17.83	17.72	17.87		
5	QPSK	25	0	17.73	17.61	17.69		
5	16QAM	1	0	17.64	17.74	17.67	19	0
5	16QAM	1	12	17.77	17.75	17.85		
5	16QAM	1	24	17.69	17.69	17.92		
5	16QAM	12	0	17.71	17.68	17.69	19	0
5	16QAM	12	6	17.72	17.71	17.69		
5	16QAM	12	11	17.78	17.76	17.80		
5	16QAM	25	0	17.60	17.54	17.63		

14. Antenna Location



Front View

<SAR test exclusion table>

General Note:

1. The below table, when the distance is < 50 mm exclusion threshold is "Ratio", when the distance is > 50 mm exclusion threshold is "mW"
2. Maximum power is the source-based time-average power and represents the maximum RF output power among production units
3. Per KDB 447498 D01v05r02, for larger devices, the test separation distance of adjacent edge configuration is determined by the closest separation between the antenna and the user.
4. Per KDB 447498 D01v05r02, standalone SAR test exclusion threshold is applied; If the test separation distance is < 5mm, 5mm is used to determine SAR exclusion threshold.
5. Per KDB 447498 D01v05r02, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison
6. Per KDB 447498 D01v05r02, at 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following
   a) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz
   b) [Threshold at 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

Exposure Position	Wireless Interface	GPRS 850 Class 10	GPRS 1900 Class 10	WCDMA Band V	WCDMA Band IV	WCDMA Band II	CDMA BC10	CDMA BC0	CDMA BC1	LTE Band 17	LTE Band 13	LTE Band 5	LTE Band 4	LTE Band 2	LTE Band 25
	Calculated Frequency	848MHz	1909MHz	846MHz	1750MHz	1907MHz	846MHz	848MHz	1907MHz	713MHz	784MHz	848MHz	1754MHz	1909MHz	1914MHz
	Maximum power (dBm)	27.0	24.0	24.0	24.0	24.0	24.5	24.5	24.5	24.0	24.0	24.0	24.0	24.0	24.0
	Maximum rated power(mW)	501.0	251.0	251.0	251.0	251.0	282.0	282.0	282.0	251.0	251.0	251.0	251.0	251.0	251.0
Bottom Face	Separation distance(mm)	5.0													
	exclusion threshold	92.3	69.4	46.2	66.4	69.3	51.9	51.9	77.9	42.4	44.5	46.2	66.5	69.4	69.5
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 1	Separation distance(mm)	5.0													
	exclusion threshold	92.3	69.4	46.2	66.4	69.3	51.9	51.9	77.9	42.4	44.5	46.2	66.5	69.4	69.5
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 2	Separation distance(mm)	25.0													
	exclusion threshold	18.5	13.9	9.2	13.3	13.9	10.4	10.4	15.6	8.5	8.9	9.3	13.3	13.9	13.9
	Testing required?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Edge 3	Separation distance(mm)	157.5													
	exclusion threshold	771.0	1184.0	769.0	1188.0	1184.0	769.0	771.0	1184.0	689.0	731.0	771.0	1188.0	1184.0	1183.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Edge 4	Separation distance(mm)	153.0													
	exclusion threshold	745.0	1139.0	744.0	1143.0	1139.0	744.0	745.0	1139.0	667.0	708.0	745.0	1143.0	1139.0	1138.0
	Testing required?	No	No	No	No	No	No	No	No	No	No	No	No	No	No

15. SAR Test Results

General Note:

1. Per KDB 447498 D01v05r02, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
2. Per KDB 447498 D01v05r02, for each exposure position, 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:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 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
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. For the exposure positions that proximity sensor power reduction is applied for SAR compliance, additional SAR testing with EUT transmitting full power in normal mode was performed; 10mm for bottom face, 10mm for edge1.
4. When the minimum distance between antenna and device edge along the curve is less than bottom face and surface edge, the curved SAR is necessary, more detail information which can be referred to setup photo.

GSM Note:

1. Per KDB 941225 D01v03, for Body SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power including tune-up tolerance, for modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested, therefore, the GPRS 2Tx slots modes was selected when EUT operating without power back-off, the GPRS 2Tx slots modes was selected when EUT operating with power back-off, according to the highest source-based time-averaged output power.

UMTS Note:

1. Per KDB 941225 D01v03, SAR for Body exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”.
2. Per KDB 941225 D01v03, RMC 12.2kbps setting is used to evaluate SAR. If the maximum output power and tune-up tolerance specified for production units in HSDPA / HSUPA / DC-HSDPA is ≤ ¼ dB higher than RMC 12.2Kbps or when the highest reported SAR of the RMC12.2Kbps is scaled by the ratio of specified maximum output power and tune-up tolerance of HSDPA / HSUPA / DC-HSDPA to RMC12.2Kbps and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for HSDPA / HSUPA / DC-HSDPA.

CMDA Note:

1. Per KDB 941225 D01v03, for Body exposure condition the EUT is treated as data device and SAR is tested with Ev-Do Rev 0 (RTAP 153.6kbps) as the primary mode.

LTE Note:

1. Per KDB 941225 D05v02r03, 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 for RB offsets at the upper edge, middle and lower edge of each required test channel.
2. Per KDB 941225 D05v02r03, 50% RB allocation for QPSK SAR testing follows 1RB QPSK allocation procedure.
3. Per KDB 941225 D05v02r03, 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 are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
4. Per KDB 941225 D05v02r03, 16QAM output power for each RB allocation configuration is > not ½ dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, 16QAM SAR testing is not required.
5. Per KDB 941225 D05v02r03, Smaller bandwidth output power for each RB allocation configuration is > not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg; Per KDB 941225 D05v02r03, smaller bandwidth SAR testing is not required.
6. For LTE B13 / B17 / B5 / B4 the maximum bandwidth does not support three non-overlapping channels, per KDB 941225 D05v02r03, 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.
7. LTE band 2 SAR test was covered by Band 25; according to TCB workshop, SAR test for overlapping LTE bands can be reduced if
   a. The maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion.
   b. The channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band.

15.1 Body SAR

<GSM SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	GSM850	GPRS (2 Tx slots)	Bottom Face	0mm	ON	128	824.2	26.55	28.00	1.396	-0.16	0.846	1.181
	GSM850	GPRS (2 Tx slots)	Bottom Face	0mm	ON	189	836.4	26.49	28.00	1.416	-0.13	0.796	1.127
	GSM850	GPRS (2 Tx slots)	Bottom Face	0mm	ON	251	848.8	26.51	28.00	1.409	-0.04	0.756	1.065
	GSM850	GPRS (2 Tx slots)	Edge 1	0mm	ON	128	824.2	26.55	28.00	1.396	-0.11	0.877	1.225
	GSM850	GPRS (2 Tx slots)	Edge 1	0mm	ON	189	836.4	26.49	28.00	1.416	-0.17	0.882	1.249
01	GSM850	GPRS (2 Tx slots)	Edge 1	0mm	ON	251	848.8	26.51	28.00	1.409	-0.17	0.935	1.318
	GSM850	GPRS (2 Tx slots)	Bottom Face	10mm	OFF	128	824.2	31.84	33.00	1.306	-0.09	0.411	0.537
	GSM850	GPRS (2 Tx slots)	Edge 1	10mm	OFF	128	824.2	31.84	33.00	1.306	0.12	0.392	0.512
	GSM850	GPRS (2 Tx slots)	Edge 2	0mm	OFF	128	824.2	31.84	33.00	1.306	-0.1	0.143	0.187
	GSM1900	GPRS (2 Tx slots)	Bottom Face	0mm	ON	810	1909.8	24.08	25.50	1.387	-0.15	0.852	1.182
	GSM1900	GPRS (2 Tx slots)	Bottom Face	0mm	ON	512	1850.2	24.00	25.50	1.413	-0.19	0.820	1.158
	GSM1900	GPRS (2 Tx slots)	Bottom Face	0mm	ON	661	1880	23.96	25.50	1.426	-0.11	0.799	1.139
	GSM1900	GPRS (2 Tx slots)	Edge 1	0mm	ON	810	1909.8	24.08	25.50	1.387	-0.19	0.704	0.976
02	GSM1900	GPRS (2 Tx slots)	Edge 1	0mm	ON	512	1850.2	24.00	25.50	1.413	-0.17	0.844	1.192
	GSM1900	GPRS (2 Tx slots)	Edge 1	0mm	ON	661	1880	23.96	25.50	1.426	-0.19	0.778	1.109
	GSM1900	GPRS (2 Tx slots)	Bottom Face	10mm	OFF	810	1909.8	29.25	30.00	1.189	-0.03	0.606	0.720
	GSM1900	GPRS (2 Tx slots)	Edge 1	10mm	OFF	810	1909.8	29.25	30.00	1.189	-0.08	0.549	0.652
	GSM1900	GPRS (2 Tx slots)	Edge 2	0mm	OFF	810	1909.8	29.25	30.00	1.189	-0.1	0.246	0.292

<WCDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4182	836.4	20.25	21.50	1.334	-0.04	0.864	1.152
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4132	826.4	20.13	21.50	1.371	-0.09	0.899	1.232
	WCDMA V	RMC 12.2Kbps	Bottom Face	0mm	ON	4233	846.6	20.20	21.50	1.349	-0.15	0.821	1.107
03	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4182	836.4	20.25	21.50	1.334	-0.09	0.962	1.283
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4132	826.4	20.13	21.50	1.371	-0.15	0.927	1.271
	WCDMA V	RMC 12.2Kbps	Edge 1	0mm	ON	4233	846.6	20.20	21.50	1.349	-0.15	0.936	1.263
	WCDMA V	RMC 12.2Kbps	Bottom Face	10mm	OFF	4182	836.4	22.72	24.00	1.343	-0.02	0.520	0.698
	WCDMA V	RMC 12.2Kbps	Edge 1	10mm	OFF	4182	836.4	22.72	24.00	1.343	-0.03	0.452	0.607
	WCDMA V	RMC 12.2Kbps	Edge 2	0mm	OFF	4182	836.4	22.72	24.00	1.343	-0.18	0.087	0.117
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1413	1732.6	18.46	19.50	1.271	-0.09	1.040	1.321
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1312	1712.4	18.39	19.50	1.291	-0.05	1.010	1.304
	WCDMA IV	RMC 12.2Kbps	Bottom Face	0mm	ON	1513	1752.6	18.44	19.50	1.276	-0.05	1.030	1.315
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1413	1732.6	18.46	19.50	1.271	-0.11	0.924	1.174
	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1312	1712.4	18.39	19.50	1.291	-0.1	0.827	1.068
04	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	18.44	19.50	1.276	-0.18	1.050	1.340
	WCDMA IV	RMC 12.2Kbps	Bottom Face	10mm	OFF	1413	1732.6	22.83	24.00	1.309	-0.12	0.503	0.659
	WCDMA IV	RMC 12.2Kbps	Edge 1	10mm	OFF	1413	1732.6	22.83	24.00	1.309	-0.04	0.386	0.505
	WCDMA IV	RMC 12.2Kbps	Edge 2	0mm	OFF	1413	1732.6	22.83	24.00	1.309	-0.09	0.207	0.271
05	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9538	1907.6	17.99	19.00	1.262	-0.06	1.030	1.300
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9262	1852.4	17.92	19.00	1.282	0.02	0.950	1.218
	WCDMA II	RMC 12.2Kbps	Bottom Face	0mm	ON	9400	1880	17.94	19.00	1.276	0.01	0.975	1.245
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9538	1907.6	17.99	19.00	1.262	-0.15	0.718	0.906
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9262	1852.4	17.92	19.00	1.282	-0.13	0.851	1.091
	WCDMA II	RMC 12.2Kbps	Edge 1	0mm	ON	9400	1880	17.94	19.00	1.276	-0.09	0.842	1.075
	WCDMA II	RMC 12.2Kbps	Bottom Face	10mm	OFF	9538	1907.6	22.94	24.00	1.276	-0.01	0.662	0.845
	WCDMA II	RMC 12.2Kbps	Bottom Face	10mm	OFF	9262	1852.4	22.89	24.00	1.291	0.03	0.564	0.728
	WCDMA II	RMC 12.2Kbps	Bottom Face	10mm	OFF	9400	1880	22.87	24.00	1.297	0.01	0.585	0.759
	WCDMA II	RMC 12.2Kbps	Edge 1	10mm	OFF	9538	1907.6	22.94	24.00	1.276	-0.06	0.624	0.796
	WCDMA II	RMC 12.2Kbps	Edge 2	0mm	OFF	9538	1907.6	22.94	22.94	1.000	-0.13	0.212	0.212

<CDMA SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	CDMA2000 BC10	RTAP 153.6Kbps	Bottom Face	0mm	ON	580	820.5	20.38	21.50	1.294	-0.01	1.000	1.294
06	CDMA2000 BC10	RTAP 153.6Kbps	Edge 1	0mm	ON	580	820.5	20.38	21.50	1.294	0.15	1.020	1.320
	CDMA2000 BC10	RTAP 153.6Kbps	Bottom Face	10mm	OFF	580	820.5	23.59	24.50	1.233	-0.1	0.580	0.715
	CDMA2000 BC10	RTAP 153.6Kbps	Edge 1	10mm	OFF	580	820.5	23.59	24.50	1.233	-0.04	0.516	0.636
	CDMA2000 BC10	RTAP 153.6Kbps	Edge 2	0mm	OFF	580	820.5	23.59	24.50	1.233	0.11	0.104	0.128
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Face	0mm	ON	384	836.52	20.49	21.50	1.262	-0.06	0.972	1.226
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Face	0mm	ON	1013	824.7	20.29	21.50	1.321	-0.05	0.978	1.292
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Face	0mm	ON	777	848.31	20.32	21.50	1.312	-0.08	0.895	1.174
07	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	0mm	ON	384	836.52	20.49	21.50	1.262	0.11	1.070	1.350
	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	0mm	ON	1013	824.7	20.29	21.50	1.321	0.16	1.010	1.335
	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	0mm	ON	777	848.31	20.32	21.50	1.312	0.12	1.000	1.312
	CDMA2000 BC0	RTAP 153.6Kbps	Bottom Face	10mm	OFF	384	836.52	23.60	24.50	1.230	-0.07	0.582	0.716
	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	10mm	OFF	384	836.52	23.60	24.50	1.230	0.09	0.577	0.710
	CDMA2000 BC0	RTAP 153.6Kbps	Edge 2	0mm	OFF	384	836.52	23.60	24.50	1.230	0.07	0.097	0.119
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	0mm	ON	600	1880	18.49	19.50	1.262	-0.09	0.995	1.256
08	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	0mm	ON	25	1851.25	18.45	19.50	1.274	-0.02	1.030	1.312
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	0mm	ON	1175	1908.75	18.48	19.50	1.265	-0.08	1.030	1.303
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	0mm	ON	600	1880	18.49	19.50	1.262	-0.06	0.865	1.091
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	0mm	ON	25	1851.25	18.45	19.50	1.274	-0.02	0.915	1.165
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	0mm	ON	1175	1908.75	18.48	19.50	1.265	-0.09	0.770	0.974
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	10mm	OFF	600	1880	23.78	24.50	1.180	0.01	0.766	0.904
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	10mm	OFF	25	1851.25	23.74	24.50	1.191	-0.01	0.698	0.831
	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	10mm	OFF	1175	1908.75	23.68	24.50	1.208	0.02	0.796	0.961
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	10mm	OFF	600	1880	23.78	24.50	1.180	-0.08	0.780	0.921
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	10mm	OFF	25	1851.25	23.74	24.50	1.191	-0.1	0.756	0.901
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 1	10mm	OFF	1175	1908.75	23.68	24.50	1.208	-0.08	0.784	0.947
	CDMA2000 BC1	RTAP 153.6Kbps	Edge 2	0mm	OFF	600	1880	23.78	24.50	1.180	-0.02	0.225	0.266

<LTE SAR>

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
09	LTE Band 17	10M	QPSK	1	0	Bottom Face	0mm	ON	23790	710	19.25	20.50	1.334	-0.11	0.786	1.048
	LTE Band 17	10M	QPSK	25	0	Bottom Face	0mm	ON	23790	710	19.21	20.50	1.346	-0.01	0.776	1.044
	LTE Band 17	10M	QPSK	50	0	Bottom Face	0mm	ON	23790	710	19.11	20.50	1.377	0.01	0.744	1.025
	LTE Band 17	10M	QPSK	1	0	Edge 1	0mm	ON	23790	710	19.25	20.50	1.334	-0.15	0.560	0.747
	LTE Band 17	10M	QPSK	25	0	Edge 1	0mm	ON	23790	710	19.21	20.50	1.346	-0.19	0.566	0.762
	LTE Band 17	10M	QPSK	1	0	Bottom Face	10mm	OFF	23790	710	22.80	24.00	1.318	-0.1	0.379	0.500
	LTE Band 17	10M	QPSK	25	0	Bottom Face	10mm	OFF	23790	710	21.73	23.00	1.340	-0.1	0.301	0.403
	LTE Band 17	10M	QPSK	1	0	Edge 1	10mm	OFF	23790	710	22.80	24.00	1.318	-0.1	0.219	0.289
	LTE Band 17	10M	QPSK	25	0	Edge 1	10mm	OFF	23790	710	21.73	23.00	1.340	-0.03	0.176	0.236
	LTE Band 17	10M	QPSK	1	0	Edge 2	0mm	OFF	23790	710	22.80	24.00	1.318	0.16	0.086	0.113
	LTE Band 17	10M	QPSK	25	0	Edge 2	0mm	OFF	23790	710	21.73	23.00	1.340	0.13	0.070	0.094
10	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	18.53	20.00	1.403	-0.13	0.844	1.184
	LTE Band 13	10M	QPSK	25	0	Bottom Face	0mm	ON	23230	782	18.48	20.00	1.419	-0.04	0.818	1.161
	LTE Band 13	10M	QPSK	50	0	Bottom Face	0mm	ON	23230	782	18.34	20.00	1.466	0.01	0.806	1.181
	LTE Band 13	10M	QPSK	1	0	Edge 1	0mm	ON	23230	782	18.53	20.00	1.403	0.14	0.646	0.906
	LTE Band 13	10M	QPSK	25	0	Edge 1	0mm	ON	23230	782	18.48	20.00	1.419	0.19	0.661	0.938
	LTE Band 13	10M	QPSK	50	0	Edge 1	0mm	ON	23230	782	18.34	20.00	1.466	-0.09	0.612	0.897
	LTE Band 13	10M	QPSK	1	0	Bottom Face	10mm	OFF	23230	782	22.78	24.00	1.324	-0.11	0.390	0.516
	LTE Band 13	10M	QPSK	25	0	Bottom Face	10mm	OFF	23230	782	21.55	23.00	1.396	-0.01	0.392	0.547
	LTE Band 13	10M	QPSK	1	0	Edge 1	10mm	OFF	23230	782	22.78	24.00	1.324	-0.06	0.268	0.355
	LTE Band 13	10M	QPSK	25	0	Edge 1	10mm	OFF	23230	782	21.55	23.00	1.396	-0.04	0.264	0.369
	LTE Band 13	10M	QPSK	1	0	Edge 2	0mm	OFF	23230	782	22.78	24.00	1.324	0.19	0.077	0.102
	LTE Band 13	10M	QPSK	25	0	Edge 2	0mm	OFF	23230	782	21.55	23.00	1.396	0.15	0.080	0.112
	LTE Band 5	10M	QPSK	1	0	Bottom Face	0mm	ON	20525	836.5	20.35	21.50	1.303	-0.08	1.010	1.316
	LTE Band 5	10M	QPSK	25	0	Bottom Face	0mm	ON	20525	836.5	20.15	21.50	1.365	-0.04	0.952	1.299
	LTE Band 5	10M	QPSK	50	0	Bottom Face	0mm	ON	20525	836.5	19.95	21.50	1.429	-0.07	0.932	1.332
	LTE Band 5	10M	QPSK	1	0	Edge 1	0mm	ON	20525	836.5	20.35	21.50	1.303	-0.17	1.010	1.316
	LTE Band 5	10M	QPSK	25	0	Edge 1	0mm	ON	20525	836.5	20.15	21.50	1.365	-0.15	0.970	1.324
11	LTE Band 5	10M	QPSK	50	0	Edge 1	0mm	ON	20525	836.5	19.95	21.50	1.429	-0.13	0.964	1.377
	LTE Band 5	10M	QPSK	1	0	Bottom Face	10mm	OFF	20525	836.5	22.42	24.00	1.439	-0.15	0.521	0.750
	LTE Band 5	10M	QPSK	25	0	Bottom Face	10mm	OFF	20525	836.5	21.40	23.00	1.445	-0.07	0.412	0.596
	LTE Band 5	10M	QPSK	1	0	Edge 1	10mm	OFF	20525	836.5	22.42	24.00	1.439	-0.07	0.459	0.660
	LTE Band 5	10M	QPSK	25	0	Edge 1	10mm	OFF	20525	836.5	21.40	23.00	1.445	-0.03	0.354	0.512
	LTE Band 5	10M	QPSK	1	0	Edge 2	0mm	OFF	20525	836.5	22.42	24.00	1.439	-0.06	0.068	0.098
	LTE Band 5	10M	QPSK	25	0	Edge 2	0mm	OFF	20525	836.5	21.40	23.00	1.445	-0.13	0.064	0.093

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	LTE Band 4	20M	QPSK	1	0	Bottom Face	0mm	ON	20175	1732.5	18.47	19.50	1.268	-0.08	0.902	1.143
	LTE Band 4	20M	QPSK	50	0	Bottom Face	0mm	ON	20175	1732.5	18.17	19.50	1.358	-0.06	0.916	1.244
12	LTE Band 4	20M	QPSK	100	0	Bottom Face	0mm	ON	20175	1732.5	18.00	19.50	1.413	-0.01	0.956	1.350
	LTE Band 4	20M	QPSK	1	0	Edge 1	0mm	ON	20175	1732.5	18.47	19.50	1.268	-0.15	0.948	1.202
	LTE Band 4	20M	QPSK	50	0	Edge 1	0mm	ON	20175	1732.5	18.17	19.50	1.358	-0.14	0.893	1.213
	LTE Band 4	20M	QPSK	100	0	Edge 1	0mm	ON	20175	1732.5	18.00	19.50	1.413	-0.17	0.938	1.325
	LTE Band 4	20M	QPSK	1	0	Bottom Face	10mm	OFF	20175	1732.5	22.71	24.00	1.346	-0.08	0.532	0.716
	LTE Band 4	20M	QPSK	50	0	Bottom Face	10mm	OFF	20175	1732.5	21.52	23.00	1.406	-0.04	0.410	0.576
	LTE Band 4	20M	QPSK	1	0	Edge 1	10mm	OFF	20175	1732.5	22.71	24.00	1.346	-0.01	0.416	0.560
	LTE Band 4	20M	QPSK	50	0	Edge 1	10mm	OFF	20175	1732.5	21.52	23.00	1.406	-0.03	0.301	0.423
	LTE Band 4	20M	QPSK	1	0	Edge 2	0mm	OFF	20175	1732.5	22.71	24.00	1.346	-0.04	0.244	0.328
	LTE Band 4	20M	QPSK	50	0	Edge 2	0mm	OFF	20175	1732.5	21.52	23.00	1.406	-0.02	0.180	0.253
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26590	1905	17.95	19.00	1.274	-0.11	0.998	1.271
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26140	1860	17.89	19.00	1.291	-0.06	0.976	1.260
	LTE Band 25	20M	QPSK	1	0	Bottom Face	0mm	ON	26340	1880	17.78	19.00	1.324	-0.05	0.993	1.315
13	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26590	1905	17.66	19.00	1.361	-0.01	0.987	1.344
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26140	1860	17.64	19.00	1.368	-0.11	0.979	1.339
	LTE Band 25	20M	QPSK	50	0	Bottom Face	0mm	ON	26340	1880	17.59	19.00	1.384	0.05	0.964	1.334
	LTE Band 25	20M	QPSK	100	0	Bottom Face	0mm	ON	26590	1905	17.50	19.00	1.413	0.1	0.948	1.339
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26590	1905	17.95	19.00	1.274	-0.04	0.912	1.161
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26140	1860	17.89	19.00	1.291	-0.03	0.998	1.289
	LTE Band 25	20M	QPSK	1	0	Edge 1	0mm	ON	26340	1880	17.78	19.00	1.324	0.03	0.999	1.323
	LTE Band 25	20M	QPSK	50	0	Edge 1	0mm	ON	26590	1905	17.66	19.00	1.361	-0.06	0.847	1.153
	LTE Band 25	20M	QPSK	50	0	Edge 1	0mm	ON	26140	1860	17.64	19.00	1.368	0.02	0.963	1.317
	LTE Band 25	20M	QPSK	50	0	Edge 1	0mm	ON	26340	1880	17.59	19.00	1.384	0.08	0.954	1.320
	LTE Band 25	20M	QPSK	100	0	Edge 1	0mm	ON	26590	1905	17.50	19.00	1.413	0.04	0.827	1.168
	LTE Band 25	20M	QPSK	1	0	Bottom Face	10mm	OFF	26590	1905	22.85	24.00	1.303	-0.1	0.642	0.837
	LTE Band 25	20M	QPSK	1	0	Bottom Face	10mm	OFF	26140	1860	22.67	24.00	1.358	-0.05	0.625	0.849
	LTE Band 25	20M	QPSK	1	0	Bottom Face	10mm	OFF	26340	1880	22.60	24.00	1.380	-0.09	0.621	0.857
	LTE Band 25	20M	QPSK	50	0	Bottom Face	10mm	OFF	26590	1905	21.59	23.00	1.384	0.06	0.514	0.711
	LTE Band 25	20M	QPSK	100	0	Bottom Face	10mm	OFF	26590	1905	21.63	23.00	1.371	-0.07	0.546	0.749
	LTE Band 25	20M	QPSK	1	0	Edge 1	10mm	OFF	26590	1905	22.85	24.00	1.303	-0.04	0.644	0.839
	LTE Band 25	20M	QPSK	1	0	Edge 1	10mm	OFF	26140	1860	22.67	24.00	1.358	-0.07	0.699	0.949
	LTE Band 25	20M	QPSK	1	0	Edge 1	10mm	OFF	26340	1880	22.60	24.00	1.380	-0.04	0.704	0.972
	LTE Band 25	20M	QPSK	50	0	Edge 1	10mm	OFF	26590	1905	21.59	23.00	1.384	-0.05	0.445	0.616
	LTE Band 25	20M	QPSK	100	0	Edge 1	10mm	OFF	26590	1905	21.63	23.00	1.371	-0.04	0.499	0.684
	LTE Band 25	20M	QPSK	1	0	Edge 2	0mm	OFF	26590	1905	22.85	24.00	1.303	-0.06	0.183	0.238
	LTE Band 25	20M	QPSK	50	0	Edge 2	0mm	OFF	26590	1905	21.59	23.00	1.384	0.02	0.133	0.184

15.2 Repeated SAR Measurement

No.	Band	Mode	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	18.44	19.50	1.276	-0.18	1.050	-	1.340
2nd	WCDMA IV	RMC 12.2Kbps	Edge 1	0mm	ON	1513	1752.6	18.44	19.50	1.276	-0.15	0.966	1.09	1.233
1st	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	0mm	ON	384	836.52	20.49	21.50	1.262	0.11	1.070	-	1.350
2nd	CDMA2000 BC0	RTAP 153.6Kbps	Edge 1	0mm	ON	384	836.52	20.49	21.50	1.262	0.12	1.030	1.04	1.300
1st	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	0mm	ON	25	1851.25	18.45	19.50	1.274	-0.02	1.030	-	1.312
2nd	CDMA2000 BC1	RTAP 153.6Kbps	Bottom Face	0mm	ON	25	1851.25	18.45	19.50	1.274	-0.08	0.984	1.05	1.253

No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Power Reduction	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Ratio	Reported 1g SAR (W/kg)
1st	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	18.53	20.00	1.403	-0.13	0.844	-	1.184
2nd	LTE Band 13	10M	QPSK	1	0	Bottom Face	0mm	ON	23230	782	18.53	20.00	1.403	-0.07	0.843	1.01	1.183

General Note:

1. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
2. Per KDB 865664 D01v01r04, if the ratio among the repeated measurement is ≤ 1.2 and the measured SAR <1.45W/kg, only one repeated measurement is required.
3. The ratio is the difference in percentage between original and repeated *measured SAR*.
4. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

16. Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Tablet
		Body
1.	GPRS/EDGE + WLAN2.4GHz	Yes
2.	WCDMA + WLAN2.4GHz	Yes
3.	LTE + WLAN2.4GHz	Yes
4.	GPRS/EDGE + Bluetooth	Yes
5.	WCDMA+ Bluetooth	Yes
6.	LTE + Bluetooth	Yes
7.	GPRS/EDGE + WLAN5GHz	Yes
8.	WCDMA + WLAN5GHz	Yes
9.	LTE + WLAN5GHz	Yes

General Note:

1. WLAN/Bluetooth module, Brand Name: Intel, Model Name: 8260D2W, FCC ID: PD98260D2W is also integrated into this host, WLAN/Bluetooth power and WLAN SAR testing data which can be refer to RF Exposure Lab SAR Report, Report No: SAR.20150809.
2. The worst case WLAN reported SAR from RF Exposure lab SAR report for each configuration was used for SAR summation. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with WLAN.
3. For simultaneous transmission analysis for exposure position of edge 10mm and bottom face 10mm, WLAN SAR tested at 0mm separation is worse and the test data is used for conservative SAR summation.
4. Per KDB 447498 D01v05r02, simultaneous transmission SAR is compliant if,
   i) Scalar SAR summation < 1.6W/kg.
   ii) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   iii) If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary.
   iv) Simultaneously transmission SAR measurement, and the reported multi-band SAR < 1.6W/kg.
   v) The SPLSR calculated results please refer to section 16.2.

16.1 Body Exposure Conditions

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN ANT1 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR Result	Case No
GSM	GSM850	Bottom Face at 10mm	0.537	0.850	**1.39**		
		Edge 1 at 10mm	0.512	0.360	**0.87**		
		Bottom Face at 0mm	1.181	0.850	**2.03**	0.02	Case 1
		Edge 1 at 0mm	1.318	0.360	**1.68**	0.02	Case 2
		Edge 2 at 0mm	0.187		**0.19**		
	GSM1900	Bottom Face at 10mm	0.720	0.850	**1.57**		
		Edge 1 at 10mm	0.652	0.360	**1.01**		
		Bottom Face at 0mm	1.182	0.850	**2.03**	0.02	Case 3
		Edge 1 at 0mm	1.192	0.360	**1.55**		
		Edge 2 at 0mm	0.292		**0.29**		
WCDMA	WCDMA V	Bottom Face at 10mm	0.698	0.850	**1.55**		
		Edge 1 at 10mm	0.607	0.360	**0.97**		
		Bottom Face at 0mm	1.232	0.850	**2.08**	0.03	Case 4
		Edge 1 at 0mm	1.283	0.360	**1.64**	0.02	Case 5
		Edge 2 at 0mm	0.117		**0.12**		
	WCDMA IV	Bottom Face at 10mm	0.659	0.850	**1.51**		
		Edge 1 at 10mm	0.505	0.360	**0.87**		
		Bottom Face at 0mm	1.321	0.850	**2.17**	0.03	Case 6
		Edge 1 at 0mm	1.340	0.360	**1.70**	0.02	Case 7
		Edge 2 at 0mm	0.271		**0.27**		
	WCDMA II	Bottom Face at 10mm	0.845	0.850	**1.70**	0.02	Case 8
		Edge 1 at 10mm	0.796	0.360	**1.16**		
		Bottom Face at 0mm	1.300	0.850	**2.15**	0.03	Case 9
		Edge 1 at 0mm	1.091	0.360	**1.45**		
		Edge 2 at 0mm	0.212		**0.21**		
CDMA	CDMA2000 BC10	Bottom Face at 10mm	0.715	0.850	**1.57**		
		Edge 1 at 10mm	0.636	0.360	**1.00**		
		Bottom Face at 0mm	1.294	0.850	**2.14**	0.03	Case 10
		Edge 1 at 0mm	1.320	0.360	**1.68**	0.02	Case 11
		Edge 2 at 0mm	0.128		**0.13**		
	CDMA2000 BC0	Bottom Face at 10mm	0.716	0.850	**1.57**		
		Edge 1 at 10mm	0.710	0.360	**1.07**		
		Bottom Face at 0mm	1.292	0.850	**2.14**	0.03	Case 12
		Edge 1 at 0mm	1.350	0.360	**1.71**	0.02	Case 13
		Edge 2 at 0mm	0.119		**0.12**		
	CDMA2000 BC1	Bottom Face at 10mm	0.961	0.850	**1.81**	0.02	Case 14
		Edge 1 at 10mm	0.947	0.360	**1.31**		
		Bottom Face at 0mm	1.312	0.850	**2.16**	0.03	Case 15
		Edge 1 at 0mm	1.165	0.360	**1.53**		
		Edge 2 at 0mm	0.266		**0.27**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz WLAN ANT1 1g SAR (W/kg)	1+2 Summed 1g SAR (W/kg)	SPLSR Result	Case No
LTE	LTE Band 17	Bottom Face at 10mm	0.500	0.850	**1.35**		
		Edge 1 at 10mm	0.289	0.360	**0.65**		
		Bottom Face at 0mm	1.048	0.850	**1.90**	0.02	Case 16
		Edge 1 at 0mm	0.762	0.360	**1.12**		
		Edge 2 at 0mm	0.113		**0.11**		
	LTE Band 13	Bottom Face at 10mm	0.547	0.850	**1.40**		
		Edge 1 at 10mm	0.369	0.360	**0.73**		
		Bottom Face at 0mm	1.184	0.850	**2.03**	0.02	Case 17
		Edge 1 at 0mm	0.938	0.360	**1.30**		
		Edge 2 at 0mm	0.112		**0.11**		
	LTE Band 5	Bottom Face at 10mm	0.750	0.850	**1.60**	0.02	Case 18
		Edge 1 at 10mm	0.660	0.360	**1.02**		
		Bottom Face at 0mm	1.332	0.850	**2.18**	0.03	Case 19
		Edge 1 at 0mm	1.377	0.360	**1.74**	0.02	Case 20
		Edge 2 at 0mm	0.098		**0.10**		
	LTE Band 4	Bottom Face at 10mm	0.716	0.850	**1.57**		
		Edge 1 at 10mm	0.560	0.360	**0.92**		
		Bottom Face at 0mm	1.350	0.850	**2.20**	0.03	Case 21
		Edge 1 at 0mm	1.325	0.360	**1.69**	0.02	Case 22
		Edge 2 at 0mm	0.328		**0.33**		
	LTE Band 25	Bottom Face at 10mm	0.857	0.850	**1.71**	0.02	Case 23
		Edge 1 at 10mm	0.972	0.360	**1.33**		
		Bottom Face at 0mm	1.344	0.850	**2.19**	0.03	Case 24
		Edge 1 at 0mm	1.323	0.360	**1.68**	0.02	Case 25
		Edge 2 at 0mm	0.238		**0.24**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 2.4GHz WLAN ANT2 1g SAR (W/kg)	1+3 Summed 1g SAR (W/kg)	SPLSR Result	Case No
GSM	GSM850	Bottom Face at 10mm	0.537	0.920	**1.46**		
		Edge 1 at 10mm	0.512		**0.51**		
		Bottom Face at 0mm	1.181	0.920	**2.10**	0.02	Case 26
		Edge 1 at 0mm	1.318		**1.32**		
		Edge 2 at 0mm	0.187		**0.19**		
	GSM1900	Bottom Face at 10mm	0.720	0.920	**1.64**	0.01	Case 27
		Edge 1 at 10mm	0.652		**0.65**		
		Bottom Face at 0mm	1.182	0.920	**2.10**	0.02	Case 28
		Edge 1 at 0mm	1.192		**1.19**		
		Edge 2 at 0mm	0.292		**0.29**		
WCDMA	WCDMA V	Bottom Face at 10mm	0.698	0.920	**1.62**	0.01	Case 29
		Edge 1 at 10mm	0.607		**0.61**		
		Bottom Face at 0mm	1.232	0.920	**2.15**	0.02	Case 30
		Edge 1 at 0mm	1.283		**1.28**		
		Edge 2 at 0mm	0.117		**0.12**		
	WCDMA IV	Bottom Face at 10mm	0.659	0.920	**1.58**		
		Edge 1 at 10mm	0.505		**0.51**		
		Bottom Face at 0mm	1.321	0.920	**2.24**	0.02	Case 31
		Edge 1 at 0mm	1.340		**1.34**		
		Edge 2 at 0mm	0.271		**0.27**		
	WCDMA II	Bottom Face at 10mm	0.845	0.920	**1.77**	0.01	Case 32
		Edge 1 at 10mm	0.796		**0.80**		
		Bottom Face at 0mm	1.300	0.920	**2.22**	0.02	Case 33
		Edge 1 at 0mm	1.091		**1.09**		
		Edge 2 at 0mm	0.212		**0.21**		
CDMA	CDMA2000 BC10	Bottom Face at 10mm	0.715	0.920	**1.64**	0.01	Case 34
		Edge 1 at 10mm	0.636		**0.64**		
		Bottom Face at 0mm	1.294	0.920	**2.21**	0.02	Case 35
		Edge 1 at 0mm	1.320		**1.32**		
		Edge 2 at 0mm	0.128		**0.13**		
	CDMA2000 BC0	Bottom Face at 10mm	0.716	0.920	**1.64**	0.01	Case 36
		Edge 1 at 10mm	0.710		**0.71**		
		Bottom Face at 0mm	1.292	0.920	**2.21**	0.02	Case 37
		Edge 1 at 0mm	1.350		**1.35**		
		Edge 2 at 0mm	0.119		**0.12**		
	CDMA2000 BC1	Bottom Face at 10mm	0.961	0.920	**1.88**	0.02	Case 38
		Edge 1 at 10mm	0.947		**0.95**		
		Bottom Face at 0mm	1.312	0.920	**2.23**	0.02	Case 39
		Edge 1 at 0mm	1.165		**1.17**		
		Edge 2 at 0mm	0.266		**0.27**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	3 2.4GHz WLAN ANT2 1g SAR (W/kg)	**1+3 Summed 1g SAR (W/kg)**	SPLSR Result	Case No
LTE	LTE Band 17	Bottom Face at 10mm	0.500	0.920	**1.42**		
		Edge 1 at 10mm	0.289		**0.29**		
		Bottom Face at 0mm	1.048	0.920	**1.97**	0.02	Case 40
		Edge 1 at 0mm	0.762		**0.76**		
		Edge 2 at 0mm	0.113		**0.11**		
	LTE Band 13	Bottom Face at 10mm	0.547	0.920	**1.47**		
		Edge 1 at 10mm	0.369		**0.37**		
		Bottom Face at 0mm	1.184	0.920	**2.10**	0.02	Case 41
		Edge 1 at 0mm	0.938		**0.94**		
		Edge 2 at 0mm	0.112		**0.11**		
	LTE Band 5	Bottom Face at 10mm	0.750	0.920	**1.67**	0.01	Case 42
		Edge 1 at 10mm	0.660		**0.66**		
		Bottom Face at 0mm	1.332	0.920	**2.25**	0.02	Case 43
		Edge 1 at 0mm	1.377		**1.38**		
		Edge 2 at 0mm	0.098		**0.10**		
	LTE Band 4	Bottom Face at 10mm	0.716	0.920	**1.64**	0.01	Case 44
		Edge 1 at 10mm	0.560		**0.56**		
		Bottom Face at 0mm	1.350	0.920	**2.27**	0.02	Case 45
		Edge 1 at 0mm	1.325		**1.33**		
		Edge 2 at 0mm	0.328		**0.33**		
	LTE Band 25	Bottom Face at 10mm	0.857	0.920	**1.78**	0.01	Case 46
		Edge 1 at 10mm	0.972		**0.97**		
		Bottom Face at 0mm	1.344	0.920	**2.26**	0.02	Case 47
		Edge 1 at 0mm	1.323		**1.32**		
		Edge 2 at 0mm	0.238		**0.24**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 Bluetooth ANT1 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR Result	Case No
GSM	GSM850	Bottom Face at 10mm	0.537	0.330	**0.87**		
		Edge 1 at 10mm	0.512	0.140	**0.65**		
		Bottom Face at 0mm	1.181	0.330	**1.51**		
		Edge 1 at 0mm	1.318	0.140	**1.46**		
		Edge 2 at 0mm	0.187		**0.19**		
	GSM1900	Bottom Face at 10mm	0.720	0.330	**1.05**		
		Edge 1 at 10mm	0.652	0.140	**0.79**		
		Bottom Face at 0mm	1.182	0.330	**1.51**		
		Edge 1 at 0mm	1.192	0.140	**1.33**		
		Edge 2 at 0mm	0.292		**0.29**		
WCDMA	WCDMA V	Bottom Face at 10mm	0.698	0.330	**1.03**		
		Edge 1 at 10mm	0.607	0.140	**0.75**		
		Bottom Face at 0mm	1.232	0.330	**1.56**		
		Edge 1 at 0mm	1.283	0.140	**1.42**		
		Edge 2 at 0mm	0.117		**0.12**		
	WCDMA IV	Bottom Face at 10mm	0.659	0.330	**0.99**		
		Edge 1 at 10mm	0.505	0.140	**0.65**		
		Bottom Face at 0mm	1.321	0.330	**1.65**	0.02	Case 48
		Edge 1 at 0mm	1.340	0.140	**1.48**		
		Edge 2 at 0mm	0.271		**0.27**		
	WCDMA II	Bottom Face at 10mm	0.845	0.330	**1.18**		
		Edge 1 at 10mm	0.796	0.140	**0.94**		
		Bottom Face at 0mm	1.300	0.330	**1.63**	0.02	Case 49
		Edge 1 at 0mm	1.091	0.140	**1.23**		
		Edge 2 at 0mm	0.212		**0.21**		
CDMA	CDMA2000 BC10	Bottom Face at 10mm	0.715	0.330	**1.05**		
		Edge 1 at 10mm	0.636	0.140	**0.78**		
		Bottom Face at 0mm	1.294	0.330	**1.62**	0.02	Case 50
		Edge 1 at 0mm	1.320	0.140	**1.46**		
		Edge 2 at 0mm	0.128		**0.13**		
	CDMA2000 BC0	Bottom Face at 10mm	0.716	0.330	**1.05**		
		Edge 1 at 10mm	0.710	0.140	**0.85**		
		Bottom Face at 0mm	1.292	0.330	**1.62**	0.02	Case 51
		Edge 1 at 0mm	1.350	0.140	**1.49**		
		Edge 2 at 0mm	0.119		**0.12**		
	CDMA2000 BC1	Bottom Face at 10mm	0.961	0.330	**1.29**		
		Edge 1 at 10mm	0.947	0.140	**1.09**		
		Bottom Face at 0mm	1.312	0.330	**1.64**	0.02	Case 52
		Edge 1 at 0mm	1.165	0.140	**1.31**		
		Edge 2 at 0mm	0.266		**0.27**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	4 Bluetooth ANT1 1g SAR (W/kg)	1+4 Summed 1g SAR (W/kg)	SPLSR Result	Case No
LTE	LTE Band 17	Bottom Face at 10mm	0.500	0.330	**0.83**		
		Edge 1 at 10mm	0.289	0.140	**0.43**		
		Bottom Face at 0mm	1.048	0.330	**1.38**		
		Edge 1 at 0mm	0.762	0.140	**0.90**		
		Edge 2 at 0mm	0.113		**0.11**		
	LTE Band 13	Bottom Face at 10mm	0.547	0.330	**0.88**		
		Edge 1 at 10mm	0.369	0.140	**0.51**		
		Bottom Face at 0mm	1.184	0.330	**1.51**		
		Edge 1 at 0mm	0.938	0.140	**1.08**		
		Edge 2 at 0mm	0.112		**0.11**		
	LTE Band 5	Bottom Face at 10mm	0.750	0.330	**1.08**		
		Edge 1 at 10mm	0.660	0.140	**0.80**		
		Bottom Face at 0mm	1.332	0.330	**1.66**	0.02	Case 53
		Edge 1 at 0mm	1.377	0.140	**1.52**		
		Edge 2 at 0mm	0.098		**0.10**		
	LTE Band 4	Bottom Face at 10mm	0.716	0.330	**1.05**		
		Edge 1 at 10mm	0.560	0.140	**0.70**		
		Bottom Face at 0mm	1.350	0.330	**1.68**	0.02	Case 54
		Edge 1 at 0mm	1.325	0.140	**1.47**		
		Edge 2 at 0mm	0.328		**0.33**		
	LTE Band 25	Bottom Face at 10mm	0.857	0.330	**1.19**		
		Edge 1 at 10mm	0.972	0.140	**1.11**		
		Bottom Face at 0mm	1.344	0.330	**1.67**	0.02	Case 55
		Edge 1 at 0mm	1.323	0.140	**1.46**		
		Edge 2 at 0mm	0.238		**0.24**		

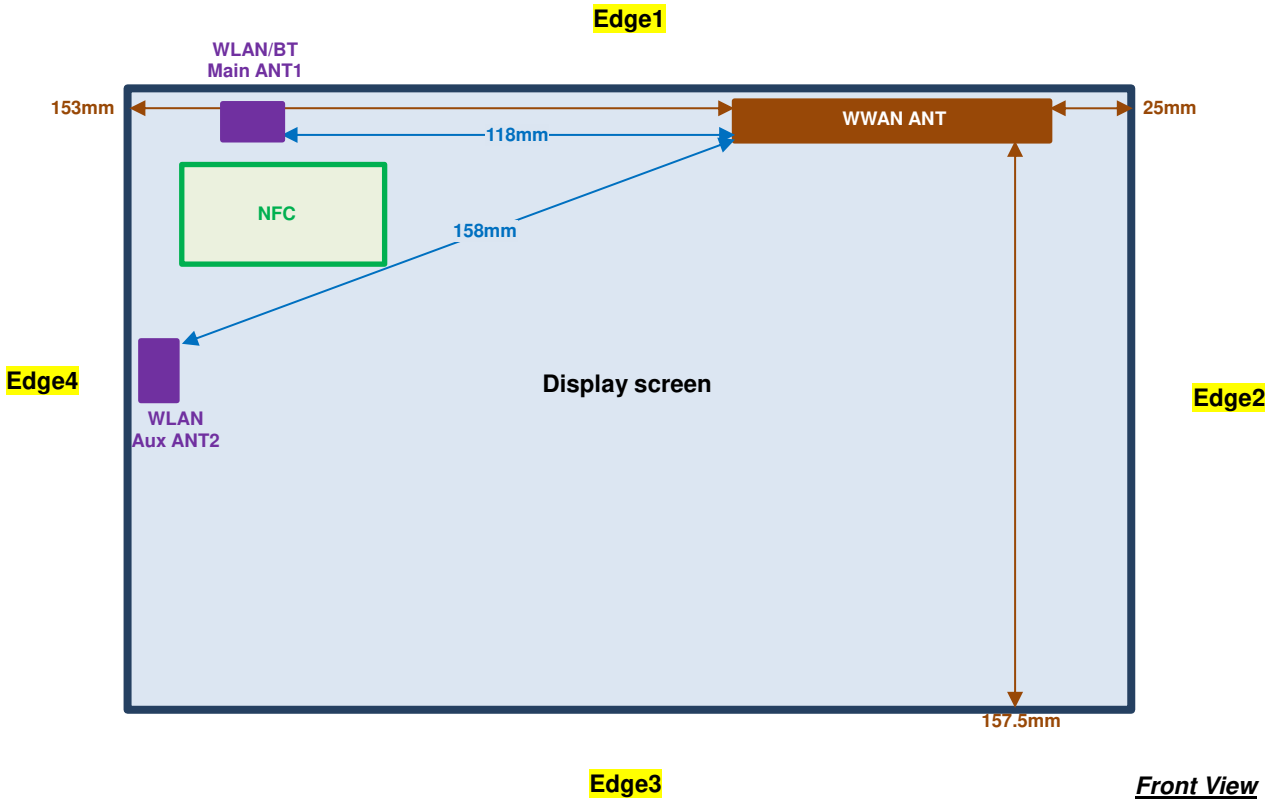
WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	5 5GHz WLAN ANT1 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	SPLSR Result	Case No
GSM	GSM850	Bottom Face at 10mm	0.537	0.820	**1.36**		
		Edge 1 at 10mm	0.512	0.710	**1.22**		
		Bottom Face at 0mm	1.181	0.820	**2.00**	0.02	Case 56
		Edge 1 at 0mm	1.318	0.710	**2.03**	0.02	Case 57
		Edge 2 at 0mm	0.187		**0.19**		
	GSM1900	Bottom Face at 10mm	0.720	0.820	**1.54**		
		Edge 1 at 10mm	0.652	0.710	**1.36**		
		Bottom Face at 0mm	1.182	0.820	**2.00**	0.02	Case 58
		Edge 1 at 0mm	1.192	0.710	**1.90**	0.02	Case 59
		Edge 2 at 0mm	0.292		**0.29**		
WCDMA	WCDMA V	Bottom Face at 10mm	0.698	0.820	**1.52**		
		Edge 1 at 10mm	0.607	0.710	**1.32**		
		Bottom Face at 0mm	1.232	0.820	**2.05**	0.02	Case 60
		Edge 1 at 0mm	1.283	0.710	**1.99**	0.02	Case 61
		Edge 2 at 0mm	0.117		**0.12**		
	WCDMA IV	Bottom Face at 10mm	0.659	0.820	**1.48**		
		Edge 1 at 10mm	0.505	0.710	**1.22**		
		Bottom Face at 0mm	1.321	0.820	**2.14**	0.03	Case 62
		Edge 1 at 0mm	1.340	0.710	**2.05**	0.02	Case 63
		Edge 2 at 0mm	0.271		**0.27**		
	WCDMA II	Bottom Face at 10mm	0.845	0.820	**1.67**	0.02	Case 64
		Edge 1 at 10mm	0.796	0.710	**1.51**		
		Bottom Face at 0mm	1.300	0.820	**2.12**	0.03	Case 65
		Edge 1 at 0mm	1.091	0.710	**1.80**	0.02	Case 66
		Edge 2 at 0mm	0.212		**0.21**		
CDMA	CDMA2000 BC10	Bottom Face at 10mm	0.715	0.820	**1.54**		
		Edge 1 at 10mm	0.636	0.710	**1.35**		
		Bottom Face at 0mm	1.294	0.820	**2.11**	0.03	Case 67
		Edge 1 at 0mm	1.320	0.710	**2.03**	0.02	Case 68
		Edge 2 at 0mm	0.128		**0.13**		
	CDMA2000 BC0	Bottom Face at 10mm	0.716	0.820	**1.54**		
		Edge 1 at 10mm	0.710	0.710	**1.42**		
		Bottom Face at 0mm	1.292	0.820	**2.11**	0.03	Case 69
		Edge 1 at 0mm	1.350	0.710	**2.06**	0.03	Case 70
		Edge 2 at 0mm	0.119		**0.12**		
	CDMA2000 BC1	Bottom Face at 10mm	0.961	0.820	**1.78**	0.02	Case 71
		Edge 1 at 10mm	0.947	0.710	**1.66**	0.02	Case 72
		Bottom Face at 0mm	1.312	0.820	**2.13**	0.03	Case 73
		Edge 1 at 0mm	1.165	0.710	**1.88**	0.02	Case 74
		Edge 2 at 0mm	0.266		**0.27**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	5 5GHz WLAN ANT1 1g SAR (W/kg)	1+5 Summed 1g SAR (W/kg)	SPLSR Result	Case No
LTE	LTE Band 17	Bottom Face at 10mm	0.500	0.820	**1.32**		
		Edge 1 at 10mm	0.289	0.710	**1.00**		
		Bottom Face at 0mm	1.048	0.820	**1.87**	0.02	Case 75
		Edge 1 at 0mm	0.762	0.710	**1.47**		
		Edge 2 at 0mm	0.113		**0.11**		
	LTE Band 13	Bottom Face at 10mm	0.547	0.820	**1.37**		
		Edge 1 at 10mm	0.369	0.710	**1.08**		
		Bottom Face at 0mm	1.184	0.820	**2.00**	0.02	Case 76
		Edge 1 at 0mm	0.938	0.710	**1.65**	0.02	Case 77
		Edge 2 at 0mm	0.112		**0.11**		
	LTE Band 5	Bottom Face at 10mm	0.750	0.820	**1.57**		
		Edge 1 at 10mm	0.660	0.710	**1.37**		
		Bottom Face at 0mm	1.332	0.820	**2.15**	0.03	Case 78
		Edge 1 at 0mm	1.377	0.710	**2.09**	0.03	Case 79
		Edge 2 at 0mm	0.098		**0.10**		
	LTE Band 4	Bottom Face at 10mm	0.716	0.820	**1.54**		
		Edge 1 at 10mm	0.560	0.710	**1.27**		
		Bottom Face at 0mm	1.350	0.820	**2.17**	0.03	Case 80
		Edge 1 at 0mm	1.325	0.710	**2.04**	0.02	Case 81
		Edge 2 at 0mm	0.328		**0.33**		
	LTE Band 25	Bottom Face at 10mm	0.857	0.820	**1.68**	0.02	Case 82
		Edge 1 at 10mm	0.972	0.710	**1.68**	0.02	Case 83
		Bottom Face at 0mm	1.344	0.820	**2.16**	0.03	Case 84
		Edge 1 at 0mm	1.323	0.710	**2.03**	0.02	Case 85
		Edge 2 at 0mm	0.238		**0.24**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	6 5GHz WLAN ANT2 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	SPLSR Result	Case No
GSM	GSM850	Bottom Face at 10mm	0.537	0.350	**0.89**		
		Edge 1 at 10mm	0.512		**0.51**		
		Bottom Face at 0mm	1.181	0.350	**1.53**		
		Edge 1 at 0mm	1.318		**1.32**		
		Edge 2 at 0mm	0.187		**0.19**		
	GSM1900	Bottom Face at 10mm	0.720	0.350	**1.07**		
		Edge 1 at 10mm	0.652		**0.65**		
		Bottom Face at 0mm	1.182	0.350	**1.53**		
		Edge 1 at 0mm	1.192		**1.19**		
		Edge 2 at 0mm	0.292		**0.29**		
WCDMA	WCDMA V	Bottom Face at 10mm	0.698	0.350	**1.05**		
		Edge 1 at 10mm	0.607		**0.61**		
		Bottom Face at 0mm	1.232	0.350	**1.58**		
		Edge 1 at 0mm	1.283		**1.28**		
		Edge 2 at 0mm	0.117		**0.12**		
	WCDMA IV	Bottom Face at 10mm	0.659	0.350	**1.01**		
		Edge 1 at 10mm	0.505		**0.51**		
		Bottom Face at 0mm	1.321	0.350	**1.67**	0.01	Case 86
		Edge 1 at 0mm	1.340		**1.34**		
		Edge 2 at 0mm	0.271		**0.27**		
	WCDMA II	Bottom Face at 10mm	0.845	0.350	**1.20**		
		Edge 1 at 10mm	0.796		**0.80**		
		Bottom Face at 0mm	1.300	0.350	**1.65**	0.01	Case 87
		Edge 1 at 0mm	1.091		**1.09**		
		Edge 2 at 0mm	0.212		**0.21**		
CDMA	CDMA2000 BC10	Bottom Face at 10mm	0.715	0.350	**1.07**		
		Edge 1 at 10mm	0.636		**0.64**		
		Bottom Face at 0mm	1.294	0.350	**1.64**	0.01	Case 88
		Edge 1 at 0mm	1.320		**1.32**		
		Edge 2 at 0mm	0.128		**0.13**		
	CDMA2000 BC0	Bottom Face at 10mm	0.716	0.350	**1.07**		
		Edge 1 at 10mm	0.710		**0.71**		
		Bottom Face at 0mm	1.292	0.350	**1.64**	0.01	Case 89
		Edge 1 at 0mm	1.350		**1.35**		
		Edge 2 at 0mm	0.119		**0.12**		
	CDMA2000 BC1	Bottom Face at 10mm	0.961	0.350	**1.31**		
		Edge 1 at 10mm	0.947		**0.95**		
		Bottom Face at 0mm	1.312	0.350	**1.66**	0.01	Case 90
		Edge 1 at 0mm	1.165		**1.17**		
		Edge 2 at 0mm	0.266		**0.27**		

WWAN Band		Exposure Position	1 WWAN 1g SAR (W/kg)	6 5GHz WLAN ANT2 1g SAR (W/kg)	1+6 Summed 1g SAR (W/kg)	SPLSR Result	Case No
LTE	LTE Band 17	Bottom Face at 10mm	0.500	0.350	**0.85**		
		Edge 1 at 10mm	0.289		**0.29**		
		Bottom Face at 0mm	1.048	0.350	**1.40**		
		Edge 1 at 0mm	0.762		**0.76**		
		Edge 2 at 0mm	0.113		**0.11**		
	LTE Band 13	Bottom Face at 10mm	0.547	0.350	**0.90**		
		Edge 1 at 10mm	0.369		**0.37**		
		Bottom Face at 0mm	1.184	0.350	**1.53**		
		Edge 1 at 0mm	0.938		**0.94**		
		Edge 2 at 0mm	0.112		**0.11**		
	LTE Band 5	Bottom Face at 10mm	0.750	0.350	**1.10**		
		Edge 1 at 10mm	0.660		**0.66**		
		Bottom Face at 0mm	1.332	0.350	**1.68**	0.01	Case 91
		Edge 1 at 0mm	1.377		**1.38**		
		Edge 2 at 0mm	0.098		**0.10**		
	LTE Band 4	Bottom Face at 10mm	0.716	0.350	**1.07**		
		Edge 1 at 10mm	0.560		**0.56**		
		Bottom Face at 0mm	1.350	0.350	**1.70**	0.01	Case 92
		Edge 1 at 0mm	1.325		**1.33**		
		Edge 2 at 0mm	0.328		**0.33**		
	LTE Band 25	Bottom Face at 10mm	0.857	0.350	**1.21**		
		Edge 1 at 10mm	0.972		**0.97**		
		Bottom Face at 0mm	1.344	0.350	**1.69**	0.01	Case 93
		Edge 1 at 0mm	1.323		**1.32**		
		Edge 2 at 0mm	0.238		**0.24**		

16.2 SPLSR Evaluation and Analysis



Front View

General Note:

1. For SPLSR analysis of colocation with PD98260D2W, according the antenna location, the minimum distances between each antenna pair was used for conservative SPLSR calculation.
2. SPLSR = $(SAR_1 + SAR_2)^{1.5}$ / (*min. separation distance, mm*). If SPLSR ≤ 0.04, simultaneously transmission SAR measurement is not necessary

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 1	GSM850	Bottom Face	1.181	0mm	118.0	2.03	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 2	GSM850	Edge1	1.318	0mm	118.0	1.68	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 3	GSM1900	Bottom Face	1.182	0mm	118.0	2.03	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 4	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Bottom Face	1.232	0mm	118.0	2.08	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 5	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Edge1	1.283	0mm	118.0	1.64	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 6	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Bottom Face	1.321	0mm	118.0	2.17	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 7	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Edge1	1.34	0mm	118.0	1.70	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 8	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	0.845	10mm	118.0	1.70	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 9	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	1.3	0mm	118.0	2.15	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 10	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Bottom Face	1.294	0mm	118.0	2.14	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 11	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Edge1	1.32	0mm	118.0	1.68	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 12	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Bottom Face	1.292	0mm	118.0	2.14	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 13	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Edge1	1.35	0mm	118.0	1.71	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 14	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Bottom Face	0.961	10mm	118.0	1.81	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 15	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Bottom Face	1.312	0mm	118.0	2.16	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 16	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B17	Bottom Face	1.048	0mm	118.0	1.90	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 17	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B13	Bottom Face	1.184	0mm	118.0	2.03	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 18	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Bottom Face	0.75	10mm	118.0	1.60	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 19	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Bottom Face	1.332	0mm	118.0	2.18	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 20	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Edge1	1.377	0mm	118.0	1.74	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 21	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B4	Bottom Face	1.35	0mm	118.0	2.20	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 22	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B4	Edge1	1.325	0mm	118.0	1.69	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 23	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Bottom Face	0.857	10mm	118.0	1.71	0.02	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 24	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Bottom Face	1.344	0mm	118.0	2.19	0.03	Not required
	2.4GHz WLAN ANT1		0.85	0mm				

Case 25	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Edge1	1.323	0mm	118.0	1.68	0.02	Not required
	2.4GHz WLAN ANT1		0.36	0mm				

Case 26	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Bottom Face	1.181	0mm	158.0	2.10	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 27	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Bottom Face	0.72	10mm	158.0	1.64	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 28	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Bottom Face	1.182	0mm	158.0	2.10	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 29	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Bottom Face	0.698	0mm	158.0	1.62	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 30	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Bottom Face	1.232	0mm	158.0	2.15	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 31	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Bottom Face	1.321	0mm	158.0	2.24	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 32	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	0.845	10mm	158.0	1.77	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 33	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	1.3	0mm	158.0	2.22	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 34	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Bottom Face	0.715	10mm	158.0	1.64	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 35	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Bottom Face	1.294	0mm	158.0	2.21	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 36	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Bottom Face	0.716	10mm	158.0	1.64	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 37	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Bottom Face	1.292	0mm	158.0	2.21	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 38	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Bottom Face	0.961	10mm	158.0	1.88	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 39	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Bottom Face	1.312	0mm	158.0	2.23	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 40	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B17	Bottom Face	1.048	0mm	158.0	1.97	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 41	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B13	Bottom Face	1.184	0mm	158.0	2.10	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 42	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Bottom Face	0.75	10mm	158.0	1.67	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 43	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Bottom Face	1.332	0mm	158.0	2.25	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 44	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B4	Bottom Face	0.716	10mm	158.0	1.64	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 45	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B4	Bottom Face	1.35	0mm	158.0	2.27	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 46	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Bottom Face	0.857	10mm	158.0	1.78	0.01	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 47	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Bottom Face	1.344	0mm	158.0	2.26	0.02	Not required
	2.4GHz WLAN ANT2		0.92	0mm				

Case 48	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Bottom Face	1.321	0mm	118.0	1.65	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 49	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	1.3	0mm	118.0	1.63	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 50	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC10	Bottom Face	1.294	0mm	118.0	1.62	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 51	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC0	Bottom Face	1.292	0mm	118.0	1.62	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 52	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	CDMA BC1	Bottom Face	1.312	0mm	118.0	1.64	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 53	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B5	Bottom Face	1.332	0mm	118.0	1.66	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 54	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B4	Bottom Face	1.35	0mm	118.0	1.68	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 55	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	LTE B25	Bottom Face	1.344	0mm	118.0	1.67	0.02	Not required
	Bluetooth ANT1		0.33	0mm				

Case 56	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Bottom Face	1.181	0mm	118.0	2.00	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 57	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM850	Edge1	1.318	0mm	118.0	2.03	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

Case 58	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Bottom Face	1.182	0mm	118.0	2.00	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 59	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	GSM1900	Edge1	1.192	0mm	118.0	1.90	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

Case 60	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Bottom Face	1.232	0mm	118.0	2.05	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 61	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA V	Edge1	1.283	0mm	118.0	1.99	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

Case 62	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Bottom Face	1.321	0mm	118.0	2.14	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 63	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA IV	Edge1	1.34	0mm	118.0	2.05	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

Case 64	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	0.845	10mm	118.0	1.67	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 65	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Bottom Face	1.3	0mm	118.0	2.12	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

Case 66	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
	WCDMA II	Edge1	1.091	0mm	118.0	1.80	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 67	CDMA BC10	Bottom Face	1.294	0mm	118.0	2.11	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 68	CDMA BC10	Edge1	1.32	0mm	118.0	2.03	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 69	CDMA BC0	Bottom Face	1.292	0mm	118.0	2.11	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 70	CDMA BC0	Edge1	1.35	0mm	118.0	2.06	0.03	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 71	CDMA BC1	Bottom Face	0.961	10mm	118.0	1.78	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 72	CDMA BC1	Edge1	0.947	10mm	118.0	1.66	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 73	CDMA BC1	Bottom Face	1.312	0mm	118.0	2.13	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 74	CDMA BC1	Edge1	1.165	0mm	118.0	1.88	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 75	LTE B17	Bottom Face	1.048	0mm	118.0	1.87	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 76	LTE B13	Bottom Face	1.184	0mm	118.0	2.00	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 77	LTE B13	Edge1	0.938	0mm	118.0	1.65	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 78	LTE B5	Bottom Face	1.332	0mm	118.0	2.15	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 79	LTE B5	Edge1	1.377	0mm	118.0	2.09	0.03	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 80	LTE B4	Bottom Face	1.35	0mm	118.0	2.17	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 81	LTE B4	Edge1	1.325	0mm	118.0	2.04	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 82	LTE B25	Bottom Face	0.857	10mm	118.0	1.68	0.02	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 83	LTE B25	Edge1	0.972	10mm	118.0	1.68	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 84	LTE B25	Bottom Face	1.344	0mm	118.0	2.16	0.03	Not required
	5GHz WLAN ANT1		0.82	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 85	LTE B25	Edge1	1.323	0mm	118.0	2.03	0.02	Not required
	5GHz WLAN ANT1		0.71	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 86	WCDMA IV	Bottom Face	1.321	0mm	158.0	1.67	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 87	WCDMA II	Bottom Face	1.3	0mm	158.0	1.65	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 88	CDMA BC10	Bottom Face	1.294	0mm	158.0	1.64	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 89	CDMA BC0	Bottom Face	1.292	0mm	158.0	1.64	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 90	CDMA BC1	Bottom Face	1.312	0mm	158.0	1.66	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 91	LTE B5	Bottom Face	1.332	0mm	158.0	1.68	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 92	LTE B4	Bottom Face	1.35	0mm	158.0	1.70	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

	Band	Position	SAR (W/kg)	Gap (cm)	Minimum Distance (mm)	Summed SAR (W/kg)	SPLSR Results	Simultaneous SAR
Case 93	LTE B25	Bottom Face	1.344	0mm	158.0	1.69	0.01	Not required
	5GHz WLAN ANT2		0.35	0mm				

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17. Uncertainty Assessment

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[a]	1/k[b]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Table 16.1. Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

Error Description	Uncertainty Value (±%)	Probability	Divisor	(Ci) 1g	(Ci) 10g	Standard Uncertainty (1g) (±%)	Standard Uncertainty (10g) (±%)
Measurement System							
Probe Calibration	6.0	N	1	1	1	6.0	6.0
Axial Isotropy	4.7	R	1.732	0.7	0.7	1.9	1.9
Hemispherical Isotropy	9.6	R	1.732	0.7	0.7	3.9	3.9
Boundary Effects	1.0	R	1.732	1	1	0.6	0.6
Linearity	4.7	R	1.732	1	1	2.7	2.7
System Detection Limits	1.0	R	1.732	1	1	0.6	0.6
Modulation Response	3.2	R	1.732	1	1	1.8	1.8
Readout Electronics	0.3	N	1	1	1	0.3	0.3
Response Time	0.0	R	1.732	1	1	0.0	0.0
Integration Time	2.6	R	1.732	1	1	1.5	1.5
RF Ambient Noise	3.0	R	1.732	1	1	1.7	1.7
RF Ambient Reflections	3.0	R	1.732	1	1	1.7	1.7
Probe Positioner	0.4	R	1.732	1	1	0.2	0.2
Probe Positioning	2.9	R	1.732	1	1	1.7	1.7
Max. SAR Eval.	2.0	R	1.732	1	1	1.2	1.2
Test Sample Related							
Device Positioning	3.0	N	1	1	1	3.0	3.0
Device Holder	3.6	N	1	1	1	3.6	3.6
Power Drift	5.0	R	1.732	1	1	2.9	2.9
Power Scaling	0.0	R	1.732	1	1	0.0	0.0
Phantom and Setup							
Phantom Uncertainty	6.1	R	1.732	1	1	3.5	3.5
SAR correction	0.0	R	1.732	1	0.84	0.0	0.0
Liquid Conductivity Repeatability	0.2	N	1	0.78	0.71	0.1	0.1
Liquid Conductivity (target)	5.0	R	1.732	0.78	0.71	2.3	2.0
Liquid Conductivity (mea.)	2.5	R	1.732	0.78	0.71	1.1	1.0
Temp. unc. - Conductivity	3.4	R	1.732	0.78	0.71	1.5	1.4
Liquid Permittivity Repeatability	0.15	N	1	0.23	0.26	0.0	0.0
Liquid Permittivity (target)	5.0	R	1.732	0.23	0.26	0.7	0.8
Liquid Permittivity (mea.)	2.5	R	1.732	0.23	0.26	0.3	0.4
Temp. unc. - Permittivity	0.83	R	1.732	0.23	0.26	0.1	0.1
Combined Std. Uncertainty						11.4%	11.4%
Coverage Factor for 95 %						K=2	K=2
Expanded STD Uncertainty						22.9%	22.7%

Table 16.2. Uncertainty Budget for frequency range 300 MHz to 3 GHz

18. References

[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 447498 D01 v05r02, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Feb 2014

[6] FCC KDB 941225 D01 v03, “3G SAR MEAUREMENT PROCEDURES”, Oct 2014

[7] FCC KDB 941225 D05 v02r03, “SAR Evaluation Considerations for LTE Devices”, Dec 2013

[8] FCC KDB 616217 D04 v01r01, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, May 2013

[9] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[10] FCC KDB 865664 D02 v01r01, “RF Exposure Compliance Reporting and Documentation Considerations” May 2013.