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

SAR EVALUATION REPORT

For

INARI8-LTDN-1

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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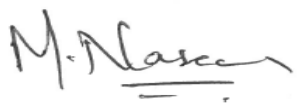
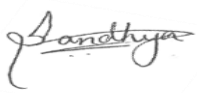
1. Attestation of Test Results

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:	INARI8-LTDN-1				
Test Device is	An identical prototype				
Device category	Portable				
Exposure Category	General Population/Uncontrolled Exposure (1g SAR limit: 1.6 W/kg)				
Date Tested	25 March 2015 to 27 April 2015				
The highest reported SAR values	RF Exposure Conditions	Equipment Class			
		Licensed	DTS	DSS	UNII
	Body	1.318 W/kg	0.498 W/kg	0.067 W/kg	1.479 W/kg
	Simultaneous Transmission	1.565 W/kg	1.519 W/kg	1.088 W/kg	1.565 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 v01r03
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 draft standard IEEE P1528-2011.
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) and ANSI C95.1-1992 and has been tested in accordance with the reference documents in section 2.2 of this report.	

2.2. Methods and Procedures Reference Documentation

The methods and procedures used were as detailed in:

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

Thomas Schmid, Oliver Egger and Neils Kuster, “Automated E-field scanning system for dosimetric assessments”, IEEE Transaction on microwave theory and techniques,
Vol. 44, pp. 105-113, January 1996.

Neils Kuster, Ralph Kastle and Thomas Schmid, “Dosimetric evaluation of mobile communications equipment with known precision”, IEICE Transactions of communications, Vol. E80-B, No.5, pp. 645-652, May 1997.

FCC KDB Publication:
248227 D01 802 11 W-Fi SAR v02
447498 D01 General RF Exposure Guidance v05r02
616217 D04 SAR for laptop and tablets v01r01
865664 D01 SAR Measurement 100 MHz to 6 GHz v01r03
865664 D02 RF Exposure Reporting v01r01
941225 D01 SAR test for 3G SAR Procedures v03
941225 D05 SAR for LTE Devices v02r03
941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r01

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), Laboratory UKAS Code 0644.

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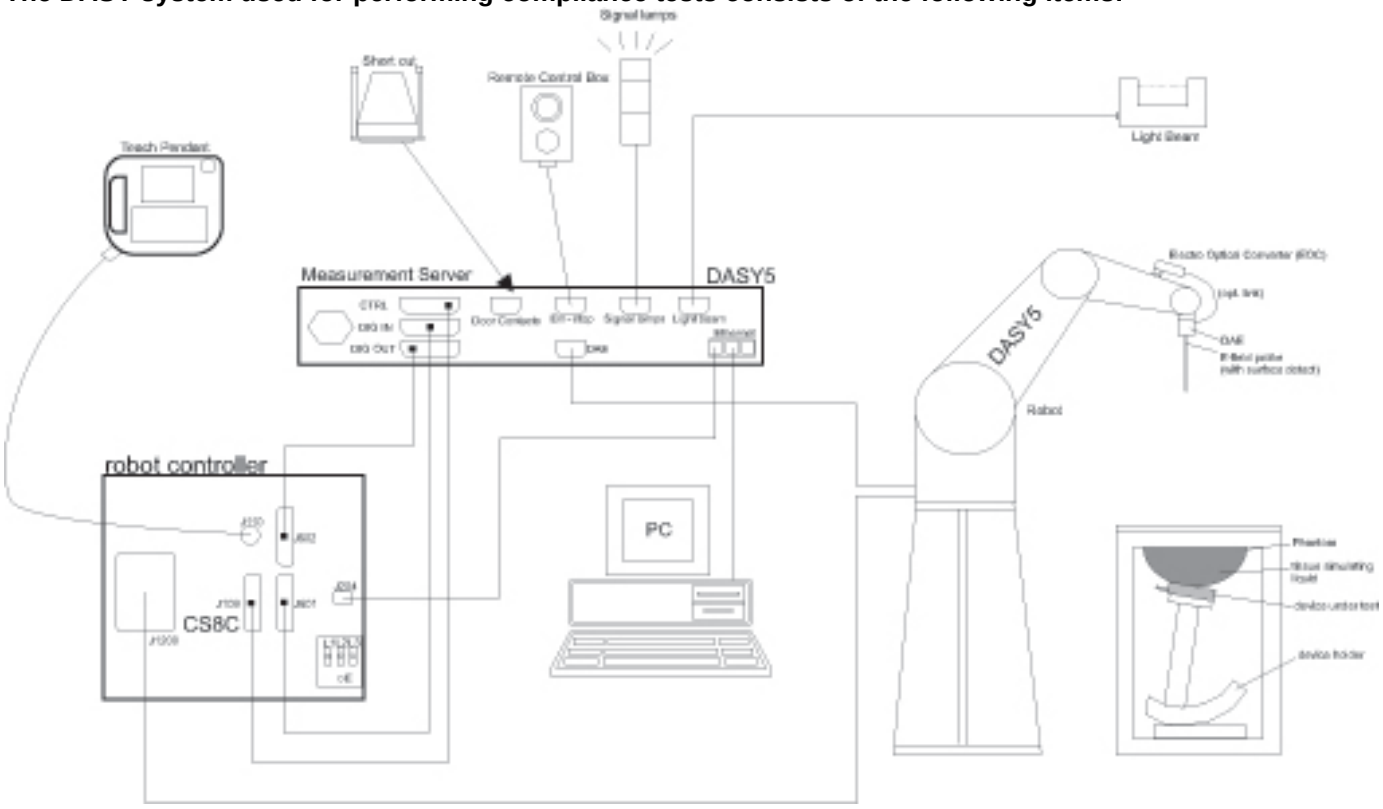
4. SAR Measurement System & Test Equipment

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 IEEE Standard 1528 and IEC 62209-1 / IEC 62209-2 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 v01r03

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

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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 v01r03

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

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

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

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 pow

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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	-
A2547	Data Acquisition Electronics	SPEAG	DAE4	1438	12 May 2014	12
A2546	Data Acquisition Electronics	SPEAG	DAE4	1435	20 Feb 2015	12
A2547	Data Acquisition Electronics	SPEAG	DAE4	417	19 Mar 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	07 May 2014	12
A2243	Probe	SPEAG	ES3DV3	3304	21 Aug 2014	12
A2587	Probe	SPEAG	ES3DV3	3341	21 Aug 2014	12
A2112	Probe	SPEAG	ET3DV6	1586	22 May 2014	12
A2077	Probe	SPEAG	EX3 DV4	3814	04 Sept 2014	12
A1985	750 MHz Dipole Kit	SPEAG	D750V3	1011	16 Jan 2015	12
A2588	900 MHz Dipole Kit	SPEAG	D900V2	1d168	14 May 2014	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	-	-
A2621	Digital Camera	Nikon	S6300	41010357	-	-
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	-
M1015	Network Analyser	Agilent Technologies	8753ES	US39172406	26 Sept 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
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 2014	12

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UL No.	Instrument	Manufacturer	Type No.	Serial No.	Date Last Calibrated	Cal. Interval (Months)
M1044	Power Sensor	R & S	ZRPZ1	893350/0019	05 Sep 2014	12
M265	Power Sensor	R & S	ZRPZ1	893350/0017	05 Sep 2014	12
M1634	Power Sensor	R & S	NRVZ1	860462/016	02 May 2014	12
M1635	Power Sensor	R & S	ZRPZ1	826515/015	02 May 2014	12
M1848	Power Sensor	R & S	ZRPZ1	831430/004	20 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	-
A1097	Directional Coupler	MiDISCO	MDC6223-30	None	Calibrated as part of system	-
A1938	Amplifier	Mini-Circuits	ZHL-42	QA0826002	Calibrated as part of system	-
A1474	Amplifier	Mini-Circuits	ZVE-8G	638700305	Calibrated as part of system	-
A2403	Amplifier	Mini-Circuits	ZHL-42W	15542	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):	F00/SD89A1/A/01 F01/5J86A1/A/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:	F12/5MZ7A1/A/01 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: 417, 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:	3994
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; 3341
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

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SAR System Specifications (Continued)

E-Field Probe	
Model:	ET3DV6
Serial No:	1586
Construction:	Triangular core
Frequency:	10 MHz to 2.55GHz
Linearity:	±0.2 dB (30 MHz to 2.55GHz)
Probe Length (mm):	337
Probe Diameter (mm):	10
Tip Length (mm):	10
Tip Diameter (mm):	6.8
Sensor X Offset (mm):	2.7
Sensor Y Offset (mm):	2.7
Sensor Z Offset (mm):	2.7
Phantom	
Phantom:	SAM 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 / LTE Band 5 / LTE Band 13 / LTE Band 17 Body Configurations 1g	95%	±18.36%
Specific Absorption Rate-WCDMA FDD 4 / LTE Band 4 Body Configuration 1g	95%	±18.45%
Specific Absorption Rate-GSM / 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.

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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 Description:	Tablet with cellular GPRS/EGPRS, WCDMA, DC-HSDPA & HSPA+, CDMA 1xRTT, EVDO Rev 0, Rev A, LTE FDD Radio, IEEE 802.11a/b/g/n (MIMO 2x2), Bluetooth Radio and wireless hotspot capabilities. The cellular bands support power reduction by proximity sensing.
Serial Number:	**The following samples were used to perform radiated SAR measurements:** AB42400261: WLAN 5.2/5.3/5.5/5.8 GHz AB42400380: GSM850, UMTS FDD 5, CDMA BC0, CDMA BC10, LTE 5, WLAN 2.4GHz KC43100003: PCS1900, UMTS FDD 2, CDMA BC1, LTE 2, LTE 25 AB42400429:UMTS FDD 4, LTE 4, LTE 13, LTE 17 **The following sample was used to perform conducted SAR measurements:** KB42400152:All cellular bands AB42400132:All WLAN bands
Hardware Version Number:	INARI8-LTDN-1
Software Version Number:	SWI9X15C_05.05.16.00
Country of Manufacture:	Finland
Date of Receipt:	02 March 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 4.0	-	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		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
	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

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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 / HT80)						
	Rule	20 MHz BW Ch.#	Frq. (MHz)	40 MHz BW Ch.#	Frq. (MHz)	80 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			42	5210.0
		44	5220.0	46	5230.0		
		48	5240.0				
	5.3 U-NII-2A	52	5260.0	54	5270.0		
		56	5280.0			58	5290.0
		60	5300.0	62	5310.0		
		64	5320.0				
	5.6 U-NII-2C	100	5500.0	102	5510.0		
		104	5520.0			106	5530.0
		108	5540.0	110	5550.0		
		112	5560.0				
		116	5580.0	118	5590.0		
		120	5600.0			122	5610.0
		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			155	5775.0
		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 Active)	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 Inactive)	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 Active)	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 Inactive)	GPRS / EGPRS 1 slot (GMSK)	24.0	-1.0~+1.0
	GPRS / EGPRS 2 slots (GMSK)	21.0	-1.0~+1.0
	GPRS / EGPRS 3 slots (GMSK)	19.0	-1.0~+1.0
	GPRS / EGPRS 4 slots (GMSK)	18.0	-1.0~+1.0
	EGPRS 1 slot (8PSK)	24.0	-1.0~+1.0
	EGPRS 2 slots (8PSK)	21.0	-1.0~+1.0
	EGPRS 3 slots (8PSK)	19.0	-1.0~+1.0
	EGPRS 4 slots (8PSK)	18.0	-1.0~+1.0
UMTS FDD 2 (Proximity Sensor Active)	R99	23.0	-1.0 ~ +1.0
UMTS FDD 2 (Proximity Sensor Inactive)	R99	15.0	-1.0 ~ +1.0
UMTS FDD 4 (Proximity Sensor Active)	R99	23.0	-1.0 ~ +1.0
UMTS FDD 4 (Proximity Sensor Inactive)	R99	14.0	-1.0 ~ +1.0
UMTS FDD 5 (Proximity Sensor Active)	R99	23.0	-1.0 ~ +1.0
UMTS FDD 5 (Proximity Sensor Inactive)	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 Active)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 0 (Proximity Sensor Inactive)	SSMA	17.0	-1.0 ~ +0.5
CDMA BC 1 (Proximity Sensor Active)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 1 (Proximity Sensor Inactive)	SSMA	15.0	-1.0 ~ +0.5
CDMA BC 10 (Proximity Sensor Active)	SSMA	24.0	-1.0 ~ +0.5
CDMA BC 10 (Proximity Sensor Inactive)	SSMA	17.0	-1.0 ~ +0.5
LTE Band 2 (Proximity Sensor Active)	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 Inactive)	QPSK (1RB)	14.0	-1.0 ~ +1.0
	QPSK (50%RB)	14.0	-1.0 ~ +1.0
	QPSK (100%RB)	14.0	-1.0 ~ +1.0
LTE Band 4 (Proximity Sensor Active)	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 Inactive)	QPSK (1RB)	13.5	-1.0 ~ +1.0
	QPSK (50%RB)	13.5	-1.0 ~ +1.0
	QPSK (100%RB)	13.5	-1.0 ~ +1.0
LTE Band 5 (Proximity Sensor Active)	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 Inactive)	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 Active)	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 Inactive)	QPSK (1RB)	17.0	-1.0 ~ +1.0
	QPSK (50%RB)	17.0	-1.0 ~ +1.0
	QPSK (100%RB)	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**
LTE Band 17 (Proximity Sensor Active)	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 Inactive)	QPSK (1RB)	14.5	-1.0 ~ +1.0
	QPSK (50%RB)	14.5	-1.0 ~ +1.0
	QPSK (100%RB)	14.5	-1.0 ~ +1.0
LTE Band 25 (Proximity Sensor Active)	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 Inactive)	QPSK (1RB)	13.5	-1.0 ~ +1.0
	QPSK (50%RB)	13.5	-1.0 ~ +1.0
	QPSK (100%RB)	13.5	-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 / 5.8 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
Bluetooth	EDR (GFSK)	9.0	-	-
	EDR (DQPSK)	6.0	-	-
	EDR (8-PSK)	6.0	-	-
	LE	8.0	-	-

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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.

Back and Side Triggering Distances:
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.

SAR Test Distances and Summary:

		Back Side	Front Side	Secondary Landscape (top)	Primary Landscape (bottom)	Secondary Portrait (right)	Primary Portrait (left)
2G/UMTS	Full Power	Yes 12mm	N/A	Yes 14mm	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 distance,mm – 50mm).$\frac{f[MHz]}{150}$,
100MHz < f < 1500 MHz

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

The antenna separation distances from the edges are mentioned in the table below:

	Front	***Back***	***Left***	***Top***	***Right***	***Bottom***
Cellular Main	*3.6 mm*	*2.4 mm*	*42.0 mm*	*2.8 mm*	*132.0 mm*	*135.0 mm*
Cellular Diversity	*3.4 mm*	*1.7 mm*	*1.8 mm*	*15.0 mm*	*217.5 mm*	*80.0 mm*
WLAN Main	*7.4 mm*	*2.8 mm*	*218.2 mm*	*19.0 mm*	*3.7 mm*	*120.0 mm*
WLAN AUX	*7.4 mm*	*2.8 mm*	*218.2 mm*	*101.0 mm*	*3.7 mm*	*38.0 mm*
GPS	*7.4 mm*	*2.8 mm*	*181.44 mm*	*4.5 mm*	*35.56 mm*	*140.0 mm*
NFC	*11.00 mm*	*1.3 mm*	*187.0mm*	*21.0 mm*	*15.0 mm*	*83.0 mm*

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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	128	0.8242	33.0	1995.26	5.00	N/A	5.00	362.28	42.00	43.13	132.00	13.72	5.00	362.28	135.00	13.42
PCS1900	661	1.8800	30.0	1000.00	5.00	N/A	5.00	274.23	42.00	32.65	132.00	10.39	5.00	274.23	135.00	10.16
UMTS 2	9538	1.9076	24.0	251.19	5.00	N/A	5.00	69.39	42.00	8.26	132.00	2.63	5.00	69.39	135.00	2.57
UMTS 4	1412	1.7324	24.0	251.19	5.00	N/A	5.00	66.12	42.00	7.87	132.00	2.50	5.00	66.12	135.00	2.45
UMTS 5	4233	0.8466	24.0	251.19	5.00	N/A	5.00	46.22	42.00	5.50	132.00	1.75	5.00	46.22	135.00	1.71
CMDA BC0	384	0.8365	24.5	281.84	5.00	N/A	5.00	51.55	42.00	6.14	132.00	1.95	5.00	51.55	135.00	1.91
CDMA BC1	600	0.1880	24.5	281.84	5.00	N/A	5.00	24.44	42.00	2.91	132.00	0.93	5.00	24.44	135.00	0.91
CDMA BC10	580	0.8205	24.5	281.84	5.00	N/A	5.00	51.06	42.00	6.08	132.00	1.93	5.00	51.06	135.00	1.89
LTE 2	19100	1.9000	24.0	251.19	5.00	N/A	5.00	69.25	42.00	8.24	132.00	2.62	5.00	69.25	135.00	2.56
LTE 4	20050	1.7200	24.0	251.19	5.00	N/A	5.00	65.89	42.00	7.84	132.00	2.50	5.00	65.89	135.00	2.44
LTE 5	20450	0.8290	24.0	251.19	5.00	N/A	5.00	45.74	42.00	5.45	132.00	1.73	5.00	45.74	135.00	1.69
LTE 13	23230	0.7820	24.0	251.19	5.00	N/A	5.00	44.43	42.00	5.29	132.00	1.68	5.00	44.43	135.00	1.65
LTE 17	23790	0.7100	24.0	251.19	5.00	N/A	5.00	42.33	42.00	5.04	132.00	1.60	5.00	42.33	135.00	1.57
LTE 25	26365	1.8825	24.0	251.19	5.00	N/A	5.00	68.93	42.00	8.21	132.00	2.61	5.00	68.93	135.00	2.55

	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	11	2.4620	12.0	15.85	7.40	N/A	5.00	4.97	218.20	0.11	5.00	4.97	19.00	1.31	120.00	0.21
	WLAN 5.2	36	5.1800	13.0	19.95	7.40	N/A	5.00	9.08	218.20	0.21	5.00	9.08	19.00	2.39	120.00	0.38
	WLAN 5.3	52	5.2600	13.0	19.95	7.40	N/A	5.00	9.15	218.20	0.21	5.00	9.15	19.00	2.41	120.00	0.38
	WLAN 5.6	100	5.5000	13.0	19.95	7.40	N/A	5.00	9.36	218.20	0.21	5.00	9.36	19.00	2.46	120.00	0.39
	WLAN 5.8	149	5.7450	13.0	19.95	7.40	N/A	5.00	9.56	218.20	0.22	5.00	9.56	19.00	2.52	120.00	0.40
	Bluetooth# 2.4	78	2.4800	9.0	7.94	7.40	N/A	5.00	2.50	218.20	0.06	5.00	2.50	19.00	0.66	120.00	0.10
WLAN (AUX)	WLAN 2.4	11	2.4620	12.0	15.85	7.40	N/A	5.00	4.97	218.20	0.11	5.00	4.97	101.00	0.25	38.00	0.65
	WLAN 5.2	36	5.1800	13.0	19.95	7.40	N/A	5.00	9.08	218.20	0.21	5.00	9.08	101.00	0.45	38.00	1.20
	WLAN 5.3	52	5.2600	13.0	19.95	7.40	N/A	5.00	9.15	218.20	0.21	5.00	9.15	101.00	0.45	38.00	1.20
	WLAN 5.6	100	5.5000	13.0	19.95	7.40	N/A	5.00	9.36	218.20	0.21	5.00	9.36	101.00	0.46	38.00	1.23
	WLAN 5.8	149	5.7450	13.0	19.95	7.40	N/A	5.00	9.56	218.20	0.22	5.00	9.56	101.00	0.47	38.00	1.26

Key

Qualified for Test Exclusion.

Although Bluetooth qualifies for Low Power Exemption, testing was performed on Body configuration to give the exact SAR levels.

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8. Conducted output power measurements

8.1. RF Output Average Power Measurements: GSM850

8.1.1. GSM850 - Proximity Sensor Active

Voice Mode GSM (GMSK)		
Channel Number	**Frequency (MHZ)**	**Avg Power (dBm)**
128	824.2	Not Supported
190	836.6	Not Supported
251	848.8	Not Supported

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	25.8	23.1	Not Supported		16.8	17.1	Not Supported	
190	836.6	25.7	23.2			16.7	17.2		
251	848.8	25.7	23.1			16.7	17.1		

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	25.8	23.1	21.0	20.2	16.8	17.1	16.7	17.2
190	836.6	25.8	23.1	21.3	20.2	16.8	17.1	17.0	17.2
251	848.8	25.8	23.0	21.2	20.2	16.8	17.0	16.9	17.2

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	25.7	22.6	21.0	20.2	16.7	16.6	16.7	17.2
190	836.6	25.7	22.6	21.0	20.2	16.7	16.6	16.7	17.2
251	848.8	25.7	22.6	21.0	20.1	16.7	16.6	16.7	17.1

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**
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
   - Body-worn SAR: GMSK (GPRS) mode with **2 uplink**, based on the output power measurements above

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8.1.2. GSM850 - Proximity Sensor Inactive

Voice Mode GSM (GMSK)		
Channel Number	**Frequency (MHZ)**	**Avg Power (dBm)**
128	824.2	Not Supported
190	836.6	Not Supported
251	848.8	Not Supported

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	31.9	31.8	Not supported		22.9	25.8	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	31.8	32.1	28.3	26.2	22.8	26.1	24.0	23.2
190	836.6	32.1	32.0	28.3	26.4	23.1	26.0	24.0	23.4
251	848.8	32.1	32.0	28.4	26.3	23.1	26.0	24.1	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	26.3	26.1	26.0	26.0	17.3	20.1	21.7	23.0
190	836.6	26.3	26.1	26.0	26.0	17.3	20.1	21.7	23.0
251	848.8	26.3	26.1	26.0	26.0	17.3	20.1	21.7	23.0

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**
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
    - Body-worn SAR: GMSK (GPRS) mode with **2 uplink**, based on the output power measurements above

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8.1.3. PCS1900 - Proximity Sensor Active

Voice Mode GSM (GMSK)		
Channel Number	**Frequency (MHZ)**	**Avg Power (dBm)**
512	1850.2	Not Supported
661	1880.0	Not Supported
810	1909.8	Not Supported

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	23.4	20.8	Not supported		14.4	14.8	Not supported	
661	1880.0	23.5	21.0			14.5	15.0		
810	1909.8	23.4	20.9			14.4	14.9		

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	23.5	20.8	19.3	18.0	14.5	14.8	15.0	15.0
661	1880.0	23.5	21.0	19.3	18.0	14.5	15.0	15.0	15.0
810	1909.8	23.5	20.9	19.4	18.0	14.5	14.9	15.1	15.0

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	23.3	20.8	19.3	18.0	14.3	14.8	15.0	15.0
661	1880.0	23.4	21.0	19.4	18.0	14.4	15.0	15.1	15.0
810	1909.8	23.4	21.1	19.4	18.0	14.4	15.1	15.1	15.0

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**
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
   - Body-worn SAR: GMSK (GPRS) mode with 2 **uplink**, based on the output power measurements above

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8.1.4. PCS1900 - Proximity Sensor Inactive

Voice Mode GSM (GMSK)		
Channel Number	**Frequency (MHZ)**	**Avg Power (dBm)**
512	1850.2	Not Supported
661	1880.0	Not Supported
810	1909.8	Not Supported

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	29.2	29.0	Not supported		20.2	23.0	Not supported	
661	1880.0	29.3	29.1			20.3	23.1		
810	1909.8	29.2	29.0			20.2	23.0		

EDGE (GMSK) – Coding Scheme: MCS4									
Channel Number	**Frequency (MHZ)**	**Avg Burst Power (dBm)**				**Frame Power (dBm)**			
		1Uplink	**2Uplink**	**3Uplink**	**4Uplink**	**1Uplink**	**2Uplink**	**3Uplink**	**4Uplink**
512	1850.2	29.2	28.9	26.4	25.1	20.2	22.9	22.1	22.1
661	1880.0	29.3	29.2	26.4	25.2	20.3	23.2	22.1	22.2
810	1909.8	29.2	29.0	26.4	25.2	20.2	23.0	22.1	22.2

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	25.1	25.0	25.0	25.0	16.1	19.0	20.7	22.0
661	1880.0	25.1	25.0	25.0	25.0	16.1	19.0	20.7	22.0
810	1909.8	25.1	25.0	25.0	25.0	16.1	19.0	20.7	22.0

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**
5. The worst-case configuration and mode for SAR testing is determined to be as follows:
   - Body-worn SAR: GMSK (GPRS) mode with **2 uplink**, based on the output power measurements above

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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	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	14.3	14.2	13.9	13.8	14.6	12.6	13.6	12.6	14.7	14.8
	UL: 9400 DL: 9800	14.0	14.1	13.5	13.5	14.6	12.5	13.6	12.5	14.6	14.6
	UL: 9538 DL: 9938	14.4	14.5	13.9	14.0	14.6	12.6	13.6	12.6	14.8	14.9
1700 (Band 4)	UL: 1312 DL: 1537	12.7	12.8	12.6	12.2	13.6	11.7	12.6	11.7	13.7	13.7
	UL: 1412 DL: 1637	12.8	12.8	12.4	12.3	13.6	11.7	12.7	11.7	13.6	13.7
	UL: 1513 DL: 1738	12.8	12.9	12.5	12.4	13.5	11.6	12.6	11.6	13.6	13.6
Band 5 (850 MHz)	UL: 4132 DL: 4357	16.3	16.3	15.7	15.8	16.7	14.6	15.8	14.6	16.7	16.8
	UL: 4183 DL: 4408	16.0	16.1	15.6	15.7	16.5	14.7	15.7	14.7	16.6	16.6
	UL: 4233 DL: 4458	16.2	16.2	15.7	15.7	16.6	14.6	15.6	14.6	16.7	16.9
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
ΔACK, ΔNACK, ΔCQI		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	RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	12.1	12.1	12.0	12.1	14.8
	UL: 9400 DL: 9800	12.1	12.1	12.0	12.1	14.6
	UL: 9538 DL: 9938	12.0	12.1	12.0	12.1	14.9
1700 (Band 4)	UL: 1312 DL: 1537	11.9	12.0	11.9	12.0	14.7
	UL: 1412 DL: 1637	12.0	12.1	12.0	12.0	13.7
	UL: 1513 DL: 1738	12.0	12.0	12.1	12.1	13.6
Band 5 (850 MHz)	UL: 4132 DL: 4357	15.1	15.1	15.1	15.0	16.8
	UL: 4183 DL: 4408	15.1	15.1	15.0	15.1	16.6
	UL: 4233 DL: 4458	15.0	15.0	15.0	15.0	16.9
ßc		2	12	15	15	
ßd		15	15	8	4	
ΔACK, ΔNACK, ΔCQI		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 Inactive

Modes		HSDPA				HSUPA					WCDMA
Sets		1	2	3	4	1	2	3	4	5	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	22.1	22.1	21.6	21.6	21.5	20.5	21.6	20.7	22.3	22.7
	UL: 9400 DL: 9800	22.1	22.0	21.6	21.6	21.6	20.6	21.6	20.7	22.4	22.8
	UL: 9538 DL: 9938	22.2	22.1	21.6	21.6	22.1	20.6	21.7	20.7	22.2	22.8
1700 (Band 4)	UL: 1312 DL: 1537	21.9	21.9	21.5	21.5	22.6	20.9	21.7	21.0	22.7	22.7
	UL: 1412 DL: 1637	22.1	22.1	21.6	21.6	22.7	20.8	21.7	20.9	22.6	22.8
	UL: 1513 DL: 1738	22.1	22.1	21.6	21.6	22.7	20.7	21.6	20.8	22.7	22.8
Band 5 (850 MHz)	UL: 4132 DL: 4357	22.0	22.0	21.6	21.6	22.6	20.8	21.8	20.9	22.6	22.7
	UL: 4183 DL: 4408	22.0	22.0	21.5	21.5	22.6	20.8	21.7	20.8	22.6	22.6
	UL: 4233 DL: 4458	22.0	22.0	21.6	21.6	22.6	20.8	21.8	20.8	22.5	22.7
ßc		2	12	15	15	11	6	15	2	15	
ßd		15	15	8	4	15	15	9	15	15	
ΔACK, ΔNACK, ΔCQI		8	8	8	8	8	8	8	8	8	
AGV		-	-	-	-	20	12	15	17	21	

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

Modes		DC-HSDPA (Cat 24)				WCDMA
Sets		1	2	3	4	RMC 12.2kbps
Band	Channel	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]	Power [dBm]
Band 2 (1900 MHz)	UL: 9262 DL: 9662	20.1	20.1	20.0	20.2	22.7
	UL: 9400 DL: 9800	20.0	20.2	20.0	20.2	22.8
	UL: 9538 DL: 9938	20.1	20.2	20.1	19.8	22.8
1700 (Band 4)	UL: 1312 DL: 1537	20.0	20.2	20.1	20.0	22.7
	UL: 1412 DL: 1637	20.1	20.1	20.2	20.0	22.8
	UL: 1513 DL: 1738	20.1	20.0	20.1	20.2	22.8
Band 5 (850 MHz)	UL: 4132 DL: 4357	20.0	20.1	19.8	20.0	22.7
	UL: 4183 DL: 4408	19.9	19.9	19.9	19.9	22.6
	UL: 4233 DL: 4458	20.0	19.9	20.0	20.1	22.7
ßc		2	12	15	15	
ßd		15	15	8	4	
ΔACK, ΔNACK, ΔCQI		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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$

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 $\beta_c = 11/15$ and $\beta_d = 15/15$

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_{ai1}: 47/15 B_{ai2}: 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 $\Delta_{CQI} = 8 \Leftrightarrow A_{hs} = \beta_{hs}/\beta_c = 30/15 \Leftrightarrow \beta_{hs} = 30/15 * \beta_c$

Note 2: CM = 1 for $\beta_c/\beta_d = 12/15$, $B_{hs}/\beta_c = 24/15$. 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 $\beta_c = 10/15$ and $\beta_d = 15/15$.

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 $\beta_c = 14/15$ and $\beta_d = 15/15$.

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	16.9
384	836.52	17.2	17.2	17.1
777	848.31	17.2	17.2	17.2
US Band Class 1				
Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
25	1851.25	14.5	14.5	14.5
600	1880.00	14.3	14.3	14.3
1175	1908.75	14.5	14.5	14.5
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	17.0	17.3
580	820.50	17.0	17.1	17.3
684	823.10	17.1	17.3	17.3

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	17.1
384	836.52			17.2
777	848.31			17.2
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	14.5
600	1880.00			14.5
1175	1908.75			14.5
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			17.1
684	823.10			16.8

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8.4.3. 1xRTT - Proximity Sensor Inactive

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	23.6	23.6	23.6
777	848.31	23.4	23.4	23.4
US Band Class 1				
Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
25	1851.25	23.6	23.6	23.6
600	1880.00	23.6	23.6	23.5
1175	1908.75	23.6	23.6	23.5
US Band Class 10				
Channel Number	Frequency (MHZ)	Avg Power (dBm)		
		RC1 SO55 (Loopback)	RC3 SO55 (Loopback)	RC3 SO32 (+F-SCH)
476	817.90	23.5	23.5	23.5
580	820.50	23.4	23.4	23.5
684	823.10	23.6	23.6	23.6

8.4.4. 1xEv-Do Rel. A - Proximity Sensor Inactive

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	23.5
384	836.52			23.6
777	848.31			23.4
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	23.6
600	1880.00			23.6
1175	1908.75			23.6
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	23.6
580	820.50			23.5
684	823.10			23.6

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8.5. RF Output Average Power Measurement: LTE

8.5.1. LTE Band 2 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1860.0 MHz	1880.0 MHz	1900.0 MHz
20 MHz	QPSK	1	Low	0	14.0	13.5	14.7
		1	Mid	49	14.0	13.5	14.6
		1	High	99	13.9	13.5	14.6
		50	low	0	14.1	13.7	14.0
		50	Mid	24	14.1	13.8	13.7
		50	High	49	13.9	14.1	13.8
		100	-	0	13.9	14.0	13.6
	16QAM	1	Low	0	13.7	13.3	14.8
		1	Mid	49	14.0	13.7	13.7
		1	High	99	13.3	14.3	14.8
		50	low	0	13.8	13.4	13.5
		50	Mid	24	13.8	13.5	13.3
		50	High	49	13.6	14.1	13.5
		100	-	0	13.7	13.7	13.6
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Measured Avg Power (dBm).**		
					1857.5 MHz	**1880.0 MHz**	**1902.5 MHz**
15 MHz	QPSK	1	Low	0	13.4	13.2	14.0
		1	Mid	37	13.9	13.6	13.2
		1	High	74	13.4	14.0	14.4
		36	low	0	13.6	13.4	13.6
		36	Mid	19	13.8	13.5	13.3
		36	High	39	13.7	13.8	13.5
		75	-	0	13.8	13.6	13.4
	16QAM	1	Low	0	13.5	13.2	14.0
		1	Mid	37	14.2	13.6	13.5
		1	High	74	13.7	14.2	14.7
		36	low	0	13.6	13.2	13.2
		36	Mid	19	13.7	13.4	13.1
		36	High	39	13.6	13.6	13.4
		75	-	0	13.6	13.4	13.2

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LTE Band 2 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1855.0 MHz	1880.0 MHz	1905.0 MHz
10 MHz	QPSK	1	Low	0	13.6	13.6	13.3
		1	Mid	24	13.7	13.5	13.2
		1	High	49	14.0	14.2	14.6
		25	Low	0	13.8	13.4	13.4
		25	Mid	12	13.8	13.6	13.4
		25	High	25	14.0	13.8	13.7
		50	-	0	13.8	13.6	13.6
	16QAM	1	Low	0	13.7	13.7	13.4
		1	mid	24	14.1	13.6	13.3
		1	High	49	14.3	14.3	14.7
		25	Low	0	13.4	13.3	13.2
		25	Mid	12	13.7	13.4	13.4
		25	High	25	13.9	13.7	13.7
		50	-	0	13.8	13.4	13.5
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Measured Avg Power (dBm).**		
					1852.5 MHz	**1880.0 MHz**	**1907.5 MHz**
5 MHz	QPSK	1	Low	0	13.3	13.2	13.1
		1	Mid	12	13.3	13.2	13.6
		1	High	24	13.3	13.2	14.0
		12	low	0	13.5	13.3	13.3
		12	Mid	6	13.6	13.4	13.8
		12	High	13	13.6	13.5	13.9
		25	-	0	13.7	13.5	13.6
	16QAM	1	Low	0	13.6	13.2	13.2
		1	Mid	12	13.9	13.5	13.8
		1	High	24	14.2	13.6	14.4
		12	low	0	13.1	13.2	13.4
		12	Mid	6	13.2	13.3	13.7
		12	High	13	13.6	13.4	14.0
		25	-	0	13.4	13.3	13.7

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LTE Band 2 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1851.5 MHz	1880 MHz	1908.5 MHz
3 MHz	QPSK	1	Low	0	13.2	13.3	13.4
		1	Mid	7	13.2	13.3	13.4
		1	High	14	13.2	13.3	13.4
		8	Low	0	13.4	13.3	13.8
		8	Mid	4	13.6	13.5	14.1
		8	High	7	13.6	13.5	14.3
		15	-	0	13.5	13.4	14.0
	16QAM	1	Low	0	13.2	13.4	13.7
		1	Mid	7	13.6	13.6	14.3
		1	High	14	13.5	13.5	14.6
		8	Low	0	13.1	13.3	13.8
		8	Mid	4	13.3	13.4	14.2
		8	High	7	13.3	13.4	14.3
		15	-	0	13.2	13.3	14.0

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1850.7 MHz	1880 MHz)	1909.3 MHz
1.4 MHz	QPSK	1	Low	0	13.1	13.3	14.1
		1	Mid	3	13.3	13.5	14.4
		1	High	5	13.3	13.4	14.5
		3	Low	0	13.2	13.4	14.2
		3	Mid	1	13.3	13.4	14.3
		3	high	3	13.4	13.4	14.5
		6	-	0	13.3	13.4	14.3
	16QAM	1	Low	0	13.2	13.4	14.1
		1	Mid	3	13.4	13.5	14.4
		1	High	5	13.3	13.5	14.5
		3	Low	0	13.3	13.4	14.1
		3	Mid	1	13.4	13.4	14.2
		3	high	3	13.4	13.4	14.4
		6	-	0	13.1	13.4	14.4

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8.5.2. LTE Band 2 (1900 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1860.0 MHz	1880.0 MHz	1900.0 MHz
20 MHz	QPSK	1	Low	0	22.9	22.8	22.7
		1	Mid	49	22.7	22.7	22.8
		1	High	99	22.9	22.5	22.7
		50	low	0	21.6	21.5	21.4
		50	Mid	24	21.5	21.5	21.6
		50	High	49	21.5	21.5	21.5
		100	-	0	21.5	21.5	21.6
	16QAM	1	Low	0	21.6	21.9	21.6
		1	Mid	49	21.4	21.9	21.7
		1	High	99	21.6	21.7	21.7
		50	low	0	20.5	20.5	20.4
		50	Mid	24	20.4	20.4	20.5
		50	High	49	20.4	20.4	20.5
		100	-	0	20.4	20.4	20.5
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**Measured Avg Power (dBm).**		
					1857.5 MHz	**1880.0 MHz**	**1902.5 MHz**
15 MHz	QPSK	1	Low	0	22.7	22.7	22.6
		1	Mid	37	22.7	22.8	22.6
		1	High	74	22.6	22.7	22.7
		36	low	0	21.5	21.5	21.4
		36	Mid	19	21.5	21.5	21.5
		36	High	39	21.5	21.5	21.5
		75	-	0	21.4	21.4	21.4
	16QAM	1	Low	0	21.7	21.5	21.7
		1	Mid	37	21.6	21.5	21.8
		1	High	74	21.6	21.3	21.7
		36	low	0	20.5	20.4	20.5
		36	Mid	19	20.5	20.5	20.5
		36	High	39	20.5	20.5	20.4
		75	-	0	20.5	20.4	20.4

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LTE Band 2 (1900 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1855.0 MHz	1880.0 MHz	1905.0 MHz
10 MHz	QPSK	1	Low	0	22.9	22.7	22.7
		1	Mid	24	22.9	22.8	22.7
		1	High	49	22.8	22.6	22.7
		25	Low	0	21.6	21.6	21.6
		25	Mid	12	21.6	21.6	21.6
		25	High	25	21.7	21.6	21.5
		50	-	0	21.5	21.5	21.5
	16QAM	1	Low	0	21.7	21.6	21.8
		1	mid	24	21.6	21.6	21.8
		1	High	49	21.6	21.5	21.8
		25	Low	0	20.7	20.7	20.6
		25	Mid	12	20.7	20.6	20.6
		25	High	25	20.6	20.6	20.6
		50	-	0	20.5	20.5	20.5

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1852.5 MHz	1880.0 MHz	1907.5 MHz
5 MHz	QPSK	1	Low	0	22.8	22.7	22.7
		1	Mid	12	22.8	22.8	22.6
		1	High	24	22.8	22.7	22.7
		12	low	0	21.8	21.8	21.6
		12	Mid	6	21.8	21.8	21.7
		12	High	13	21.8	21.7	21.7
		25	-	0	21.7	21.6	21.6
	16QAM	1	Low	0	21.8	21.6	21.6
		1	Mid	12	21.8	21.6	21.5
		1	High	24	21.8	21.5	21.6
		12	low	0	20.8	20.9	20.7
		12	Mid	6	20.7	20.8	20.7
		12	High	13	20.8	20.7	20.7
		25	-	0	20.7	20.6	20.6

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LTE Band 2 (1900 MHz)

Proximity Sensor Inactive

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

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					1850.7 MHz	1880 MHz)	1909.3 MHz
1.4 MHz	QPSK	1	Low	0	22.9	22.8	22.7
		1	Mid	3	22.9	22.8	22.7
		1	High	5	22.9	22.9	22.7
		3	Low	0	22.8	22.8	22.7
		3	Mid	1	22.8	22.7	22.7
		3	high	3	22.8	22.8	22.7
		6	-	0	21.7	21.8	21.8
	16QAM	1	Low	0	21.7	21.6	21.6
		1	Mid	3	21.7	21.7	21.6
		1	High	5	21.7	21.7	21.6
		3	Low	0	21.4	21.9	21.7
		3	Mid	1	21.4	21.9	21.7
		3	high	3	21.4	21.9	21.7
		6	-	0	20.7	20.8	20.8

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8.5.3. LTE Band 4 (1700 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.2	13.3	12.8
		1	Mid	49	13.5	13.0	13.1
		1	High	99	13.1	13.1	13.3
		50	low	0	13.0	13.2	13.3
		50	Mid	24	13.6	13.4	13.3
		50	High	49	13.1	13.3	13.2
		100	-	0	13.0	13.2	13.3
	16QAM	1	Low	0	13.2	13.8	13.3
		1	Mid	49	13.3	13.5	13.2
		1	High	99	13.0	13.2	13.2
		50	low	0	13.2	13.1	13.1
		50	Mid	24	13.2	13.0	13.1
		50	High	49	13.2	13.1	13.3
		100	-	0	13.1	13.1	13.1
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**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	13.3	13.4	13.3
		1	Mid	37	13.8	13.2	13.3
		1	High	74	13.3	13.1	13.7
		36	low	0	13.2	13.3	13.4
		36	Mid	19	13.3	13.2	13.5
		36	High	39	13.2	13.3	13.7
		75	-	0	13.2	13.3	13.6
	16QAM	1	Low	0	13.4	13.4	13.3
		1	Mid	37	13.6	13.2	13.8
		1	High	74	13.3	12.8	13.7
		36	low	0	13.2	13.1	12.9
		36	Mid	19	13.4	13.0	13.5
		36	High	39	13.3	13.1	13.1
		75	-	0	13.1	13.1	13.1

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LTE Band 4 (1700 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	13.5	13.6	13.6
		1	Mid	24	13.8	13.2	13.5
		1	High	49	13.7	13.4	13.9
		25	Low	0	13.2	13.4	13.5
		25	Mid	12	13.3	13.4	13.6
		25	High	25	13.5	13.4	13.7
		50	-	0	13.3	13.4	13.6
	16QAM	1	Low	0	13.6	13.6	13.5
		1	mid	24	13.6	13.3	14.0
		1	High	49	14.0	13.2	13.8
		25	Low	0	13.3	13.2	13.1
		25	Mid	12	13.5	13.2	13.2
		25	High	25	13.6	13.3	13.3
		50	-	0	13.4	13.2	13.1

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.2	13.2	13.6
		1	Mid	12	13.3	13.3	13.6
		1	High	24	13.3	13.2	13.6
		12	low	0	13.2	13.3	13.6
		12	Mid	6	13.2	13.3	13.7
		12	High	13	13.2	13.3	13.6
		25	-	0	13.3	13.3	13.7
	16QAM	1	Low	0	13.6	13.2	13.4
		1	Mid	12	14.0	13.2	13.9
		1	High	24	13.9	13.2	13.4
		12	low	0	13.0	13.1	13.2
		12	Mid	6	13.3	13.2	13.7
		12	High	13	13.3	13.1	13.6
		25	-	0	13.4	13.1	13.2

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LTE Band 4 (1700 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.3	13.2	13.4
		1	Mid	7	13.4	13.3	13.7
		1	High	14	13.2	13.2	13.4
		8	Low	0	13.2	13.3	13.5
		8	Mid	4	13.2	13.4	13.8
		8	High	7	13.2	13.3	13.7
		15	-	0	13.2	13.3	13.5
	16QAM	1	Low	0	13.3	13.3	13.4
		1	Mid	7	13.7	13.3	13.9
		1	High	14	13.6	13.3	13.9
		8	Low	0	13.1	13.2	13.7
		8	Mid	4	13.4	13.2	13.8
		8	High	7	13.4	13.2	13.7
		15	-	0	13.3	13.1	13.7

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.2	13.2	13.7
		1	Mid	3	13.2	13.3	13.8
		1	High	5	13.1	13.2	13.7
		3	Low	0	12.9	13.3	13.8
		3	Mid	1	13.1	13.3	13.8
		3	high	3	13.1	13.3	13.8
		6	-	0	13.0	13.3	13.8
	16QAM	1	Low	0	13.5	13.3	13.7
		1	Mid	3	13.6	13.3	13.8
		1	High	5	13.5	13.3	13.7
		3	Low	0	12.8	13.2	13.6
		3	Mid	1	13.0	13.2	13.6
		3	high	3	13.0	13.2	13.7
		6	-	0	13.2	13.2	13.8

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8.5.4. LTE Band 4 (1700 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.7	22.9	23.0
		1	Mid	49	22.8	22.9	23.1
		1	High	99	23.0	22.8	23.1
		50	low	0	21.6	21.7	21.7
		50	Mid	24	21.6	21.6	21.7
		50	High	49	21.7	21.6	21.6
		100	-	0	21.6	21.7	21.8
	16QAM	1	Low	0	21.7	21.9	21.8
		1	Mid	49	21.6	22.0	21.9
		1	High	99	21.9	21.8	21.8
		50	low	0	20.6	20.7	20.7
		50	Mid	24	20.6	20.6	20.7
		50	High	49	20.6	20.6	20.7
		100	-	0	20.6	20.6	20.7

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.9	22.8	22.9
		1	Mid	37	23.0	22.8	23.1
		1	High	74	22.9	22.8	22.9
		36	low	0	21.5	21.7	21.7
		36	Mid	19	21.6	21.6	21.7
		36	High	39	21.5	21.7	21.9
		75	-	0	21.5	21.5	21.6
	16QAM	1	Low	0	21.8	21.6	21.7
		1	Mid	37	21.7	21.6	22.0
		1	High	74	21.8	21.5	22.0
		36	low	0	20.6	20.7	20.7
		36	Mid	19	20.4	20.6	20.7
		36	High	39	20.6	20.6	20.9
		75	-	0	20.6	20.5	20.7

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LTE Band 4 (1700 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					Frequency **1715.0 MHz** (Low)	Frequency **1732.5 MHz** (Middle)	Frequency **1750 MHz** (High)
10 MHz	QPSK	1	Low	0	22.9	23.1	22.9
		1	Mid	24	22.9	22.9	23.2
		1	High	49	22.9	23.0	22.9
		25	Low	0	21.6	21.8	21.8
		25	Mid	12	21.7	21.8	21.9
		25	High	25	21.7	21.8	22.0
		50	-	0	21.6	21.6	21.7
	16QAM	1	Low	0	21.8	21.9	21.9
		1	mid	24	21.7	21.7	22.1
		1	High	49	21.7	21.8	21.9
		25	Low	0	20.7	20.9	20.8
		25	Mid	12	20.7	20.8	21.0
		25	High	25	20.7	20.9	20.9
		50	-	0	20.5	20.6	20.7

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.8	23.0	23.1
		1	Mid	12	22.8	22.8	23.2
		1	High	24	22.8	22.9	23.0
		12	low	0	21.8	21.9	22.0
		12	Mid	6	21.8	21.9	22.1
		12	High	13	21.8	21.9	22.0
		25	-	0	21.7	21.8	21.8
	16QAM	1	Low	0	21.9	21.8	21.9
		1	Mid	12	21.8	21.7	21.9
		1	High	24	21.9	21.8	21.8
		12	low	0	20.7	21.0	21.1
		12	Mid	6	20.7	20.9	21.0
		12	High	13	20.7	21.0	21.0
		25	-	0	20.7	20.8	21.0

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LTE Band 4 (1700 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.7	23.1	23.1
		1	Mid	7	22.7	23.0	23.0
		1	High	14	22.7	23.0	23.0
		8	Low	0	21.8	21.9	22.1
		8	Mid	4	21.8	22.0	22.0
		8	High	7	21.8	21.9	22.1
		15	-	0	21.8	21.9	21.9
	16QAM	1	Low	0	21.8	21.9	22.2
		1	Mid	7	21.8	21.8	22.0
		1	High	14	21.7	21.8	22.0
		8	Low	0	20.8	20.8	21.3
		8	Mid	4	20.7	20.8	21.1
		8	High	7	20.7	20.9	21.1
		15	-	0	20.8	20.9	21.1

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.9	23.0	23.0
		1	Mid	3	22.9	23.0	23.0
		1	High	5	22.9	23.0	22.9
		3	Low	0	22.8	22.9	23.1
		3	Mid	1	22.8	22.9	22.9
		3	high	3	22.8	22.9	23.0
		6	-	0	21.8	22.0	22.0
	16QAM	1	Low	0	21.8	21.7	21.9
		1	Mid	3	21.8	21.8	21.9
		1	High	5	21.7	21.8	21.8
		3	Low	0	21.4	21.9	22.0
		3	Mid	1	21.5	22.0	21.9
		3	high	3	21.4	22.0	21.9
		6	-	0	20.8	20.9	21.1

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8.5.5.LTE Band 5 (850 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	15.6	15.9	15.8
		1	Mid	24	15.7	15.9	16.2
		1	High	49	15.8	16.0	15.5
		25	Low	0	15.7	15.9	16.1
		25	Mid	12	15.8	15.9	16.1
		25	High	25	15.7	15.8	15.7
		50	-	0	15.6	15.8	15.5
	16QAM	1	Low	0	16.0	15.6	15.5
		1	mid	24	16.1	16.1	15.9
		1	High	49	15.7	15.6	15.2
		25	Low	0	15.7	15.3	15.5
		25	Mid	12	15.9	15.9	15.7
		25	High	25	15.2	15.3	15.2
		50	-	0	15.6	15.3	15.5

Ch. BW	Modulations	RB Config	Start RB Offset		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	15.2	15.4	15.7
		1	Mid	12	15.6	15.7	16.1
		1	High	24	15.2	15.4	15.6
		12	low	0	15.4	15.5	15.8
		12	Mid	6	15.6	15.7	16.0
		12	High	13	15.4	15.4	15.8
		25	-	0	15.4	15.6	15.8
	16QAM	1	Low	0	15.7	15.4	15.4
		1	Mid	12	16.2	15.9	15.9
		1	High	24	15.2	15.1	15.4
		12	low	0	15.4	15.6	15.4
		12	Mid	6	15.5	15.8	15.6
		12	High	13	15.4	15.6	15.4
		25	-	0	15.5	15.6	15.4

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LTE Band 5 (850 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	15.4	15.4	15.6
		1	Mid	7	15.5	15.6	15.9
		1	High	14	15.4	15.5	15.5
		8	Low	0	15.3	15.5	15.9
		8	Mid	4	15.4	15.7	15.8
		8	High	7	15.4	15.6	15.7
		15	-	0	15.3	15.6	15.9
	16QAM	1	Low	0	15.7	15.2	15.7
		1	Mid	7	15.8	16.0	15.9
		1	High	14	15.7	15.2	15.6
		8	Low	0	15.4	15.7	15.6
		8	Mid	4	15.5	15.8	15.6
		8	High	7	15.5	15.7	15.4
		15	-	0	15.3	15.7	15.5

Ch. BW	Modulations	RB Config	Start RB Offset		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	16.3	15.4	15.6
		1	Mid	3	15.3	15.6	15.7
		1	High	5	15.4	15.6	15.6
		3	Low	0	15.4	15.5	15.5
		3	Mid	1	15.3	15.5	15.7
		3	high	3	15.3	15.5	15.5
		6	-	0	15.3	15.6	15.5
	16QAM	1	Low	0	15.7	15.8	15.4
		1	Mid	3	15.7	15.9	15.4
		1	High	5	15.7	15.8	15.3
		3	Low	0	15.2	15.7	15.2
		3	Mid	1	15.2	15.7	15.3
		3	high	3	15.1	15.7	15.2
		6	-	0	15.5	15.7	15.3

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8.5.6.LTE Band 5 (850 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.8	22.8	22.7
		1	Mid	24	22.9	22.7	22.8
		1	High	49	22.8	22.8	22.8
		25	Low	0	21.8	21.7	21.6
		25	Mid	12	21.8	21.8	21.6
		25	High	25	21.7	21.6	21.6
		50	-	0	21.6	21.6	21.6
	16QAM	1	Low	0	21.6	21.8	21.6
		1	mid	24	21.6	21.8	21.6
		1	High	49	21.5	21.9	21.6
		25	Low	0	20.8	20.8	20.7
		25	Mid	12	20.7	20.7	20.6
		25	High	25	20.7	20.7	20.6
		50	-	0	20.6	20.5	20.5

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.7	22.8	22.7
		1	Mid	12	22.8	22.7	22.8
		1	High	24	22.8	22.6	22.7
		12	low	0	21.8	21.9	21.7
		12	Mid	6	21.8	21.8	21.8
		12	High	13	21.8	21.8	21.6
		25	-	0	21.7	21.7	21.7
	16QAM	1	Low	0	21.8	21.7	21.5
		1	Mid	12	21.8	21.6	21.6
		1	High	24	21.9	21.5	21.5
		12	low	0	20.8	20.9	20.7
		12	Mid	6	20.8	20.9	20.8
		12	High	13	20.8	20.7	20.7
		25	-	0	20.8	20.7	20.8

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LTE Band 5 (850 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.8	22.9	22.6
		1	Mid	7	22.7	22.8	22.7
		1	High	14	22.9	22.7	22.6
		8	Low	0	21.7	21.8	21.7
		8	Mid	4	21.8	21.9	21.7
		8	High	7	21.8	21.6	21.7
		15	-	0	21.7	21.8	21.7
	16QAM	1	Low	0	21.6	21.7	21.8
		1	Mid	7	21.6	21.6	21.7
		1	High	14	21.7	21.5	21.7
		8	Low	0	20.7	20.9	20.8
		8	Mid	4	20.7	20.9	20.8
		8	High	7	20.7	20.7	20.8
		15	-	0	20.8	20.7	20.7
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**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	22.7	23.0	22.7
		1	Mid	3	22.8	22.8	22.6
		1	High	5	22.8	22.8	22.6
		3	Low	0	22.7	22.8	22.6
		3	Mid	1	22.6	22.8	22.7
		3	high	3	22.6	22.8	22.6
		6	-	0	21.7	21.9	21.7
	16QAM	1	Low	0	21.7	21.7	21.5
		1	Mid	3	21.7	21.6	21.5
		1	High	5	21.6	21.6	21.5
		3	Low	0	21.3	21.9	21.6
		3	Mid	1	21.3	21.8	21.6
		3	high	3	21.3	21.8	21.6
		6	-	0	20.6	20.8	20.8

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LTE Band 13 (750 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		Measured Avg Power (dBm).		
					Low	Frequency **782.0 MHz** (Middle)	High
10 MHz	QPSK	1	Low	0	Not Supported	16.7	Not Supported
		1	Mid	24		16.9	
		1	High	49		17.0	
		25	Low	0		16.9	
		25	Mid	12		17.0	
		25	High	25		17.0	
		50	-	0		16.9	
	16QAM	1	Low	0		16.8	
		1	mid	24		17.0	
		1	High	49		17.0	
		25	Low	0		16.9	
		25	Mid	12		17.0	
		25	High	25		17.0	
		50	-	0		16.8	

Ch. BW	Modulations	RB Config	Start RB Offset		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	16.8	16.8	17.0
		1	Mid	12	16.9	16.9	17.0
		1	High	24	16.9	17.0	17.0
		12	low	0	16.7	17.0	17.1
		12	Mid	6	16.9	16.9	17.0
		12	High	13	17.0	17.1	16.9
		25	-	0	16.8	16.9	16.9
	16QAM	1	Low	0	16.9	16.6	16.8
		1	Mid	12	16.9	16.7	16.8
		1	High	24	17.0	16.8	16.8
		12	low	0	16.7	17.0	17.1
		12	Mid	6	16.8	17.0	17.0
		12	High	13	16.9	17.1	16.9
		25	-	0	16.8	16.9	17.0

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LTE Band 13 (750 MHz)

Proximity Sensor Inactive

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

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.5	22.6	22.8
		1	Mid	12	22.6	22.7	22.8
		1	High	24	22.7	22.8	22.8
		12	low	0	21.6	21.8	21.9
		12	Mid	6	21.7	21.8	21.8
		12	High	13	21.8	21.9	21.7
		25	-	0	21.6	21.7	21.7
	16QAM	1	Low	0	21.7	21.5	21.7
		1	Mid	12	21.7	21.6	21.6
		1	High	24	21.8	21.8	21.6
		12	low	0	20.6	20.8	20.9
		12	Mid	6	20.6	20.9	20.9
		12	High	13	20.7	20.9	20.8
		25	-	0	20.6	20.7	20.9

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LTE Band 17 (700 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	14.7	14.6	14.6
		1	Mid	24	15.4	15.3	15.2
		1	High	49	14.8	14.6	14.1
		25	Low	0	14.8	15.0	15.2
		25	Mid	12	15.2	15.1	15.2
		25	High	25	15.1	14.9	14.6
		50	-	0	15.0	15.0	15.0
	16QAM	1	Low	0	14.9	15.0	15.2
		1	mid	24	15.5	15.5	15.5
		1	High	49	15.0	14.8	14.5
		25	Low	0	14.9	15.1	15.2
		25	Mid	12	15.2	15.2	15.2
		25	High	25	15.2	15.0	14.6
		50	-	0	15.0	15.0	15.0

Ch. BW	Modulations	RB Config	Start RB Offset		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	14.4	14.9	14.8
		1	Mid	12	14.5	15.3	14.5
		1	High	24	15.2	14.8	13.7
		12	low	0	14.4	15.2	14.6
		12	Mid	6	14.5	15.3	14.4
		12	High	13	14.8	15.1	14.4
		25	-	0	14.6	15.2	14.5
	16QAM	1	Low	0	15.0	14.9	15.2
		1	Mid	12	15.1	15.2	15.5
		1	High	24	14.7	15.5	15.1
		12	low	0	14.3	14.5	15.2
		12	Mid	6	14.6	14.6	15.3
		12	High	13	14.3	14.8	15.2
		25	-	0	14.8	14.7	15.2

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LTE Band 17 (700 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.3	22.5	22.3
		1	Mid	24	22.4	22.7	22.6
		1	High	49	22.4	22.4	22.2
		25	Low	0	21.3	21.4	21.4
		25	Mid	12	21.4	21.4	21.4
		25	High	25	21.4	21.4	21.3
		50	-	0	21.4	21.3	21.2
	16QAM	1	Low	0	21.4	21.3	21.2
		1	mid	24	21.5	21.4	21.4
		1	High	49	21.5	21.3	21.0
		25	Low	0	20.3	20.4	20.4
		25	Mid	12	20.4	20.4	20.4
		25	High	25	20.4	20.4	20.4
		50	-	0	20.3	20.2	20.2

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.4	22.5	22.4
		1	Mid	12	22.3	22.5	22.4
		1	High	24	22.4	22.3	22.4
		12	low	0	21.3	21.5	21.4
		12	Mid	6	21.3	21.5	21.2
		12	High	13	21.4	21.5	21.6
		25	-	0	21.4	21.5	21.8
	16QAM	1	Low	0	21.6	21.4	21.3
		1	Mid	12	21.2	21.4	21.4
		1	High	24	21.1	21.4	21.2
		12	low	0	20.9	20.2	20.5
		12	Mid	6	20.4	20.3	20.6
		12	High	13	20.3	20.3	20.5
		25	-	0	20.6	20.3	20.4

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8.5.7. LTE Band 25 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.3	13.3	13.3
		1	Mid	49	13.4	13.4	13.4
		1	High	99	14.2	14.2	14.2
		50	low	0	13.1	13.1	13.1
		50	Mid	24	13.4	13.4	13.3
		50	High	49	13.7	13.7	13.7
		100	-	0	13.5	13.5	13.5
	16QAM	1	Low	0	13.1	13.1	13.1
		1	Mid	49	13.4	13.4	13.4
		1	High	99	14.0	14.0	14.0
		50	low	0	13.0	13.0	13.0
		50	Mid	24	13.2	13.2	13.2
		50	High	49	13.7	13.7	13.7
		100	-	0	13.3	13.3	13.3

Ch. BW	Modulations	RB Config	Start RB Offset		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	12.8	12.8	12.8
		1	Mid	37	13.2	13.2	13.2
		1	High	74	13.7	13.7	13.7
		36	low	0	13.1	13.1	13.1
		36	Mid	19	13.3	13.3	13.3
		36	High	39	13.6	13.6	13.6
		75	-	0	13.4	13.3	13.3
	16QAM	1	Low	0	13.1	13.1	13.1
		1	Mid	37	13.6	13.6	13.6
		1	High	74	14.2	14.2	14.2
		36	low	0	12.9	12.9	12.9
		36	Mid	19	13.1	13.1	13.1
		36	High	39	13.4	13.4	13.4
		75	-	0	13.4	13.2	13.2

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LTE Band 25 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.3	13.3	13.3
		1	Mid	24	13.2	13.2	13.2
		1	High	49	13.9	13.9	13.9
		25	Low	0	13.3	13.3	13.3
		25	Mid	12	13.4	13.4	13.4
		25	High	25	13.6	13.6	13.6
		50	-	0	13.5	13.5	13.5
	16QAM	1	Low	0	13.6	13.6	13.6
		1	mid	24	13.6	13.6	13.6
		1	High	49	14.2	14.2	14.2
		25	Low	0	13.1	13.1	13.1
		25	Mid	12	13.3	13.3	13.3
		25	High	25	13.5	13.5	13.5
		50	-	0	13.3	13.3	13.3

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.1	13.0	13.0
		1	Mid	12	13.3	13.3	13.3
		1	High	24	13.4	13.4	13.4
		12	low	0	13.2	13.2	13.1
		12	Mid	6	13.2	13.2	13.2
		12	High	13	13.3	13.3	13.3
		25	-	0	13.3	13.3	13.3
	16QAM	1	Low	0	13.2	13.1	13.1
		1	Mid	12	13.4	13.5	13.4
		1	High	24	13.5	13.5	13.5
		12	low	0	13.0	13.0	13.0
		12	Mid	6	13.1	13.1	13.1
		12	High	13	13.2	13.2	13.2
		25	-	0	13.2	13.2	13.2

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LTE Band 25 (1900 MHz)

Proximity Sensor Active

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.0	13.0	13.0
		1	Mid	7	13.2	13.2	13.2
		1	High	14	13.2	13.2	13.2
		8	Low	0	13.2	13.2	13.2
		8	Mid	4	13.3	13.3	13.3
		8	High	7	13.3	13.3	13.3
		15	-	0	13.2	13.2	13.2
	16QAM	1	Low	0	13.4	13.4	13.4
		1	Mid	7	13.6	13.6	13.6
		1	High	14	13.5	13.5	13.5
		8	Low	0	13.2	13.2	13.2
		8	Mid	4	13.4	13.4	13.4
		8	High	7	13.4	13.4	13.4
		15	-	0	13.2	13.2	13.2

Ch. BW	Modulations	RB Config	Start RB Offset		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	13.1	13.1	13.1
		1	Mid	3	13.2	13.2	13.2
		1	High	5	13.2	13.2	13.2
		3	Low	0	13.2	13.2	13.2
		3	Mid	1	13.3	13.3	13.3
		3	high	3	13.3	13.3	13.3
		6	-	0	13.3	13.3	13.3
	16QAM	1	Low	0	13.2	13.2	13.2
		1	Mid	3	13.4	13.4	13.4
		1	High	5	13.3	13.3	13.3
		3	Low	0	13.2	13.2	13.2
		3	Mid	1	13.2	13.2	13.2
		3	high	3	13.2	13.2	13.2
		6	-	0	13.3	13.3	13.3

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8.5.8. LTE Band 25 (1900 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.9	23.0	23.0
		1	Mid	49	22.9	22.9	22.9
		1	High	99	22.7	22.7	22.7
		50	low	0	21.5	21.5	21.5
		50	Mid	24	21.5	21.5	21.5
		50	High	49	21.5	21.5	21.5
		100	-	0	21.5	21.5	21.5
	16QAM	1	Low	0	21.9	21.9	21.9
		1	Mid	49	21.8	21.8	21.8
		1	High	99	21.6	21.7	21.6
		50	low	0	20.6	20.5	20.5
		50	Mid	24	20.5	20.5	20.6
		50	High	49	20.5	20.5	20.5
		100	-	0	20.5	20.5	20.5
Ch. BW	**Modulations**	**RB Config**	**Start RB Offset**		**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	22.9	22.8	22.8
		1	Mid	37	22.9	22.8	22.8
		1	High	74	22.6	22.7	22.7
		36	low	0	21.6	21.6	21.6
		36	Mid	19	21.6	21.6	21.6
		36	High	39	21.6	21.6	21.6
		75	-	0	21.5	21.5	21.5
	16QAM	1	Low	0	21.9	21.9	21.9
		1	Mid	37	21.9	21.9	21.9
		1	High	74	21.8	21.8	21.7
		36	low	0	20.6	20.5	20.6
		36	Mid	19	20.6	20.6	20.6
		36	High	39	20.5	20.5	20.5
		75	-	0	20.5	20.5	20.4

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LTE Band 25 (1900 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.7	22.7	22.7
		1	Mid	24	22.8	22.8	22.8
		1	High	49	22.7	22.7	22.7
		25	Low	0	21.6	21.6	21.6
		25	Mid	12	21.6	21.6	21.6
		25	High	25	21.6	21.6	21.6
		50	-	0	21.5	21.6	21.6
	16QAM	1	Low	0	21.8	21.8	21.8
		1	mid	24	21.9	21.9	21.9
		1	High	49	21.7	21.8	21.7
		25	Low	0	20.7	20.7	20.7
		25	Mid	12	20.7	20.7	20.7
		25	High	25	20.7	20.7	20.6
		50	-	0	20.5	20.5	20.5

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.8	22.8	22.8
		1	Mid	12	22.9	22.9	22.9
		1	High	24	22.8	22.7	22.8
		12	low	0	21.9	21.9	21.9
		12	Mid	6	21.9	21.9	21.9
		12	High	13	21.8	21.8	21.8
		25	-	0	21.7	21.7	21.7
	16QAM	1	Low	0	21.6	21.7	21.6
		1	Mid	12	21.7	21.8	21.8
		1	High	24	21.6	21.6	21.6
		12	low	0	20.9	20.9	20.9
		12	Mid	6	20.8	20.8	20.8
		12	High	13	20.7	20.7	20.7
		25	-	0	20.7	20.7	20.7

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LTE Band 25 (1900 MHz)

Proximity Sensor Inactive

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.7	22.8	22.8
		1	Mid	7	22.8	22.8	22.8
		1	High	14	22.6	22.6	22.6
		8	Low	0	21.8	21.8	21.8
		8	Mid	4	21.8	21.8	21.8
		8	High	7	21.8	21.8	21.8
		15	-	0	21.8	21.8	21.8
	16QAM	1	Low	0	21.9	22.0	21.9
		1	Mid	7	21.9	21.9	21.9
		1	High	14	21.8	21.8	21.8
		8	Low	0	20.9	20.9	20.9
		8	Mid	4	21.0	21.0	21.0
		8	High	7	20.9	21.0	21.0
		15	-	0	20.9	20.9	20.9

Ch. BW	Modulations	RB Config	Start RB Offset		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	22.8	22.8	22.9
		1	Mid	3	22.8	22.8	22.7
		1	High	5	22.8	22.8	22.8
		3	Low	0	22.8	22.8	22.8
		3	Mid	1	22.9	22.9	22.9
		3	high	3	22.9	22.8	22.8
		6	-	0	21.9	21.9	21.9
	16QAM	1	Low	0	21.7	21.7	21.7
		1	Mid	3	21.7	21.7	21.7
		1	High	5	21.7	21.7	21.7
		3	Low	0	21.8	21.8	21.8
		3	Mid	1	21.8	21.8	21.8
		3	high	3	21.8	21.8	21.9
		6	-	0	20.9	20.9	20.9

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8.6. RF Output Average Power Measurement: Wi-Fi

8.6.1. 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	2412.0	11.3	11.4	**802.11b**
6	2437.0	11.5	11.7	
11	2462.0	11.7	11.7	
Channel Number	**Frequency (MHZ)**	**(6Mbps)**	**(6Mbps)**	**Operating Mode**
1	2412.0	10.8	11.1	**802.11g**
6	2437.0	11.1	11.2	
11	2462.0	11.3	11.4	
Channel Number	**Frequency (MHZ)**	**(6.5Mbps)**	**(6.5Mbps)**	**Operating Mode**
1	2412.0	10.8	10.9	**802.11n HT20**
6	2437.0	11.0	11.2	
11	2462.0	11.1	11.3	

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

Channel Number	**Frequency (MHZ)**	**Avg Power (dBm)**		**Operating Mode**
		Antenna 1 (Main)	**Antenna 2 (Aux)**	
		(6Mbps)	**(6Mbps)**	
1	2412.0	11.0	11.2	**802.11g (CDD)**
6	2437.0	11.2	11.6	
11	2462.0	11.4	11.5	
Channel Number	**Frequency (MHZ)**	**(6.5Mbps)**	**(6.5Mbps)**	**Operating Mode**
1	2412.0	11.1	10.9	**802.11n, HT20 (CDD)**
6	2437.0	11.1	11.2	
11	2462.0	11.2	11.2	
1	2412.0	10.9	11.0	**802.11n, HT20 (STBC)**
6	2437.0	11.1	11.1	
11	2462.0	11.1	11.2	

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8.6.3. Wi-Fi802.11a/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	5180.0	12.8	12.5	**802.11a**
40	5200.0	12.7	12.5	
44	5220.0	12.8	12.5	
48	5240.0	12.7	12.7	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
36	5180.0	11.7	11.5	**802.11n, HT20**
40	5200.0	11.8	11.3	
44	5220.0	11.7	11.4	
48	5240.0	11.8	11.5	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
38	5190.0	11.7	11.6	**802.11n, HT40**
46	5230.0	11.8	11.6	

8.6.4. 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	5180.0	12.8	12.8	**802.11a CDD**
40	5200.0	12.8	12.8	
44	5220.0	12.8	12.8	
48	5240.0	12.8	12.7	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
36	5180.0	12.0	11.3	**802.11n, HT20 CDD**
40	5200.0	11.9	11.4	
44	5220.0	11.8	11.4	
48	5240.0	11.8	11.5	
36	5180.0	11.9	11.3	**802.11n, HT20 STBC**
40	5200.0	11.9	11.4	
44	5220.0	11.9	11.4	
48	5240.0	11.8	11.4	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
38	5190.0	11.8	11.6	**802.11n, HT40 CDD**
46	5230.0	11.8	11.7	
38	5190.0	11.8	11.7	**802.11n, HT40 STBC**
46	5230.0	11.8	11.6	

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8.6.5. Wi-Fi802.11a/n (5.0 GHz) – SISO Sub Band U-NII-2A (5.3 GHz)

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
52	5260.0	12.7	12.6	**802.11a**
56	5280.0	12.7	12.6	
60	5300.0	12.6	12.7	
64	5320.0	12.7	12.7	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
52	5260.0	11.8	11.6	**802.11n, HT20**
56	5280.0	11.8	11.6	
60	5300.0	11.8	11.6	
64	5320.0	11.6	11.6	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
54	5270.0	11.7	11.7	**802.11n, HT40**
62	5310.0	11.6	11.7	

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

		Avg Power (dBm)		
		Antenna 1 (Main)	Antenna 2 (Aux)	
Channel Number	**Frequency (MHZ)**	**6 Mbps**	**6 Mbps**	**Operating Mode**
52	5260.0	12.7	12.8	**802.11a CDD**
56	5280.0	12.7	12.8	
60	5300.0	12.7	12.8	
64	5320.0	12.7	12.8	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
52	5260.0	11.8	11.5	**802.11n, HT20 CDD**
56	5280.0	11.9	11.6	
60	5300.0	11.9	11.7	
64	5320.0	11.8	11.7	
52	5260.0	11.7	11.5	**802.11n, HT20 STBC**
56	5280.0	11.8	11.6	
60	5300.0	11.8	11.5	
64	5320.0	11.8	11.6	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
54	5270.0	11.7	11.7	**802.11n, HT40 CDD**
62	5310.0	11.7	11.7	
54	5270.0	11.8	11.8	**802.11n, HT40 STBC**
62	5310.0	11.7	11.8	

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8.6.7. Wi-Fi802.11a/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	5500.0	12.0	12.4	**802.11a**
104	5520.0	12.0	12.4	
108	5540.0	11.9	12.3	
112	5560.0	11.9	12.1	
116	5580.0	11.8	12.1	
132	5660.0	11.8	11.9	
136	5680.0	11.7	11.7	
140	5700.0	11.7	11.7	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
100	5500.0	11.5	12.0	**802.11n, HT20**
104	5520.0	11.4	12.0	
108	5540.0	11.4	11.9	
112	5560.0	11.6	11.8	
116	5580.0	11.6	11.7	
132	5660.0	11.7	11.6	
136	5680.0	11.4	11.7	
140	5700.0	11.3	11.6	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
102	5510.0	10.9	11.4	**802.11n, HT40**
110	5550.0	11.2	11.4	
134	5670.0	11.2	10.8	

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8.6.8. Wi-Fi802.11a/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	5500.0	12.0	12.6	**802.11a CDD**
104	5520.0	12.0	12.6	
108	5540.0	12.0	12.4	
112	5560.0	12.0	12.3	
116	5580.0	12.0	12.3	
132	5660.0	11.8	12.0	
136	5680.0	11.8	11.9	
140	5700.0	11.7	11.9	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
100	5500.0	11.5	12.0	**802.11n, HT20 CDD**
104	5520.0	11.4	12.0	
108	5540.0	11.4	11.9	
112	5560.0	11.4	11.9	
116	5580.0	11.4	11.7	
132	5660.0	11.4	11.6	
136	5680.0	11.4	11.6	
140	5700.0	11.3	11.6	
100	5500.0	11.5	12.0	**802.11n, HT20 STBC**
104	5520.0	11.5	12.0	
108	5540.0	11.4	11.9	
112	5560.0	11.4	11.9	
116	5580.0	11.4	11.8	
132	5660.0	11.4	11.6	
136	5680.0	11.3	11.6	
140	5700.0	11.3	11.6	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
102	5510.0	10.8	11.5	**802.11n, HT40 CDD**
110	5550.0	10.8	11.3	
134	5670.0	10.8	10.9	
102	5510.0	10.9	11.5	**802.11n, HT40 STBC**
110	5550.0	10.8	11.4	
134	5670.0	10.7	10.9	

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8.6.9. 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	5745.0	11.6	11.5	**802.11a**
153	5765.0	11.6	11.4	
157	5785.0	11.6	11.4	
161	5805.0	11.7	11.3	
165	5825.0	11.7	11.3	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
149	5745.0	11.3	11.4	**802.11n, HT20**
153	5765.0	11.2	11.4	
157	5785.0	11.2	11.2	
161	5805.0	11.2	11.1	
165	5825.0	11.1	11.1	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
151	5755.0	10.6	10.6	**802.11n, HT40**
159	5795.0	10.5	10.5	

8.6.10. Wi-Fi802.11a/n (5.0 GHz) – MIMO 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	5745.0	11.7	11.5	**802.11a CDD**
153	5765.0	11.7	11.5	
157	5785.0	11.7	11.4	
161	5805.0	11.7	11.2	
165	5825.0	11.7	11.3	
Channel Number	**Frequency (MHZ)**	**6.5 Mbps**	**6.5 Mbps**	**Operating Mode**
149	5745.0	11.4	11.5	**802.11n, HT20 CDD**
153	5765.0	11.3	11.5	
157	5785.0	11.4	11.5	
161	5805.0	11.4	11.4	
165	5825.0	11.4	11.5	
149	5745.0	11.3	11.4	**802.11n, HT20 STBC**
153	5765.0	11.3	11.4	
157	5785.0	11.4	11.5	
161	5805.0	11.3	11.4	
165	5825.0	11.4	11.5	
Channel Number	**Frequency (MHZ)**	**13.5 Mbps**	**13.5 Mbps**	**Operating Mode**
151	5755.0	10.7	10.6	**802.11n, HT40 CDD**
159	5795.0	10.8	10.4	
151	5755.0	10.3	10.3	**802.11n, HT40 STBC**
159	5795.0	10.1	10.0	

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8.7.RF Output Average Power Measurement: Bluetooth

8.7.1.Bluetooth

		Avg Power (dBm)			
Channel Number	**Frequency (MHZ)**	**V3.0 + EDR, GFSK**	**V3.0 + EDR, π/4 DQPSK**	**V3.0 + EDR, 8-DPSK**	**V4.0 LE, GFSK**
0	2402.0	7.8	5.2	5.2	6.1
39	2441.0	8.1	5.3	5.1	6.6
78	2480.0	8.0	4.7	4.8	6.8

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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	-	-
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
D750V3	1011	16/01/2015	750	1g	8.09
				10g	5.32
D900V2	1d168	14/05/2014	900	1g	10.30
				10g	6.60
D1800V2	264	18/08/2014	1800	1g	38.60
				10g	20.30
D1900V2	540	08/12/2014	1900	1g	40.10
				10g	20.90
D2300V2	1036	25/02/2015	2300	1g	48.50
				10g	23.40
D2450V2	725	08/12/2014	2450	1g	50.80
				10g	49.90
D2600V2	1046	18/08/2014	2600	1g	58.30
				10g	26.10
D5GHzV2	1016	24/02/2015	5250	1g	79.00
				10g	22.70
			5600	1g	80.90
				10g	23.00
			5750	1g	79.10
				10g	22.50

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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 1900 Body
Date: 20/04/2015
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	22.3	ε_r	53.30	52.09	-2.27	5.00
				σ	1.52	1.52	0.07	5.00
				1g SAR	40.00	40.40	1.00	5.00
				10g SAR	21.10	21.40	1.42	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
18700	Low	1860.0	ε_r	52.20
			σ	1.48
18900	Middle	1880.0	ε_r	52.20
			σ	1.50
19100	High	1900.0	ε_r	52.10
			σ	1.52
26140	Low	1860.0	ε_r	52.70
			σ	1.48
26365	Middle	1882.5	ε_r	52.60
			σ	1.50
26.590	High	1905.0	ε_r	52.60
			σ	1.52

System Check 1900 Body
Date: 23/04/2015
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	22.4	ε_r	53.30	52.58	-1.35	5.00
				σ	1.52	1.52	-0.21	5.00
				1g SAR	40.00	40.40	1.00	5.00
				10g SAR	21.10	21.56	2.18	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 57 (Continued)

System Check 1900 Body
Date: 27/04/2015
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	22.8	ε_r	53.30	52.69	-1.14	5.00
				σ	1.52	1.53	0.69	5.00
				1g SAR	40.00	40.80	2.00	5.00
				10g SAR	21.10	21.84	3.51	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
512	Low	1850.2	ε_r	52.90
			σ	1.48
661	Middle	1880.0	ε_r	52.80
			σ	1.51
810	High	1909.8	ε_r	52.70
			σ	1.54
25	Low	1851.25	ε_r	52.80
			σ	1.48
600	Middle	1880.0	ε_r	52.80
			σ	1.51
1175	High	1908.75	ε_r	52.70
			σ	1.54

System Check 2450 Body
Date: 25/03/2015
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	23.0	ε_r	52.70	51.27	-2.71	5.00
				σ	1.95	1.92	-1.37	5.00
				1g SAR	49.90	50.00	0.20	5.00
				10g SAR	23.20	22.84	-1.55	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412.0	ε_r	51.35
			σ	1.87
6	Middle	2437.0	ε_r	51.30
			σ	1.91
11	High	2462.0	ε_r	51.20
			σ	1.94

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SAR Lab 57 (Continued)

System Check 2450 Body
Date: 14/04/2015
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	23.9	ε_r	52.70	52.04	-1.25	5.00
				σ	1.95	2.02	3.65	5.00
				1g SAR	49.90	50.00	0.20	5.00
				10g SAR	23.20	23.32	0.52	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1	Low	2412.0	ε_r	51.30
			σ	1.87
6	Middle	2437.0	ε_r	51.30
			σ	1.91
11	High	2462.0	ε_r	51.24
			σ	1.94
0	Low	2402.0	ε_r	51.40
			σ	1.86
39	Middle	2441.0	ε_r	51.30
			σ	1.91
78	High	2480.0	ε_r	51.20
			σ	1.96

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SAR Lab 59

System Check 1800 Body
Date: 20/04/2015
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	23.0	ε_r	53.30	52.99	-0.58	5.00
				σ	1.52	1.55	1.84	5.00
				1g SAR	37.80	39.16	3.60	5.00
				10g SAR	20.10	20.40	1.49	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1312	Low	1712.4	ε_r	53.27
			σ	1.47
1412	Middle	1732.4	ε_r	53.21
			σ	1.49
1513	High	1752.6	ε_r	53.15
			σ	1.51
20050	Low	1720.0	ε_r	53.24
			σ	1.48
20175	Middle	1732.5	ε_r	53.21
			σ	1.49
20300	High	1745.0	ε_r	53.17
			σ	1.50

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SAR Lab 60

System Check 900 Body
Date: 13/04/2015
Validation Dipole and Serial Number: D900V2 SN: 1d168

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	900	24.0	23.0	ε_r	55.00	53.44	-2.84	5.00
				σ	1.05	1.03	-2.38	5.00
				1g SAR	10.60	10.88	2.64	5.00
				10g SAR	6.87	7.08	3.06	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
4132	Low	826.4	ε_r	53.45
			σ	0.97
4183	Middle	836.6	ε_r	53.72
			σ	0.99
4233	High	846.6	ε_r	53.35
			σ	0.98

System Check 900 Body
Date: 20/04/2015
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	23.0	ε_r	55.00	53.15	-3.36	5.00
				σ	1.05	1.01	-3.86	5.00
				1g SAR	10.60	10.36	-2.26	5.00
				10g SAR	6.87	6.84	-0.44	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
4132	Low	826.4	ε_r	53.45
			σ	0.97
4183	Middle	836.6	ε_r	53.40
			σ	0.97
4233	High	846.6	ε_r	53.35
			σ	0.98
20450	Low	829.0	ε_r	53.44
			σ	0.97
20525	Middle	836.5	ε_r	53.40
			σ	0.97
20600	High	844.0	ε_r	53.37
			σ	0.98

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SAR Lab 60 (Continued)

System Check 900 Body
Date: 23/04/2015
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	23.4	ε_r	55.00	53.19	-3.29	5.00
				σ	1.05	1.03	-2.24	5.00
				1g SAR	10.60	10.76	1.51	5.00
				10g SAR	6.87	7.16	4.22	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
1013	Low	824.70	ε_r	53.54
			σ	0.98
384	Middle	836.52	ε_r	53.48
			σ	0.99
777	High	848.31	ε_r	53.43
			σ	1.00
476	Low	817.9	ε_r	53.57
			σ	0.98
580	Middle	820.5	ε_r	53.55
			σ	0.98
684	High	823.1	ε_r	53.54
			σ	0.98

System Check 900 Body
Date: 27/04/2015
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	22.5	ε_r	55.00	52.97	-3.69	5.00
				σ	1.05	1.02	-3.05	5.00
				1g SAR	10.60	10.68	0.75	5.00
				10g SAR	6.87	7.12	3.64	5.00

Channel Number	Channel Description	Frequency (MHz)	Parameters	
20450	Low	829.0	ε_r	53.30
			σ	0.97
20525	Middle	836.5	ε_r	53.27
			σ	0.97
20600	High	844.0	ε_r	53.27
			σ	0.97

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SAR Lab 61

System Check 750 Body
Date: 27/04/2015
Validation Dipole and Serial Number: D750V3 SN: 1011

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Head	750	23.0	22.1	ε_r	55.55	55.75	0.36	5.00
				σ	0.96	0.93	-3.60	5.00
				1g SAR	8.54	8.52	-0.23	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	55.64
			σ	0.95
23780	Low	709.0	ε_r	55.97
			σ	0.90
23790	Middle	710.0	ε_r	55.96
			σ	0.90
23800	High	711.0	ε_r	55.95
			σ	0.91

System Check 5.25 GHz Body
Date: 17/04/2015
Validation Dipole and Serial Number: D1016V2 SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5250	24.0	24.0	ε_r	48.90	47.76	-2.33	5.00
				σ	5.36	5.39	0.61	5.00
				1g SAR	76.00	75.00	-1.18	5.00
				10g SAR	21.20	20.50	-3.30	5.00

Channel Number	Frequency (MHz)	Parameters	
36	5180	ε_r	47.97
		σ	5.29
48	5240	ε_r	47.80
		σ	5.38

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SAR Lab 61 (Continued)

System Check 5.25/5.6/5.75 GHz Body
Date: 20/04/2015
Validation Dipole and Serial Number: D1016V2 SN: 1016

Simulant	Frequency (MHz)	Room Temp	Liquid Temp	Parameters	Target Value	Measured Value	Deviation (%)	Limit (%)
Body	5250	24.0	24.0	ε_r	48.90	47.12	-3.64	5.00
				σ	5.36	5.34	-0.42	5.00
				1g SAR	76.00	76.70	0.92	5.00
				10g SAR	21.20	21.00	-0.94	5.00
Body	5600	23.0	23.0	ε_r	48.50	46.35	-4.43	5.00
				σ	5.77	5.93	2.82	5.00
				1g SAR	77.70	79.00	1.67	5.00
				10g SAR	21.40	21.50	0.47	5.00
Body	5750	23.0	22.0	ε_r	48.30	45.96	-4.84	5.00
				σ	5.94	6.17	3.79	5.00
				1g SAR	74.40	77.80	4.57	5.00
				10g SAR	20.50	21.10	2.93	5.00

Channel Number	Frequency (MHz)	Parameters	
36	5180	ε_r	47.27
		σ	5.21
48	5240	ε_r	47.14
		σ	5.32
52	5260	ε_r	47.10
		σ	5.36
64	5260	ε_r	46.99
		σ	5.46
104	5520	ε_r	46.54
		σ	5.79
116	5580	ε_r	46.40
		σ	5.90
136	5680	ε_r	46.15
		σ	6.05
149	5745	ε_r	45.97
		σ	6.17
165	5825	ε_r	45.81
		σ	6.28

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10. Measurements, Examinations and Derived Results

10.1. General Comments

This section contains test results only.

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to section 8 for details of measurement uncertainties.

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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 Inactive

Max Reported SAR = 0.551 (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 (Data 2 Slots)	12	Back	190	836.6	N/A	N/A	33.0	32.0	0.395	0.497	1
GMSK (Data 2 Slots)	14	Top	190	836.6	N/A	N/A	33.0	32.0	0.376	0.473	2
GMSK (Data 2 Slots)	0	Left	190	836.6	N/A	N/A	33.0	32.0	0.380	0.478	3
GMSK (Data 2 Slots)	12	Back	128	824.2	N/A	N/A	33.0	31.8	0.418	0.551	4
GMSK (Data 2 Slots)	12	Back	251	848.8	N/A	N/A	33.0	32.0	0.270	0.340	5

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

Max Reported SAR = 0.466 (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 (Data 2 Slots)	0	Back	190	836.6	N/A	N/A	23.5	23.2	0.435	0.466	6
GMSK (Data 2 Slots)	0	Top	190	836.6	N/A	N/A	23.5	23.2	0.339	0.363	7

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

Max Reported SAR = 0.324 (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 (Data 2 Slots)	12	Back	661	1880.0	N/A	N/A	30.0	29.1	0.263	0.324	8
GMSK (Data 2 Slots)	14	Top	661	1880.0	N/A	N/A	30.0	29.1	0.205	0.252	9
GMSK (Data 2 Slots)	0	Left	661	1880.0	N/A	N/A	30.0	29.1	0.105	0.129	10

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

Max Reported SAR = 0.669 (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 (Data 2 Slots)	0	Back	661	1880.0	N/A	N/A	22.0	21.0	0.449	0.565	11
GMSK (Data 2 Slots)	0	Top	661	1880.0	N/A	N/A	22.0	21.0	0.498	0.627	12
GMSK (Data 2 Slots)	0	Top	512	1850.2	N/A	N/A	22.0	20.8	0.479	0.631	13
GMSK (Data 2 Slots)	0	Top	810	1909.8	N/A	N/A	22.0	20.9	0.519	0.669	14

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

Max Reported SAR = 0.732 (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	12	Back	9400	1880.0	N/A	N/A	24.0	22.8	0.555	0.732	15
QPSK	14	Top	9400	1880.0	N/A	N/A	24.0	22.8	0.454	0.598	16
QPSK	0	Left	9400	1880.0	N/A	N/A	24.0	22.8	0.216	0.285	17

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

Max Reported SAR = 0.835 (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	9400	1880.0	N/A	N/A	16.0	14.6	0.605	0.835	18
QPSK	0	Top	9400	1880.0	N/A	N/A	16.0	14.6	0.555	0.766	19
QPSK	0	Back	9262	1852.4	N/A	N/A	16.0	14.8	0.568	0.749	20
QPSK	0	Back	9538	1907.6	N/A	N/A	16.0	14.9	0.543	0.700	21

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

Max Reported SAR = 1.318 (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	12	Back	1412	1732.4	N/A	N/A	24.0	22.8	0.887	1.169	22
QPSK	12	Back	1312	1712.4	N/A	N/A	24.0	22.7	0.825	1.113	23
QPSK	12	Back	1513	1752.6	N/A	N/A	24.0	22.8	1.000	1.318	24*
QPSK	14	Top	1412	1732.4	N/A	N/A	24.0	22.8	0.759	1.001	25
QPSK	14	Top	1312	1712.4	N/A	N/A	24.0	22.7	0.729	0.983	26
QPSK	14	Top	1513	1752.6	N/A	N/A	24.0	22.8	0.673	0.887	27
QPSK	0	Left	1412	1732.4	N/A	N/A	24.0	22.8	0.243	0.320	28

***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 = 0.776 (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	15.0	13.7	0.575	0.776	29
QPSK	0	Top	1412	1732.4	N/A	N/A	15.0	13.7	0.430	0.580	30

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

Max Reported SAR = 0.433 (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	12	Back	4183	836.6	N/A	N/A	24.0	22.6	0.314	0.433	31
QPSK	14	Top	4183	836.6	N/A	N/A	24.0	22.6	0.191	0.264	32
QPSK	0	Left	4183	836.60	N/A	N/A	24.0	22.6	0.052	0.072	33

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

Max Reported SAR = 0.504 (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	18.0	16.6	0.357	0.493	34
QPSK	0	Top	4183	836.6	N/A	N/A	18.0	16.6	0.291	0.402	35
QPSK	0	Back	4132	826.4	N/A	N/A	18.0	16.8	0.382	0.504	36
QPSK	0	Back	4233	846.6	N/A	N/A	18.0	16.9	0.331	0.426	37

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

Max Reported SAR = 0.482 (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	12	Back	384	836.52	N/A	N/A	24.5	23.6	0.392	0.482	38
QPSK	14	Top	384	836.52	N/A	N/A	24.5	23.6	0.277	0.341	39
QPSK	0	Left	384	836.52	N/A	N/A	24.5	23.6	0.218	0.268	40

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

Max Reported SAR = 0.463 (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	384	836.52	N/A	N/A	17.5	17.1	0.422	0.463	41
QPSK	0	Top	384	836.52	N/A	N/A	17.5	17.1	0.292	0.320	42
QPSK	0	Back	1013	824.70	N/A	N/A	17.5	16.9	0.314	0.361	43
QPSK	0	Back	777	848.31	N/A	N/A	17.5	17.2	0.259	0.278	44

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

Max Reported SAR = 0.762 (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	12	Back	600	1880.0	N/A	N/A	24.5	23.5	0.605	0.762	45
QPSK	14	Top	600	1880.0	N/A	N/A	24.5	23.5	0.492	0.619	46
QPSK	0	Left	600	1880.0	N/A	N/A	24.5	23.5	0.256	0.322	47
QPSK	12	Back	25	1851.25	N/A	N/A	24.5	23.6	0.597	0.734	48
QPSK	12	Back	1175	1908.75	N/A	N/A	24.5	23.5	0.544	0.685	49

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

Max Reported SAR = 0.684 (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	600	1880	N/A	N/A	15.5	14.3	0.519	0.684	50
QPSK	0	Top	600	1880	N/A	N/A	15.5	14.3	0.476	0.627	51

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

Max Reported SAR = 0.354 (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	12	Back	684	823.10	N/A	N/A	24.5	23.6	0.288	0.354	52
QPSK	14	Top	684	823.10	N/A	N/A	24.5	23.6	0.229	0.282	53
QPSK	0	Left	684	823.10	N/A	N/A	24.5	23.6	0.272	0.335	54

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

Max Reported SAR = 0.396 (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	684	823.10	N/A	N/A	17.5	17.3	0.378	0.396	55
QPSK	0	Top	684	823.10	N/A	N/A	17.5	17.3	0.276	0.289	56
QPSK	0	Back	476	817.90	N/A	N/A	17.5	17.3	0.361	0.378	57
QPSK	0	Back	580	820.50	N/A	N/A	17.5	17.3	0.376	0.394	58

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

Max Reported SAR = 0.803 (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	12	Back	18700	1860	1	0	24.0	22.9	0.594	0.765	59
QPSK	12	Back	18700	1860	50	0	23.0	21.6	0.582	0.803	60
QPSK	12	Back	18900	1880	50	0	23.0	21.5	0.536	0.757	61
QPSK	12	Back	19100	1900	50	0	23.0	21.4	0.477	0.689	62
QPSK	12	Back	19100	1900	100	0	23.0	21.6	0.472	0.652	63
QPSK	14	Top	18700	1860	1	0	24.0	22.9	0.481	0.620	64
QPSK	14	Top	18700	1860	50	0	23.0	21.6	0.372	0.514	65
QPSK	0	Left	18700	1860	1	0	24.0	22.9	0.255	0.329	66
QPSK	0	Left	18700	1860	50	0	23.0	21.6	0.194	0.268	67

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

Max Reported SAR = 0.989 (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	19100	1900	1	0	15.0	14.7	0.556	0.596	68
QPSK	0	Back	18900	1880	50	49	15.0	14.1	0.494	0.608	69
QPSK	0	Top	19100	1900	1	0	15.0	14.7	0.923	0.989	70*
QPSK	0	Top	18700	1860	1	0	15.0	14.0	0.515	0.648	71
QPSK	0	Top	18900	1880	1	0	15.0	13.5	0.464	0.655	72
QPSK	0	Top	18900	1880	50	49	15.0	14.1	0.616	0.758	73
QPSK	0	Top	18900	1880	100	0	15.0	14.0	0.533	0.671	74

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

Max Reported SAR = 1.139 (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	12	Back	20300	1745.0	1	99	24.0	23.1	0.886	1.090	75*
QPSK	12	Back	20175	1732.5	1	99	24.0	22.8	0.864	1.139	76
QPSK	12	Back	20050	1720.0	1	99	24.0	23.0	0.813	1.024	77
QPSK	12	Back	20050	1720.0	50	49	23.0	21.7	0.603	0.813	78
QPSK	12	Back	20300	1745.0	50	49	23.0	21.6	0.640	0.883	79
QPSK	12	Back	20175	1732.5	50	49	23.0	21.6	0.633	0.874	80
QPSK	12	Back	20300	1745.0	100	0	23.0	21.8	0.728	0.960	81
QPSK	14	Top	20300	1745.0	1	99	24.0	23.1	0.736	0.905	82
QPSK	14	Top	20175	1732.5	1	99	24.0	22.8	0.802	1.057	83
QPSK	14	Top	20050	1720.0	1	99	24.0	23.0	0.825	1.039	84
QPSK	14	Top	20050	1720.0	50	49	23.0	21.7	0.592	0.799	85
QPSK	14	Top	20300	1745.0	100	0	23.0	21.8	0.570	0.751	86
QPSK	0	Left	20300	1745.0	1	99	24.0	23.1	0.252	0.310	87
QPSK	0	Left	20050	1720.0	50	49	23.0	21.7	0.179	0.241	88

***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.**

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

Max Reported SAR = 1.021 (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	49	14.5	13.5	0.811	1.021	89
QPSK	0	Back	20175	1732.5	1	49	14.5	13.0	0.576	0.814	90
QPSK	0	Back	20300	1745.0	1	49	14.5	13.1	0.633	0.874	91
QPSK	0	Back	20050	1720.0	50	25	14.5	13.6	0.800	0.984	92
QPSK	0	Back	20175	1732.5	50	25	14.5	13.4	0.583	0.751	93
QPSK	0	Back	20300	1745.0	50	25	14.5	13.3	0.625	0.824	94
QPSK	0	Back	20300	1745.0	100	0	14.5	13.3	0.635	0.837	95
QPSK	0	Top	20050	1720.0	1	49	14.5	13.5	0.433	0.545	96
QPSK	0	Top	20050	1720.0	50	25	14.5	13.6	0.455	0.560	97

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

Max Reported SAR = 0.255 (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	12	Back	20450	829	1	24	24.0	22.9	0.198	0.255	98
QPSK	12	Back	20450	829	25	12	23.0	21.8	0.187	0.247	99
QPSK	14	Top	20450	829	1	24	24.0	22.9	0.187	0.241	100
QPSK	14	Top	20450	829	25	12	23.0	21.8	0.149	0.196	101
QPSK	0	Left	20450	829	1	24	24.0	22.9	0.192	0.247	102
QPSK	0	Left	20450	829	25	12	23.0	21.8	0.153	0.202	103

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

Max Reported SAR = 0.450 (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	20635	844	1	24	17.0	16.2	0.359	0.432	104
QPSK	0	Back	20635	844	25	12	17.0	16.1	0.366	0.450	105
QPSK	0	Top	20635	844	1	24	17.0	16.2	0.268	0.322	106
QPSK	0	Top	20635	844	25	12	17.0	16.1	0.283	0.348	107

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

Max Reported SAR = 0.540 (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	12	Back	23230	782.0	1	24	24.0	22.8	0.410	0.540	108
QPSK	12	Back	23230	782.0	25	12	23.0	21.8	0.330	0.435	109
QPSK	14	Top	23230	782.0	1	24	24.0	22.8	0.161	0.212	110
QPSK	14	Top	23230	782.0	25	12	23.0	21.8	0.126	0.166	111
QPSK	0	Left	23230	782.0	1	24	24.0	22.8	0.393	0.518	112
QPSK	0	Left	23230	782.0	25	12	23.0	21.8	0.327	0.431	113

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

Max Reported SAR = 0.595 (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	49	18.0	17.0	0.463	0.583	114
QPSK	0	Back	23230	782.0	25	12	18.0	17.0	0.473	0.595	115
QPSK	0	Top	23230	782.0	1	49	18.0	17.0	0.268	0.337	116
QPSK	0	Top	23230	782.0	25	12	18.0	17.0	0.279	0.351	117

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

Max Reported SAR = 0.504 (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	12	Back	23790	710.0	1	24	24.0	22.7	0.370	0.499	118
QPSK	12	Back	23790	710.0	25	12	23.0	21.4	0.290	0.419	119
QPSK	14	Top	23790	710.0	1	24	24.0	22.7	0.106	0.143	120
QPSK	14	Top	23790	710.0	25	12	23.0	21.4	0.084	0.121	121
QPSK	0	Left	23790	710.0	1	24	24.0	22.7	0.329	0.444	122
QPSK	0	Left	23790	710.0	25	12	23.0	21.4	0.257	0.371	123
QPSK	12	Back	23780	709.0	1	24	24.0	22.4	0.349	0.504	124
QPSK	12	Back	23800	711.0	1	24	24.0	22.6	0.339	0.468	125

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

Max Reported SAR = 0.393 (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	23780	709.0	1	24	15.5	15.4	0.370	0.379	126
QPSK	0	Back	23780	709.0	25	12	15.5	15.2	0.367	0.393	127
QPSK	0	Top	23780	709.0	1	24	15.5	15.4	0.187	0.191	128
QPSK	0	Top	23780	709.0	25	12	15.5	15.2	0.185	0.198	129

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

Max Reported SAR = 0.786 (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	12	Back	26365	1882.5	1	0	24.0	23.0	0.624	0.786	130
QPSK	12	Back	26365	1882.5	50	0	23.0	21.5	0.462	0.653	131
QPSK	14	Top	26365	1882.5	1	0	24.0	23.0	0.489	0.616	132
QPSK	14	Top	26365	1882.5	50	0	23.0	21.5	0.375	0.530	133
QPSK	0	Left	26365	1882.5	1	0	24.0	23.0	0.252	0.317	134
QPSK	0	Left	26365	1882.5	50	0	23.0	21.5	0.186	0.263	135

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

Max Reported SAR = 1.136 (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	26365	1882.5	1	99	14.5	14.2	0.577	0.618	136
QPSK	0	Back	26365	1882.5	50	49	14.5	13.7	0.516	0.620	137
QPSK	0	Top	26365	1882.5	1	99	14.5	14.2	0.894	0.958	138
QPSK	0	Top	26140	1860	1	99	14.5	14.2	0.452	0.484	139
QPSK	0	Top	26590	1905	1	99	14.5	14.2	1.060	1.136	140*
QPSK	0	Top	26365	1882.5	50	49	14.5	13.7	0.731	0.879	141
QPSK	0	Top	26140	1860	50	49	14.5	13.7	0.655	0.787	142
QPSK	0	Top	26590	1905	50	49	14.5	13.7	0.763	0.917	143
QPSK	0	Top	26365	1882.5	100	0	14.5	13.5	0.639	0.804	144

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

Max. Reported SAR: 0.498 (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. Power	Meas.	Reported	Tune up Limit	Meas. Power	Meas.	Reported	Scan No.
SISO (Ant 1)													
BPSK (802.11b)	0.0	Back	11	2462.0	12.0	11.7	0.427	0.458	N/A				145
	0.0	Right	11	2462.0	12.0	11.7	0.382	0.409					146
SISO (Ant 2)													
BPSK (802.11b)	0.0	Back	11	2462.0	N/A				12.0	11.7	0.265	0.284	147
	0.0	Right	11	2462.0					12.0	11.7	0.175	0.188	148
MIMO (Ant 1 + Ant 2)													
BPSK (802.11g CDD)	0.0	Back	11	2462.0	12.0	11.4	0.434	0.498	12.0	11.5	-	-	149
	0.0	Right	11	2462.0	12.0	11.4	0.387	0.444	12.0	11.5	-	-	150
	0.0	Back	1	2412.0	12.0	11.0	0.347	0.437	12.0	11.2	-	-	151
	0.0	Right	6	2437.0	12.0	11.2	0.331	0.398	12.0	11.6	-	-	152

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10.2.30. Wi-Fi 5.0 GHz (UNII Band 1) – Body Configuration 1g

Max. Reported SAR: 1.414 (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. Power	Meas.	Reported	Tune up Limit	Meas. Power	Meas.	Reported	Scan No.
SISO (Ant 1)													
BPSK (802.11a)	0	Back	36	5180.0	13.0	12.8	0.697	0.730	N/A				153
	0	Right	36	5180.0	13.0	12.8	1.020	1.068					154
	0	Right	48	5240.0	13.0	12.7	1.270	1.361					155
	0	Top	36	5180.0	13.0	12.8	0.261	0.273					156
SISO (Ant 2)													
BPSK (802.11a)	0	Back	48	5240.0	N/A				13.0	12.7	0.255	0.273	157
	0	Right	48	5240.0					13.0	12.7	0.295	0.316	158
MIMO (Ant 1 + Ant 2)													
BPSK (802.11a CDD)	0	Right	36	5180.0	13.0	12.8	1.220	1.277	13.0	12.8	-	-	159
	0	Right	48	5240.0	13.0	12.8	1.350	1.414	13.0	12.7	-	-	160

10.2.31. Wi-Fi 5.0 GHz (UNII Band 2A) – Body Configuration 1g

Max. Reported SAR: 1.479 (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. Power	Meas.	Reported	Tune up Limit	Meas. Power	Meas.	Reported	Scan No.
SISO (Ant 1)													
BPSK (802.11a)	0	Right	52	5260.0	13.0	12.7	1.380	1.479	N/A				161*
	0	Right	64	5320.0	13.0	12.7	1.200	1.286					162
SISO (Ant 2)													
BPSK (802.11a)	0	Right	64	5320.0	N/A				13.0	12.7	0.272	0.291	163
MIMO (Ant 1 + Ant 2)													
BPSK (802.11a CDD)	0	Right	52	5260.0	13.0	12.7	1.310	1.404	13.0	12.8	-	-	164
	0	Right	64	5320.0	13.0	12.7	1.220	1.307	13.0	12.8	-	-	165

*** 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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10.2.32. Wi-Fi 5.0 GHz (UNII Band 2C) – Body Configuration 1g

Max. Reported SAR: 0.881 (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. Power	Meas.	Reported	Tune up Limit	Meas. Power	Meas.	Reported	Scan No.
SISO (Ant 1)													
BPSK (802.11a)	0	Right	104	5520.0	13.0	12.0	0.700	0.881	N/A				166
	0	Right	116	5580.0	13.0	11.8	0.611	0.805					167
	0	Right	136	5680.0	13.0	11.7	0.540	0.728					168
SISO (Ant 2)													
BPSK (802.11a)	0	Right	104	5520.0	N/A				13.0	12.4	0.193	0.222	169
MIMO (Ant 1 + Ant 2)													
BPSK (802.11a CDD)	0	Right	104	5520.0	13.0	12.0	0.656	0.826	13.0	12.6	-	-	170
	0	Right	116	5580.0	13.0	12.0	0.597	0.752	13.0	12.3	-	-	171
	0	Right	136	5680.0	13.0	11.8	0.574	0.757	13.0	11.9	-	-	172

* Repeat Run

10.2.33. Wi-Fi 5.0 GHz (UNII Band 3) – Body Configuration 1g

Max. Reported SAR: 0.778 (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. Power	Meas.	Reported	Tune up Limit	Meas. Power	Meas.	Reported	Scan No.
SISO (Ant 1)													
BPSK (802.11a)	0	Right	165	5825.0	13.0	11.7	0.575	0.776	N/A				173
SISO (Ant 2)													
BPSK (802.11a)	0	Right	149	5745.0	N/A				13.0	11.5	0.387	0.547	174
MIMO (Ant 1 + Ant 2)													
BPSK (802.11a CDD)	0	Right	165	5825.0	13.0	11.7	0.574	0.774	13.0	11.3	0.526	0.778	175

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10.2.34. Bluetooth – Body Configuration 1g

Max. Reported SAR: 0.067 (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.
GFSK	0	Back	39	2441.0	N/A	N/A	9.0	8.1	0.053	0.065	176
GFSK	0	Right	39	2441.0	N/A	N/A	9.0	8.1	0.046	0.057	177
GFSK	0	Back	0	2402.0	N/A	N/A	9.0	7.8	0.051	0.067	178
GFSK	0	Back	79	2480.0	N/A	N/A	9.0	8.0	0.053	0.067	179

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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		
UMTS FDD 4	Back	QPSK	1513	1752.6	1.000	0.927	1.08	1
LTE Band 2	Top	QPSK	19100	1900.0	0.923	0.787	1.17	1
LTE Band 4	Back	QPSK	20300	1745.0	0.886	0.756	1.17	1
LTE Band 25	Top	QPSK	20650	1905.0	1.060	1.060	1.00	1
Wi-Fi 5.0GHz	Right	BPSK	52	5260.0	1.380	1.370	1.01	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			Wi-Fi 802.11a/n/ac			*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	0.466	0.498			0.964	No
		① + ③	0.466		0.730		1.196	No
		① + ④	0.466			0.067	0.533	No
	Left	① + ②	0.478	-			0.478	No
		① + ③	0.478		-		0.478	No
		① + ④	0.478			-	0.478	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.363	-			0.363	No
		① + ③	0.363		0.273		0.636	No
		① + ④	0.363			-	0.363	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	0.565	0.498			1.063	No
		① + ③	0.565		0.730		1.295	No
		① + ④	0.565			0.067	0.632	No
	Left	① + ②	0.129	-			0.129	No
		① + ③	0.129		-		0.129	No
		① + ④	0.129			-	0.129	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.669	-			0.669	No
		① + ③	0.669		0.273		0.942	No
		① + ④	0.669			-	0.669	No

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

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

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			UMTS 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	0.835	0.498			1.333	No
		① + ③	0.835		0.730		1.565	No
		① + ④	0.835			0.067	0.902	No
	Left	① + ②	0.285	-			0.285	No
		① + ③	0.285		-		0.285	No
		① + ④	0.285			-	0.285	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.766	-			0.766	No
		① + ③	0.766		0.273		1.039	No
		① + ④	0.766			-	0.766	No

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

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			UMTS 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	0.776	0.498			1.274	No
		① + ③	0.776		0.730		1.506	No
		① + ④	0.776			0.067	0.843	No
	Left	① + ②	0.320	-			0.320	No
		① + ③	0.320		-		0.320	No
		① + ④	0.320			-	0.320	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.580	-			0.580	No
		① + ③	0.580		0.273		0.853	No
		① + ④	0.580			-	0.580	No

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

RF Exposure Conditions	EUT Position		Simultaneous Transmission Condition					
			UMTS 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	0.504	0.498			1.002	No
		① + ③	0.504		0.730		1.234	No
		① + ④	0.504			0.067	0.571	No
	Left	① + ②	0.072	-			0.072	No
		① + ③	0.072		-		0.072	No
		① + ④	0.072			-	0.072	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.264	-			0.264	No
		① + ③	0.264		0.273		0.537	No
		① + ④	0.264			-	0.264	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	0.463	0.498			0.961	No
		① + ③	0.463		0.730		1.193	No
		① + ④	0.463			0.067	0.530	No
	Left	① + ②	0.268	-			0.268	No
		① + ③	0.268		-		0.268	No
		① + ④	0.268			-	0.268	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.320	-			0.320	No
		① + ③	0.320		0.273		0.593	No
		① + ④	0.320			-	0.320	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	0.648	0.498			1.146	No
		① + ③	0.648		0.730		1.378	No
		① + ④	0.648			0.067	0.715	No
	Left	① + ②	0.322	-			0.322	No
		① + ③	0.322		-		0.322	No
		① + ④	0.322			-	0.322	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.627	-			0.627	No
		① + ③	0.627		0.273		0.900	No
		① + ④	0.627			-	0.627	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	0.396	0.498			0.894	No
		① + ③	0.396		0.730		1.126	No
		① + ④	0.396			0.067	0.463	No
	Left	① + ②	0.335	-			0.335	No
		① + ③	0.335		-		0.335	No
		① + ④	0.335			-	0.335	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.289	-			0.289	No
		① + ③	0.289		0.273		0.562	No
		① + ④	0.289			-	0.289	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	0.608	0.498			1.106	No
		① + ③	0.608		0.730		1.338	No
		① + ④	0.608			0.067	0.675	No
	Left	① + ②	0.329	-			0.329	No
		① + ③	0.329		-		0.329	No
		① + ④	0.329			-	0.329	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.989	-			0.989	No
		① + ③	0.989		0.273		1.262	No
		① + ④	0.989			-	0.989	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	1.021	0.498			1.519	No
		① + ③	1.021		0.730		1.751	Yes
		① + ④	1.021			0.067	1.088	No
	Left	① + ②	0.310	-			0.310	No
		① + ③	0.310		-		0.310	No
		① + ④	0.310			-	0.310	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.560	-			0.560	No
		① + ③	0.560		0.273		0.833	No
		① + ④	0.560			-	0.560	No

Case 1: Back of EUT configuration for the combinations, LTE Band 4 + WLAN 5.0GHz exceeds 1.6W/kg hence, SPLSR calculations are performed and documented in Section 11.5.

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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	0.450	0.498			0.948	No
		① + ③	0.450		0.730		1.180	No
		① + ④	0.450			0.067	0.517	No
	Left	① + ②	0.247	-			0.247	No
		① + ③	0.247		-		0.247	No
		① + ④	0.247			-	0.247	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.348	-			0.348	No
		① + ③	0.348		0.273		0.521	No
		① + ④	0.348			-	0.348	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	0.595	0.498			1.093	No
		① + ③	0.595		0.730		1.325	No
		① + ④	0.595			0.067	0.662	No
	Left	① + ②	0.518	-			0.518	No
		① + ③	0.518		-		0.518	No
		① + ④	0.518			-	0.518	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.351	-			0.351	No
		① + ③	0.351		0.273		0.624	No
		① + ④	0.351			-	0.351	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	0.393	0.498			0.891	No
		① + ③	0.393		0.730		1.123	No
		① + ④	0.393			0.067	0.460	No
	Left	① + ②	0.444	-			0.444	No
		① + ③	0.444		-		0.444	No
		① + ④	0.444			-	0.444	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	0.198	-			0.198	No
		① + ③	0.198		0.273		0.471	No
		① + ④	0.198			-	0.198	No

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	0.620	0.498			1.118	No
		① + ③	0.620		0.730		1.350	No
		① + ④	0.620			0.067	0.687	No
	Left	① + ②	0.317	-			0.317	No
		① + ③	0.317		-		0.317	No
		① + ④	0.317			-	0.317	No
	Right	① + ②	-	0.444			0.444	No
		① + ③	-		1.479		1.479	No
		① + ④	-			0.057	0.057	No
	Top	① + ②	1.136	-			1.136	No
		① + ③	1.136		0.273		1.409	No
		① + ④	1.136			-	1.136	No

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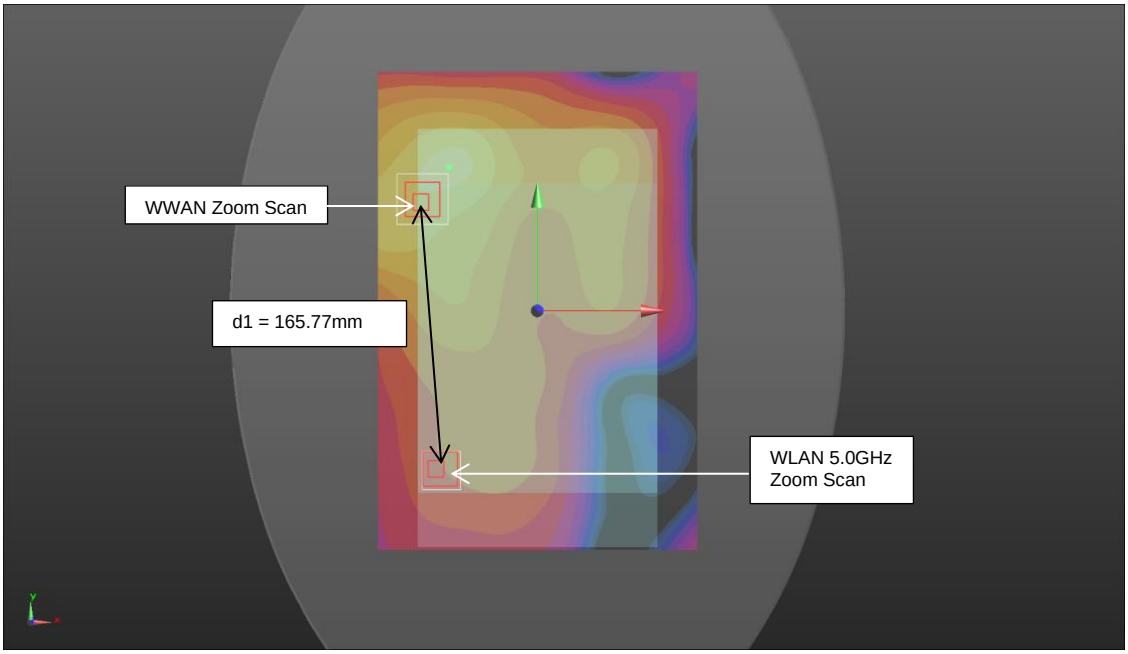
11.5. SAR to Peak Location Separation Ratio (SPLSR)

Case 1: The sum Back of EUT for UMTS FDD 2(CH20050) + WLAN 5.0GHz (CH36) 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 4	0.895	-0.069	0.0655	-0.171
WLAN 5.0 GHz	0.877	-0.064	-0.100	-0.179

d1: Calculated distance (mm)	WWAN + WLAN	165.77

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 4	② WLAN 5.0 GHz				
1	Back ① + ②	1.021	0.730	1.751	165.77	0.01	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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