KDB 865664 D01 SAR Measurement 100MHz to 6GHz
FCC 47 CFR part 2 (2.1093)

SAR EVALUATION REPORT

For

INARI10-LTDN-2
FCC ID: 2ABVH-INARI102

Tablet with cellular GPRS/EGPRS, WCDMA, DC-HSDPA & HSPA+, CDMA 1xRTT/ EVDO Rev A, LTE FDD Radio, IEEE 802.11a/b/g/n (MIMO 2x2) and Bluetooth Radio

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REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
--	28 July 2015	Initial Issue	--
1	28 August 2015	The following amendments were made in the report: 1. Attestation of test results revised in section 1 2. Section 2.1 and 2.2, updated the revision version of the KDB 3. Section 3, the ISO accreditation details added. 4. Section 4.2.1, typo amended. 5. Section 4.4, the typo in calibration date amended. 6. Section 5, typo in the titles corrected. 7. Section 6.1, the DUT description updated. 8. Section 6.2, the Bluetooth band Transmitter Frequency Allocation added. 9. Typo in distances in Section 7.1 table was amended. Note for 'Tilt' test exemption included in the section. 10. Section 7.2, the statement rephrased. 11. In Section 10.1, additional notes added to KDB 941225 D01 SAR test for 3G devices. 12. Typo in configuration type in Section 10.2.29 Wi-Fi 2.4GHz table was amended. 13. Simultaneous transmission tables in Sections 11.1, 11.2, 11.3, 11.4 was updated to reflect the changes caused during to typo in Section 10.2.29 14. Simultaneous transmission analysis Case 1 was updated to accommodate the change of result in Section 11.2	Sandhya Menon
2	04 September 2015	The following amendments were made in the report: 1. The Model number of the EUT is updated on front page and section 1.	Sandhya Menon

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1. Attestation of Test Results

Applicant Name:	Aava Mobile Oy				
Application Purpose	☒ Original Grant				
DUT Description	Tablet with cellular GPRS/EGPRS, WCDMA, DC-HSDPA & HSPA+, CDMA 1xRTT, EVDO Rev A, LTE FDD Radio, IEEE 802.11a/b/g/n (MIMO 2x2) and *Bluetooth* Radio				
Model:	INARI10-LTDN-2				
Test Device is	An identical prototype				
Device category	Portable				
Exposure Category	General Population/Uncontrolled Exposure (1g SAR limit: 1.6 W/kg)				
Date Tested	01 June 2015 to 15 July 2015				
The highest reported SAR values	RF Exposure Conditions	Equipment Class			
		Licensed	DTS	DSS	UNII
	Body	1.315 W/kg	0.542 W/kg	0.121 W/kg	1.320 W/kg
	Simultaneous Transmission	1.588 W/kg	1.362 W/kg	1.270 W/kg	1.588 W/kg
Applicable Standards	FCC 47 CFR part 2 (2.1093) KDB publication IEEE Std 1528-2013				
Test Results	Pass				

UL VS Limited tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL VS Limited based on interpretations and/or observations of test results. Measurement Uncertainties are in accordance with the above standard and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample(s), under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL VS Limited and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL VS Limited will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by UKAS. This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released By:	Prepared By:
Naseer Mirza Project Lead UL VS Limited	Sandhya Menon Senior Engineer UL VS Limited

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2. Test Specification, Methods and Procedures

2.1. Test Specification

Reference:	KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
Title:	SAR Measurement Requirements for 100 MHz to 6 GHz
Purpose of Test:	Field probes, tissue dielectric properties, SAR scans, measurement accuracy and variability of the measured results are discussed. The field probe and SAR scan requirements are derived from criteria considered in standard IEEE 1528-2013.
The Equipment Under Test complied with the Specific Absorption Rate for general population/uncontrolled exposure limit of 1.6 W/kg as specified in FCC 47 CFR part 2 (2.1093).	

2.2. Methods and Procedures Reference Documentation

The test documents in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, the following FCC Published RF exposure KDB procedures and TCB methods and procedures workshop updates:

IEEE 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

FCC KDB Publications:
248227 D01 802 11 W-Fi SAR v02r01
447498 D01 General RF Exposure Guidance v05r02
616217 D04 SAR for laptop and tablets v01r01
865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
865664 D02 RF Exposure Reporting v01r01
941225 D01 3G SAR Procedures v03
941225 D05 SAR for LTE Devices v02r03

2.3. Definition of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the methods & procedures section above. Appendix 1 contains a list of the test equipment used.

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3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at

Pavilion A, Ashwood Park, Ashwood Way, Basingstoke, Hampshire, RG23 8BG UK	Facility Type
SAR Lab 57	Controlled Environment Chamber
SAR Lab 59	Controlled Environment Chamber
SAR Lab 60	Controlled Environment Chamber
SAR Lab 61	Controlled Environment Chamber

UL VS Limited is accredited by UKAS (United Kingdom Accreditation Service, Accredited to ISO/IEC 17025: 2005), Laboratory UKAS Code 0644.

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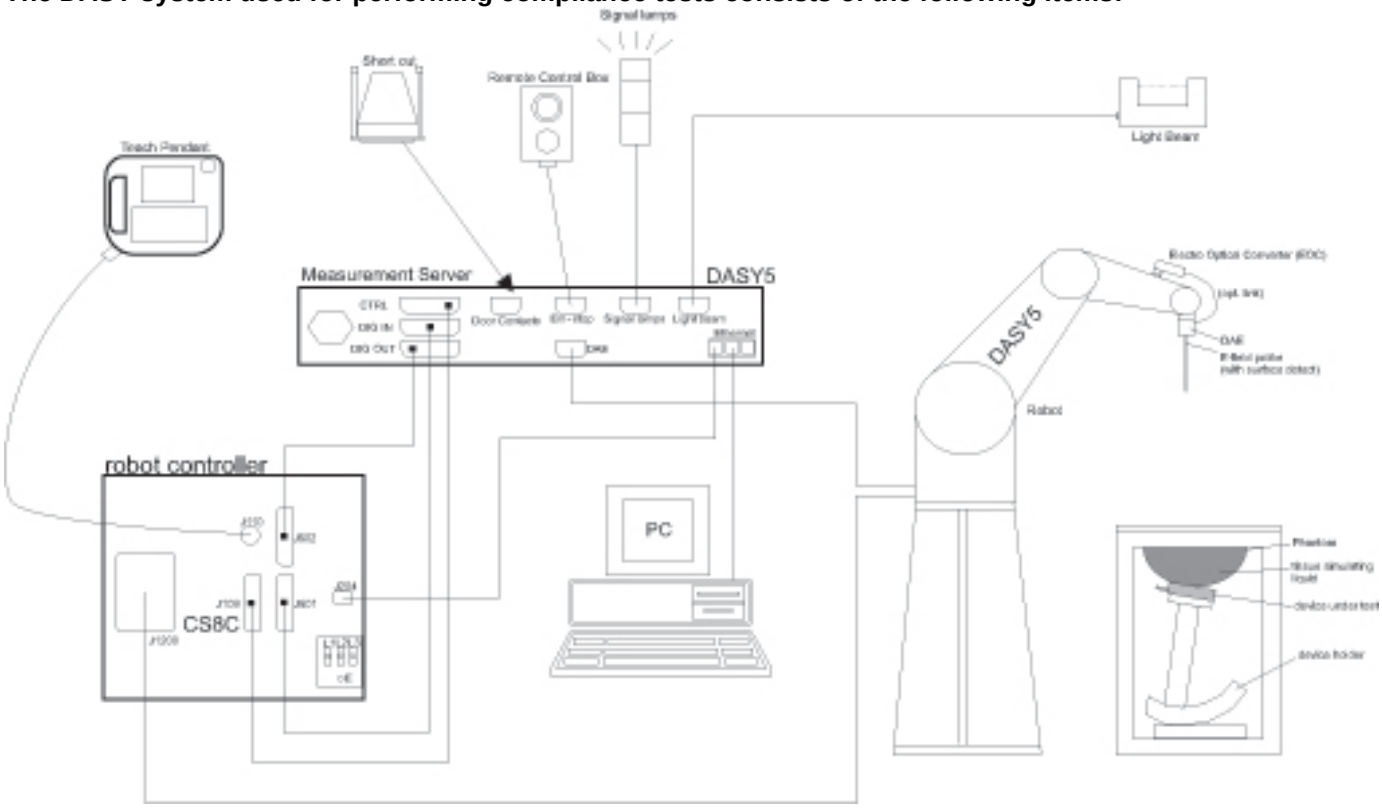
4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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 DASY 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.

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4.2. SAR Measurement Procedure

4.2.1. Normal SAR Measurement Procedure

Step 1: 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. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties

Step 2: 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 locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in following standards: IEEE 1528 -2013 and IEC 62209-1: 2005 / IEC 62209-2: 2010 standards. 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 KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 mm ± 1 mm	½·δ·ln(2) mm ± 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.	

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Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose 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 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04

			≤ 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	$\leq 1.5 \cdot \Delta z_{Zoom}(n-1)$	
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.

Step 4: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z- direction.

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4.3. Volumetric Scan Procedure

Step 1: Repeat Step 1-4 in Section 4.3

Step 2: Volume Scan

Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

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4.4. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
A1097	SMA Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
M1755	DAK Fluid Probe	SPEAG	SM DAK 040 CA	1089	Calibrated before use	-
A2546	Data Acquisition Electronics	SPEAG	DAE4	1435	20 Feb 2015	12
A2111	Data Acquisition Electronics	SPEAG	DAE3	432	20 Aug 2014	12
A1234	Data Acquisition Electronics	SPEAG	DAE3	450	16 Sept 2014	12
A2544	Probe	SPEAG	EX3 DV4	3994	17 Mar 2015	12
A2243	Probe	SPEAG	ES3 DV3	3304	21 Aug 2014	12
A2436	Probe	SPEAG	ES3 DV3	3335	29 Aug 2014	12
A2545	Probe	SPEAG	EX3 DV4	3995	28 April 2015	12
A2077	Probe	SPEAG	EX3 DV4	3814	18 Sep 2014	12
A1985	750 MHz Dipole Kit	SPEAG	D750V3	1011	16 Jan 2015	12
A2201	900 MHz Dipole Kit	SPEAG	D900V2	035	23 Jan 2015	12
A1190	1800 MHz Dipole Kit	SPEAG	D1800V2	264	18 Aug 2014	12
A1237	1900 MHz Dipole Kit	SPEAG	D1900V2	540	08 Dec 2014	12
A1322	2450 MHz Dipole Kit	SPEAG	D2450V2	725	08 Dec 2014	12
A1377	5GHz GHz Dipole Kit	SPEAG	D5GHzV2	1016	24 Feb 2015	12
A1531	Antenna	AARONIA AG	7025	02458	-	-
C1145	Cable	Rosenberger MICRO-COAX	FA147A F003003030	41843-1	Calibrated as part of system	-
GO591	Robot Power Supply	SPEAG	DASY4	None	Calibrated before use	-
G0610	Robot Power Supply	SPEAG	DASY52	None	Calibrated before use	-
G0611	Robot Power Supply	SPEAG	DASY52	None	Calibrated before use	-
G0612	Robot Power Supply	SPEAG	DASY52	None	Calibrated before use	-
G087	PSU	Thurlby Thandar	CPX200	100701	Calibrated before use	-
M1653	Robot Arm	Staubli	RX908 L	F01/5J8 6A1/C/01	Calibrated before use	-
M1875	Robot Arm	Staubli	TX60 L	F13/5SC6F1/A/01	Calibrated before use	-
M1876	Robot Arm	Staubli	TX60 L	F14/5T5ZA1/A/01	Calibrated before use	-
M1877	Robot Arm	Staubli	TX60 L	F14/5UA6A1/A/01	Calibrated before use	-
M1755	DAK Fluid Probe	SPEAG	SM DAK 040 CA	1089	Calibrated before use	-
M1855	Power Sensor	R & S	NRP-Z51	103246	05 May 2015	12
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	26 Oct 2014	12
A2621	Digital Camera	Nikon	S3600	41010357	-	-
M1908	Signal Generator	R & S	SMIQ03B	1125555503	02 Dec 2014	12
M1839	Signal Generator	R & S	SME06	837633/001	27 Mar 2015	12
M1838	Signal Generator	R & S	SME06	831377/005	16 Apr 2015	12
M1841	Dual Channel Power Meter	R & S	NRVD	834501/069	27 Mar 2015	12
M1023	Dual Channel Power Meter	R & S	NRVD	863715/030	01 May 2015	12
M1840	Dual Channel Power Meter	R & S	NRVD	844860/040	30 Apr 2015	12
M1044	Power Sensor	R & S	ZRPZ1	893350/0019	03 Sep 2014	12
M1842	Power Sensor	R & S	ZRPZ1	890212/015	27 Mar 2015	12

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UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M1635	Power Sensor	R & S	ZRPZ1	826515/015	01 May 2015	12
M1848	Power Sensor	R & S	ZRPZ1	831430/004	16 Apr 2015	12
M1847	Power Sensor	R & S	ZRPZ1	831430/003	20 Apr 2015	12
A2100	Directional Coupler	RF-Lambda	11101300748	None	Calibrated as part of system	-
A2099	Directional Coupler	RF-Lambda	11101300747	None	Calibrated as part of system	-
A1097	Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-

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4.5. SAR System Specifications

Robot System	
Positioner:	Stäubli Unimation Corp. Robot Model: RX90L
Repeatability:	0.025 mm
No. of Axis:	6
Serial Number(s):	F01/5J86A1/C/01
Reach:	1185 mm
Payload:	3.5 kg
Control Unit:	CS7
Programming Language:	V+
Robot System	
Positioner:	Stäubli Unimation Corp. Robot Model: TX60L
Repeatability:	±0.030 mm
No. of Axis:	6
Serial Number:	F13/5SC6F1/A/01 F14/5T5ZA1/A/01 F14/5UA6A1/A/01
Reach:	920 mm
Payload:	2.0 kg
Control Unit:	CS8C
Programming Language:	V+
Data Acquisition Electronic (DAE) System	
Serial Number:	DAE3 SN: 450, 432
Serial Number:	DAE4 SN: 1435
PC Controller	
PC:	Dell Precision 340
Operating System:	Windows 2000
Data Card:	DASY4 Measurement Server
Serial Number:	1080

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SAR System Specifications (Continued)

Data Converter	
Features:	Signal Amplifier, multiplexer, A/D converted and control logic.
Software:	DASY4 Software
Connecting Lines:	Optical downlink for data and status info. Optical uplink for commands and clock.
PC Interface Card	
Function:	24 bit (64 MHz) DSP for real time processing Link to DAE3 16 nit A/D converter for surface detection system serial link to robot direct emergency stop output for robot.
E-Field Probe	
Model:	EX3DV4
Serial No:	3814; 3994; 3995
Construction:	Triangular core
Frequency:	10 MHz to >6 GHz
Linearity:	±0.2 dB (30 MHz to 6 GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	9
Tip Diameter (mm):	2.5
Sensor X Offset (mm):	1
Sensor Y Offset (mm):	1
Sensor Z Offset (mm):	1
E-Field Probe	
Model:	ES3DV3
Serial No:	3304; 3335
Construction:	Triangular core
Frequency:	10 MHz to >4 GHz
Linearity:	±0.2 dB (30 MHz to 4 GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	10
Tip Diameter (mm):	4
Sensor X Offset (mm):	2
Sensor Y Offset (mm):	2
Sensor Z Offset (mm):	2
Phantom	
Phantom:	Eli Phantom
Shell Material:	Fibreglass
Thickness:	2.0 ±0.1 mm

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5. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document “approximately” is interpreted as meaning “effectively” or “for most practical purposes”.

Test Name	Confidence Level	Calculated Uncertainty
Specific Absorption Rate- GSM / GPRS / EDGE 850 / WCDMA FDD 5 / CDMA BC 0 / CDMA BC10 / LTE Band 5 / LTE Band 13 / LTE Band 17 Body Configuration 1g	95%	±18.36%
Specific Absorption Rate-WCDMA FDD 4 / LTE Band 4 Body Configuration 1g	95%	±18.45%
Specific Absorption Rate- PCS / GPRS / EDGE 1900 / WCDMA FDD 2 / CDMA BC1 / LTE Band 2 / LTE Band 25 Body Configuration 1g	95%	±18.26%
Specific Absorption Rate-Wi-Fi 2450 MHz Body Configuration 1g	95%	±18.35%
Specific Absorption Rate-Wi-Fi 5GHz Body Configuration 1g	95%	±19.90%

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed. The assessment is based on overall worst case scenario on the frequency range rather than technology.

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5.1. Uncertainty -GSM / GPRS / EDGE 850 / WCDMA FDD 5 / CDMA BC 0 / CDMA BC10 / LTE Band 5 / LTE Band 13 / LTE Band 17 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (1g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration /Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.510	2.510	normal (k=1)	1.0000	1.0000	2.510	2.510	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	2.000	2.000	normal (k=1)	1.0000	0.6400	1.280	1.280	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	1.560	1.560	normal (k=1)	1.0000	0.6000	0.936	0.936	5
	Combined standard uncertainty			t-distribution			9.37	9.37	>500
	Expanded uncertainty			k = 1.96			18.36	18.36	>500

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5.2. Uncertainty -WCDMA FDD 4 / LTE Band 4 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (1g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration/ Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.460	2.460	normal (k=1)	1.0000	1.0000	2.460	2.460	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	2.210	2.210	normal (k=1)	1.0000	0.6400	1.414	1.414	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	2.150	2.150	normal (k=1)	1.0000	0.6000	1.290	1.290	5
	Combined standard uncertainty			t-distribution			9.42	9.42	>500
	Expanded uncertainty			k = 1.96			18.45	18.45	>500

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5.3. Uncertainty -PCS / GPRS / EDGE 1900 / WCDMA FDD 2 / CDMA BC1 / LTE Band 2 / LTE Band 25 Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (1g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	1.730	1.730	Rectangular	1.7321	1.0000	0.999	0.999	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	1.860	1.860	normal (k=1)	1.0000	1.0000	1.860	1.860	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	2.610	2.610	normal (k=1)	1.0000	0.6400	1.670	1.670	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	2.140	2.140	normal (k=1)	1.0000	0.6000	1.284	1.284	5
	Combined standard uncertainty			t-distribution			9.32	9.32	>500
	Expanded uncertainty			k = 1.96			18.26	18.26	>500

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5.4. Uncertainty –Wi-Fi 2450 MHz Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (1g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.000	6.000	normal (k=1)	1.0000	1.0000	6.000	6.000	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	2.440	2.440	normal (k=1)	1.0000	1.0000	2.440	2.440	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	2.260	2.260	normal (k=1)	1.0000	0.6400	1.446	1.446	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	2.150	2.150	normal (k=1)	1.0000	0.6000	1.290	1.290	5
	Combined standard uncertainty			t-distribution			9.36	9.36	>500
	Expanded uncertainty			k = 1.96			18.35	18.35	>500

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5.5. Uncertainty - Wi-Fi 5GHz Body Configuration 1g

Type	Source of uncertainty	+ Value	- Value	Probability Distribution	Divisor	$c_{i\ (1g)}$	Standard Uncertainty		υ_i or υ_{eff}
							+ u (%)	- u (%)	
B	Probe calibration	6.550	6.550	normal (k=1)	1.0000	1.0000	6.550	6.550	∞
B	Axial Isotropy	0.250	0.250	normal (k=1)	1.0000	1.0000	0.250	0.250	∞
B	Hemispherical Isotropy	1.300	1.300	normal (k=1)	1.0000	1.0000	1.300	1.300	∞
B	Spatial Resolution	0.500	0.500	Rectangular	1.7321	1.0000	0.289	0.289	∞
B	Boundary Effect	0.769	0.769	Rectangular	1.7321	1.0000	0.444	0.444	∞
B	Linearity	0.600	0.600	Rectangular	1.7321	1.0000	0.346	0.346	∞
B	Detection Limits	0.200	0.200	Rectangular	1.7321	1.0000	0.115	0.115	∞
B	Readout Electronics	0.160	0.160	normal (k=1)	1.0000	1.0000	0.160	0.160	∞
B	Response Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	Integration Time	0.000	0.000	Rectangular	1.7321	1.0000	0.000	0.000	∞
B	RF Ambient conditions	3.000	3.000	Rectangular	1.7321	1.0000	1.732	1.732	∞
B	Probe Positioner Mechanical Restrictions	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Probe Positioning with regard to Phantom Shell	2.850	2.850	Rectangular	1.7321	1.0000	1.645	1.645	∞
B	Extrapolation and integration / Maximum SAR evaluation	5.080	5.080	Rectangular	1.7321	1.0000	2.933	2.933	∞
A	Test Sample Positioning	1.960	1.960	normal (k=1)	1.0000	1.0000	1.960	1.960	10
A	Device Holder uncertainty	0.154	0.154	normal (k=1)	1.0000	1.0000	0.154	0.154	10
B	Phantom Uncertainty	4.000	4.000	Rectangular	1.7321	1.0000	2.309	2.309	∞
B	Drift of output power	5.000	5.000	Rectangular	1.7321	1.0000	2.887	2.887	∞
B	Liquid Conductivity (target value)	5.000	5.000	Rectangular	1.7321	0.6400	1.848	1.848	∞
A	Liquid Conductivity (measured value)	4.370	4.370	normal (k=1)	1.0000	0.6400	2.797	2.797	5
B	Liquid Permittivity (target value)	5.000	5.000	Rectangular	1.7321	0.6000	1.732	1.732	∞
A	Liquid Permittivity (measured value)	4.270	4.270	normal (k=1)	1.0000	0.6000	2.562	2.562	5
	Combined standard uncertainty			t-distribution			10.15	10.15	>450
	Expanded uncertainty			k = 1.96			19.90	19.90	>450

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6. Device Under Test (DUT) Information

6.1. DUT Description

DUT Further Description:	The cellular bands support power reduction by proximity sensing. The details are included in section 7.1
Serial Number:	**The following samples were used to perform radiated SAR measurements:** BB44102654: SAR testing on all Cellular bands and WLAN 2.4GHz was performed on this sample BC50500342: SAR testing on all WLAN 5.0GHz and Bluetooth was performed on this sample **The following sample was used to perform conducted SAR measurements:** BB44102117: All Cellular bands BB44102103: All WLAN bands BB44102659: Bluetooth
Hardware Version Number:	RU
Software Version Number:	Windows Embedded 8.1 Industry Pro Build 9600 (module SWI9X15C_05.05.58.00)
Country of Manufacture:	Finland
Date of Receipt:	22 May 2015

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6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode	Duty Cycle
GSM	850, 1900	GPRS (GMSK) EGPRS (GMSK / 8PSK)	GPRS 1 Slot: 12.0%; 2 Slots: 25% EGPRS 1 Slot: 12.0%; 2 Slots: 25%, 3 Slots: 37.5%, 4 Slots: 50%
	GPRS Multi-Slot Class: ☐ Class 8 - One Up ☒ Class 10 - Two Up ☐Class 12 - Four Up EDGE Multi-Slot Class: ☐ Class 8 - One Up ☐Class 10 - Two Up ☒ Class 12 - Four Up		
W-CDMA (FDD)	Band 2 / 4 / 5	WCDMA Rel. 99 (Voice & Data) HSDPA (Rel. 5) HSUPA (Rel. 6) DC-HSDPA (Rel. 7) HSPA+ (Rel. 9)	Rel. 99: 100%
CDMA	BC 0/1/10	1xRTT EVDO Rev A	100%
LTE (FDD)	Band 2 / 4 / 5 / 13 / 17 / 25	QPSK 16QAM	100%
	Does this device SV-LTE (1xRTT-LTE)? ☐Yes ☒ No		
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20) 802.11n (HT40)	100%
	5.0 GHz	802.11a 802.11n (HT20) 802.11n (HT40)	100%
Bluetooth	2.4 GHz	BR EDR BLE	31%

Transmitter Frequency Range:	GSM850	(824 to 849) MHz
	PCS1900	(1850 to 1910) MHz
	WCDMA FDD 2	(1852 to 1908) MHz
	WCDMA FDD 4	(1712 to 1753) MHz
	WCDMA FDD 5	(826 to 847) MHz
	CDMA BC0	(824 to 849) MHz
	CDMA BC1	(1851 to 1909) MHz
	CDMA BC10	(817 to 824) MHz
	LTE Band 2	(1850 to 1910) MHz
	LTE Band 4	(1710 to 1755) MHz
	LTE Band 5	(820 to 850) MHz
	LTE Band 13	(775 to 790) MHz
	LTE Band 17	(705 to 715) MHz
	LTE Band 25	(1850 to 1915) MHz
	2.4 GHz Wi-Fi 802.11b/g/n	(2412 to 2462) MHz
	5.0 GHz Sub band 1 - Wi-Fi 802.11a/n	(5180 to 5240) MHz
	5.0 GHz Sub band 2A - Wi-Fi 802.11a/n	(5260 to 5320) MHz
	5.0 GHz Sub band 2C - Wi-Fi 802.11a/n	(5500 to 5700) MHz
	5.0 GHz Sub band 3 - Wi-Fi 802.11a/n	(5745 to 5825) MHz
	Bluetooth	(2402 to 2480) MHz

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Wireless Technologies (Continued):

Transmitter Frequency Allocation of EUT When Under Test:	Bands	Channel Number	Channel Description	Frequency (MHz)
	GSM850	128	Low	824.2
		190	Middle	836.6
		251	High	848.8
	PCS1900	512	Low	1850.2
		661	Middle	1880.0
		810	High	1909.8
	WCDMA FDD 2	9262	Low	1852.4
		9400	Middle	1880.0
		9538	High	1907.6
	WCDMA FDD 4	1312	Low	1712.4
		1412	Middle	1732.6
		1513	High	1752.6
	WCDMA FDD 5	4132	Low	826.4
		4183	Middle	836.6
		4233	High	846.6
	CDMA BC 0	1013	Low	824.70
		384	Middle	836.52
		777	High	848.31
	CDMA BC 1	25	Low	1851.25
		600	Middle	1880.00
		1175	High	1908.75
	CDMA BC 10	476	Low	817.90
		580	Middle	820.50
		684	High	823.10
	LTE Band 2	18700	Low	1860.0
		18900	Middle	1880.0
		19100	High	1900.0
	LTE Band 4	20050	Low	1720.0
		20175	Middle	1732.5
		20300	High	1745.0

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Transmitter Frequency Allocation of EUT When Under Test:	Bands	Channel Number	Channel Description	Frequency (MHz)
	LTE Band 5	20450	Low	829.0
		20525	Middle	836.5
		20625	High	844.0
	LTE Band 13	23780	Low	709.0
		23790	Middle	710.0
		23800	High	711.0
	LTE Band 17	24250	Low	842.0
		24300	Middle	847.0
		24350	High	852.0
	LTE Band 25	26140	Low	1860.0
		26365	Middle	1882.5
		26590	High	1905.0
	Bluetooth EDR	0	Low	2402.0
		39	Middle	2441.0
		78	High	2480.0
	Bluetooth LE	0	Low	2402.0
		18	Middle	2442.0
		39	High	2480.0

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Wireless Technologies (Continued):

Transmitter Frequency Allocation of EUT When Under Test:	Band: 2.4 / 5.0 GHz Wi-Fi 802.11a/n (HT20 / HT40)				
	Rule	**20 MHz BW Ch.#**	**Frq. (MHz)**	**40 MHz BW Ch.#**	**Frq. (MHz)**
	15.247	1	2412.0		
		6	2436.0		
		11	2462.0		
	5.2 U-NII-1	36	5180.0	38	5190.0
		40	5200.0		
		44	5220.0	46	5230.0
		48	5240.0		
	5.3 U-NII-2A	52	5260.0	54	5270.0
		56	5280.0		
		60	5300.0	62	5310.0
		64	5320.0		
	5.6 U-NII-2C	100	5500.0	102	5510.0
		104	5520.0		
		108	5540.0	110	5550.0
		112	5560.0		
		116	5580.0	118	5590.0
		120	5600.0		
		124	5620.0	126	5630.0
		128	5640.0		
		132	5660.0	134	5670.0
		136	5680.0		
		140	5700.0		
	5.8 UNII-3	149	5745.0	151	5755.0
		153	5765.0		
		157	5785.0	159	5795.0
		161	5805.0		
		165	5825.0		
Antenna Type:	Internal integral				
Antenna Length:	As specified in Appendix 12.1				
Number of Antenna Positions:	WWAN ~ LTE / WCDMA / GSM (Cellular Main)			1 fixed	
	WWAN ~ LTE / WCDMA / GSM (Cellular Diversity – Rx only)			1 fixed	
	WLAN/ BT (Main)			1 fixed	
	WLAN (AUX)			1 fixed	
	NFC			1 fixed	
	GPS			1 fixed	

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6.3. Nominal and Maximum Output Power

(From customer)

		RF Output Power (dBm)	
RF Air interface	**Mode**	**Target**	**Max. tune-up tolerance limit**
GSM850 (Proximity Sensor Deactivated)	GPRS / EGPRS 1 slot (GMSK)	32.0	-1.0~+1.0
	GPRS / EGPRS 2 slots (GMSK)	32.0	-1.0~+1.0
	GPRS / EGPRS 3 slots (GMSK)	28.5	-1.0~+1.0
	GPRS / EGPRS 4 slots (GMSK)	26.5	-1.0~+1.0
	EGPRS 1 slot (8PSK)	27.0	-1.0~+1.0
	EGPRS 2 slots (8PSK)	27.0	-1.0~+1.0
	EGPRS 3 slots (8PSK)	27.0	-1.0~+1.0
	EGPRS 4 slots (8PSK)	27.0	-1.0~+1.0
GSM850 (Proximity Sensor Active)	GPRS / EGPRS 1 slot (GMSK)	25.5	-1.0~+1.0
	GPRS / EGPRS 2 slots (GMSK)	22.5	-1.0~+1.0
	GPRS / EGPRS 3 slots (GMSK)	20.5	-1.0~+1.0
	GPRS / EGPRS 4 slots (GMSK)	19.5	-1.0~+1.0
	EGPRS 1 slot (8PSK)	26.0	-1.0~+1.0
	EGPRS 2 slots (8PSK)	23.0	-1.0~+1.0
	EGPRS 3 slots (8PSK)	21.0	-1.0~+1.0
	EGPRS 4 slots (8PSK)	20.0	-1.0~+1.0
PCS1900 (Proximity Sensor Deactivated)	GPRS / EGPRS 1 slot (GMSK)	29.0	-1.0~+1.0
	GPRS / EGPRS 2 slots (GMSK)	29.0	-1.0~+1.0
	GPRS / EGPRS 3 slots (GMSK)	26.5	-1.0~+1.0
	GPRS / EGPRS 4 slots (GMSK)	25.5	-1.0~+1.0
	EGPRS 1 slot (8PSK)	26.0	-1.0~+1.0
	EGPRS 2 slots (8PSK)	26.0	-1.0~+1.0
	EGPRS 3 slots (8PSK)	26.0	-1.0~+1.0
	EGPRS 4 slots (8PSK)	26.0	-1.0~+1.0
PCS1900 (Proximity Sensor Active)	GPRS / EGPRS 1 slot (GMSK)	22.0	-1.0~+1.0
	GPRS / EGPRS 2 slots (GMSK)	19.0	-1.0~+1.0
	GPRS / EGPRS 3 slots (GMSK)	17.0	-1.0~+1.0
	GPRS / EGPRS 4 slots (GMSK)	16.0	-1.0~+1.0
	EGPRS 1 slot (8PSK)	22.0	-1.0~+1.0
	EGPRS 2 slots (8PSK)	19.0	-1.0~+1.0
	EGPRS 3 slots (8PSK)	17.0	-1.0~+1.0
	EGPRS 4 slots (8PSK)	16.0	-1.0~+1.0
WCDMA FDD 2 (Proximity Sensor Deactivated)	R99	23.0	-1.0 ~ +1.0
WCDMA FDD 2 (Proximity Sensor Active)	R99	14.0	-1.0 ~ +1.0
WCDMA FDD 4 (Proximity Sensor Deactivated)	R99	23.0	-1.0 ~ +1.0
WCDMA FDD 4 (Proximity Sensor Active)	R99	13.0	-1.0 ~ +1.0
WCDMA FDD 5 (Proximity Sensor Deactivated)	R99	23.0	-1.0 ~ +1.0
WCDMA FDD 5 (Proximity Sensor Active)	R99	17.0	-1.0 ~ +1.0

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Nominal and Maximum Output Power (Continued)

		RF Output Power (dBm)	
RF Air interface	**Mode**	**Target**	**Max. tune-up tolerance limit**
CDMA BC 0 (Proximity Sensor Deactivated)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 0 (Proximity Sensor Active)	SSMA	17.0	-1.0 ~ +0.5
CDMA BC 1 (Proximity Sensor Deactivated)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 1 (Proximity Sensor Active)	SSMA	13.0	-1.0 ~ +0.5
CDMA BC 10 (Proximity Sensor Deactivated)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 10 (Proximity Sensor Active)	SSMA	17.0	-1.0 ~ +0.5
LTE Band 2 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 2 (Proximity Sensor Active)	QPSK (1RB)	12.5	-1.0 ~ +1.0
	QPSK (50%RB)	12.5	-1.0 ~ +1.0
	QPSK (100%RB)	12.5	-1.0 ~ +1.0
LTE Band 4 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 4 (Proximity Sensor Active)	QPSK (1RB)	12.0	-1.0 ~ +1.0
	QPSK (50%RB)	12.0	-1.0 ~ +1.0
	QPSK (100%RB)	12.0	-1.0 ~ +1.0
LTE Band 5 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 5 (Proximity Sensor Active)	QPSK (1RB)	16.0	-1.0 ~ +1.0
	QPSK (50%RB)	16.0	-1.0 ~ +1.0
	QPSK (100%RB)	16.0	-1.0 ~ +1.0
LTE Band 13 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 13 (Proximity Sensor Active)	QPSK (1RB)	18.0	-1.0 ~ +1.0
	QPSK (50%RB)	18.0	-1.0 ~ +1.0
	QPSK (100%RB)	18.0	-1.0 ~ +1.0

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Nominal and Maximum Output Power (Continued)

		RF Output Power (dBm)	
RF Air interface	**Mode**	**Target**	**Max. tune-up tolerance limit**
LTE Band 17 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 17 (Proximity Sensor Active)	QPSK (1RB)	18.0	-1.0 ~ +1.0
	QPSK (50%RB)	18.0	-1.0 ~ +1.0
	QPSK (100%RB)	18.0	-1.0 ~ +1.0
LTE Band 25 (Proximity Sensor Deactivated)	QPSK (1RB)	23.0	-1.0 ~ +1.0
	QPSK (50%RB)	22.0	-1.0 ~ +1.0
	QPSK (100%RB)	22.0	-1.0 ~ +1.0
LTE Band 25 (Proximity Sensor Active)	QPSK (1RB)	12.5	-1.0 ~ +1.0
	QPSK (50%RB)	12.5	-1.0 ~ +1.0
	QPSK (100%RB)	12.5	-1.0 ~ +1.0

		RF Output Power (dBm)		
RF Air interface	**Mode**	**Maximum Power Including Upper Tolerance**		
		SISO Ant 1 (Main)	**SISO Ant 2 (Aux)**	**MIMO Ant 1 + Ant 2**
Wi-Fi 2.4 GHz	802.11b	12.0	12.0	12.0
	802.11g	12.0	12.0	12.0
	802.11n HT20	12.0	12.0	12.0
Wi-Fi 5.2 / 5.3 / 5.5 GHz	802.11a	13.0	13.0	13.0
	802.11n HT20	12.0	12.0	12.0
	802.11n HT40	12.0	12.0	12.0
Wi-Fi 5.8 GHz	802.11a	12.0	12.0	12.0
	802.11n HT20	11.0	11.0	11.0
	802.11n HT40	11.0	11.0	11.0
Bluetooth	EDR (GFSK)	9.0	-	-
	EDR (DQPSK)	6.0	-	-
	EDR (8-PSK)	6.0	-	-
	LE	10.0	-	-

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7. RF Exposure Conditions

7.1. Power Reduction by Proximity Sensing

EUT uses capacitive proximity sensing to reduce the power in the cellular mode. The proximity sensor does have an effect to WLAN and Bluetooth bands. Refer Appendix 12.1 for Antenna schematics.

Since the proximity sensing elements are placed on two sides of the transmitting WWAN antenna and the fact that the traces also detect proximity, the antenna and sensor are not spatially offset and therefore proximity coverage area does not need to be determined as described in FCC 616217 D04 SAR v01r01.

Back and Side Triggering Distances: (From customer)
The Proximity sensors are located near the cellular main antenna and trigger on the 'Back' and on the 'Top Edge' of the EUT.

SAR proximity sensor's detection distance was determined as described in FCC 616217 D04, SAR v01r01 paragraph 6.2:

Back side trigger 3mm steps													
40mm	37mm	34mm	31mm	28mm	25mm	22mm	19mm	16mm	13mm	10mm	7mm	4mm	0mm
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON

Back side trigger 1mm steps													
18mm	17mm	16mm	15mm	14mm	13mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	0mm
OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

Top edge trigger 3mm steps													
40mm	37mm	34mm	31mm	28mm	25mm	22mm	19mm	16mm	13mm	10mm	7mm	4mm	0mm
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON

Top edge trigger 1mm steps													
15mm	14mm	13mm	12mm	11mm	10mm	9mm	8mm	7mm	6mm	5mm	4mm	3mm	0mm
OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

Tilt angle test, distance 13mm													
-50°	-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	50°	60°
OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON

The most conservative human proximity detection distances are 13mm for top edge and 15mm for back side. It is made sure that the tablet can be tilted at least ±45 degrees along the top edge at 13mm distance without restoring full output power.

Since the 'Tilt Sensor' is triggered only at a separation distance of 13mm from the top edge, testing at a more conservative distance of 12mm from the top edge is carried out without tilting the device.

SAR Test Distances and Summary:

		Back Side	Front Side	Secondary Landscape (Top)	Primary Landscape (Bottom)	Secondary Portrait (Right)	Primary Portrait (Left)
2G/WCDMA	Full Power	Yes 14mm	N/A	Yes 12mm	No >5cm (1)	No >5cm (1)	Yes 0mm
	Reduced Power	Yes 0mm	N/A	Yes 0mm	No >5cm (1)	No >5cm (1)	No
WLAN/BT	Full Power	Yes 0mm	N/A	Yes 0mm	Yes 0mm	Yes 0mm	No >5cm (1)

Note:
1. The distance is 0mm to the flat phantom, and SAR evaluation is required for back side and the edges with the antenna within 5cm to the user.

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7.2. Test Configurations

According to the KDB 447498 D01 v05r02, for standalone SAR evaluation the test exclusion power condition is given by

$$\frac{Max\ Power, mW}{test\ distance, mm} . \sqrt{f(GHz)} \leq 3.0$$

for test separation distance ≤50mm. For test separation distance >50mm, the SAR test exclusion threshold is:

P_{TH} [mW] = [Power allowed at numeric threshold for 50mm + (test separation distance – 50 mm).(f(MHz)/150)] , 100 MHz < f < 1500 MHz

P_{TH} [mW] = [(Power allowed at numeric threshold for 50mm) + (test separation distance – 50 mm).10], 1500 MHz < f < 6 GHz

The closest antenna-to-EUT edge separation distances are mentioned in the table below:

(mm)	Front	Back	Left	Right	Top	Bottom
Cellular Main	*4.00*	*2.00*	*74.00*	*148.00*	*2.00*	*167.00*
Cellular Diversity	*4.00*	*2.00*	*2.00*	*257.00*	*41.00*	*95.00*
WLAN Main	*8.00*	*2.00*	*262.00*	*4.00*	*24.00*	*146.00*
WLAN AUX	*8.00*	*2.00*	*262.00*	*4.00*	*107.00*	*63.00*
GPS	*8.00*	*2.00*	*218.00*	*40.00*	*5.00*	*172.00*
NFC	*11.00*	*1.00*	*220.00*	*23.00*	*26.00*	*109.00*

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Test Configurations (Continued)

Band	Channel	Frequency (GHz)	Max Power (dBm)	Max Power (mW)	Front		Back		Left		Right		Top		Bottom	
					Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result
CELLULAR																
GSM850 2 Time slots	190	0.8365	27.0	498.88	N/A	N/A	5.00	16.00	74.00	297.80	148.00	710.50	5.00	16.00	167.00	816.50
PCS1900 2 Time slots	661	1.8800	24.0	250.03	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
UMTS 2	9400	1.8800	24.0	251.19	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
UMTS 4	1412	1.7324	24.0	251.19	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
UMTS 5	4183	0.8366	24.0	251.19	N/A	N/A	5.00	16.00	74.00	297.90	148.00	710.60	5.00	16.00	167.00	816.50
CMDA BC0	384	0.8365	24.5	281.84	N/A	N/A	5.00	16.00	74.00	297.80	148.00	710.50	5.00	16.00	167.00	816.50
CDMA BC1	600	1.8800	24.5	281.84	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
CDMA BC10	580	0.8205	24.5	281.84	N/A	N/A	5.00	16.00	74.00	295.30	148.00	700.10	5.00	16.00	167.00	805.00
LTE 2	18900	1.8800	24.0	251.19	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
LTE 4	20175	1.7325	24.0	251.19	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00
LTE 5	20525	0.8365	24.0	251.19	N/A	N/A	5.00	16.00	74.00	297.80	148.00	710.50	5.00	16.00	167.00	816.50
LTE 13	23230	0.7820	24.0	251.19	N/A	N/A	5.00	16.00	74.00	289.10	148.00	674.90	5.00	16.00	167.00	774.00
LTE 17	23790	0.7100	24.0	251.19	N/A	N/A	5.00	16.00	74.00	277.60	148.00	627.90	5.00	16.00	167.00	717.80
LTE 25	26365	1.8825	24.0	251.19	N/A	N/A	5.00	11.00	74.00	349.00	148.00	1089.00	5.00	11.00	167.00	1279.00

	Band	Channel	Frequency (GHz)	Max Power (dBm)	Max Power (mW)	Front		Back		Left		Right		Top		Bottom	
						Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result	Distance (mm)	SAR Test Exclusion Threshold Result
	WLAN / WPAN																
WLAN/ BT (MAIN)	WLAN 2.4	6	2.437	12.0	15.85	N/A	N/A	5.00	10.00	262.00	2216.00	5.00	10.00	24.00	47.00	146.00	1056.00
	WLAN 5.2	40	5.200	13.0	19.95	N/A	N/A	5.00	7.00	262.00	2186.00	5.00	7.00	24.00	32.00	146.00	1026.00
	WLAN 5.3	52	5.260	13.0	19.95	N/A	N/A	5.00	7.00	262.00	2185.00	5.00	7.00	24.00	31.00	146.00	1025.00
	WLAN 5.5	100	5.500	13.0	19.95	N/A	N/A	5.00	6.00	262.00	2184.00	5.00	6.00	24.00	31.00	146.00	1024.00
	WLAN 5.8	165	5.825	12.0	15.85	N/A	N/A	5.00	6.00	262.00	2182.00	5.00	6.00	24.00	30.00	146.00	1022.00
	Bluetooth 2.4	39	2.439	10.0	10.00	N/A	N/A	5.00	10.00	262.00	2216.00	5.00	10.00	24.00	47.00	146.00	1056.00
WLAN (AUX)	WLAN 2.4	11	2.462	15.85	15.849	N/A	N/A	5.00	10.00	262.00	2216.00	5.00	10.00	107.00	666.00	63.00	226.00
	WLAN 5.2	40	5.200	19.95	19.953	N/A	N/A	5.00	7.00	262.00	2186.00	5.00	7.00	107.00	636.00	63.00	196.00
	WLAN 5.3	60	5.300	19.95	19.953	N/A	N/A	5.00	7.00	262.00	2185.00	5.00	7.00	107.00	635.00	63.00	195.00
	WLAN 5.5	100	5.500	19.95	19.953	N/A	N/A	5.00	6.00	262.00	2184.00	5.00	6.00	107.00	634.00	63.00	194.00
	WLAN 5.8	149	5.745	15.85	15.849	N/A	N/A	5.00	6.00	262.00	2182.00	5.00	6.00	107.00	632.00	63.00	192.00

Key

Qualified for Test Exclusion.

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8. Conducted output power measurements

8.1. RF Output Average Power Measurements: GSM850

8.1.1. GSM850 - Proximity Sensor Active

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	25.6	22.7	Not Supported		16.6	16.7	Not Supported	
190	836.6	25.6	22.7			16.6	16.7		
251	848.8	25.7	22.8			16.7	16.8		

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	25.7	22.6	20.8	19.7	16.7	16.6	16.5	16.7
190	836.6	25.7	22.7	20.7	19.6	16.7	16.7	16.4	16.6
251	848.8	25.5	22.8	20.6	19.6	16.5	16.8	16.3	16.6

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	26.7	23.6	21.3	20.4	17.7	17.6	17.0	17.4
190	836.6	26.6	23.6	21.4	20.4	17.6	17.6	17.1	17.4
251	848.8	26.6	23.6	21.4	20.3	17.6	17.6	17.1	17.3

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

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8.1.2. GSM850 - Proximity Sensor Deactivated

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	32.3	32.1	Not Supported		23.3	26.1	Not Supported	
190	836.6	32.2	32.0			23.2	26.0		
251	848.8	32.1	32.0			23.1	26.0		

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	32.2	32.1	28.5	26.4	23.2	26.1	24.2	23.4
190	836.6	32.1	32.0	28.5	26.4	23.1	26.0	24.2	23.4
251	848.8	32.1	32.3	28.3	26.3	23.4	26.1	24.0	23.3

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
128	824.2	27.2	26.9	26.8	26.8	18.2	20.9	22.5	23.8
190	836.6	27.1	27.0	26.8	26.7	18.1	21.0	22.5	23.7
251	848.8	27.0	26.9	26.7	26.6	18.0	20.9	22.4	23.6

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

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8.1.3. PCS1900 - Proximity Sensor Active

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	21.7	18.7	Not supported		12.7	12.7	Not supported	
661	1880.0	21.7	18.8			12.7	12.8		
810	1909.8	21.7	18.7			12.7	12.7		

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	21.7	18.7	16.6	15.7	12.7	12.7	12.3	12.7
661	1880.0	21.7	18.7	16.7	15.8	12.7	12.7	12.4	12.8
810	1909.8	21.7	18.7	16.6	15.7	12.7	12.7	12.3	12.7

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	21.9	19.1	17.1	16.1	12.9	13.1	12.8	13.1
661	1880.0	21.9	19.3	17.2	16.1	12.9	13.3	12.9	13.1
810	1909.8	21.8	19.1	17.0	15.9	12.8	13.1	12.7	12.9

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

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8.1.4. PCS1900 - Proximity Sensor Deactivated

GPRS (GMSK) – Coding Scheme: CS1

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	29.6	29.5	Not supported		20.6	23.5	Not supported	
661	1880.0	29.9	29.6			20.9	23.6		
810	1909.8	29.6	29.4			20.6	23.4		

EDGE (GMSK) – Coding Scheme: MCS4

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	29.5	29.4	26.8	25.6	20.5	23.4	22.5	22.6
661	1880.0	29.7	29.6	26.6	25.5	20.7	23.6	22.3	22.5
810	1909.8	29.6	29.4	26.6	25.6	20.6	23.4	22.3	22.6

EDGE (8PSK) – Coding Scheme: MCS9

Channel Number	Frequency (MHZ)	Avg Burst Power (dBm)				Frame Power (dBm)			
		1Uplink	2Uplink	3Uplink	4Uplink	1Uplink	2Uplink	3Uplink	4Uplink
512	1850.2	25.6	25.4	25.3	25.2	16.6	19.4	21.0	22.2
661	1880.0	25.6	25.4	25.3	25.1	16.6	19.4	21.0	22.1
810	1909.8	25.5	25.4	25.2	25.1	16.5	19.4	20.9	22.1

Note:

Scale factor for uplink time slot:

1. 1 Uplink: time slot ratio = 8:1 => 10*log(8/1) = **9.03 dB**
2. 2 Uplink: time slot ratio = 8:2 => 10*log(8/2) = **6.02 dB**
3. 3 Uplink: time slot ratio = 8:3 => 10*log(8/3) = **4.26 dB**
4. 4 Uplink: time slot ratio = 8:4 => 10*log(8/4) = **3.01 dB**

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8.2. RF Output Average Power Measurement: WCDMA

8.2.1. RMC / HSDPA / HSUPA - Proximity Sensor Active

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	13.5	13.5	13.0	13.1	12.1	10.9	11.6	11.4	12.9	14.0
	UL: 9400 DL: 9800	12.6	12.7	12.1	12.3	12.0	10.3	10.8	10.8	12.0	13.0
	UL: 9538 DL: 9938	13.3	13.3	12.8	12.9	11.7	10.7	11.3	11.3	12.5	13.7
1700 (Band 4)	UL: 1312 DL: 1537	11.5	11.7	11.2	11.1	10.9	9.9	10.5	10.3	11.5	12.2
	UL: 1412 DL: 1637	11.5	11.7	11.1	11.0	11.1	10.2	10.8	10.7	11.9	12.4
	UL: 1513 DL: 1738	11.3	11.4	10.8	10.8	10.3	9.5	10.0	9.9	11.2	12.1
Band 5 (850 MHz)	UL: 4132 DL: 4357	16.1	16.1	15.6	15.7	16.1	15.4	15.8	15.7	16.7	16.7
	UL: 4183 DL: 4408	16.0	16.1	15.6	15.6	16.0	15.5	15.6	15.6	16.6	16.6
	UL: 4233 DL: 4458	16.0	16.1	15.7	15.6	16.2	15.0	15.7	15.4	16.7	16.6
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
∆ACK, ∆NACK, ∆CQI		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

8.2.2. DC-HSDPA (Cat 24) - Proximity Sensor Active

Modes		DC-HSDPA (Cat 24)				WCDMA
Sets		1	2	3	4	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	12.0	11.4	12.0	11.3	14.0
	UL: 9400 DL: 9800	11.1	11.0	11.1	11.2	13.0
	UL: 9538 DL: 9938	11.7	11.3	11.7	11.6	13.7
1700 (Band 4)	UL: 1312 DL: 1537	10.4	11.0	10.3	10.3	12.2
	UL: 1412 DL: 1637	10.8	11.5	10.7	10.8	12.4
	UL: 1513 DL: 1738	10.7	11.2	10.6	10.6	12.1
Band 5 (850 MHz)	UL: 4132 DL: 4357	15.2	15.9	15.3	15.4	16.7
	UL: 4183 DL: 4408	15.4	15.6	15.4	15.3	16.6
	UL: 4233 DL: 4458	15.4	15.5	15.5	15.4	16.6
ßc		2	12	15	15	
ßd		15	15	8	4	
∆ACK, ∆NACK, ∆CQI		8	8	8	8	
AGV		-	-	-	-	

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8.3. RF Output Average Power Measurement: WCDMA

8.3.1. RMC / HSDPA / HSUPA - Proximity Sensor Deactivated

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	22.2	21.6	21.6	21.6	21.3	20.3	20.8	20.1	21.9	22.6
	UL: 9400 DL: 9800	22.2	21.7	21.7	21.7	21.2	20.7	21.1	20.6	21.9	22.7
	UL: 9538 DL: 9938	22.2	21.8	21.8	21.8	21.4	20.7	20.8	21.0	22.0	22.8
1700 (Band 4)	UL: 1312 DL: 1537	21.9	22.0	21.5	21.6	21.9	20.8	20.6	20.7	22.0	22.6
	UL: 1412 DL: 1637	22.0	22.0	21.5	21.5	22.0	20.5	21.0	20.7	22.0	22.7
	UL: 1513 DL: 1738	22.2	22.1	21.7	21.7	21.7	20.7	21.1	20.7	22.0	22.8
Band 5 (850 MHz)	UL: 4132 DL: 4357	22.1	22.1	21.7	21.7	22.1	20.8	21.2	20.4	22.1	22.6
	UL: 4183 DL: 4408	22.2	22.2	21.8	21.8	21.9	21.0	21.2	20.6	22.2	22.7
	UL: 4233 DL: 4458	22.0	22.1	21.6	21.6	22.1	20.7	20.8	20.9	22.1	22.5
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
∆ACK, ∆NACK, ∆CQI		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

8.3.2. DC-HSDPA (Cat 24) - Proximity Sensor Deactivated

Modes		DC-HSDPA (Cat 24)				WCDMA
Sets		1	2	3	4	Voice / RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	21.3	21.8	21.4	21.3	22.6
	UL: 9400 DL: 9800	21.4	21.8	21.4	21.4	22.7
	UL: 9538 DL: 9938	21.4	21.9	21.3	21.4	22.8
1700 (Band 4)	UL: 1312 DL: 1537	21.3	21.8	21.4	21.3	22.6
	UL: 1412 DL: 1637	21.4	21.9	21.4	21.5	22.7
	UL: 1513 DL: 1738	21.4	21.8	21.4	21.4	22.8
Band 5 (850 MHz)	UL: 4132 DL: 4357	21.3	22.0	21.4	21.3	22.6
	UL: 4183 DL: 4408	21.3	21.9	21.4	21.5	22.7
	UL: 4233 DL: 4458	21.4	22.0	21.4	21.4	22.5
ßc		2	12	15	15	
ßd		15	15	8	4	
∆ACK, ∆NACK, ∆CQI		8	8	8	8	
AGV		-	-	-	-	

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The module power levels were measured in both HSPA and 3G RMC 12.2kbps modes and compared to ensure the correct mode of operation had been established.

The following tables taken from FCC 3G SAR procedures (KDB 941225 D01 SAR test for 3G devices v02) below were applied using an wireless communications test set which supports 3G / HSDPA release 5 / HSUPA release 6.

Sub-test Setup for Release 5 HSDPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{hs} (1)	SM (dB)(2)
1	2/15	15/15	64	2/15	4/15	0.0
2	12/15(3)	15/15(3)	64	12/15(3)	24/15	1.0
3	15/15	8/15	64	15/8	30/15	1.5
4	15/15	4/15	64	15/4	30/15	1.5

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔ β_{hs} = 30/15 * β_c

Note 2: CM = 1 for β_c/β_d = 12/15, B_{hs}/β_c = 24/15

Note 3: 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

Sub-test Setup for Release 6 HSUPA

Sub-test	β_c	β_d	B_d *(SF)*	β_c/β_d	β_{hs} (1)	B_{oc}	B_{od}	B_{od} *(SF)*	B_{od} *(codes)*	CM(2) (dB)	MPR (dB)	AG(4) Index	E-TFCI
1	11/15(3)	15/15(3)	64	11/15(3)	22/15	209/225	1039/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	31/15	B_{al1}: 47/15 B_{al2}: 47/15	4	1	2.0	1.0	15	92
4	2/15	15/15	64	2/15	2/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15(4)	15/15(4)	64	15/15(4)	24/15	24/15	134/15	4	1	1.0	0.0	21	81

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 8 ⇔ $A_{hs} = \beta_{hs}/\beta_c$ = 30/15 ⇔ β_{hs} = 30/15 * β_c

Note 2: CM = 1 for β_c/β_d = 12/15, B_{hs}/β_c = 24/15. For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH AND E-DPCCH for the Power Back-off 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: Testing UE using E-DPDCH Physical Layer category 1 Sub-test 3 is not required according to TS 25.306 Tavle 5.1g.

Note 6: B_{od} can not be set directly; it is set by Absolute Grant Value.

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8.4. RF Output Average Power Measurement: CDMA

8.4.1. 1xRTT - Proximity Sensor Active

US Band Class 0

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
1013	824.70	17.1	17.1	17.2
384	836.52	17.1	17.0	17.0
777	848.31	17.1	16.8	17.1

US Band Class 1

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
25	1851.25	12.8	13.0	12.9
600	1880.00	12.5	12.6	12.6
1175	1908.75	12.9	13.0	13.1

US Band Class 10

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
476	817.90	17.0	16.9	17.0
580	820.50	17.0	17.0	17.0
684	823.10	17.0	17.1	17.0

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8.4.2. 1xEv-Do Rel. A - Proximity Sensor Active

US Band Class 0

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
1013	824.70	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	17.2
384	836.52			17.0
777	848.31			17.0

US Band Class 1

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
25	1851.25	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	13.0
600	1880.00			12.6
1175	1908.75			12.9

US Band Class 10

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
476	817.90	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	17.0
580	820.50			17.0
684	823.10			17.1

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8.5. RF Output Average Power Measurement: CDMA

8.5.1. 1xRTT - Proximity Sensor Deactivated

US Band Class 0

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
1013	824.70	23.4	23.4	23.4
384	836.52	23.5	23.5	23.5
777	848.31	23.2	23.2	23.2

US Band Class 1

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
25	1851.25	23.4	23.4	23.4
600	1880.00	23.5	23.5	23.5
1175	1908.75	23.4	23.5	23.4

US Band Class 10

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
476	817.90	23.3	23.4	23.4
580	820.50	23.5	23.5	23.5
684	823.10	23.4	23.4	23.4

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8.5.2. 1xEv-Do Rel. A - Proximity Sensor Deactivated

US Band Class 0

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
1013	824.70	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	23.4
384	836.52			23.5
777	848.31			23.2

US Band Class 1

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
25	1851.25	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	23.4
600	1880.00			23.4
1175	1908.75			23.4

US Band Class 10

Channel Number	Frequency (MHZ)	FETAP Traffic Format	RETAP Data Payload Size	Avg Power (dBm)
476	817.90	307.2kbps, QPSK / ACK channel is transmitted at all the slots	4096	23.4
580	820.50			23.5
684	823.10			23.3

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8.6. RF Output Average Power Measurement: LTE

8.6.1. LTE Band 2 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1860.0 MHz	1880.0 MHz	1900.0 MHz
20 MHz	QPSK	1	Low	0	(0)	13.5	12.2	11.9	12.8
		1	Mid	49	(0)	13.5	12.8	12.1	12.0
		1	High	99	(0)	13.5	11.5	12.8	12.5
		50	low	0	(0)	13.5	12.9	11.8	12.2
		50	Mid	25	(0)	13.5	12.7	12.2	11.6
		50	High	50	(0)	13.5	12.2	12.6	11.7
		100	-	0	(0)	13.5	12.5	12.2	12.0
	16QAM	1	Low	0	(0)	13.5	12.2	11.6	12.6
		1	Mid	49	(0)	13.5	12.9	12.5	11.7
		1	High	99	(0)	13.5	11.7	12.9	12.9
		50	low	0	(0)	13.5	12.6	11.5	12.3
		50	Mid	25	(0)	13.5	12.4	11.9	11.7
		50	High	50	(0)	13.5	11.8	12.3	11.5
		100	-	0	(0)	13.5	12.0	12.0	12.1

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1857.5 MHz	1880.0 MHz	1902.5 MHz
15 MHz	QPSK	1	Low	0	(0)	13.5	12.2	11.5	12.1
		1	Mid	37	(0)	13.5	13.0	12.2	11.8
		1	High	74	(0)	13.5	11.7	12.6	12.6
		36	low	0	(0)	13.5	12.6	11.8	11.6
		36	Mid	19	(0)	13.5	13.0	12.1	11.5
		36	High	39	(0)	13.5	12.6	12.4	11.7
		75	-	0	(0)	13.5	12.8	12.2	11.7
	16QAM	1	Low	0	(0)	13.5	12.3	11.5	12.4
		1	Mid	37	(0)	13.5	13.2	12.2	11.5
		1	High	74	(0)	13.5	11.9	12.6	13.1
		36	low	0	(0)	13.5	12.7	11.6	11.5
		36	Mid	19	(0)	13.5	12.7	11.9	11.7
		36	High	39	(0)	13.5	12.3	12.2	11.5
		75	-	0	(0)	13.5	12.2	12.0	11.5

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LTE Band 2 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1855.0 MHz	1880.0 MHz	1905.0 MHz
10 MHz	QPSK	1	Low	0	(0)	13.5	12.0	11.5	11.5
		1	Mid	24	(0)	13.5	13.0	12.1	11.5
		1	High	49	(0)	13.5	12.9	12.5	13.0
		25	Low	0	(0)	13.5	12.7	11.6	11.5
		25	Mid	12	(0)	13.5	13.0	12.2	11.7
		25	High	25	(0)	13.5	13.0	12.4	12.3
		50	-	0	(0)	13.5	13.0	12.2	11.8
	16QAM	1	Low	0	(0)	13.5	12.2	11.5	11.6
		1	mid	24	(0)	13.5	13.0	12.2	11.6
		1	High	49	(0)	13.5	12.8	12.5	12.3
		25	Low	0	(0)	13.5	12.6	11.8	11.5
		25	Mid	12	(0)	13.5	12.7	12.1	11.5
		25	High	25	(0)	13.5	12.8	12.3	12.1
		50	-	0	(0)	13.5	12.7	12.0	11.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1852.5 MHz	1880.0 MHz	1907.5 MHz
5 MHz	QPSK	1	Low	0	(0)	13.5	12.0	11.5	11.5
		1	Mid	12	(0)	13.5	12.7	12.1	12.2
		1	High	24	(0)	13.5	12.9	12.3	13.3
		12	low	0	(0)	13.5	12.4	11.9	11.9
		12	Mid	6	(0)	13.5	12.7	12.0	12.3
		12	High	13	(0)	13.5	12.7	12.2	12.8
		25	-	0	(0)	13.5	12.6	12.1	12.4
	16QAM	1	Low	0	(0)	13.5	12.2	11.8	11.6
		1	Mid	12	(0)	13.5	12.8	12.2	12.3
		1	High	24	(0)	13.5	13.2	12.4	13.4
		12	low	0	(0)	13.5	12.3	11.8	11.8
		12	Mid	6	(0)	13.5	12.6	11.9	12.2
		12	High	13	(0)	13.5	12.9	12.0	12.8
		25	-	0	(0)	13.5	12.5	11.9	12.2

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LTE Band 2 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1851.5 MHz	1880 MHz	1908.5 MHz
3 MHz	QPSK	1	Low	0	(0)	13.5	12.0	11.7	12.1
		1	Mid	7	(0)	13.5	12.5	12.2	12.7
		1	High	14	(0)	13.5	12.7	12.2	13.3
		8	Low	0	(0)	13.5	12.1	12.0	12.4
		8	Mid	4	(0)	13.5	12.5	12.2	12.8
		8	High	7	(0)	13.5	12.6	12.2	13.0
		15	-	0	(0)	13.5	12.4	12.1	12.7
	16QAM	1	Low	0	(0)	13.5	12.2	12.0	12.4
		1	Mid	7	(0)	13.5	12.7	12.2	12.9
		1	High	14	(0)	13.5	12.8	12.3	13.5
		8	Low	0	(0)	13.5	12.1	11.9	12.3
		8	Mid	4	(0)	13.5	12.5	12.1	12.8
		8	High	7	(0)	13.5	12.6	12.1	12.9
		15	-	0	(0)	13.5	12.3	12.0	12.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1850.7 MHz	1880 MHz)	1909.3 MHz
1.4 MHz	QPSK	1	Low	0	(0)	13.5	12.0	12.0	12.8
		1	Mid	3	(0)	13.5	12.3	12.2	13.1
		1	High	5	(0)	13.5	12.3	12.1	13.3
		3	Low	0	(0)	13.5	12.0	12.1	13.0
		3	Mid	1	(0)	13.5	12.1	12.1	13.1
		3	high	3	(0)	13.5	13.0	12.2	13.3
		6	-	0	(0)	13.5	12.1	12.2	13.1
	16QAM	1	Low	0	(0)	13.5	12.0	12.2	12.9
		1	Mid	3	(0)	13.5	12.3	12.4	13.3
		1	High	5	(0)	13.5	12.3	12.3	13.4
		3	Low	0	(0)	13.5	12.0	12.6	12.6
		3	Mid	1	(0)	13.5	12.2	12.0	12.7
		3	high	3	(0)	13.5	12.3	12.0	12.8
		6	-	0	(0)	13.5	12.2	12.2	13.0

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8.6.2. LTE Band 2 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1860.0 MHz	1880.0 MHz	1900.0 MHz
20 MHz	QPSK	1	Low	0	(0)	24	22.7	22.8	22.9
		1	Mid	49	(0)	24	22.9	22.7	22.8
		1	High	99	(0)	24	22.7	22.6	23.0
		50	low	0	(1)	23	21.7	21.7	21.7
		50	Mid	25	(1)	23	21.9	21.9	21.7
		50	High	50	(1)	23	21.7	21.6	21.7
		100	-	0	(1)	23	21.7	21.6	21.7
	16QAM	1	Low	0	(1)	23	21.6	21.8	21.7
		1	Mid	49	(1)	23	21.7	21.8	21.7
		1	High	99	(1)	23	21.6	21.7	21.8
		50	low	0	(2)	22	20.6	20.7	20.6
		50	Mid	25	(2)	22	20.8	20.6	20.6
		50	High	50	(2)	22	20.7	20.6	20.7
		100	-	0	(2)	22	20.6	20.6	20.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1857.5 MHz	1880.0 MHz	1902.5 MHz
15 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.8
		1	Mid	37	(0)	24	23.0	22.8	22.8
		1	High	74	(0)	24	22.9	22.7	22.8
		36	low	0	(1)	23	21.7	21.6	21.7
		36	Mid	19	(1)	23	21.8	21.7	21.7
		36	High	39	(1)	23	21.9	21.6	21.7
		75	-	0	(1)	23	21.7	21.5	21.6
	16QAM	1	Low	0	(1)	23	21.7	21.5	21.8
		1	Mid	37	(1)	23	21.7	21.5	21.8
		1	High	74	(1)	23	21.7	21.3	21.9
		36	low	0	(2)	22	20.7	20.6	20.7
		36	Mid	19	(2)	22	20.8	20.7	20.7
		36	High	39	(2)	22	20.8	20.7	20.7
		75	-	0	(2)	22	20.7	20.5	20.5

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LTE Band 2 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1855.0 MHz	1880.0 MHz	1905.0 MHz
10 MHz	QPSK	1	Low	0	(0)	24	22.8	22.8	22.7
		1	Mid	24	(0)	24	22.8	22.7	22.7
		1	High	49	(0)	24	23.0	22.7	22.9
		25	Low	0	(1)	23	21.7	21.7	21.7
		25	Mid	12	(1)	23	21.7	21.7	21.7
		25	High	25	(1)	23	21.7	21.7	21.8
		50	-	0	(1)	23	21.6	21.6	21.6
	16QAM	1	Low	0	(1)	23	21.7	21.7	21.8
		1	mid	24	(1)	23	21.6	21.6	21.8
		1	High	49	(1)	23	21.8	21.6	21.9
		25	Low	0	(2)	22	20.8	20.7	20.7
		25	Mid	12	(2)	22	20.7	20.8	20.7
		25	High	25	(2)	22	20.8	20.7	20.8
		50	-	0	(2)	22	20.6	20.6	20.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1852.5 MHz	1880.0 MHz	1907.5 MHz
5 MHz	QPSK	1	Low	0	(0)	24	22.8	22.8	22.7
		1	Mid	12	(0)	24	22.9	22.7	22.7
		1	High	24	(0)	24	22.8	22.7	22.9
		12	low	0	(1)	23	21.7	21.7	21.7
		12	Mid	6	(1)	23	21.7	21.7	21.8
		12	High	13	(1)	23	21.8	21.7	21.8
		25	-	0	(1)	23	21.7	21.7	21.7
	16QAM	1	Low	0	(1)	23	21.6	21.8	21.7
		1	Mid	12	(1)	23	21.7	21.7	21.7
		1	High	24	(1)	23	21.7	21.7	21.8
		12	low	0	(2)	22	20.8	20.8	20.9
		12	Mid	6	(2)	22	20.8	20.8	20.9
		12	High	13	(2)	22	20.8	20.7	21.0
		25	-	0	(2)	22	20.8	20.7	20.7

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LTE Band 2 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1851.5 MHz	1880 MHz	1908.5 MHz
3 MHz	QPSK	1	Low	0	(0)	24	22.6	22.8	22.9
		1	Mid	7	(0)	24	22.7	22.8	22.9
		1	High	14	(0)	24	22.8	22.8	22.9
		8	Low	0	(1)	23	21.7	21.7	21.8
		8	Mid	4	(1)	23	21.7	21.8	21.9
		8	High	7	(1)	23	21.8	21.8	21.9
		15	-	0	(1)	23	21.7	21.8	21.8
	16QAM	1	Low	0	(1)	23	21.6	21.6	21.9
		1	Mid	7	(1)	23	21.7	21.6	21.9
		1	High	14	(1)	23	21.7	21.6	21.9
		8	Low	0	(2)	22	20.7	20.7	20.9
		8	Mid	4	(2)	22	20.7	20.7	20.9
		8	High	7	(2)	22	20.7	20.7	20.9
		15	-	0	(2)	22	20.7	20.8	20.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							1850.7 MHz	1880 MHz)	1909.3 MHz
1.4 MHz	QPSK	1	Low	0	(0)	24	22.8	22.8	22.8
		1	Mid	3	(0)	24	22.8	22.8	22.8
		1	High	5	(0)	24	22.8	22.8	22.9
		3	Low	0	(0)	24	22.7	22.7	22.8
		3	Mid	1	(0)	24	22.7	22.7	22.9
		3	high	3	(0)	24	22.7	22.7	22.9
		6	-	0	(1)	23	21.7	21.7	21.8
	16QAM	1	Low	0	(1)	23	21.6	21.5	21.7
		1	Mid	3	(1)	23	21.6	21.6	21.7
		1	High	5	(1)	23	21.7	21.6	21.7
		3	Low	0	(1)	23	21.3	21.8	21.8
		3	Mid	1	(1)	23	21.3	21.8	21.8
		3	high	3	(1)	23	21.3	21.7	21.5
		6	-	0	(2)	22	20.8	20.8	20.8

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8.6.3. LTE Band 4 (1700 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1720.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1745.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	13	11.8	11.6	11.7
		1	Mid	49	(0)	13	12.3	11.8	11.4
		1	High	99	(0)	13	11.8	11.1	11.5
		50	low	0	(0)	13	12.3	12.2	11.7
		50	Mid	25	(0)	13	12.3	12.0	11.6
		50	High	50	(0)	13	12.3	11.5	11.6
		100	-	0	(0)	13	12.0	11.7	11.7
	16QAM	1	Low	0	(0)	13	11.7	12.2	12.1
		1	Mid	49	(0)	13	12.2	12.3	11.9
		1	High	99	(0)	13	11.8	11.6	12.0
		50	low	0	(0)	13	11.7	11.9	11.7
		50	Mid	25	(0)	13	12.0	11.7	11.7
		50	High	50	(0)	13	11.9	11.4	11.5
		100	-	0	(0)	13	11.6	11.6	11.5

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1717.5.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1747.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	13	12.0	11.9	11.8
		1	Mid	37	(0)	13	12.3	12.1	11.7
		1	High	74	(0)	13	12.2	11.4	11.7
		36	low	0	(0)	13	12.3	12.3	11.6
		36	Mid	19	(0)	13	12.2	12.1	11.7
		36	High	39	(0)	13	12.7	11.6	11.9
		75	-	0	(0)	13	12.2	11.7	11.8
	16QAM	1	Low	0	(0)	13	12.1	12.0	12.0
		1	Mid	37	(0)	13	12.7	12.1	12.0
		1	High	74	(0)	13	12.2	11.3	12.3
		36	low	0	(0)	13	12.0	11.9	11.4
		36	Mid	19	(0)	13	12.3	11.8	11.5
		36	High	39	(0)	13	12.4	11.5	11.6
		75	-	0	(0)	13	11.5	11.6	11.6

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LTE Band 4 (1700 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	13	11.9	11.9	11.9
		1	Mid	24	(0)	13	12.2	12.2	11.9
		1	High	49	(0)	13	12.3	11.6	11.9
		25	Low	0	(0)	13	12.4	12.3	11.9
		25	Mid	12	(0)	13	12.2	12.2	12.0
		25	High	25	(0)	13	12.2	11.8	12.1
		50	-	0	(0)	13	12.3	11.8	12.1
	16QAM	1	Low	0	(0)	13	12.0	12.0	12.1
		1	mid	24	(0)	13	12.1	12.2	12.2
		1	High	49	(0)	13	12.2	11.8	12.5
		25	Low	0	(0)	13	12.0	12.1	11.7
		25	Mid	12	(0)	13	11.9	12.0	11.8
		25	High	25	(0)	13	12.0	11.7	11.9
		50	-	0	(0)	13	12.0	11.7	11.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1712.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1752.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	13	12.0	12.0	11.8
		1	Mid	12	(0)	13	12.5	12.3	12.1
		1	High	24	(0)	13	12.4	11.6	12.2
		12	low	0	(0)	13	12.5	12.3	12.1
		12	Mid	6	(0)	13	12.5	12.3	12.1
		12	High	13	(0)	13	12.4	11.8	12.2
		25	-	0	(0)	13	12.5	11.9	12.1
	16QAM	1	Low	0	(0)	13	12.0	12.3	11.9
		1	Mid	12	(0)	13	12.4	12.2	12.2
		1	High	24	(0)	13	12.3	11.8	12.3
		12	low	0	(0)	13	12.1	12.0	12.0
		12	Mid	6	(0)	13	12.2	12.1	12.0
		12	High	13	(0)	13	12.0	11.7	12.1
		25	-	0	(0)	13	12.1	11.9	11.9

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LTE Band 4 (1700 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1711.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1753.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	13	12.0	12.3	11.9
		1	Mid	7	(0)	13	12.6	12.3	12.1
		1	High	14	(0)	13	12.5	11.8	12.1
		8	Low	0	(0)	13	12.5	12.4	12.1
		8	Mid	4	(0)	13	12.5	12.3	12.2
		8	High	7	(0)	13	12.4	11.9	12.1
		15	-	0	(0)	13	12.5	12.3	12.1
	16QAM	1	Low	0	(0)	13	12.4	12.2	12.2
		1	Mid	7	(0)	13	12.5	12.3	12.3
		1	High	14	(0)	13	12.3	11.9	12.3
		8	Low	0	(0)	13	12.2	12.1	12.0
		8	Mid	4	(0)	13	12.1	12.1	12.1
		8	High	7	(0)	13	12.1	12.0	12.0
		15	-	0	(0)	13	12.1	12.0	11.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1710.7 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1754.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	13	12.4	12.2	12.0
		1	Mid	3	(0)	13	12.5	12.3	12.1
		1	High	5	(0)	13	12.4	12.2	12.1
		3	Low	0	(0)	13	12.3	12.4	12.1
		3	Mid	1	(0)	13	12.4	12.3	12.2
		3	high	3	(0)	13	12.8	12.7	12.7
		6	-	0	(0)	13	12.7	12.7	12.6
	16QAM	1	Low	0	(0)	13	12.2	12.4	12.4
		1	Mid	3	(0)	13	12.4	12.6	12.8
		1	High	5	(0)	13	12.5	12.5	12.6
		3	Low	0	(0)	13	12.3	12.5	12.1
		3	Mid	1	(0)	13	12.4	12.4	12.1
		3	high	3	(0)	13	12.8	12.1	12.4
		6	-	0	(0)	13	12.4	12.5	12.4

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8.6.4. LTE Band 4 (1700 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1720.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1745.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	24	22.7	22.7	22.7
		1	Mid	49	(0)	24	22.7	22.6	22.7
		1	High	99	(0)	24	22.9	22.7	22.8
		50	low	0	(1)	23	21.5	21.5	21.7
		50	Mid	25	(1)	23	21.7	21.6	21.6
		50	High	50	(1)	23	21.6	21.8	21.5
		100	-	0	(1)	23	21.6	21.7	21.6
	16QAM	1	Low	0	(1)	23	21.5	21.9	21.7
		1	Mid	49	(1)	23	21.5	21.9	21.7
		1	High	99	(1)	23	21.5	21.9	21.6
		50	low	0	(2)	22	20.5	20.5	20.6
		50	Mid	25	(2)	22	20.6	20.6	20.6
		50	High	50	(2)	22	20.5	20.5	20.6
		100	-	0	(2)	22	20.6	20.6	20.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1717.5.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1747.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	24	22.7	22.8	22.8
		1	Mid	37	(0)	24	22.9	22.7	22.7
		1	High	74	(0)	24	22.9	22.8	22.8
		36	low	0	(1)	23	21.5	21.6	21.7
		36	Mid	19	(1)	23	21.7	21.7	21.7
		36	High	39	(1)	23	21.7	21.7	21.6
		75	-	0	(1)	23	21.5	21.6	21.6
	16QAM	1	Low	0	(1)	23	21.7	21.5	21.9
		1	Mid	37	(1)	23	21.8	21.5	21.6
		1	High	74	(1)	23	21.7	21.4	21.8
		36	low	0	(2)	22	20.5	20.6	20.8
		36	Mid	19	(2)	22	20.6	20.6	20.7
		36	High	39	(2)	22	20.7	20.7	20.7
		75	-	0	(2)	22	20.7	20.5	20.5

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LTE Band 4 (1700 MHz)
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Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	24	22.9	22.7	22.9
		1	Mid	24	(0)	24	22.9	22.7	22.7
		1	High	49	(0)	24	22.9	22.8	22.9
		25	Low	0	(1)	23	21.7	21.7	21.7
		25	Mid	12	(1)	23	21.6	21.7	21.7
		25	High	25	(1)	23	21.7	21.8	21.7
		50	-	0	(1)	23	21.5	21.7	21.6
	16QAM	1	Low	0	(1)	23	21.7	21.6	21.9
		1	mid	24	(1)	23	21.7	21.6	21.8
		1	High	49	(1)	23	21.7	21.6	21.8
		25	Low	0	(2)	22	20.7	20.8	20.8
		25	Mid	12	(2)	22	20.7	20.8	20.8
		25	High	25	(2)	22	20.7	20.8	20.8
		50	-	0	(2)	22	20.5	20.6	20.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1712.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1752.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.9
		1	Mid	12	(0)	24	22.9	22.7	22.8
		1	High	24	(0)	24	22.9	22.8	22.7
		12	low	0	(1)	23	21.8	21.8	21.8
		12	Mid	6	(1)	23	21.8	21.8	21.8
		12	High	13	(1)	23	21.8	21.8	21.7
		25	-	0	(1)	23	21.7	21.7	21.7
	16QAM	1	Low	0	(1)	23	21.7	21.7	21.7
		1	Mid	12	(1)	23	21.7	21.7	21.7
		1	High	24	(1)	23	21.8	21.9	21.7
		12	low	0	(2)	22	20.7	20.8	21.0
		12	Mid	6	(2)	22	20.8	20.8	21.0
		12	High	13	(2)	22	20.7	20.8	21.0
		25	-	0	(2)	22	20.7	20.7	20.7

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LTE Band 4 (1700 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1711.5 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1753.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.7
		1	Mid	7	(0)	24	22.9	22.8	22.8
		1	High	14	(0)	24	22.8	22.8	22.7
		8	Low	0	(1)	23	21.8	21.8	21.8
		8	Mid	4	(1)	23	21.8	21.8	21.8
		8	High	7	(1)	23	21.8	21.8	21.8
		15	-	0	(1)	23	21.7	21.8	21.8
	16QAM	1	Low	0	(1)	23	21.7	21.6	22.0
		1	Mid	7	(1)	23	21.7	21.7	21.9
		1	High	14	(1)	23	21.6	21.6	21.9
		8	Low	0	(2)	22	20.7	20.7	21.0
		8	Mid	4	(2)	22	20.6	20.7	20.8
		8	High	7	(2)	22	20.6	20.8	21.0
		15	-	0	(2)	22	20.8	20.7	20.8

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1710.7 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1754.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.7
		1	Mid	3	(0)	24	22.8	22.8	22.7
		1	High	5	(0)	24	22.9	22.8	22.7
		3	Low	0	(0)	24	22.7	22.7	22.8
		3	Mid	1	(0)	24	22.7	22.7	22.8
		3	high	3	(0)	24	22.7	22.7	22.8
		6	-	0	(1)	23	21.8	21.8	21.8
	16QAM	1	Low	0	(1)	23	21.6	21.6	21.6
		1	Mid	3	(1)	23	21.7	21.6	21.6
		1	High	5	(1)	23	21.7	21.6	21.6
		3	Low	0	(1)	23	21.5	21.8	21.7
		3	Mid	1	(1)	23	21.4	21.8	21.6
		3	high	3	(1)	23	21.5	21.8	21.8
		6	-	0	(2)	22	20.7	20.8	20.8

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8.6.5.LTE Band 5 (850 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **829.0 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **844.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	17	16.5	16.3	16.1
		1	Mid	24	(0)	17	16.5	16.1	16.4
		1	High	49	(0)	17	16.4	16.3	15.8
		25	Low	0	(0)	17	16.3	16.1	16.3
		25	Mid	12	(0)	17	16.3	16.0	16.5
		25	High	25	(0)	17	16.3	16.2	16.5
		50	-	0	(0)	17	16.3	16.2	16.4
	16QAM	1	Low	0	(0)	17	16.7	15.8	16.6
		1	mid	24	(0)	17	16.6	16.4	16.2
		1	High	49	(0)	17	16.0	15.9	15.9
		25	Low	0	(0)	17	16.4	16.2	16.4
		25	Mid	12	(0)	17	16.4	16.1	15.9
		25	High	25	(0)	17	16.4	16.3	15.9
		50	-	0	(0)	17	16.3	16.2	15.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **826.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **846.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	17	16.1	15.6	16.1
		1	Mid	12	(0)	17	16.4	16.0	16.5
		1	High	24	(0)	17	15.2	15.7	15.4
		12	low	0	(0)	17	16.3	15.8	16.4
		12	Mid	6	(0)	17	16.3	15.9	16.5
		12	High	13	(0)	17	15.4	15.4	15.7
		25	-	0	(0)	17	16.3	15.8	16.4
	16QAM	1	Low	0	(0)	17	16.1	16.0	15.8
		1	Mid	12	(0)	17	16.5	16.4	16.2
		1	High	24	(0)	17	16.2	16.1	15.5
		12	low	0	(0)	17	16.1	15.9	15.9
		12	Mid	6	(0)	17	16.2	16.1	16.1
		12	High	13	(0)	17	16.0	16.0	16.0
		25	-	0	(0)	17	16.1	15.8	15.8

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LTE Band 5 (850 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **825.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **847.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	17	16.3	15.8	16.2
		1	Mid	7	(0)	17	16.4	16.1	16.4
		1	High	14	(0)	17	15.5	15.9	15.5
		8	Low	0	(0)	17	16.2	15.9	16.4
		8	Mid	4	(0)	17	16.3	16.0	16.4
		8	High	7	(0)	17	16.4	15.9	16.3
		15	-	0	(0)	17	16.3	16.0	16.3
	16QAM	1	Low	0	(0)	17	15.7	16.1	16.1
		1	Mid	7	(0)	17	15.9	16.4	16.2
		1	High	14	(0)	17	15.8	16.2	16.1
		8	Low	0	(0)	17	15.5	16.1	16.0
		8	Mid	4	(0)	17	15.6	16.1	16.0
		8	High	7	(0)	17	15.6	16.1	15.8
		15	-	0	(0)	17	15.5	16.1	15.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **824.7 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **848.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	17	16.4	15.9	16.6
		1	Mid	3	(0)	17	16.4	16.0	16.0
		1	High	5	(0)	17	16.3	15.9	16.6
		3	Low	0	(0)	17	16.3	15.9	16.6
		3	Mid	1	(0)	17	16.3	16.0	16.1
		3	high	3	(0)	17	16.2	15.9	16.6
		6	-	0	(0)	17	16.3	16.0	16.6
	16QAM	1	Low	0	(0)	17	16.3	16.1	16.6
		1	Mid	3	(0)	17	15.9	16.4	16.5
		1	High	5	(0)	17	16.1	16.2	16.5
		3	Low	0	(0)	17	16.1	16.1	16.4
		3	Mid	1	(0)	17	15.9	16.1	16.3
		3	high	3	(0)	17	15.9	16.1	16.2
		6	-	0	(0)	17	15.8	16.1	16.2

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8.6.6.LTE Band 5 (850 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **829.0 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **844.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	24	22.6	22.8	22.7
		1	Mid	24	(0)	24	22.6	22.7	22.7
		1	High	49	(0)	24	22.7	22.8	22.6
		25	Low	0	(1)	23	21.8	21.7	21.7
		25	Mid	12	(1)	23	21.7	21.7	21.6
		25	High	25	(1)	23	21.7	21.7	21.7
		50	-	0	(1)	23	21.6	21.6	21.7
	16QAM	1	Low	0	(1)	23	21.8	21.7	21.6
		1	mid	24	(1)	23	21.8	21.7	21.6
		1	High	49	(1)	23	21.9	21.7	21.5
		25	Low	0	(2)	22	20.9	20.7	20.8
		25	Mid	12	(2)	22	20.8	20.8	20.7
		25	High	25	(2)	22	20.8	20.8	20.8
		50	-	0	(2)	22	20.6	20.6	20.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **826.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **846.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	24	22.7	22.7	22.6
		1	Mid	12	(0)	24	22.7	22.6	22.6
		1	High	24	(0)	24	22.8	22.7	22.5
		12	low	0	(1)	23	21.7	21.7	21.7
		12	Mid	6	(1)	23	21.8	21.7	21.7
		12	High	13	(1)	23	21.8	21.8	21.7
		25	-	0	(1)	23	21.8	21.7	21.7
	16QAM	1	Low	0	(1)	23	21.6	21.8	21.7
		1	Mid	12	(1)	23	21.7	21.7	21.7
		1	High	24	(1)	23	21.7	21.7	21.5
		12	low	0	(2)	22	20.8	20.8	20.9
		12	Mid	6	(2)	22	20.9	20.8	20.9
		12	High	13	(2)	22	20.9	20.9	20.9
		25	-	0	(2)	22	20.8	20.7	20.8

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LTE Band 5 (850 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **825.5 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **847.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	24	22.7	22.7	22.5
		1	Mid	7	(0)	24	22.7	22.7	22.6
		1	High	14	(0)	24	22.8	22.7	22.5
		8	Low	0	(0)	23	21.7	21.7	21.7
		8	Mid	4	(0)	23	21.8	21.8	21.7
		8	High	7	(0)	23	21.8	21.7	21.7
		15	-	0	(1)	23	21.7	21.8	21.7
	16QAM	1	Low	0	(1)	23	21.6	21.6	21.7
		1	Mid	7	(1)	23	21.6	21.6	21.7
		1	High	14	(1)	23	21.7	21.6	21.7
		8	Low	0	(1)	22	20.7	20.7	21.0
		8	Mid	4	(1)	22	20.8	20.8	20.9
		8	High	7	(1)	22	20.9	20.7	20.9
		15	-	0	(2)	22	20.7	20.8	20.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **824.7 MHz** (Low)	Frequency **836.5 MHz** (Middle)	Frequency **848.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	24	22.7	22.6	22.7
		1	Mid	3	(0)	24	22.6	22.6	22.6
		1	High	5	(0)	24	22.6	22.6	22.6
		3	Low	0	(0)	24	22.6	22.6	22.6
		3	Mid	1	(0)	24	22.5	22.6	22.5
		3	high	3	(0)	24	22.6	22.6	22.6
		6	-	0	(1)	23	21.7	21.7	21.7
	16QAM	1	Low	0	(1)	23	21.6	21.6	21.5
		1	Mid	3	(1)	23	21.7	21.6	21.5
		1	High	5	(1)	23	21.5	21.7	21.5
		3	Low	0	(1)	23	21.7	21.4	21.8
		3	Mid	1	(1)	23	21.6	21.4	21.7
		3	high	3	(1)	23	21.6	21.4	21.7
		6	-	0	(2)	22	20.8	20.8	20.8

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8.6.7.LTE Band 13 (750 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
								Frequency **782.0 MHz** (Middle)	
10 MHz	QPSK	1	Low	0	(0)	19	Not Supported	18.7	Not Supported
		1	Mid	24	(0)	19		18.9	
		1	High	49	(0)	19		18.8	
		25	Low	0	(0)	19		18.7	
		25	Mid	12	(0)	19		18.9	
		25	High	25	(0)	19		18.9	
		50	-	0	(0)	19		18.8	
	16QAM	1	Low	0	(0)	19		18.7	
		1	mid	24	(0)	19		18.9	
		1	High	49	(0)	19		18.9	
		25	Low	0	(0)	19		18.8	
		25	Mid	12	(0)	19		18.9	
		25	High	25	(0)	19		18.8	
		50	-	0	(0)	19		18.8	

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **779.5 MHz** (Low)	Frequency **782.0 MHz** (Middle)	Frequency **784.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	19	18.8	18.8	18.9
		1	Mid	12	(0)	19	18.8	18.9	18.8
		1	High	24	(0)	19	18.9	18.9	18.8
		12	low	0	(0)	19	18.7	18.8	18.9
		12	Mid	6	(0)	19	18.7	18.9	18.8
		12	High	13	(0)	19	18.8	18.8	18.8
		25	-	0	(0)	19	18.7	18.9	18.9
	16QAM	1	Low	0	(0)	19	18.6	18.7	18.8
		1	Mid	12	(0)	19	18.6	18.9	18.8
		1	High	24	(0)	19	18.8	18.8	18.7
		12	low	0	(0)	19	18.7	18.8	19.0
		12	Mid	6	(0)	19	18.7	18.9	19.0
		12	High	13	(0)	19	18.8	18.9	19.0
		25	-	0	(0)	19	18.8	18.9	18.9

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8.6.8.LTE Band 13 (750 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
								Frequency **782.0 MHz** (Middle)	
10 MHz	QPSK	1	Low	0	(0)	24	Not Supported	22.6	Not Supported
		1	Mid	24	(0)	24		22.9	
		1	High	49	(0)	24		22.8	
		25	Low	0	(1)	23		21.5	
		25	Mid	12	(1)	23		21.8	
		25	High	25	(1)	23		21.6	
		50	-	0	(1)	23		21.6	
	16QAM	1	Low	0	(1)	23		21.5	
		1	mid	24	(1)	23		21.8	
		1	High	49	(1)	23		21.7	
		25	Low	0	(2)	22		20.6	
		25	Mid	12	(2)	22		20.8	
		25	High	25	(2)	22		20.7	
		50	-	0	(2)	22		20.6	

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **779.5 MHz** (Low)	Frequency **782.0 MHz** (Middle)	Frequency **784.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	24	22.6	22.6	22.8
		1	Mid	12	(0)	24	22.7	22.8	22.7
		1	High	24	(0)	24	22.8	22.8	22.6
		12	low	0	(1)	23	21.5	21.7	21.8
		12	Mid	6	(1)	23	21.5	21.7	21.7
		12	High	13	(1)	23	21.6	21.7	21.6
		25	-	0	(1)	23	21.6	21.8	21.7
	16QAM	1	Low	0	(1)	23	21.5	21.6	21.7
		1	Mid	12	(1)	23	21.5	21.8	21.6
		1	High	24	(1)	23	21.7	21.7	21.6
		12	low	0	(2)	22	20.6	20.6	20.9
		12	Mid	6	(2)	22	20.6	20.7	20.8
		12	High	13	(2)	22	20.7	20.8	20.8
		25	-	0	(2)	22	20.6	20.6	20.7

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8.6.9. LTE Band 17 (700 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **709.0 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **711.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	19	18.7	18.7	18.7
		1	Mid	24	(0)	19	18.9	18.9	18.8
		1	High	49	(0)	19	18.7	18.6	18.4
		25	Low	0	(0)	19	18.7	18.8	18.7
		25	Mid	12	(0)	19	18.7	18.8	18.8
		25	High	25	(0)	19	18.7	18.6	18.7
		50	-	0	(0)	19	18.7	18.6	18.6
	16QAM	1	Low	0	(0)	19	18.6	18.5	18.8
		1	mid	24	(0)	19	18.7	18.7	18.8
		1	High	49	(0)	19	18.5	18.4	18.5
		25	Low	0	(0)	19	18.8	18.9	18.7
		25	Mid	12	(0)	19	18.8	18.8	18.8
		25	High	25	(0)	19	18.8	18.7	18.7
		50	-	0	(0)	19	18.7	18.6	18.6

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **706.5 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **713.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	19	18.7	18.8	18.7
		1	Mid	12	(0)	19	18.8	18.8	18.5
		1	High	24	(0)	19	18.9	18.7	18.2
		12	low	0	(0)	19	18.7	18.8	18.6
		12	Mid	6	(0)	19	18.8	18.8	18.6
		12	High	13	(0)	19	18.8	18.8	17.9
		25	-	0	(0)	19	18.8	18.8	17.9
	16QAM	1	Low	0	(0)	19	17.9	18.5	18.7
		1	Mid	12	(0)	19	18.7	18.7	18.7
		1	High	24	(0)	19	18.5	18.8	18.7
		12	low	0	(0)	19	17.8	18.8	18.8
		12	Mid	6	(0)	19	18.7	18.8	18.8
		12	High	13	(0)	19	18.7	18.9	18.8
		25	-	0	(0)	19	18.0	18.7	18.8

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8.6.10.LTE Band 17 (700 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **709.0 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **711.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	24	22.7	22.7	22.7
		1	Mid	24	(0)	24	22.8	22.8	22.7
		1	High	49	(0)	24	22.5	22.4	22.2
		25	Low	0	(1)	23	21.7	21.7	21.7
		25	Mid	12	(1)	23	21.7	21.7	21.7
		25	High	25	(1)	23	21.6	21.6	21.5
		50	-	0	(1)	23	21.6	21.6	21.5
	16QAM	1	Low	0	(1)	23	21.5	21.5	21.8
		1	mid	24	(1)	23	21.7	21.7	21.8
		1	High	49	(1)	23	21.5	21.3	21.4
		25	Low	0	(2)	22	20.7	20.8	20.7
		25	Mid	12	(2)	22	20.7	20.8	20.8
		25	High	25	(2)	22	20.7	20.6	20.6
		50	-	0	(2)	22	20.6	20.5	20.5

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **706.5 MHz** (Low)	Frequency **710.0 MHz** (Middle)	Frequency **713.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	24	22.6	22.9	22.6
		1	Mid	12	(0)	24	22.8	22.7	22.4
		1	High	24	(0)	24	22.8	22.7	22.3
		12	low	0	(1)	23	21.7	21.8	21.5
		12	Mid	6	(1)	23	21.7	21.8	21.5
		12	High	13	(1)	23	21.8	21.7	21.5
		25	-	0	(1)	23	21.7	21.8	21.7
	16QAM	1	Low	0	(1)	23	21.5	21.4	21.8
		1	Mid	12	(1)	23	21.5	21.7	21.7
		1	High	24	(1)	23	21.4	21.7	21.6
		12	low	0	(2)	22	21.0	20.7	20.8
		12	Mid	6	(2)	22	20.7	20.8	20.8
		12	High	13	(2)	22	20.7	20.9	20.7
		25	-	0	(2)	22	20.8	20.7	20.7

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8.6.11. LTE Band 25 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1860.0 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1905.0 MHz** (High)
20 MHz	QPSK	1	Low	0	(0)	13.5	12.1	11.7	12.2
		1	Mid	49	(0)	13.5	12.6	12.0	11.5
		1	High	99	(0)	13.5	11.5	12.9	13.0
		50	low	0	(0)	13.5	12.9	11.9	11.5
		50	Mid	25	(0)	13.5	12.6	12.3	11.8
		50	High	50	(0)	13.5	12.1	12.9	12.9
		100	-	0	(0)	13.5	12.5	12.3	12.5
	16QAM	1	Low	0	(0)	13.5	12.4	11.9	12.4
		1	Mid	49	(0)	13.5	12.6	12.7	11.6
		1	High	99	(0)	13.5	11.5	13.0	13.5
		50	low	0	(0)	13.5	12.7	11.8	11.5
		50	Mid	25	(0)	13.5	12.3	12.2	11.6
		50	High	50	(0)	13.5	11.9	12.6	12.9
		100	-	0	(0)	13.5	12.2	12.2	12.2

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1857.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1907.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	13.5	12.2	11.5	11.7
		1	Mid	37	(0)	13.5	13.0	12.1	11.8
		1	High	74	(0)	13.5	11.7	13.0	12.9
		36	low	0	(0)	13.5	12.6	11.8	11.5
		36	Mid	19	(0)	13.5	12.8	12.3	12.2
		36	High	39	(0)	13.5	12.5	12.5	13.0
		75	-	0	(0)	13.5	12.6	12.3	12.4
	16QAM	1	Low	0	(0)	13.5	12.5	11.5	11.7
		1	Mid	37	(0)	13.5	13.1	12.3	12.1
		1	High	74	(0)	13.5	11.6	13.2	13.4
		36	low	0	(0)	13.5	12.7	11.9	11.6
		36	Mid	19	(0)	13.5	12.6	12.2	11.9
		36	High	39	(0)	13.5	12.3	12.6	12.9
		75	-	0	(0)	13.5	12.6	12.3	12.5

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LTE Band 25 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1855.0 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1910.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	13.5	12.2	11.5	11.5
		1	Mid	24	(0)	13.5	13.1	12.2	12.5
		1	High	49	(0)	13.5	12.9	12.5	12.6
		25	Low	0	(0)	13.5	12.7	12.0	12.1
		25	Mid	12	(0)	13.5	13.0	12.3	12.8
		25	High	25	(0)	13.5	13.0	12.6	13.1
		50	-	0	(0)	13.5	12.9	12.5	12.8
	16QAM	1	Low	0	(0)	13.5	12.5	11.6	11.9
		1	mid	24	(0)	13.5	13.2	12.4	13.0
		1	High	49	(0)	13.5	12.9	12.8	12.9
		25	Low	0	(0)	13.5	12.5	12.1	11.9
		25	Mid	12	(0)	13.5	12.9	12.2	12.8
		25	High	25	(0)	13.5	12.8	12.6	13.1
		50	-	0	(0)	13.5	12.7	12.4	12.8

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1852.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1912.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	13.5	12.3	11.9	12.6
		1	Mid	12	(0)	13.5	12.9	12.1	13.4
		1	High	24	(0)	13.5	12.9	12.5	12.2
		12	low	0	(0)	13.5	12.7	12.1	13.0
		12	Mid	6	(0)	13.5	12.9	12.2	13.4
		12	High	13	(0)	13.5	12.9	12.4	12.9
		25	-	0	(0)	13.5	12.8	12.3	13.0
	16QAM	1	Low	0	(0)	13.5	12.7	12.0	12.9
		1	Mid	12	(0)	13.5	12.9	12.3	13.5
		1	High	24	(0)	13.5	13.2	12.7	12.6
		12	low	0	(0)	13.5	12.5	12.1	13.1
		12	Mid	6	(0)	13.5	12.7	12.1	13.5
		12	High	13	(0)	13.5	12.7	12.4	13.2
		25	-	0	(0)	13.5	12.6	12.1	13.0

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LTE Band 25 (1900 MHz)
Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1851.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1915.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	13.5	13.0	13.0	12.9
		1	Mid	7	(0)	13.5	13.1	12.9	13.0
		1	High	14	(0)	13.5	13.1	13.2	12.7
		8	Low	0	(0)	13.5	12.9	12.8	12.9
		8	Mid	4	(0)	13.5	12.9	12.9	13.0
		8	High	7	(0)	13.5	13.0	13.1	12.7
		15	-	0	(0)	13.5	12.9	12.8	13.0
	16QAM	1	Low	0	(0)	13.5	12.9	13.0	13.3
		1	Mid	7	(0)	13.5	13.0	13.2	13.3
		1	High	14	(0)	13.5	13.1	13.1	13.1
		8	Low	0	(0)	13.5	12.7	12.8	13.2
		8	Mid	4	(0)	13.5	12.7	13.1	13.0
		8	High	7	(0)	13.5	12.8	12.9	12.7
		15	-	0	(0)	13.5	12.6	12.9	12.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1850.7 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1914.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	13.5	12.6	12.1	13.1
		1	Mid	3	(0)	13.5	12.8	12.3	12.7
		1	High	5	(0)	13.5	12.7	12.3	12.2
		3	Low	0	(0)	13.5	12.6	12.2	13.0
		3	Mid	1	(0)	13.5	12.6	12.3	13.2
		3	high	3	(0)	13.5	12.9	12.4	12.7
		6	-	0	(0)	13.5	12.7	12.3	12.9
	16QAM	1	Low	0	(0)	13.5	12.7	12.3	13.0
		1	Mid	3	(0)	13.5	12.8	12.5	12.6
		1	High	5	(0)	13.5	12.7	12.6	12.1
		3	Low	0	(0)	13.5	12.2	12.3	12.8
		3	Mid	1	(0)	13.5	12.2	12.4	12.6
		3	high	3	(0)	13.5	12.3	12.3	12.3
		6	-	0	(0)	13.5	12.5	12.3	12.7

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8.6.12. LTE Band 25 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1860.0 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1905.0 MHz** (High)
20 MHz tf	QPSK	1	Low	0	(0)	24	22.7	22.7	22.8
		1	Mid	49	(0)	24	22.7	22.8	22.7
		1	High	99	(0)	24	22.7	22.7	22.7
		50	low	0	(1)	23	21.7	21.5	21.6
		50	Mid	25	(1)	23	21.7	21.6	21.6
		50	High	50	(1)	23	21.7	21.5	21.6
		100	-	0	(1)	23	21.7	21.6	21.6
	16QAM	1	Low	0	(1)	23	21.5	21.8	21.6
		1	Mid	49	(1)	23	21.5	21.8	21.7
		1	High	99	(1)	23	21.5	21.7	21.8
		50	low	0	(2)	22	20.7	20.5	20.6
		50	Mid	25	(2)	22	20.7	20.6	20.5
		50	High	50	(2)	22	20.6	20.5	20.6
		100	-	0	(2)	22	20.5	20.5	20.5

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1857.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1907.5 MHz** (High)
15 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.8
		1	Mid	37	(0)	24	22.9	22.8	22.7
		1	High	74	(0)	24	22.9	22.8	22.7
		36	low	0	(1)	23	21.7	21.6	21.6
		36	Mid	19	(1)	23	21.7	21.6	21.7
		36	High	39	(1)	23	21.8	21.6	21.8
		75	-	0	(1)	23	21.6	21.5	21.5
	16QAM	1	Low	0	(1)	23	21.8	21.5	21.8
		1	Mid	37	(1)	23	21.4	21.4	21.8
		1	High	74	(1)	23	21.6	21.3	21.9
		36	low	0	(2)	22	20.6	20.6	20.7
		36	Mid	19	(2)	22	20.7	20.6	20.7
		36	High	39	(2)	22	20.8	20.5	20.7
		75	-	0	(2)	22	20.5	20.4	20.5

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LTE Band 25 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1855.0 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1910.0 MHz** (High)
10 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.7
		1	Mid	24	(0)	24	22.9	22.7	22.7
		1	High	49	(0)	24	22.9	22.7	22.8
		25	Low	0	(1)	23	21.7	21.7	21.7
		25	Mid	12	(1)	23	21.7	21.6	21.8
		25	High	25	(1)	23	21.7	21.7	21.8
		50	-	0	(1)	23	21.6	21.6	21.7
	16QAM	1	Low	0	(1)	23	21.7	21.7	21.8
		1	mid	24	(1)	23	21.7	21.6	21.8
		1	High	49	(1)	23	21.7	21.5	21.9
		25	Low	0	(2)	22	20.7	20.7	20.8
		25	Mid	12	(2)	22	20.8	20.7	20.7
		25	High	25	(2)	22	20.7	20.7	20.8
		50	-	0	(2)	22	20.7	20.6	20.7

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1852.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1912.5 MHz** (High)
5 MHz	QPSK	1	Low	0	(0)	24	22.9	22.7	22.8
		1	Mid	12	(0)	24	22.8	22.7	22.8
		1	High	24	(0)	24	22.9	22.7	22.8
		12	low	0	(1)	23	21.8	21.7	21.7
		12	Mid	6	(1)	23	21.7	21.7	21.8
		12	High	13	(1)	23	21.8	21.7	21.8
		25	-	0	(1)	23	21.7	21.7	21.8
	16QAM	1	Low	0	(1)	23	21.7	21.7	21.7
		1	Mid	12	(1)	23	21.7	21.7	21.7
		1	High	24	(1)	23	21.7	21.7	21.7
		12	low	0	(2)	22	20.8	20.7	20.9
		12	Mid	6	(2)	22	20.8	20.7	21.0
		12	High	13	(2)	22	20.8	20.7	20.9
		25	-	0	(2)	22	20.7	20.6	20.8

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LTE Band 25 (1900 MHz)
Proximity Sensor Deactivated

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1851.5 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1915.5 MHz** (High)
3 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.7
		1	Mid	7	(0)	24	22.9	22.7	22.8
		1	High	14	(0)	24	22.9	22.7	22.8
		8	Low	0	(0)	23	21.7	21.7	21.8
		8	Mid	4	(0)	23	21.8	21.7	21.9
		8	High	7	(0)	23	21.8	21.7	21.9
		15	-	0	(1)	23	21.7	21.6	21.8
	16QAM	1	Low	0	(1)	23	21.7	21.5	21.9
		1	Mid	7	(1)	23	21.7	21.5	21.9
		1	High	14	(1)	23	21.7	21.5	21.9
		8	Low	0	(1)	22	20.8	20.7	20.8
		8	Mid	4	(1)	22	20.8	20.7	20.9
		8	High	7	(1)	22	20.7	20.6	21.0
		15	-	0	(2)	22	20.7	20.6	20.9

Ch. BW	Modulations	RB Config	Start RB Offset		Power Back-off	Actual Max Power (dBm)	Measured Avg Power (dBm).		
							Frequency **1850.7 MHz** (Low)	Frequency **1882.5 MHz** (Middle)	Frequency **1914.3 MHz** (High)
1.4 MHz	QPSK	1	Low	0	(0)	24	22.9	22.8	22.8
		1	Mid	3	(0)	24	22.9	22.8	22.8
		1	High	5	(0)	24	23.0	22.8	22.8
		3	Low	0	(0)	24	22.8	22.7	22.8
		3	Mid	1	(0)	24	22.8	22.6	22.6
		3	high	3	(0)	24	22.8	22.6	22.7
		6	-	0	(1)	23	21.8	21.7	21.8
	16QAM	1	Low	0	(1)	23	21.7	21.5	21.8
		1	Mid	3	(1)	23	21.7	21.7	21.6
		1	High	5	(1)	23	21.6	21.6	21.6
		3	Low	0	(1)	23	21.7	21.4	21.9
		3	Mid	1	(1)	23	21.7	21.3	21.8
		3	high	3	(1)	23	21.8	21.3	21.9
		6	-	0	(2)	22	20.9	20.7	20.8

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8.7.RF Output Average Power Measurement: Wi-Fi

8.7.1.WiFi 802.11b/g/n (2.4 GHz) - SISO

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**(1Mbps)**	**(1Mbps)**	**Operating Mode**
1	2412	11.4	11.3	**802.11b**
6	2437	11.7	11.4	
11	2462	11.5	11.8	
12	2467	11.5	11.7	
13	2472	11.6	11.7	
Channel Number	**Frequency (MHZ)**	**(6Mbps)**	**(6Mbps)**	**Operating Mode**
1	2412	11.1	11.1	**802.11g**
6	2437	11.3	11.2	
11	2462	11.2	11.4	
12	2467	11.2	11.3	
13	2472	11.2	11.3	
Channel Number	**Frequency (MHZ)**	**(6.5Mbps)**	**(6.5Mbps)**	**Operating Mode**
1	2412	10.9	11.1	**802.11n HT20**
6	2437	11.1	11.2	
11	2462	11.0	11.2	
12	2467	11.0	11.1	
13	2472	11.0	11.1	

8.7.2. WiFi 802.11b/g/n (2.4 GHz) - MIMO

Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	Operating Mode
		(6Mbps)	(6Mbps)	
1	2412	11.2	11.3	**802.11g (CDD)**
6	2437	11.4	11.5	
11	2462	11.3	11.6	
12	2467	11.1	11.4	
13	2472	11.2	11.3	
Channel Number	**Frequency (MHZ)**	**(6.5Mbps)**	**(6.5Mbps)**	**Operating Mode**
1	2412	11.0	10.5	**802.11n, HT20 (CDD)**
6	2437	11.0	11.4	
11	2462	11.1	11.4	
12	2467	10.9	11.2	
13	2472	11.0	11.2	
1	2412	11.1	10.9	**802.11n, HT20 (STBC)**
6	2437	11.1	11.2	
11	2462	11.1	11.3	
12	2467	10.9	11.1	
13	2472	11.0	11.0	

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8.7.3.Wi-Fi 802.11a/n (5.0 GHz) – SISO Sub Band U-NII-1 (5.2 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
36	5180	13.0	12.5	**802.11a**
40	5200	13.0	12.6	
44	5220	13.0	12.5	
48	5240	13.0	12.5	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
36	5180	11.9	11.2	**802.11n, HT20**
40	5200	12.0	11.2	
44	5220	11.9	11.2	
48	5240	11.8	11.5	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
38	5190	11.9	11.3	**802.11n, HT40**
46	5230	11.9	11.4	

8.7.4.Wi-Fi802.11a/n (5.0 GHz) – MIMO Sub Band U-NII-1 (5.2 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
36	5180	12.9	12.5	**802.11a CDD**
40	5200	13.0	12.5	
44	5220	12.9	12.6	
48	5240	12.8	12.6	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
36	5180	11.8	11.3	**802.11n, HT20 CDD**
40	5200	11.8	11.3	
44	5220	11.8	11.3	
48	5240	11.7	11.4	
36	5180	11.8	11.3	**802.11n, HT20 STBC**
40	5200	11.8	11.2	
44	5220	11.7	11.3	
48	5240	11.7	11.4	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
38	5190	12.0	11.4	**802.11n, HT40 CDD**
46	5230	11.8	11.5	
38	5190	12.0	11.4	**802.11n, HT40 STBC**
46	5230	11.9	11.5	

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8.7.5.Wi-Fi 802.11a/n (5.0 GHz) – SISO Sub Band U-NII-2B (5.3 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
52	5260	12.8	12.4	**802.11a**
56	5280	12.7	12.4	
60	5300	12.7	12.5	
64	5320	12.7	12.5	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
52	5260	11.8	11.4	**802.11n, HT20**
56	5280	11.6	11.4	
60	5300	11.7	11.5	
64	5320	11.6	11.3	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
54	5270	11.9	11.6	**802.11n, HT40**
62	5310	11.8	11.6	

8.7.6.Wi-Fi802.11a/n (5.0 GHz) – MIMO Sub Band U-NII-2B (5.3 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
52	5260	12.8	12.6	**802.11a CDD**
56	5280	12.8	12.7	
60	5300	12.8	12.6	
64	5320	12.7	12.6	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
52	5260	11.8	11.4	**802.11n, HT20 CDD**
56	5280	11.6	11.4	
60	5300	11.6	11.6	
64	5320	11.7	11.5	
52	5260	11.7	11.5	**802.11n, HT20 STBC**
56	5280	11.7	11.5	
60	5300	11.7	11.6	
64	5320	11.5	11.5	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
54	5270	11.8	11.5	**802.11n, HT40 CDD**
62	5310	11.7	11.6	
54	5270	11.8	11.6	**802.11n, HT40 STBC**
62	5310	11.7	11.6	

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8.7.7.Wi-Fi 802.11a/n (5.0 GHz) – SISO Sub Band U-NII-2C (5.5 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
100	5500	12.4	12.4	**802.11a**
104	5520	12.2	12.2	
108	5540	12.0	12.0	
112	5560	11.9	12.0	
116	5580	11.8	11.8	
120	5600	N/A	N/A	
124	5620	N/A	N/A	
128	5640	N/A	N/A	
132	5660	11.5	11.3	
136	5680	11.4	11.1	
140	5700	11.3	11.0	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
100	5500	11.6	11.6	**802.11n, HT20**
104	5520	11.6	11.5	
108	5540	11.6	11.4	
112	5560	11.5	11.3	
116	5580	11.5	11.3	
120	5600	N/A	N/A	
124	5620	N/A	N/A	
128	5640	N/A	N/A	
132	5660	10.9	10.7	
136	5680	10.9	10.5	
140	5700	10.8	10.5	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
102	5510	11.1	11.3	**802.11n, HT40**
110	5550	11.0	11.1	
118	5590	N/A	N/A	
126	5630	N/A	N/A	
134	5670	10.4	10.4	

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8.7.8.Wi-Fi 802.11a/n (5.0 GHz) – MIMO Sub Band U-NII-2C (5.5 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
100	5500	12.3	12.4	**802.11a CDD**
104	5520	12.2	12.3	
108	5540	12.1	12.3	
112	5560	12.1	12.1	
116	5580	12.0	12.0	
120	5600	N/A	N/A	
124	5620	N/A	N/A	
128	5640	N/A	N/A	
132	5660	11.7	11.4	
136	5680	11.6	11.4	
140	5700	11.5	11.1	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
100	5500	11.4	11.8	**802.11n, HT20 CDD**
104	5520	11.6	11.4	
108	5540	11.4	11.5	
112	5560	11.3	11.4	
116	5580	11.3	11.3	
120	5600	N/A	N/A	
124	5620	N/A	N/A	
128	5640	N/A	N/A	
132	5660	10.9	10.9	
136	5680	10.8	10.6	
140	5700	10.7	10.4	
100	5500	11.5	11.7	**802.11n, HT20 STBC**
104	5520	11.5	11.5	
108	5540	11.5	11.6	
112	5560	11.4	11.4	
116	5580	11.2	11.3	
120	5600	N/A	N/A	
124	5620	N/A	N/A	
128	5640	N/A	N/A	
132	5660	10.9	10.8	
136	5680	10.8	10.7	
140	5700	10.7	10.6	

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8.7.9.Wi-Fi 802.11a/n (5.0 GHz) – MIMO Sub Band U-NII-2C (5.5 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
102	5510	11.1	11.3	**802.11n, HT40 CDD**
110	5550	11.0	11.1	
118	5590	N/A	N/A	
126	5630	N/A	N/A	
134	5670	10.5	10.3	
102	5510	11.2	11.4	**802.11n, HT40 STBC**
110	5550	11.0	11.1	
118	5590	N/A	N/A	
126	5630	N/A	N/A	
134	5670	10.5	10.3	

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8.7.10.Wi-Fi 802.11a/n (5.0 GHz) – SISO Sub Band U-NII-3 (5.8 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
149	5745	11.3	10.6	**802.11a**
153	5765	11.3	10.6	
157	5785	11.3	10.4	
161	5805	11.3	10.3	
165	5825	11.4	10.1	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
149	5745	10.9	10.0	**802.11n, HT20**
153	5765	10.7	10.1	
157	5785	10.7	10.0	
161	5805	10.7	9.8	
165	5825	10.8	9.6	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
151	5755	10.3	9.8	**802.11n, HT40**
159	5795	10.3	9.5	

8.7.11.Wi-Fi802.11a/n (5.0 GHz) – SISO Sub Band U-NII-3 (5.8 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
149	5745	11.4	11.0	**802.11a CDD**
153	5765	11.4	10.8	
157	5785	11.4	10.7	
161	5805	11.4	10.5	
165	5825	11.3	10.4	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
149	5745	10.8	10.3	**802.11n, HT20 CDD**
153	5765	10.6	10.1	
157	5785	10.7	9.9	
161	5805	10.7	9.9	
165	5825	10.8	9.7	
149	5745	10.6	10.3	**802.11n, HT20 STBC**
153	5765	10.7	10.0	
157	5785	10.5	10.0	
161	5805	10.6	9.8	
165	5825	10.7	9.7	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
151	5755	10.2	9.8	**802.11n, HT40 CDD**
159	5795	10.2	9.6	
151	5755	10.2	9.8	**802.11n, HT40 STBC**
159	5795	10.3	9.5	

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8.8.RF Output Average Power Measurement: Bluetooth

8.8.1.Bluetooth

		Avg Power (dBm)		
Channel Number	**Frequency (MHZ)**	**V3.0 + EDR, GFSK**	**V3.0 + EDR, π/4 DQPSK**	**V3.0 + EDR, 8-DPSK**
0	2402.0	8.9	6.0	6.0
39	2441.0	8.6	5.5	5.5
78	2480.0	8.5	5.1	5.1

		Avg Power (dBm)
Channel Number	**Frequency (MHZ)**	**V4.0 LE, GFSK**
0	2402.0	9.6
18	2442.0	9.6
39	2480.0	9.7

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9. Dielectric Property Measurements & System Check

9.1.Tissue Dielectric Parameters

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.
Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz; IEEE1528:2013

Target Frequency (MHz)	Head		Body (FCC Only)	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
750	41.9	0.89	55.5	0.96
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1500	40.4	1.23	-	-
1610	40.3	1.29	53.8	1.40
1640	40.2	1.31	-	-
1750	40.1	1.37	-	-
1800	40	1.40	53.3	1.52
1900	40	1.40	53.3	1.52
2000	40	1.40	53.3	1.52
2100	39.8	1.49	-	-
2300	39.5	1.67	-	-
2450	39.2	1.80	52.7	1.95
2600	39	1.96	-	-
3000	38.5	2.40	52.0	2.73
3500	37.9	2.91	-	-
4000	37.4	3.43	-	-
4500	36.8	3.94	-	-
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00
6000	35.1	5.48	-	-

NOTE: For convenience, permittivity and conductivity values at some frequencies that are not part of the original data from Drossos et al. [B60] or the extension to 5800 MHz are provided (i.e., the values shown in italics). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6000 MHz that were linearly extrapolated from the values at 3000 MHz and 5800 MHz.

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9.2. System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

9.3. Reference Target SAR Values

The reference SAR values are obtained from the calibration certificate of system validation dipoles. The measured values are normalised to 1 Watt.

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D750V3	1011	16/01/2015	750	1g	8.09	8.54
				10g	5.32	5.66
D900V2	035	23/01/2015	900	1g	10.80	10.80
				10g	6.88	6.97
D1800V2	264	18/08/2014	1800	1g	38.60	37.80
				10g	20.30	20.10
D1900V2	540	08/12/2014	1900	1g	40.10	40.00
				10g	20.90	21.10
D2450V2	725	08/12/2015	2450	1g	50.80	49.90
				10g	23.70	23.20
D5GHzV2	1016	24/02/2015	5250	1g	79.00	76.00
				10g	22.70	21.20
D5GHzV2	1016	24/02/2015	5600	1g	80.90	77.70
				10g	23.00	21.40
D5GHzV2	1016	24/02/2015	5750	1g	79.10	74.40
				10g	22.50	20.50

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9.4. Dielectric Property Measurements & System Check Results

The 1-g SAR and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target. The internal limit is set to 5%.

SAR Lab 57

System Check 750 Body
Date: 17/06/2015
Validation Dipole and Serial Number: D750V3 SN: 1011

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	750	23.0	22.3	ε_r	55.55	53.24	-4.16	5.00
				σ	0.96	0.96	-0.35	5.00
				1g SAR	8.54	8.64	1.17	5.00
				10g SAR	5.66	5.76	1.77	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
23230	Middle	782.0	ε_r	53.30
			σ	0.99
23780	Low	709.0	ε_r	53.80
			σ	0.95
23790	Middle	710.0	ε_r	53.70
			σ	0.95
23800	High	711.0	ε_r	53.70
			σ	0.95

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SAR Lab 57 (Continued)

System Check 900 Body
Date: 11/06/2015
Validation Dipole and Serial Number: D900V2 SN: 1d168

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	900	23.0	21.6	ε_r	55.00	53.60	-2.55	5.00
				σ	1.05	1.06	0.67	5.00
				1g SAR	10.80	10.32	-4.44	5.00
				10g SAR	6.97	6.76	-3.01	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
4132	Low	826.4	ε_r	54.00
			σ	1.01
4183	Middle	836.6	ε_r	53.90
			σ	1.01
4233	High	846.6	ε_r	53.90
			σ	1.02
1013	Low	824.70	ε_r	54.00
			σ	1.01
384	Middle	836.52	ε_r	53.90
			σ	1.01
777	High	848.31	ε_r	53.90
			σ	1.02
476	Low	817.9	ε_r	54.01
			σ	1.00
580	Middle	820.5	ε_r	54.00
			σ	1.00
684	High	823.1	ε_r	53.99
			σ	1.01

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SAR Lab 57

System Check 900 Body
Date: 15/06/2015
Validation Dipole and Serial Number: D900V2 SN: 1d168

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	900	23.0	23.3	ε_r	55.00	52.55	-4.45	5.00
				σ	1.05	1.05	0.05	5.00
				1g SAR	10.80	10.72	-0.74	5.00
				10g SAR	6.97	6.96	-0.14	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
190	Low	836.6	ε_r	54.00
			σ	1.00
128	Middle	824.2	ε_r	54.00
			σ	1.01
251	High	848.8	ε_r	53.90
			σ	1.02
476	Low	817.9	ε_r	54.00
			σ	1.00
580	Middle	820.5	ε_r	54.00
			σ	1.00
684	High	823.1	ε_r	54.00
			σ	1.01
20450	Low	829.0	ε_r	54.00
			σ	1.01
20525	Middle	836.5	ε_r	53.90
			σ	1.01
20600	High	844.0	ε_r	53.90
			σ	1.02

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SAR Lab 57

System Check 1800 Body
Date: 19/06/2015
Validation Dipole and Serial Number: D1800V2 SN: 264

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1800	23.0	21.1	ε_r	53.30	52.29	-1.89	5.00
				σ	1.52	1.57	3.49	5.00
				1g SAR	37.80	39.04	3.28	5.00
				10g SAR	20.10	20.40	1.49	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
20000	Low	1715.0	ε_r	52.60
			σ	1.49
20175	Middle	1732.5	ε_r	52.6
			σ	1.51
20350	High	1750.0	ε_r	52.49
			σ	1.53

System Check 1800 Body
Date: 22/06/2015
Validation Dipole and Serial Number: D1800V2 SN: 264

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1800	23.0	21.6	ε_r	53.30	51.74	-2.93	5.00
				σ	1.52	1.56	2.57	5.00
				1g SAR	37.80	38.00	0.53	5.00
				10g SAR	20.10	19.92	-0.90	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1312	Low	1712.4	ε_r	52.60
			σ	1.49
1412	Middle	1732.4	ε_r	52.60
			σ	1.51
1513	High	1752.6	ε_r	52.50
			σ	1.53
20000	Low	1715.0	ε_r	52.60
			σ	1.49
20175	Middle	1732.5	ε_r	52.60
			σ	1.51
20350	High	1750.0	ε_r	52.50
			σ	1.53

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SAR Lab 57 (Continued)

System Check 1900 Body
Date: 24/06/2015
Validation Dipole and Serial Number: D1900V2 SN: 540

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1900	23.0	23.9	ε_r	53.30	51.43	-3.51	5.00
				σ	1.52	1.59	4.72	5.00
				1g SAR	40.00	40.80	2.00	5.00
				10g SAR	21.10	21.36	1.23	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
512	Low	1850.2	ε_r	52.70
			σ	1.44
661	Middle	1880.0	ε_r	52.50
			σ	1.47
810	High	1909.8	ε_r	52.40
			σ	1.50
18700	Low	1860.0	ε_r	52.60
			σ	1.45
18900	Middle	1880.0	ε_r	52.50
			σ	1.47
19100	High	1900.0	ε_r	52.50
			σ	1.49
26140	Low	1860.0	ε_r	52.60
			σ	1.45
26365	Middle	1882.5	ε_r	52.50
			σ	1.47
26590	High	1905.0	ε_r	52.50
			σ	1.49

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SAR Lab 57 (Continued)

System Check 1900 Body
Date: 29/06/2015
Validation Dipole and Serial Number: D1900V2 SN: 540

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1900	23.0	23.9	ε_r	53.30	53.32	0.04	5.00
				σ	1.52	1.59	4.86	5.00
				1g SAR	40.00	40.80	2.00	5.00
				10g SAR	21.10	21.44	1.61	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
18700	Low	1860.0	ε_r	52.62
			σ	1.45
18900	Middle	1880.0	ε_r	52.50
			σ	1.47
19100	High	1900.0	ε_r	52.50
			σ	1.49
26140	Low	1860.0	ε_r	52.60
			σ	1.45
26365	Middle	1882.5	ε_r	52.50
			σ	1.47
26590	High	1905.0	ε_r	52.50
			σ	1.49
25	Low	1851.25	ε_r	52.70
			σ	1.44
600	Middle	1880.0	ε_r	52.50
			σ	1.47
1175	High	1908.75	ε_r	52.40
			σ	1.50

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SAR Lab 59

System Check 1900 Body
Date: 01/06/2015
Validation Dipole and Serial Number: D1900V2 SN: 540

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1900	23.0	23.0	ε_r	53.30	52.57	-1.37	5.00
				σ	1.52	1.47	-3.06	5.00
				1g SAR	40.00	41.20	3.00	5.00
				10g SAR	21.10	21.48	1.80	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
9262	Low	1852.4	ε_r	52.80
			σ	1.47
9400	Middle	1880.0	ε_r	52.7
			σ	1.50
9538	High	1907.6	ε_r	52.60
			σ	1.53

System Check 1900 Body
Date: 22/06/2015
Validation Dipole and Serial Number: D1900V2 SN: 540

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	1900	23.0	22.2	ε_r	53.30	53.32	0.04	5.00
				σ	1.52	1.59	4.86	5.00
				1g SAR	40.00	39.76	-0.60	5.00
				10g SAR	21.10	20.92	-0.85	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
9262	Low	1852.4	ε_r	52.80
			σ	1.47
9400	Middle	1880.0	ε_r	52.7
			σ	1.50
9538	High	1907.6	ε_r	52.60
			σ	1.53

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SAR Lab 59 (Continued)

System Check 2450 Body
Date: 02/07/2015
Validation Dipole and Serial Number: D2450V2 SN: 725

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	2450	23.0	21.6	ε_r	52.70	53.20	0.95	5.00
				σ	1.95	1.93	-0.81	5.00
				1g SAR	49.90	50.00	0.20	5.00
				10g SAR	23.20	23.48	1.21	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412.0	ε_r	53.27
			σ	1.89
6	Middle	2437.0	ε_r	53.22
			σ	1.92
11	High	2462.0	ε_r	53.16
			σ	1.95

System Check 2450 Body
Date: 06/07/2015
Validation Dipole and Serial Number: D2450V2 SN: 725

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	2450	23.0	22.7	ε_r	52.70	52.40	-0.57	5.00
				σ	1.95	2.01	3.37	5.00
				1g SAR	49.90	51.60	3.41	5.00
				10g SAR	23.20	23.96	3.28	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412.0	ε_r	52.53
			σ	1.97
6	Middle	2437.0	ε_r	52.45
			σ	2.00
11	High	2462.0	ε_r	52.38
			σ	2.03

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SAR Lab 59 (Continued)

System Check 2450 Body
Date: 14/07/2015
Validation Dipole and Serial Number: D2450V2 SN: 725

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	2450	23.0	22.2	ε_r	52.70	52.07	-1.20	5.00
				σ	1.95	1.98	1.63	5.00
				1g SAR	49.90	50.80	1.80	5.00
				10g SAR	23.20	23.76	2.41	5.00

Channel Number	Frequency (MHz)	Parameters	
0	2402.0	ε_r	52.09
		σ	1.93
39	2441.0	ε_r	52.05
		σ	1.97
18	2442.0	ε_r	52.05
		σ	1.98
78	2480.0	ε_r	51.94
		σ	2.02

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SAR Lab 61

System Check 5.25/5.6/5.75 GHz Body
Date: 01/07/2015
Validation Dipole and Serial Number: D1016V2 SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5250	23.0	24.0	ε_r	48.90	48.94	0.08	5.00
				σ	5.36	5.33	-0.58	5.00
				1g SAR	76.00	74.30	-2.24	5.00
				10g SAR	21.20	2.09	-1.42	5.00
Body	5600	23.0	24.0	ε_r	48.50	48.14	-0.74	5.00
				σ	5.77	5.85	1.31	5.00
				1g SAR	77.70	77.60	-0.13	5.00
				10g SAR	21.40	21.70	1.40	5.00
Body	5750	23.0	24.0	ε_r	48.30	48.14	-0.33	5.00
				σ	5.94	6.03	1.59	5.00
				1g SAR	74.40	74.50	0.13	5.00
				10g SAR	20.50	20.80	1.46	5.00

Channel Number	Frequency (MHz)	Parameters	
52	5260.0	ε_r	48.87
		σ	5.35
56	5280.0	ε_r	48.73
		σ	5.38
64	5260.0	ε_r	48.59
		σ	5.45
100	5500.0	ε_r	48.30
		σ	5.67
149	5745.0	ε_r	47.59
		σ	6.04
165	5825.0	ε_r	47.53
		σ	6.20

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SAR Lab 61 (Continued)

System Check 5.75 GHz Body
Date: 06/07/2015
Validation Dipole and Serial Number: D1016V2 SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5750	23.0	24.0	ε_r	48.30	46.10	-4.55	5.00
				σ	5.94	6.15	3.52	5.00
				1g SAR	74.40	73.90	-0.67	5.00
				10g SAR	20.50	20.70	0.98	5.00

Channel Number	Frequency (MHz)	Parameters	
149	5745.0	ε_r	46.11
		σ	6.15
153	5765.0	ε_r	46.07
		σ	6.18

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10. Measurements, Examinations and Derived Results

10.1. General Comments

SAR Test Reduction criteria are as follows:

KDB 447498 D01 General RF Exposure Guidance:
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

KDB 941225 D01 SAR test for 3G devices:
When the maximum output power and tune-up tolerance specified for production units in a secondary mode is ≤ ¼ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode

SAR test exclusion may apply to 3GPP Rel. 6 HSPA, Rel. 7 HSPA+ and Rel. 8 DC-HSDPA. When SAR measurement is required for HSPA, HSPA+ or DC-HSDPA, a KDB inquiry is required to confirm that the wireless mode configurations in the test setup have remained stable throughout the SAR measurements.
For this particular model, none of the 1g SAR measurements were >1.2W/kg, hence no KDB inquiry was raised to address this.

KDB 941225 D05 SAR for LTE Devices:
SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

KDB 248227 D01 SAR meas for 802.11 v02:
SAR test reduction for 802.11 Wi-Fi transmission mode configurations are considered separately for DSSS and OFDM. An initial test position is determined to reduce the number of tests required for certain exposure configurations with multiple test positions. An initial test configuration is determined for each frequency band and aggregated band according to maximum output power, channel bandwidth, wireless mode configurations and other operating parameters to streamline the measurement requirements. For 2.4 GHz DSSS, either the initial test position or DSSS procedure is applied to reduce the number of SAR tests; these are mutually exclusive. For OFDM, an initial test position is only applicable to next to the ear, UMPC mini-tablet and hotspot mode configurations, which is tested using the initial test configuration to facilitate test reduction. For other exposure conditions with a fixed test position, SAR test reduction is determined using only the initial test configuration.

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

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

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KDB 248227 D01 SAR meas for 802.11 v02 (Continued):

- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported* SAR is ≤ 0.8 W/kg or all required test positions are tested.
  - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required test channels are considered.
  - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

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

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10.2. Specific Absorption Rate - Test Results

For All SAR measurement in this report the 1g-SAR limit tested to is 1.6 W/Kg

10.2.1. GSM850 – Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 1.068 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	**Dist (mm)**	**Test Position**	**Channel No.**	**Freq (MHz)**	**#RB**	**Start RB**	**Tune-up limit**	**Meas.**	**Meas.**	**Reported**	**Scan No.**
GMSK (GPRS 2 Slots)	14	Back	190	836.6	N/A	N/A	33.00	32.00	0.818	1.030	1
GMSK (GPRS 2 Slots)	12	Top	190	836.6	N/A	N/A	33.00	32.00	0.263	0.331	2
GMSK (GPRS 2 Slots)	0	Left	190	836.6	N/A	N/A	33.00	32.00	0.171	0.215	3
GMSK (GPRS 2 Slots)	14	Back	128	824.2	N/A	N/A	33.00	32.10	0.868	1.068	4*
GMSK (GPRS 2 Slots)	14	Back	251	848.8	N/A	N/A	33.00	32.00	0.834	1.050	5

***As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under** *SAR Measurement Variability and Measurement Uncertainty Analysis Results* **Table.**

10.2.2. GSM850 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.471 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	**Dist (mm)**	**Test Position**	**Channel No.**	**Freq (MHz)**	**#RB**	**Start RB**	**Tune-up limit**	**Meas.**	**Meas.**	**Reported**	**Scan No.**
GMSK (GPRS 2 Slots)	0	Back	190	836.6	N/A	N/A	23.50	22.70	0.392	0.471	6
GMSK (GPRS 2 Slots)	0	Top	190	836.6	N/A	N/A	23.50	22.70	0.203	0.244	7
GMSK (EDGE 2 Slots MCS9)	0	Back	190	836.6	N/A	N/A	24.00	23.60	0.387	0.424	8
GMSK (EDGE 2 Slots MCS9)	0	Top	190	836.6	N/A	N/A	24.00	23.60	0.206	0.226	9

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10.2.3. PCS1900 – Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.630 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
GMSK (GPRS 2 Slots)	14	Back	661	1880.0	N/A	N/A	30.00	29.60	0.575	0.630	10
GMSK (GPRS 2 Slots)	12	Top	661	1880.0	N/A	N/A	30.00	29.60	0.413	0.453	11

10.2.4. PCS1900 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.717 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
GMSK (GPRS 2 Slots)	0	Back	661	1880.0	N/A	N/A	20.00	18.80	0.430	0.567	12
GMSK (GPRS 2 Slots)	0	Top	661	1880.0	N/A	N/A	20.00	18.80	0.544	0.717	13
(EDGE 2 Slots MCS9)	0	Back	661	1880.0	N/A	N/A	20.00	19.30	0.412	0.484	14
(EDGE 2 Slots MCS9)	0	Top	661	1880.0	N/A	N/A	20.00	19.30	0.526	0.618	15
GMSK (GPRS 2 Slots)	0	Top	512	1850.2	N/A	N/A	20.00	18.70	0.525	0.708	16
GMSK (GPRS 2 Slots)	0	Top	810	1909.8	N/A	N/A	20.00	18.70	0.524	0.707	17

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10.2.5. WCDMA FDD 2– Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 1.004 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	9400	1880.0	N/A	N/A	24.00	22.70	0.674	0.909	18
QPSK	14	Back	9262	1852.4	N/A	N/A	24.00	22.60	0.727	1.004	19
QPSK	14	Back	9538	1907.6	N/A	N/A	24.00	22.80	0.635	0.837	20
QPSK	12	Top	9400	1880.0	N/A	N/A	24.00	22.70	0.494	0.666	21

10.2.6. WCDMA FDD 2 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 1.163 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	9262	1852.4	N/A	N/A	15.0	14.0	0.588	0.740	22*
QPSK	0	Top	9262	1852.4	N/A	N/A	15.0	14.0	0.452	0.569	23
QPSK	0	Back	9400	1880.0	N/A	N/A	15.0	13.0	0.734	1.163	24
QPSK	0	Back	9538	1907.6	N/A	N/A	15.0	13.7	0.623	0.840	25

***As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under** *SAR Measurement Variability and Measurement Uncertainty Analysis Results* **Table.**

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10.2.7. WCDMA FDD 4– Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 1.123 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	1412	1732.4	N/A	N/A	24.00	22.70	0.774	1.044	26
QPSK	12	Top	1412	1732.4	N/A	N/A	24.00	22.70	0.294	0.397	27
QPSK	14	Back	1312	1712.4	N/A	N/A	24.00	22.60	0.754	1.041	28
QPSK	14	Back	1512	1752.6	N/A	N/A	24.00	22.80	0.852	1.123	29*

***As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under** *SAR Measurement Variability and Measurement Uncertainty Analysis Results* **Table.**

10.2.8. WCDMA FDD 4 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.730 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	1412	1732.4	N/A	N/A	14.0	12.4	0.505	0.730	30
QPSK	0	Top	1412	1732.4	N/A	N/A	14.0	12.4	0.494	0.714	31

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10.2.9. WCDMA FDD 5– Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.723 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	4183	836.6	N/A	N/A	24.00	22.70	0.536	0.723	32
QPSK	12	Top	4183	836.6	N/A	N/A	24.00	22.70	0.359	0.484	33
QPSK	14	Back	4132	826.4	N/A	N/A	24.00	22.60	0.457	0.631	34
QPSK	14	Back	4233	846.6	N/A	N/A	24.00	22.50	0.423	0.598	35

10.2.10. WCDMA FDD 5 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.425 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	4183	836.6	N/A	N/A	18.00	16.60	0.308	0.425	36
QPSK	0	Top	4183	836.6	N/A	N/A	18.00	16.60	0.156	0.215	37

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10.2.11. CDMA BC0 Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.666 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	14	Back	384	836.52	N/A	N/A	24.50	23.50	0.479	0.603	38
SSMA (RC3 SO32 Data)	12	Top	384	836.52	N/A	N/A	24.50	23.50	0.393	0.495	39
SSMA (RC3 SO32 Data)	14	Back	1013	824.70	N/A	N/A	24.50	23.40	0.517	0.666	40
SSMA (RC3 SO32 Data)	14	Back	777	848.31	N/A	N/A	24.50	23.20	0.471	0.635	41

10.2.12. CDMA BC0 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.306 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	0	Back	384	836.52	N/A	N/A	17.50	17.00	0.273	0.306	42
SSMA (RC3 SO32 Data)	0	Top	384	836.52	N/A	N/A	17.50	17.00	0.147	0.165	43

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10.2.13. CDMA BC1 Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 1.052 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	14	Back	600	1880.0	N/A	N/A	24.50	23.50	0.770	0.969	44
SSMA (RC3 SO32 Data)	12	Top	600	1880.0	N/A	N/A	24.50	23.50	0.533	0.671	45
SSMA (RC3 SO32 Data)	14	Back	25	1851.25	N/A	N/A	24.50	23.40	0.817	1.052	46*
SSMA (RC3 SO32 Data)	14	Back	1175	1908.75	N/A	N/A	24.50	23.40	0.693	0.893	47

***As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under** *SAR Measurement Variability and Measurement Uncertainty Analysis Results* **Table.**

10.2.14. CDMA BC1 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.534 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	0	Back	1175	1908.75	N/A	N/A	13.50	13.10	0.487	0.534	48
SSMA (RC3 SO32 Data)	0	Top	1175	1908.75	N/A	N/A	13.50	13.10	0.409	0.448	49

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10.2.15. CDMA BC10- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.759 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	14	Back	580	820.5	N/A	N/A	24.50	23.50	0.603	0.759	50
SSMA (RC3 SO32 Data)	12	Top	580	820.5	N/A	N/A	24.50	23.50	0.386	0.486	51
SSMA (RC3 SO32 Data)	14	Back	476	817.9	N/A	N/A	24.50	23.40	0.552	0.711	52
SSMA (RC3 SO32 Data)	14	Back	684	823.1	N/A	N/A	24.50	23.40	0.550	0.709	53

10.2.16. CDMA BC10 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.323 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
SSMA (RC3 SO32 Data)	0	Back	580	820.5	N/A	N/A	17.50	17.00	0.288	0.323	54
SSMA (RC3 SO32 Data)	0	Top	580	820.5	N/A	N/A	17.50	17.00	0.167	0.187	55

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10.2.17. LTE Band 2- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.728 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	19100	1900.0	1	99	24.00	23.00	0.578	0.728	56
QPSK	14	Back	18900	1880.0	50	25	23.00	21.90	0.480	0.618	57
QPSK	12	Top	19100	1900.0	1	99	24.00	23.00	0.452	0.569	58
QPSK	12	Top	18900	1880.0	50	25	23.00	21.90	0.319	0.411	59

10.2.18. LTE Band 2 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.824 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	18700	1860.0	1	49	13.50	12.80	0.551	0.647	60
QPSK	0	Back	18700	1860.0	50	0	13.50	12.90	0.513	0.589	61
QPSK	0	Top	18700	1860.0	1	49	13.50	12.80	0.701	0.824	62
QPSK	0	Top	18900	1880.0	1	49	13.50	12.10	0.364	0.502	63
QPSK	0	Top	19100	1900.0	1	49	13.50	12.00	0.429	0.606	64
QPSK	0	Top	18700	1860.0	50	0	13.50	12.90	0.553	0.635	65

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10.2.19. LTE Band 4- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.809 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	20050	1720.0	1	99	24.00	22.90	0.564	0.727	66
QPSK	14	Back	20175	1732.5	50	50	23.00	21.80	0.479	0.631	67
QPSK	12	Top	20050	1720.0	1	99	24.00	22.90	0.282	0.363	68
QPSK	12	Top	20175	1732.5	50	50	23.00	21.80	0.230	0.303	69
QPSK	14	Back	20175	1720.0	1	99	24.00	22.70	0.590	0.796	70
QPSK	14	Back	21300	1750.0	1	99	24.00	22.80	0.614	0.809	71

10.2.20. LTE Band 4 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.623 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	20050	1720.0	1	99	13.00	12.30	0.390	0.458	72
QPSK	0	Back	20050	1720.0	50	0	13.00	12.30	0.437	0.513	73
QPSK	0	Top	20050	1720.0	1	99	13.00	12.30	0.530	0.623	74
QPSK	0	Top	20050	1720.0	50	0	13.00	12.30	0.468	0.550	75

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10.2.21. LTE Band 5- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.676 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	20525	836.5	1	0	24.00	22.80	0.513	0.676	76
QPSK	14	Back	20450	829.0	25	0	23.00	21.80	0.417	0.550	77
QPSK	12	Top	20525	836.5	1	0	24.00	22.80	0.329	0.434	78
QPSK	12	Top	20450	829.0	25	0	23.00	21.80	0.269	0.355	79
QPSK	14	Back	20450	829.0	1	0	24.00	22.60	0.432	0.596	80
QPSK	14	Back	20600	844.0	1	0	24.00	22.70	0.417	0.563	81

10.2.22. LTE Band 5 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.260 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	20450	829.0	1	0	17.00	16.50	0.232	0.260	82
QPSK	0	Back	20600	844.0	25	12	17.00	16.50	0.218	0.245	83
QPSK	0	Top	20450	829.0	1	0	17.00	16.50	0.125	0.140	84
QPSK	0	Top	20600	844.0	25	12	17.00	16.50	0.114	0.128	85

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10.2.23. LTE Band 13- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.698 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	23230	782.0	1	24	24.00	22.90	0.542	0.698	86
QPSK	14	Back	23230	782.0	25	12	23.00	21.80	0.423	0.558	87
QPSK	12	Top	23230	782.0	1	24	24.00	22.90	0.306	0.394	88
QPSK	12	Top	23230	782.0	25	12	23.00	21.80	0.239	0.315	89

10.2.24. LTE Band 13 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.588 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	23230	782.0	1	24	19.00	18.90	0.569	0.582	90
QPSK	0	Back	23230	782.0	25	12	19.00	18.90	0.575	0.588	91
QPSK	0	Top	23230	782.0	1	24	19.00	18.90	0.339	0.347	92
QPSK	0	Top	23230	782.0	25	12	19.00	18.90	0.335	0.343	93

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10.2.25. LTE Band 17- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 0.526 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	23790	710.0	1	24	24.00	22.80	0.399	0.526	94
QPSK	14	Back	23790	710.0	25	12	23.00	21.70	0.316	0.426	95
QPSK	12	Top	23790	710.0	1	24	24.00	22.80	0.212	0.279	96
QPSK	12	Top	23790	710.0	25	12	23.00	21.70	0.169	0.228	97

10.2.26. LTE Band 17 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.796 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	23790	710.0	1	24	19.00	18.90	0.767	0.785	98
QPSK	0	Back	23790	710.0	25	12	19.00	18.80	0.753	0.788	99
QPSK	0	Top	23790	710.0	1	24	19.00	18.90	0.519	0.531	100
QPSK	0	Top	23790	710.0	25	12	19.00	18.80	0.512	0.536	101
QPSK	0	Back	23780	709.0	1	24	19.00	18.90	0.775	0.793	102
QPSK	0	Back	23800	711.0	1	24	19.00	18.80	0.760	0.796	103

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10.2.27. LTE Band 25- Body Configuration 1g – Proximity Sensor Deactivated

Max Reported SAR = 1.315 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	14	Back	26590	1905.0	1	0	24.00	22.80	0.866	1.142	104
QPSK	14	Back	26140	1860.0	1	0	24.00	22.70	0.975	1.315	105*
QPSK	14	Back	26365	1882.5	1	0	24.00	22.70	0.918	1.238	106
QPSK	14	Back	26140	1860.0	50	0	23.00	21.70	0.739	0.997	107
QPSK	14	Back	26365	1882.5	50	0	23.00	21.50	0.430	0.607	108
QPSK	14	Back	26590	1905.0	50	0	23.00	21.60	0.607	0.838	109
QPSK	14	Back	26140	1860.0	100	0	23.00	21.70	0.453	0.611	110
QPSK	12	Top	26590	1905.0	1	0	24.00	22.80	0.487	0.642	111
QPSK	12	Top	26140	1860.0	50	0	23.00	21.70	0.325	0.438	112

*As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under ***SAR Measurement Variability and Measurement Uncertainty Analysis Results*** Table.

10.2.28. LTE Band 25 – Body Configuration 1g – Proximity Sensor Active

Max Reported SAR = 0.882 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	Channel No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
QPSK	0	Back	26590	1905.0	1	99	13.50	13.00	0.731	0.820	113
QPSK	0	Back	26140	1860.0	1	99	13.50	11.50	0.429	0.680	114
QPSK	0	Back	26365	1882.5	1	99	13.50	12.90	0.681	0.782	115
QPSK	0	Back	26140	1860.0	50	0	13.50	12.90	0.613	0.704	116
QPSK	0	Back	26590	1905.0	100	0	13.50	12.50	0.596	0.750	117
QPSK	0	Top	26590	1905.0	1	99	13.50	13.00	0.786	0.882	118
QPSK	0	Top	26140	1860.0	1	99	13.50	11.50	0.390	0.618	119
QPSK	0	Top	26365	1882.5	1	99	13.50	12.90	0.615	0.706	120
QPSK	0	Top	26140	1860.0	50	0	13.50	12.90	0.532	0.611	121
QPSK	0	Top	26590	1905.0	100	0	13.50	12.50	0.484	0.609	122

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10.2.29. Wi-Fi 2.4 GHz – Body Configuration 1g

(Proximity Sensor NOT Supported)

Max. Reported SAR: 0.542 (W/kg)

					Power (dBm) - ANT 1		1g: SAR Results (W/kg) - ANT 1			Power (dBm) - ANT 2		1g: SAR Results (W/kg) – ANT 2			
Mod.	Dist (mm)	EUT Position	CH #	Freq (MHz)	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Scan No.
SISO (Ant 1)															
BPSK (802.11b)	0.0	Back	6	2437.0	12.0	11.7	0.430	0.443	0.475	N/A					123
	0.0	Right	6	2437.0	12.0	11.7	0.305	0.355	0.380						124
SISO (Ant 2)															
BPSK (802.11b)	0.0	Back	11	2462.0	N/A					12.0	11.8	0.231	0.251	0.263	125
	0.0	Right	11	2462.0						12.0	11.8	0.319	0.342	0.358	126
MIMO (Ant 1 + Ant 2)															
BPSK (802.11g CDD)	0.0	Back	11	2462.0	12.0	11.3	0.396	0.411	0.483	12.0	11.6	-	-	-	127
	0.0	Right	11	2462.0	12.0	11.3	0.404	0.405	0.476	12.0	11.6	-	-	-	128
	0.0	Back	1	2412.0	12.0	11.2	0.432	0.451	0.542	12.0	11.3	-	-	-	129
	0.0	Back	6	2437.0	12.0	11.4	0.431	0.457	0.525	12.0	11.5	-	-	-	130

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10.2.30. Wi-Fi 5.3 GHz (UNII Band 2B) – Body Configuration 1g

(Proximity Sensor NOT Supported)

Max. Reported SAR: 0.648 (W/kg)

					Power (dBm) - ANT 1		1g: SAR Results (W/kg) - ANT 1			Power (dBm) - ANT 2		1g: SAR Results (W/kg) – ANT 2			
Mod.	Dist (mm)	EUT Position	CH #	Freq (MHz)	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Scan No.
SISO (Ant 1)															
BPSK (802.11a 6Mbps)	0.0	Back	52	5260.0	13.0	12.8	0.531	0.230	0.241	N/A					131
	0.0	Right	52	5260.0	13.0	12.8	0.305	0.257	0.269						132
SISO (Ant 2)															
BPSK (802.11a 6Mbps)	0.0	Back	64	5230.0	N/A					13.0	12.5	0.480	0.546	0.613	133
	0.0	Right	64	5230.0						13.0	12.5	0.316	0.337	0.378	134
MIMO (Ant 1 + Ant 2)															
BPSK (802.11a 6Mbps CDD)	0.0	Back	56	5280.0	13.0	12.8	0.619	0.619	0.648	13.0	12.7	-	-	-	135
	0.0	Right	56	5280.0	13.0	12.8	0.384	0.346	0.362	13.0	12.7	-	-	-	136

Note(s):

1. Highest *reported* SAR is ≤ 0.4 W/kg. Therefore, further SAR measurements within this exposure condition are not required.

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10.2.31. Wi-Fi 5.5 GHz (UNII Band 2C) – Body Configuration 1g

(Proximity Sensor NOT Supported)

Max. Reported SAR: 1.320 (W/kg)

					Power (dBm) - ANT 1		1g: SAR Results (W/kg) - ANT 1			Power (dBm) - ANT 2		1g: SAR Results (W/kg) – ANT 2			
Mod.	Dist (mm)	EUT Position	CH #	Freq (MHz)	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Scan No.
SISO (Ant 1)															
BPSK (802.11a 6Mbps)	0.0	Right	100	5500.0	13.0	12.4	1.070	1.150	1.320	N/A					137*
	0.0	Right	104	5520.0	13.0	12.2	0.938	0.955	1.148						138
SISO (Ant 2)															
BPSK (802.11a 6Mbps)	0.0	Back	100	5500.0	N/A					13.0	12.4	0.428	0.465	0.534	139
MIMO (Ant 1 + Ant 2)															
BPSK (802.11a 6Mbps CDD)	0.0	Back	100	5500.0	13.0	12.3	0.467	0.482	0.566	13.0	12.4	-	-	-	140

***As per 865664 D01, the highest SAR measured > 0.8 W/kg has been re-measured and included in the report in section 9.3 under** *SAR Measurement Variability and Measurement Uncertainty Analysis Results* **Table.**

Note(s):

1. Highest *reported* SAR is ≤ 0.4 W/kg. Therefore, further SAR measurements within this exposure condition are not
2. Testing for a second channel was required because the *reported* SAR for this test position was >0.8 W/kg.
3. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

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10.2.32. Wi-Fi 5.8 GHz (UNII Band 3) – Body Configuration 1g

(Proximity Sensor NOT Supported)

Max. Reported SAR: 0.946 (W/kg)

					Power (dBm) - ANT 1		1g: SAR Results (W/kg) - ANT 1			Power (dBm) - ANT 2		1g: SAR Results (W/kg) – ANT 2			
Mod.	Dist (mm)	EUT Position	CH #	Freq (MHz)	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Tune up Limit	Meas. Pwr	Area Scan (Motorola Scan)	Zoom Scan Meas.	Zoom Scan Reported	Scan No.
SISO (Ant 1)															
BPSK (802.11a 6Mbps)	0.0	Right	165	5825.0	12.0	11.4	0.767	0.754	0.866	N/A					141
	0.0	Right	149	5745.0	12.0	11.3	0.809	0.805	0.946						142
SISO (Ant 2)															
BPSK (802.11a 6Mbps)	0.0	Back	149	5745.0	N/A					12.0	10.6	0.524	0.682	0.941	143
	0.0	Back	153	5765.0						12.0	10.6	0.625	0.641	0.885	144
MIMO (Ant 1 + Ant 2)															
BPSK (802.11a 6Mbps CDD)	0.0	Back	149	5745.0	12.0	11.4	0.621	0.689	0.791	12.0	11.0	-	-	-	145

Note(s):

1. Highest *reported* SAR is ≤ 0.4 W/kg. Therefore, further SAR measurements within this exposure condition are not required.
2. Testing for a second channel was required because the *reported* SAR for this test position was >0.8 W/kg.
3. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

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10.2.33. Bluetooth – Body Configuration 1g

(Proximity Sensor NOT Supported)

Max. Reported SAR: 0.121 (W/kg)

					RB allocation		Power (dBm)		1g : SAR Results (W/kg)		
Mode or Modulation	Dist (mm)	Test Position	CH No.	Freq (MHz)	#RB	Start RB	Tune-up limit	Meas.	Meas.	Reported	Scan No.
LE Mode	0	Back	18	2442.0	N/A	N/A	10.0	9.6	0.097	0.107	146
LE Mode	0	Right	18	2442.0	N/A	N/A	10.0	9.6	0.110	0.121	147
LE Mode	0	Right	0	2402.0	N/A	N/A	10.0	9.6	0.095	0.104	148
LE Mode	0	Right	39	2480.0	N/A	N/A	10.0	9.7	0.094	0.101	149

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10.3. SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

Repeated Measurement Results

Body Exposure Condition

Frequency band	Test Position	Mode	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Note
					Original	Repeated		
GSM850	Back	QPSK	128	824.2	0.868	0.854	1.02	1
CDMA BC 1	Back	QPSK	25	1851.25	0.817	0.816	1.00	1
LTE Band 25	Back	QPSK	26140	1860.0	0.975	0.952	1.02	1
WLAN 5.5GHz	Right	BPSK	100	5500.0	1.150	1.090	1.05	1

Note(s):

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.

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11. Simultaneous Transmission Analysis

Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to the *reported* standalone SAR of each applicable simultaneous transmitting antenna.

	Simultaneous transmission conditions									
	WWAN			WLAN						WPAN
#	GSM Data	WCDMA Data	LTE Data	Wi-Fi 802.11b/g/n (2.4 GHz)			Wi-Fi 802.11a/n (5.0 GHz)			*Bluetooth* (ANT 1)
				SISO (Ant 1)	SISO (Ant 2)	MIMO (Ant 1 + Ant 2	SISO (Ant 1)	SISO (Ant 2)	MIMO (Ant 1 + Ant 2	
1	X			X						
2		X		X						
3			X	X						
4	X				X					
5		X			X					
6			X		X					
7	X					X				
8		X				X				
9			X			X				
10	X						X			
11		X					X			
12			X				X			
13	X							X		
14		X						X		
15			X					X		
16	X								X	
17		X							X	
18			X						X	
19	X									X
20		X								X
21			X							X

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Simultaneous Transmission Analysis (Continued)

KDB 447498 D01 General RF Exposure Guidance, introduces a new formula for calculating the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

$$SPLSR = (SAR_1 + SAR_2)^{1.5} / Ri$$

Where:

SAR_1 is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR_2 is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

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

$$[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$$

A new threshold of 0.04 is also introduced in the KDB 447498. Thus, in order for a pair of simultaneously transmitting antennas, with the sum of 1-g SAR > 1.6 W/kg, to qualify for exemption from Simultaneous Transmission SAR measurements, it has to satisfy the condition of:

$$(SAR_1 + SAR_2)^{1.5} / Ri < 0.04$$

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11.1.Simultaneous consideration for GSM + Wi-Fi + BT

11.1.1.GSM 850 + 2.4 GHz / GSM 850 + 5.0 GHz / GSM 850 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			GSM850 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.471	0.542			1.013	No
		① + ③	0.471		0.941		1.412	No
		① + ④	0.471			0.107	0.578	No
	Left	① + ②	0.215	-			0.215	No
		① + ③	0.215		-		0.215	No
		① + ④	0.215			-	0.215	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.244	-			0.244	No
		① + ③	0.244		-		0.244	No
		① + ④	0.244			-	0.244	No

11.1.2.PCS 1900 + 2.4 GHz / PCS 1900 + 5.0 GHz / PCS 1900 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			PCS1900 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.567	0.542			1.109	No
		① + ③	0.567		0.941		1.508	No
		① + ④	0.567			0.107	0.674	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.717	-			0.717	No
		① + ③	0.717		-		0.717	No
		① + ④	0.717			-	0.717	No

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11.2.Simultaneous consideration for WCDMA + Wi-Fi + BT

11.2.1.WCDMA FDD 2 + 2.4 GHz / WCDMA FDD 2 + 5.0 GHz / WCDMA FDD 2 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			WCDMA FDD 2 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	1.163	0.542			1.705	Yes
		① + ③	1.163		0.941		2.104	Yes
		① + ④	1.163			0.107	1.270	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.569	-			0.569	No
		① + ③	0.569		-		0.569	No
		① + ④	0.569			-	0.569	No

Case 1: Back of EUT configuration for the combinations, WCDMA FDD 2 + WLAN 2.4GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

Case 2: Back of EUT configuration for the combinations, WCDMA FDD 2 + WLAN 5.0GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

11.2.2.WCDMA FDD 4 + 2.4 GHz / WCDMA FDD 4 + 5.0 GHz / WCDMA FDD 4 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			WCDMA FDD 4 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.730	0.542			1.272	No
		① + ③	0.730		0.941		1.671	Yes
		① + ④	0.730			0.107	0.837	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.714	-			0.714	No
		① + ③	0.714		-		0.714	No
		① + ④	0.714			-	0.714	No

Case 3: Back of EUT configuration for the combinations, WCDMA FDD 4 + WLAN 5.0GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

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11.2.3.WCDMA FDD 5 + 2.4 GHz / WCDMA FDD 5 + 5.0 GHz / WCDMA FDD 5 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			WCDMA FDD 5 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.425	0.542			0.967	No
		① + ③	0.425		0.941		1.366	No
		① + ④	0.425			0.107	0.532	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.215	-			0.215	No
		① + ③	0.215		-		0.215	No
		① + ④	0.215			-	0.215	No

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11.3.Simultaneous consideration for CDMA + Wi-Fi + BT

11.3.1.CDMA BC 0 + 2.4 GHz / CDMA BC 0 + 5.0 GHz / CDMA BC 0 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			CDMA BC0 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.306	0.542			0.848	No
		① + ③	0.306		0.941		1.247	No
		① + ④	0.306			0.107	0.413	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.165	-			0.165	No
		① + ③	0.165		-		0.165	No
		① + ④	0.165			-	0.165	No

11.3.2.CDMA BC 1 + 2.4 GHz / CDMA BC 1 + 5.0 GHz / CDMA BC 1 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			CDMA BC1 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.534	0.542			1.076	No
		① + ③	0.534		0.941		1.475	No
		① + ④	0.534			0.107	0.641	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.448	-			0.448	No
		① + ③	0.448		-		0.448	No
		① + ④	0.448			-	0.448	No

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11.3.3.CDMA BC 10 + 2.4 GHz / CDMA BC 10 + 5.0 GHz / CDMA BC 10 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			CDMA BC10 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.323	0.542			0.865	No
		① + ③	0.323		0.941		1.264	No
		① + ④	0.323			0.107	0.430	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.187	-			0.187	No
		① + ③	0.187		-		0.187	No
		① + ④	0.187			-	0.187	No

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11.4.Simultaneous consideration for LTE + Wi-Fi + BT

11.4.1.LTE Band 2 + 2.4 GHz / LTE Band 2 + 5.0 GHz / LTE Band 2 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 2 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.647	0.542			1.189	No
		① + ③	0.647		0.941		1.588	No
		① + ④	0.647			0.107	0.754	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.824	-			0.824	No
		① + ③	0.824		-		0.824	No
		① + ④	0.824			-	0.824	No

11.4.2.LTE Band 4 + 2.4 GHz / LTE Band 4 + 5.0 GHz / LTE Band 4 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 4 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.513	0.542			1.055	No
		① + ③	0.513		0.941		1.454	No
		① + ④	0.513			0.107	0.620	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.623	-			0.623	No
		① + ③	0.623		-		0.623	No
		① + ④	0.623			-	0.623	No

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11.4.3.LTE Band 5 + 2.4 GHz / LTE Band 5 + 5.0 GHz / LTE Band 5 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 5 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.260	0.542			0.802	No
		① + ③	0.260		0.941		1.201	No
		① + ④	0.260			0.107	0.367	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.140	-			0.140	No
		① + ③	0.140		-		0.140	No
		① + ④	0.140			-	0.140	No

11.4.4.LTE Band 13 + 2.4 GHz / LTE Band 13 + 5.0 GHz / LTE Band 13 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 13 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.588	0.542			1.130	No
		① + ③	0.588		0.941		1.529	No
		① + ④	0.588			0.107	0.695	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.347	-			0.347	No
		① + ③	0.347		-		0.347	No
		① + ④	0.347			-	0.347	No

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11.4.5.LTE Band 17 + 2.4 GHz / LTE Band 17 + 5.0 GHz / LTE Band 17 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 17 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.796	0.542			1.338	No
		① + ③	0.793		0.941		1.734	Yes
		① + ④	0.793			0.107	0.900	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.536	-			0.536	No
		① + ③	0.536		-		0.536	No
		① + ④	0.536			-	0.536	No

Case 4: Back of EUT configuration for the combinations, LTE Band 17 + WLAN 5.0GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

11.4.6.LTE Band 25 + 2.4 GHz / LTE Band 25 + 5.0 GHz / LTE Band 25 + BT

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			LTE Band 25 ①	Wi-Fi (DTS) ②	Wi-Fi (UNII) ③	*Bluetooth* ④	Σ 1g SAR (W/kg)	SPLSR (Yes/ No)
Body	Back	① + ②	0.820	0.542			1.362	No
		① + ③	0.820		0.941		1.761	Yes
		① + ④	0.820			0.107	0.927	No
	Left	① + ②	-	-			-	No
		① + ③	-		-		-	No
		① + ④	-			-	-	No
	Right	① + ②	-	0.476			0.476	No
		① + ③	-		1.320		1.320	No
		① + ④	-			0.121	0.121	No
	Top	① + ②	0.882	-			0.882	No
		① + ③	0.882		-		0.882	No
		① + ④	0.882			-	0.882	No

Case 5: Back of EUT configuration for the combinations, LTE Band 25 + WLAN 5.0GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

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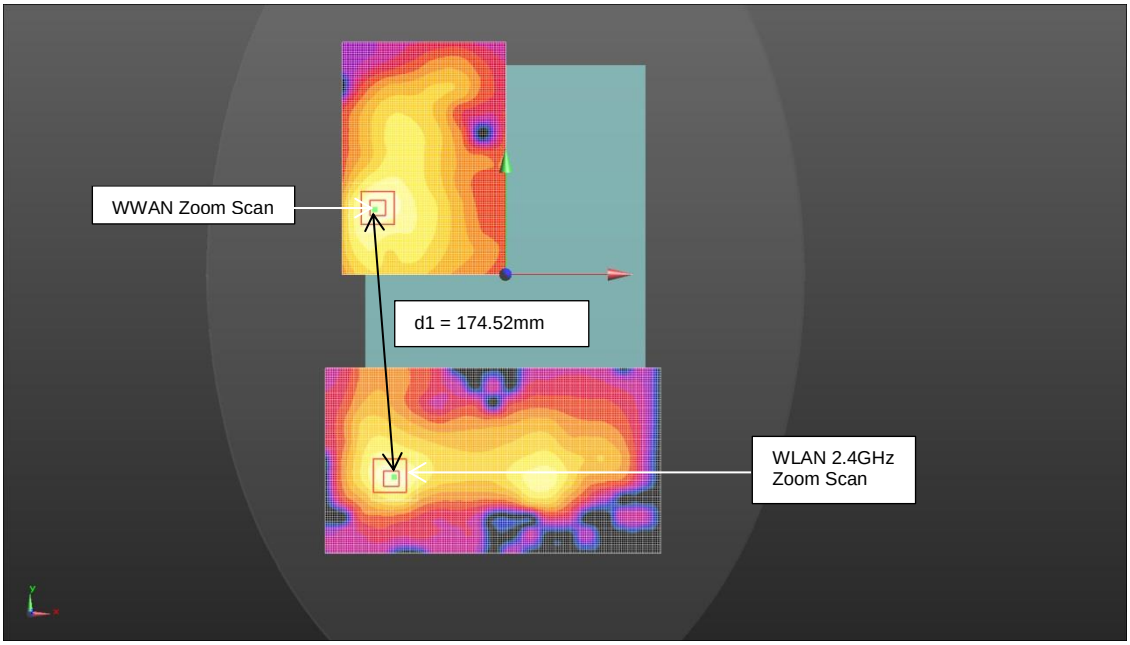
11.5. SAR to Peak Location Separation Ratio (SPLSR)

Case 1: The sum Back of EUT for WCDMA FDD 2(CH9400) + WLAN 2.4GHz (CH6) exceeded 1.6W/kg. Hence, SPLSR has been calculated for this combination below:



Mode	Peak SAR	X	Y	Z
	W/kg	m	m	m
WCDMA FDD 2	0.803	-0.085	0.043	-0.171
WLAN 2.4 GHz	0.646	-0.0716	-0.131	-0.172

d1: Calculated distance (mm)	WWAN + WLAN	174.52

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Case #	Test Position	Worst-case combination		∑ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
		① WCDMA FDD 2	② WLAN 2.4 GHz				
1	Back ① + ②	1.163	0.542	1.705	174.52	0.013	No

Conclusion:

Simultaneous transmission SAR measurement (**Volume Scan**) is not required because SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

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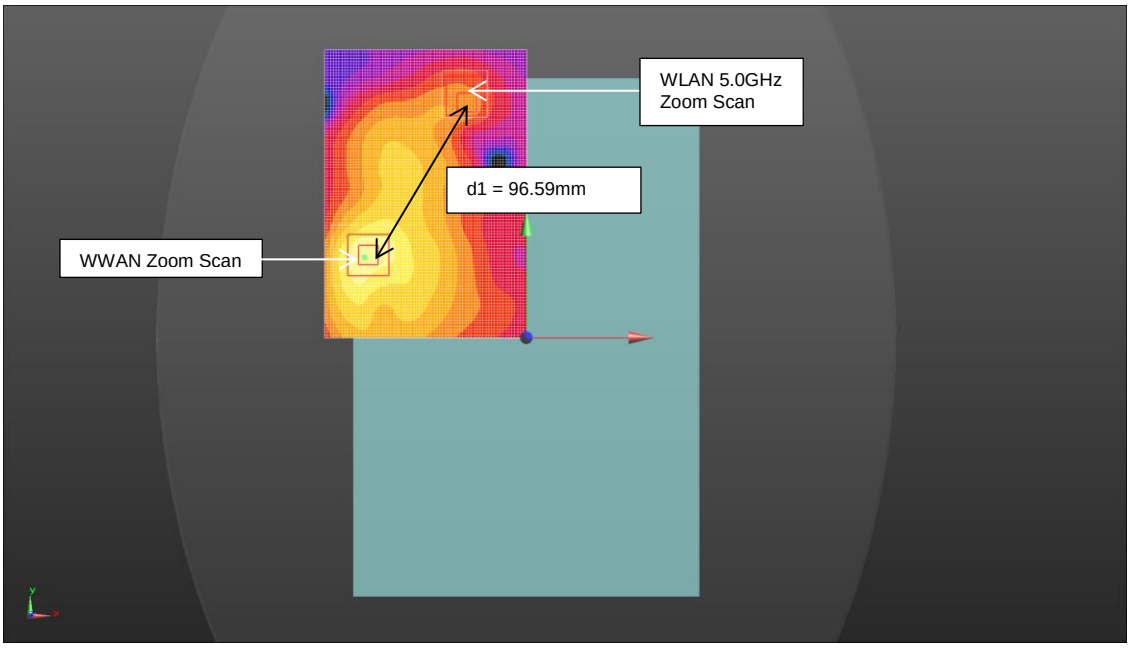
Case 2: The sum Back of EUT for WCDMA FDD 2(CH9400) + WLAN 5.0GHz (CH149) exceeded 1.6W/kg. Hence, SPLSR has been calculated for this combination below:



Mode	Peak SAR	X	Y	Z
	W/kg	m	m	m
WCDMA FDD 2	0.803	-0.085	0.043	-0.171
WLAN 5.0 GHz	1.57	-0.032	0.123	-0.182

d1: Calculated distance (mm)	WWAN + WLAN	96.59

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Case #	Test Position	Worst-case combination		∑ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
		① WCDMA FDD 2	② WLAN 5.0 GHz				
1	Back ① + ②	1.163	0.941	2.104	96.59	0.031	No

Conclusion:

Simultaneous transmission SAR measurement (**Volume Scan**) is not required because SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

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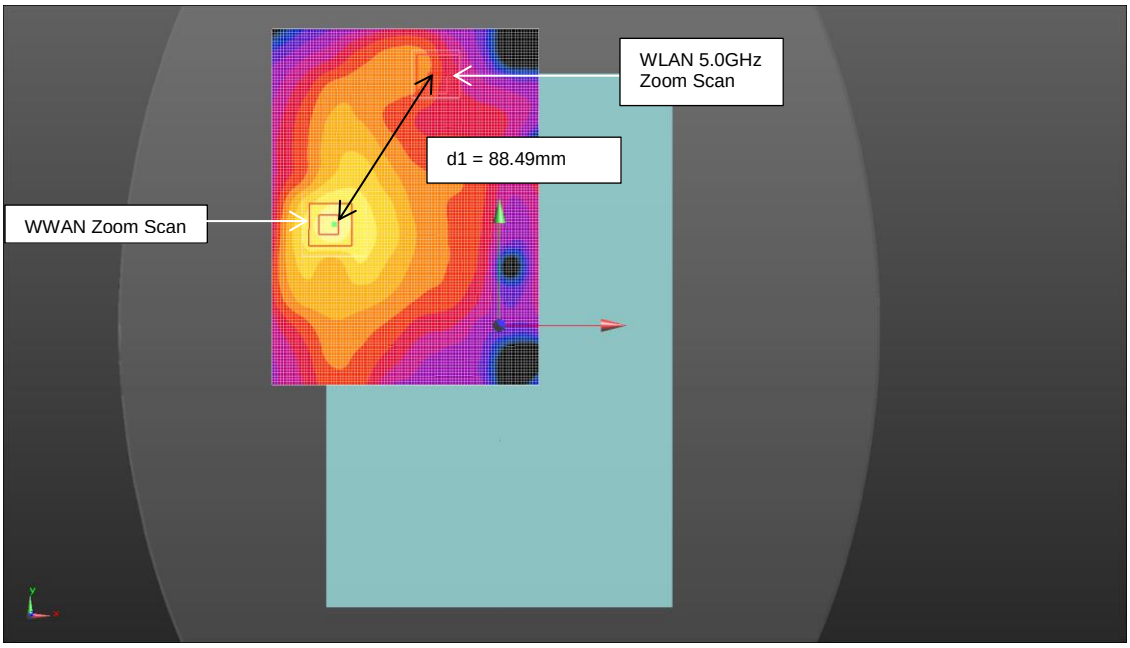
Case 3: The sum Back of EUT for WCDMA FDD 2(CH1412) + WLAN 5.0GHz (CH149) exceeded 1.6W/kg. Hence, SPLSR has been calculated for this combination below:



Mode	Peak SAR	X	Y	Z
	W/kg	m	m	m
WCDMA FDD 4	0.568	-0.0834	0.051	-0.18
WLAN 5.0 GHz	1.57	-0.032	0.123	-0.182

d1: Calculated distance (mm)	WWAN + WLAN	88.49

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Case #	Test Position	Worst-case combination		∑ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
		① WCDMA FDD 4	② WLAN 5.0 GHz				
1	Back ① + ②	0.730	0.941	1.671	88.49	0.024	No

Conclusion:

Simultaneous transmission SAR measurement (**Volume Scan**) is not required because SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

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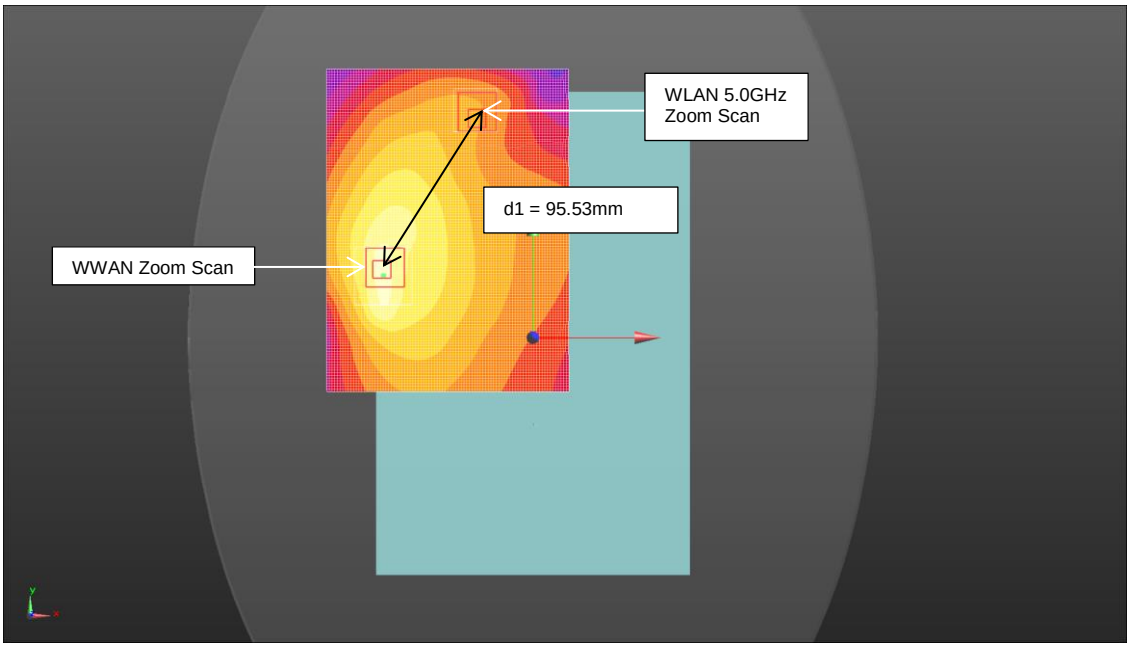
Case 4: The sum Back of EUT for LTE Band 17(CH23800) + WLAN 5.0GHz (CH149) exceeded 1.6W/kg. Hence, SPLSR has been calculated for this combination below:



Mode	Peak SAR	X	Y	Z
	W/kg	m	m	m
LTE Band 17	0.914	-0.0834	0.0425	-0.18
WLAN 5.0 GHz	1.57	-0.032	0.123	-0.182

d1: Calculated distance (mm)	WWAN + WLAN	95.53

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Case #	Test Position	Worst-case combination		∑ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
		① LTE Band 17	② WLAN 5.0 GHz				
1	Back ① + ②	0.793	0.941	1.734	95.53	0.024	No

Conclusion:

Simultaneous transmission SAR measurement (**Volume Scan**) is not required because SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

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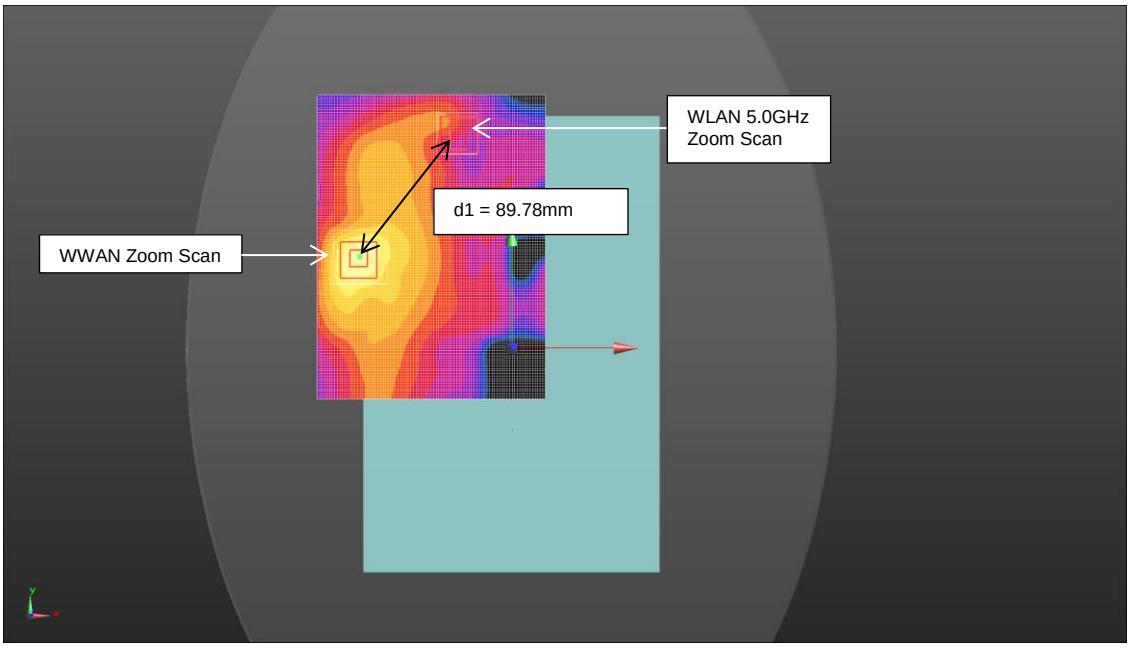
Case 5: The sum Back of EUT for LTE Band 25(CH26590) + WLAN 5.0GHz (CH149) exceeded 1.6W/kg. Hence, SPLSR has been calculated for this combination below:



Mode	Peak SAR	X	Y	Z
	W/kg	m	m	m
LTE Band 25	0.87	-0.0894	0.054	-0.18
WLAN 5.0 GHz	1.57	-0.032	0.123	-0.182

d1: Calculated distance (mm)	WWAN + WLAN	89.78

The Peak Location Separation Distance is computed by using the formula below:
SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Case #	Test Position	Worst-case combination		∑ 1-g SAR (W/kg)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)
		① LTE Band 25	② WLAN 5.0 GHz				
1	Back ① + ②	0.820	0.941	1.761	89.78	0.026	No

Conclusion:

Simultaneous transmission SAR measurement (**Volume Scan**) is not required because SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

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