



SAR EVALUATION REPORT

**FCC 47 CFR § 2.1093
IEEE Std 1528-2013**

For
GSM/W-CDMA/LTE + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ & NFC

FCC ID: PY7-PM0841

**Report Number: 15U20107-S1C
Issue Date: 5/12/2015**

Prepared for
**SONY MOBILE COMMUNICATIONS INC.
NYA VATTENTORNET MOBILVAGEN 10
LUND 22188
SWEDEN**

Prepared by
**UL VERIFICATION SERVICES INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



NVLAP LAB CODE 200065-0

Revision History

Rev.	Date	Revisions	Revised By
--	5/7/2015	Initial Issue	--
A	5/8/2015	Section 1: Updated Highest Simultaneous value for U-NII Section 9: Updated Reduced power for WCDMA Band II Section 10: Updated Power for WCDMA and CDMA Added Section 6.5 with Proximity Sensor information	Coltyce Sanders
B	5/11/2015	Updated Section 6.5 with Proximity Sensor information Added Appendix G	Coltyce Sanders
C	5/12/2015	Section 6.5: Updated IR sensor information Updated Appendix G to Revision 1 Updated WLAN Power Tables	Coltyce Sanders

Table of Contents

1.	Attestation of Test Results	5
2.	Test Specification, Methods and Procedures.....	6
3.	Facilities and Accreditation	6
4.	SAR Measurement System & Test Equipment	7
4.1.	SAR Measurement System.....	7
4.2.	SAR Scan Procedures.....	8
4.3.	Test Equipment.....	10
5.	Measurement Uncertainty.....	11
6.	Device Under Test (DUT) Information	12
6.1.	DUT Description	12
6.2.	Wireless Technologies.....	12
6.3.	Nominal and Maximum Output Power.....	13
6.4.	General LTE SAR Test and Reporting Considerations.....	17
6.5.	Power Reduction by Proximity Sensing for Head Position	18
6.5.1.	Proximity Sensor Triggering Distance	19
6.5.2.	Proximity Sensor Coverage	19
7.	RF Exposure Conditions (Test Configurations)	20
8.	Dielectric Property Measurements & System Check	21
8.1.	Dielectric Property Measurements	21
8.2.	System Check.....	26
9.	Conducted Output Power Measurements.....	30
9.1.	GSM	30
9.2.	W-CDMA	33
9.3.	CDMA.....	37
9.4.	LTE.....	38
9.5.	Wi-Fi 2.4GHz (DTS Band)	48
9.6.	Wi-Fi 5GHz (U-NII Bands).....	50
9.7.	Bluetooth	55
10.	Measured and Reported (Scaled) SAR Results.....	56
10.1.	GSM850.....	58
10.2.	GSM1900.....	58
10.3.	W-CDMA Band V	59
10.4.	W-CDMA Band II.....	59

10.5.	CDMA BC0.....	59
10.6.	CDMA BC1.....	60
10.7.	LTE Band 2 (20MHz Bandwidth)	60
10.8.	LTE Band 4 (20MHz Bandwidth)	61
10.9.	LTE Band 5 (10MHz Bandwidth)	61
10.10.	LTE Band 7 (20MHz Bandwidth)	62
10.11.	LTE Band 13 (10MHz Bandwidth)	62
10.12.	Wi-Fi (DTS Band).....	63
10.13.	Wi-Fi (U-NII Band).....	64
10.14.	Bluetooth.....	65
11.	SAR Measurement Variability.....	66
12.	Simultaneous Transmission SAR Analysis.....	67
12.1.	Sum of the SAR for GSM850 & Wi-Fi & BT.....	68
12.2.	Sum of the SAR for GSM1900 & Wi-Fi & BT.....	68
12.3.	Sum of the SAR for WCDMA Band V & Wi-Fi & BT.....	68
12.4.	Sum of the SAR for WCDMA Band II & Wi-Fi & BT.....	69
12.5.	Sum of the SAR for CDMA BC0 & Wi-Fi & BT.....	69
12.6.	Sum of the SAR for CDMA BC1 & Wi-Fi & BT.....	69
12.7.	Sum of the SAR for LTE Band 2 & Wi-Fi & BT.....	70
12.8.	Sum of the SAR for LTE Band 4 & Wi-Fi & BT.....	70
12.9.	Sum of the SAR for LTE Band 5 & Wi-Fi & BT.....	70
12.10.	Sum of the SAR for LTE Band 7 & Wi-Fi & BT.....	70
12.11.	Sum of the SAR for LTE Band 13 & Wi-Fi & BT.....	71
Appendixes		73
A_	15U20107v0 SAR Photos & Ant. Locations.....	73
B_	15U20107v0 SAR System Check Plots.....	73
C_	15U20107v0 SAR Highest Test Plots.....	73
D_	15U20107v0 SAR Tissue Ingredients	73
E_	15U20107v0 SAR Probe Cal. Certificates.....	73
F_	15U20107v0 SAR Dipole Cal. Certificates.....	73
G_	15U20107v1 Proximity Sensor Trigger Distance.....	73

1. Attestation of Test Results

Applicant Name	SONY MOBILE COMMUNICATIONS, INC.			
FCC ID	PY7-PM0841			
Applicable Standards	FCC 47 CFR § 2.1093 Published RF exposure KDB procedures IEEE Std 1528-2013			
SAR Limits (W/Kg)				
Exposure Category	Peak spatial-average(1g of tissue)			
General population / Uncontrolled exposure	1.6			
The Highest Reported SAR (W/kg)				
RF Exposure Conditions	Equipment Class			
	Licensed	DTS	U-NII	DSS (BT)
Head	0.637	0.872	0.282	N/A
Body-worn	0.850	0.637	0.470	
Hotspot/Wi-Fi Direct	0.698	0.968	0.178	
Simultaneous Tx	1.581		1.414	
Date Tested	3/30/2015 to 4/30/2015			
Test Results	Pass			
UL Verification Services Inc. 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 Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account 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, 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.				
Approved & Released By:		Prepared By:		
				
Devin Chang Senior Engineer UL Verification Services Inc.		Coltyce Sanders Laboratory Engineer UL Verification Services Inc.		

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, the following FCC Published RF exposure [KDB](#) procedures:

- 248227 D01 802.11 Wi-Fi SAR v02
- 447498 D01 General RF Exposure Guidance v05r02
- 648474 D04 Handset SAR v01r02
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03
- 865664 D02 RF Exposure Reporting v01r01
- 941225 D01 3G SAR Procedures v03
- 941225 D05 SAR for LTE Devices v02r03
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r01
- 941225 D06 Hotspot Mode v02

3. Facilities and Accreditation

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

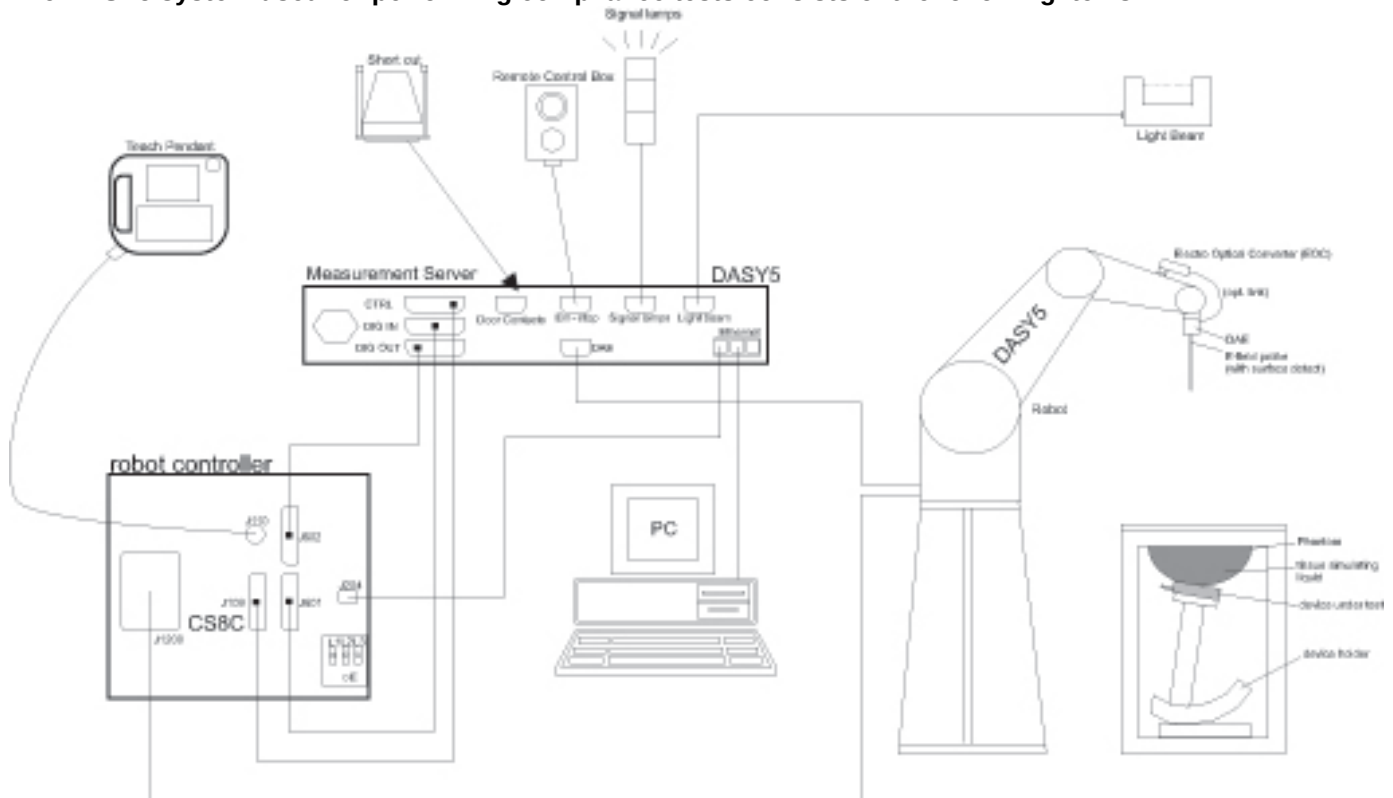
47173 Benicia Street	47266 Benicia Street
SAR Lab A	SAR Lab 1
SAR Lab B	SAR Lab 2
SAR Lab C	SAR Lab 3
SAR Lab D	SAR Lab 4
SAR Lab E	SAR Lab 5
SAR Lab F	
SAR Lab G	
SAR Lab H	

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.htm>

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY5 system used for performing compliance tests consists of the following items:



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

4.2. SAR Scan Procedures

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 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	≤ 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 $\leq$ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

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

			≤ 3 GHz	> 3 GHz
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$			≤ 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: $\Delta z_{\text{Zoom}}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	graded grid	$\Delta z_{\text{Zoom}}(1)$: between 1 st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{\text{Zoom}}(n>1)$: between subsequent points	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1)$	
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 <i>reported</i> 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.

4.3. 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.

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E753ES	MY40000980	4/17/2016
Dielectronic Probe kit	SPEAG	DAK-3.5	1082	9/16/2015
Dielectronic Probe kit	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	Control Company	Traceable	122529163	10/8/2015
Network Analyzer	Agilent	8753ES	MY40001647	7/17/2015
Dielectronic Probe kit	SPEAG	DAK-3.5	1087	11/11/2015
Dielectronic Probe kit	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	Traceable Calibration Control Co.	4242	122529162	10/8/2015

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
HP Signal Generator	HP	8665B	3546A00784	6/23/2015
Power Meter	HP	437B	3125U09516	10/6/2015
Power Meter	Agilent	N1911A	MY53060016	8/7/2015
Power Sensor	Agilent	E9323A	MY53070003	5/1/2015
Power Sensor	Agilent	8481A	3318A95392	10/6/2015
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1622052	N/A
Bi-directional coupler	Werlatone, Inc.	C8060-102	2711	N/A
DC Power Supply	Sorensen Ametek	XT20-3	1318A00530	N/A
Synthesized Signal Generator	Agilent	8665B	3438A00633	7/10/2015
Power Meter	HP	437B	3125U11347	8/27/2015
Power Meter	HP	437B	3125U16345	6/16/2015
Power Sensor	HP	8481A	2702A60780	6/16/2015
Power Sensor	HP	8481A	1926A16917	10/10/2015
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1808938	N/A
Bi-directional coupler	Werlatone, Inc.	C8060-102	2710	N/A
DC Power Supply	HP	6296A	2841A-05955	N/A
E-Field Probe (SAR Lab 1)	SPEAG	EX3DV4	3902	5/19/2015
E-Field Probe (SAR Lab 2)	SPEAG	EX3DV3	3773	4/22/2015
E-Field Probe (SAR Lab 2)	SPEAG	EX3DV3	3990	3/18/2016
E-Field Probe (SAR Lab 3)	SPEAG	EX3DV4	3749	1/26/2016
E-Field Probe (SAR Lab 4)	SPEAG	EX3DV4	3929	5/9/2015
E-Field Probe (SAR Lab 4)	SPEAG	EX3DV4	3989	3/17/2016
E-Field Probe (SAR Lab 5)	SPEAG	EX3DV4	3991	5/16/2015
Data Acquisition Electronics (SAR Lab 1)	SPEAG	DAE4	1352	11/7/2015
Data Acquisition Electronics (SAR Lab 2)	SPEAG	DAE4	1259	1/14/2016
Data Acquisition Electronics (SAR Lab 3)	SPEAG	DAE4	1380	7/23/2015
Data Acquisition Electronics (SAR Lab 4)	SPEAG	DAE4	1377	8/27/2015
Data Acquisition Electronics (SAR Lab 5)	SPEAG	DAE4	1439	5/14/2015
System Validation Dipole	SPEAG	D750V3	1024	5/16/2015
System Validation Dipole	SPEAG	D835V2	4d142	9/9/2015
System Validation Dipole	SPEAG	D1750V2	1077	9/11/2015
System Validation Dipole	SPEAG	D1900V2	5d163	9/11/2015
System Validation Dipole	SPEAG	D2450V2	706	9/10/2015
System Validation Dipole	SPEAG	D2450V2	899	3/13/2016
System Validation Dipole	SPEAG	D2600V2	1006	9/10/2015
System Validation Dipole	SPEAG	D5GHzV2	1168	12/4/2015
Thermometer (SAR Lab 1)	EXTECH	445703	CCS-205	3/20/2016
Thermometer (SAR Lab 2)	EXTECH	445703	CCS-203	3/19/2016
Thermometer (SAR Lab 3)	EXTECH	445703	CCS-237	6/3/2015
Thermometer (SAR Lab 4)	EXTECH	445703	CCS-238	6/3/2015
Thermometer (SAR Lab 5)	EXTECH	445703	CCS-239	6/3/2015

Other

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Power Meter	Agilent	N1912A	MY53060009	5/5/2015
Power Sensor	Agilent	N1921A	MY53020038	3/6/2016
Base Station Simulator	R & S	CMW500	132910	10/16/2015
Base Station Simulator	Agilent	8960	MY53211024	9/19/2015

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

6. Device Under Test (DUT) Information

6.1. DUT Description

This device has two power setting. When hotspot mode is activated, an automatic RF power reduction is activated and reduces the output RF power level. When hotspot mode is deactivated, the RF output power levels return to their maximum RF power level.	
Back Cover	☒ The rechargeable battery is not user accessible.
Battery Options	☒ The rechargeable battery is not user accessible.
Accessory	Headset
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☒ Mobile Hotspot (Wi-Fi 5 GHz, Only U-NII 1 and U-NII 3)
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☒ Mobile Hotspot (Wi-Fi 5 GHz, Only U-NII 1 and U-NII 3)

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	☒ Class A = both simultaneously. ☐ Class B = GPRS connection interrupted during a GSM call, automatically resumed at end of call. ☐ Class C = manual GSM / GPRS mode switching. Does this device support DTM (Dual Transfer Mode)? ☒ Yes ☐ No			
CDMA (CDMA2000)	BC0 BC1	1xRTT (Voice & Data) 1xEV-DO Rel. 0 1xEV-DO Rev. A		100%
	Does this device support SV-DO (1xRTT-1xEVDO)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band II Band V	UMTS Rel. 99 (Voice & Data) HSDPA HSUPA		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 13	QPSK 16QAM ☐ Rel. 10 Does not support Carrier Aggregation (CA) ☒ Rel. 10 Carrier Aggregation (Downlink Only) ☐ Rel. 11 Carrier Aggregation (2 Uplink and 2 Downlinks)		100% (FDD)
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20)		100%
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)		100%
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 4.1 LE		77.5% (DH5)

6.3. Nominal and Maximum Output Power

KDB 447498 sec.4.1.(3) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit

RF Air interface	Mode		Full Power			Reduce Power		
			Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)	Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)
GSM850	GSM	Voice	32.5	-1.3 ~ 0.7	33.2	28.5	-1.3 ~ 0.7	29.2
		Tx Slot 1	32.5	-1.3 ~ 0.7	33.2	28.5	-1.3 ~ 0.7	29.2
	GPRS GMSK	Tx Slot 2	31.5	-1.3 ~ 0.7	32.2	27.5	-1.3 ~ 0.7	28.2
		Tx Slot 3	29.5	-1.3 ~ 0.7	30.2	25.5	-1.3 ~ 0.7	26.2
		Tx Slot 4	28.5	-1.3 ~ 0.7	29.2	24.5	-1.3 ~ 0.7	25.2
		Tx Slot 1	27.0	-2.0 ~ 1.0	28.0	27.0	-2.0 ~ 1.0	28.0
	EGPRS 8PSK	Tx Slot 2	25.5	-2.0 ~ 1.0	26.5	25.5	-2.0 ~ 1.0	26.5
		Tx Slot 3	23.5	-2.0 ~ 1.0	24.5	23.5	-2.0 ~ 1.0	24.5
		Tx Slot 4	22.5	-2.0 ~ 1.0	23.5	22.5	-2.0 ~ 1.0	23.5
GSM1900	GSM	Voice	29.5	-1.3 ~ 0.7	30.2	28.3	-1.3 ~ 0.7	29.0
		Tx Slot 1	29.5	-1.3 ~ 0.7	30.2	28.3	-1.3 ~ 0.7	29.0
	GPRS GMSK	Tx Slot 2	28.5	-1.3 ~ 0.7	29.2	27.9	-1.3 ~ 0.7	28.6
		Tx Slot 3	26.5	-1.3 ~ 0.7	27.2	25.9	-1.3 ~ 0.7	26.6
		Tx Slot 4	25.5	-1.3 ~ 0.7	26.2	24.9	-1.3 ~ 0.7	25.6
		Tx Slot 1	26.0	-2.0 ~ 1.0	27.0	26.0	-2.0 ~ 1.0	27.0
	EGPRS 8PSK	Tx Slot 2	24.5	-2.0 ~ 1.0	25.5	24.5	-2.0 ~ 1.0	25.5
		Tx Slot 3	22.5	-2.0 ~ 1.0	23.5	22.5	-2.0 ~ 1.0	23.5
		Tx Slot 4	21.5	-2.0 ~ 1.0	22.5	21.5	-2.0 ~ 1.0	22.5

Dual Transfer Mode

RF Air interface	Mode			Full Power			Reduce Power		
				Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)	Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)
GSM850	GSM (Voice) + GPRS(Data)	Tx Slot 1	CS	32.5	-1.3 ~ 0.7	33.2	28.5	-1.3 ~ 0.7	29.2
		Tx Slot 2	CS	31.5	-1.3 ~ 0.7	32.2	27.5	-1.3 ~ 0.7	28.2
			PS	31.5	-1.3 ~ 0.7	32.2	27.5	-1.3 ~ 0.7	28.2
		Tx Slot 3	CS	29.5	-1.3 ~ 0.7	30.2	25.5	-1.3 ~ 0.7	26.2
	GSM (Voice) + EGPRS(Data) MCS5-9		PS	29.5	-1.3 ~ 0.7	30.2	25.5	-1.3 ~ 0.7	26.2
		Tx Slot 1	CS	32.5	-1.3 ~ 0.7	33.2	28.5	-1.3 ~ 0.7	29.2
		Tx Slot 2	CS	31.5	-1.3 ~ 0.7	32.2	27.5	-1.3 ~ 0.7	28.2
			PS	25.5	-2.0 ~ 1.0	26.5	25.5	-2.0 ~ 1.0	26.5
GSM1900	GSM (Voice) + GPRS(Data)	Tx Slot 3	CS	29.5	-1.3 ~ 0.7	30.2	25.5	-1.3 ~ 0.7	26.2
			PS	23.5	-2.0 ~ 1.0	24.5	23.5	-2.0 ~ 1.0	24.5
	GSM (Voice) + EGPRS(Data) MCS5-9	Tx Slot 1	CS	29.5	-1.3 ~ 0.7	30.2	28.3	-1.3 ~ 0.7	29.0
		Tx Slot 2	CS	28.5	-1.3 ~ 0.7	29.2	27.0	-1.3 ~ 0.7	27.7
			PS	28.5	-1.3 ~ 0.7	29.2	27.0	-1.3 ~ 0.7	27.7
		Tx Slot 3	CS	26.5	-1.3 ~ 0.7	27.2	25.0	-1.3 ~ 0.7	25.7
			PS	26.5	-1.3 ~ 0.7	27.2	25.0	-1.3 ~ 0.7	25.7
		Tx Slot 1	CS	29.5	-1.3 ~ 0.7	30.2	28.3	-1.3 ~ 0.7	29.0
		Tx Slot 2	CS	28.5	-1.3 ~ 0.7	29.2	27.0	-1.3 ~ 0.7	27.7
			PS	24.5	-2.0 ~ 1.0	25.5	24.5	-2.0 ~ 1.0	25.5
		Tx Slot 3	CS	26.5	-1.3 ~ 0.7	27.2	25.0	-1.3 ~ 0.7	25.7
			PS	22.5	-2.0 ~ 1.0	23.5	22.5	-2.0 ~ 1.0	23.5

Note: CS : circuit switched PS : packet switched

RF Air interface	Mode		Full Power			Reduce Power		
			Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)	Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)
WCDMA Band II	R99		23.5	-1.0 ~ 0.7	24.2	20.8	-1.0 ~ 0.7	21.5
	HSDPA	Subtest 1/2	23.0	-2.0 ~ 0.7	23.7	20.0	-2.0 ~ 0.7	20.7
		Subtest 3/4	21.7	-2.0 ~ 0.7	22.4	18.5	-2.0 ~ 0.7	19.2
	HSUPA	Subtest 1/5	23.5	-2.0 ~ 0.7	24.2	20.0	-2.0 ~ 0.7	20.7
		Subtest 2/4	21.5	-2.0 ~ 0.7	22.2	18.5	-2.0 ~ 0.7	19.2
		Subtest 3	22.0	-2.0 ~ 0.7	22.7	18.5	-2.0 ~ 0.7	19.2
WCDMA Band V	R99		23.5	-1.0 ~ 0.7	24.2	23.0	-1.0 ~ 0.7	23.7
	HSDPA	Subtest 1/2	23.0	-2.0 ~ 0.7	23.7	22.5	-2.0 ~ 0.7	23.2
		Subtest 3/4	22.5	-2.0 ~ 0.7	23.2	22.0	-2.0 ~ 0.7	22.7
	HSUPA	Subtest 1/5	23.0	-2.0 ~ 0.7	23.7	22.5	-2.0 ~ 0.7	23.2
		Subtest 2/4	21.5	-2.0 ~ 0.7	22.2	21.5	-2.0 ~ 0.7	22.2
		Subtest 3	21.5	-2.0 ~ 0.7	22.2	21.5	-2.0 ~ 0.7	22.2
RF Air interface	Mode		Full Power			Reduce Power		
			Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)	Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)
CDMA BC0	1xRTT		23.8	-0.8 ~ 0.8	24.6	23.0	-0.8 ~ 0.8	23.8
	1xEVDO Rel. 0		Same as 1xRTT			Same as 1xRTT		
	1xEVDO Rel. A							
CDMA BC1	1xRTT (Low /Mid CH)		23.2	-1.5 ~ 0.8	24.0	20.7	-1.5 ~ 0.8	21.5
	1xRTT (High CH)		22.7	-1.7 ~ 1.0	23.7	20.3	-1.7 ~ 1.0	21.3
	1xEVDO Rel. 0		Same as 1xRTT			Same as 1xRTT		
	1xEVDO Rel. A							
RF Air interface	Mode		Full Power			Reduce Power		
			Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)	Target (dBm)	Tolerance (dB)	Max. Tune-up Limit (dBm)
LTE B2	QPSK		23.0	-1.7 ~ 1.0	24.0	18.8	-3.0 ~ 2.0	20.8
	16QAM		22.0	-1.7 ~ 1.0	23.0	18.8	-3.0 ~ 2.0	20.8
LTE B4	QPSK		23.0	-1.7 ~ 1.0	24.0	18.4	-3.0 ~ 2.0	20.4
	16QAM		22.0	-1.7 ~ 1.0	23.0	18.4	-3.0 ~ 2.0	20.4
LTE B5	QPSK		23.0	-1.7 ~ 1.0	24.0	20.7	-3.0 ~ 2.0	22.7
	16QAM		22.0	-1.7 ~ 1.0	23.0	20.7	-3.0 ~ 2.0	22.7
LTE B7	QPSK		23.0	-1.7 ~ 1.0	24.0	17.7	-3.0 ~ 2.0	19.7
	16QAM		22.0	-1.7 ~ 1.0	23.0	17.7	-3.0 ~ 2.0	19.7
LTE B13	QPSK		23.0	-1.7 ~ 1.0	24.0	20.5	-3.0 ~ 2.0	22.5
	16QAM		22.0	-1.7 ~ 1.0	23.0	20.5	-3.0 ~ 2.0	22.5

WLAN 2.4GHzMaximum Output Power for Head(Cheek)

RF Air interface	Mode	Band (MHz)	Data Rate	Channel	Ant Chain 0	Ant Chain 1
					Max. Tune-up Limit (dBm)	Max. Tune-up Limit (dBm)
Wi-Fi 2.4 GHz	802.11b	2400~2483.5	1 Mbps	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	16.0
				10	14.6	14.5
				11	13.6	13.5
				12	17.2	16.0
				13	13.4	13.4
	802.11g	2400~2483.5	6 Mbps	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	16.0
				10	14.6	14.5
				11	13.6	13.5
				12	11.7	11.3
				13	4.7	4.3
	802.11n HT20	2400~2483.5	MCS0	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	16.0
				10	14.6	14.5
				11	13.6	13.3
				12	9.7	9.2
				13	4.6	3.7

WLAN 2.4GHzMaximum Output Power for Body

RF Air interface	Mode	Band (MHz)	Data Rate	Channel	Ant Chain 0	Ant Chain 1
					Max. Tune-up Limit (dBm)	Max. Tune-up Limit (dBm)
Wi-Fi 2.4 GHz	802.11b	2400~2483.5	1 Mbps	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	18.0
				10	14.6	14.5
				11	13.6	13.5
				12	17.2	17.2
				13	13.4	13.4
	802.11g	2400~2483.5	6 Mbps	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	18.0
				10	14.6	14.5
				11	13.6	13.5
				12	11.7	11.3
				13	4.7	4.3
	802.11n HT20	2400~2483.5	MCS0	1	12.6	12.5
				2	14.6	14.5
				3 ~ 9	18.6	18.0
				10	14.6	14.5
				11	13.6	13.3
				12	9.7	9.2
				13	4.6	3.7

WLAN 5GHz Maximum Output Power for Head(Cheek)

RF Air interface	Mode	Channel	Data Rate	Ant Chain 0	Ant Chain 1
				Max. Tune-up Limit (dBm)	Max. Tune-up Limit (dBm)
UNII-2A	802.11a	All	6 Mbps	15.7	14.4
	802.11n HT20	All	MCS0	15.7	14.4
	802.11n HT40	All		13.7	14.4
	802.11ac VHT20	All		15.7	14.4
	802.11ac VHT40	All		13.7	14.4
	802.11ac VHT80	All		10.7	11.4
UNII-2C	802.11a	All	6 Mbps	15.8	15.1
	802.11n HT20	All	MCS0	15.8	15.1
	802.11n HT40	All		13.8	15.1
	802.11ac VHT20	All		15.8	15.1
	802.11ac VHT40	All		13.8	15.1
	802.11ac VHT80	All		10.8	12.1
UNII-3 or DTS	802.11a	All	6 Mbps	16.3	15.1
	802.11n HT20	All	MCS0	16.3	15.1
	802.11n HT40	All		14.3	15.1
	802.11ac VHT20	All		16.3	15.1
	802.11ac VHT40	All		14.3	15.1
	802.11ac VHT80	All		11.3	12.1

WLAN 5GHz Maximum Output Power for Body

RF Air interface	Mode	Channel	Data Rate	Ant Chain 0	Ant Chain 1
				Max. Tune-up Limit (dBm)	Max. Tune-up Limit (dBm)
UNII-2A	802.11a	All	6 Mbps	15.7	16.4
	802.11n HT20	All	MCS0	15.7	16.4
	802.11n HT40	All		13.7	14.4
	802.11ac VHT20	All		15.7	16.4
	802.11ac VHT40	All		13.7	14.4
	802.11ac VHT80	All		10.7	11.4
UNII-2C	802.11a	All	6 Mbps	15.8	17.1
	802.11n HT20	All	MCS0	15.8	17.1
	802.11n HT40	All		13.8	15.1
	802.11ac VHT20	All		15.8	17.1
	802.11ac VHT40	All		13.8	15.1
	802.11ac VHT80	All		10.8	12.1
UNII-3 or DTS	802.11a	All	6 Mbps	16.3	17.1
	802.11n HT20	All	MCS0	16.3	17.1
	802.11n HT40	All		14.3	15.1
	802.11ac VHT20	All		16.3	17.1
	802.11ac VHT40	All		14.3	15.1
	802.11ac VHT80	All		11.3	12.1

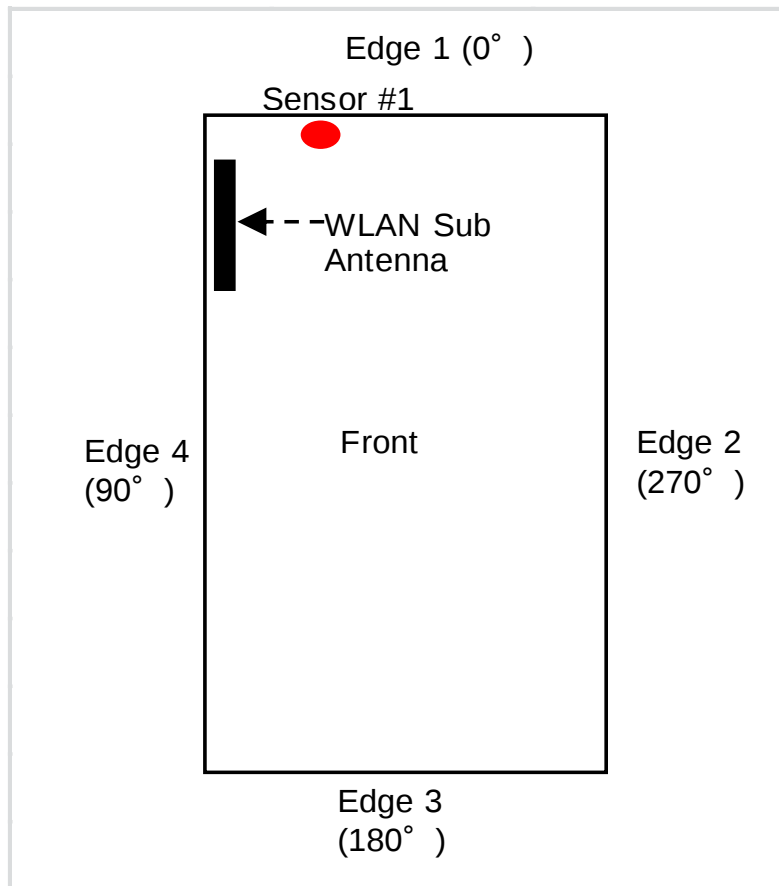
RF Air interface	Mode	Band (MHz)	Channel	Ant Chain 0
				Max. Tune-up Limit (dBm)
Bluetooth	BDR	2400~2483.5	All	10.5
	EDR			8.9
	BLE			8.0

6.4. General LTE SAR Test and Reporting Considerations

Item	Description																																												
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz																																											
		Channel Bandwidth																																											
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																						
	Low	18700 /1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7																																						
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880																																						
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3																																						
	Band 4	Frequency range: 1710 - 1755 MHz																																											
		Channel Bandwidth																																											
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																						
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7																																						
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5																																						
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3																																						
	Band 5	Frequency range: 824 - 849 MHz																																											
		Channel Bandwidth																																											
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																						
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7																																						
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5																																						
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3																																						
	Band 7	Frequency range: 2500 - 2570 MHz																																											
		Channel Bandwidth																																											
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																						
	Low	20850 2510	20825 2507.5	20800 2505	20775 2502.5																																								
	Mid	21100 2535	21100 2535	21100 2535	21100 2535																																								
	High	21350 2560	21375 2562.5	21400 2565	21425 2567.5																																								
	Band 13	Frequency range: 777 - 787 MHz																																											
		Channel Bandwidth																																											
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																						
	Low				23205/ 779.5																																								
	Mid			23230/ 782	23230/ 782																																								
	High				23255/ 784.5																																								
LTE transmitter and antenna implementation	LTE has one (1) Tx/Rx antennas Refer to Appendix A.																																												
Maximum power reduction (MPR)	Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3 <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (RB)</th><th rowspan="2">MPR (dB)</th></tr> <tr> <th>1.4 MHz</th><th>3.0 MHz</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th></tr> </thead> <tbody> <tr> <td>QPSK</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 1</td></tr> <tr> <td>16 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 1</td></tr> <tr> <td>16 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 2</td></tr> </tbody> </table> MPR Built-in by design A-MPR (additional MPR) was disabled during SAR testing							Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1	16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1	16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)																																						
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz																																							
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1																																						
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1																																						
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2																																						
Power reduction	No																																												
Spectrum plots for RB configurations	A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.																																												

6.5. Power Reduction by Proximity Sensing for Head Position

The DUT has one proximity sensor to reduce the output power. The position of the sensor and antenna are shown in the graphic below:



6.5.1. Proximity Sensor Triggering Distance

The IR sensor was positioned 5 cm away and perpendicular to an opaque surface. The opaque surface was moved in 3 mm increments towards the device until the IR sensor triggered. The opaque surface was then moved away from the device until IR triggering was released and subsequently moved towards the device again, in 1 mm increments until it triggered. The opaque surface continued to move toward the device all the way in 2 mm increments until it was touching the device to verify that the IR sensor remained triggered.

The DUT was configured to beep or buzz to indicate if the DUT is operating at reduced power or full power respectively. This was used to determine the status of the sensor during the proximity sensor assessment as monitoring the output power directly was not practical without affecting the measurement.

It was confirmed separately that the output power was altered according to the proximity sensor status indication. This was achieved by observing the proximity sensor status at the same time as monitoring the conducted power. Section 9 contains both the full and reduced conducted power measurements.

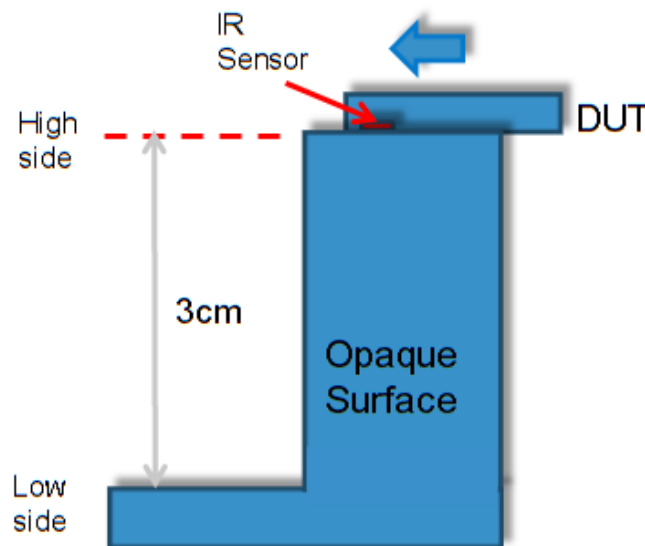
See Appendix G for full details regarding proximity sensor triggering distance.

Summary of Trigger Distances

Band	Front	
	Trigger Point	Release Point
WLAN	32	33

6.5.2. Proximity Sensor Coverage

The device was positioned with the IR sensor touching the high side of a 3 cm step opaque surface. The IR sensor location was gradually moved towards the step edge, at 1 mm increments until the sensor had crossed the step edge. Once the IR sensor was over the 3 cm low side of the opaque surface, the device was moved perpendicularly away from the opaque surface. It was verified that the IR sensor remained triggered continuously during this process. This process is then repeated at varying orientations (i.e. 90°, 180°, and 270°).



See Appendix G for full details regarding proximity sensor coverage.

Summary of DUT Sensor coverage to Proximity Sensor Triggering

Band	Front at 0° (mm)		Minimum Distance (mm)	Front at 90° (mm)		Minimum Distance (mm)	Front at 180° (mm)		Minimum Distance (mm)	Front at 270° (mm)		Minimum Distance (mm)
	X	Z		X	Z		X	Z		X	Z	
WLAN	50 to -11	3	3	50 to -11	3	3	50 to -5	3	3	50 to -8	3	3

7. RF Exposure Conditions (Test Configurations)

Refer to “SAR Photos and Ant locations” Appendix for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	15 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot	10 mm	Rear	< 25 mm	Yes	
			Front	< 25 mm	Yes	
			Edge 1 (Top)	> 25 mm	No	1
			Edge 2 (Right)	< 25 mm	Yes	
			Edge 3 (Bottom)	< 25 mm	Yes	
			Edge 4 (Left)	< 25 mm	Yes	
WLAN (Chain0)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	15 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot / Wi-Fi Direct	10 mm	Rear	< 25 mm	Yes	
			Front	< 25 mm	Yes	
			Edge 1 (Top)	< 25 mm	Yes	
			Edge 2 (Right)	< 25 mm	Yes	
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	> 25 mm	No	1
WLAN (Chain1)	Head	0 mm	Left Touch	N/A	Yes	
			Left Tilt (15°)	N/A	Yes	
			Right Touch	N/A	Yes	
			Right Tilt (15°)	N/A	Yes	
	Body	15 mm	Rear	N/A	Yes	
			Front	N/A	Yes	
	Hotspot / Wi-Fi Direct	10 mm	Rear	< 25 mm	Yes	
			Front	< 25 mm	Yes	
			Edge 1 (Top)	< 25 mm	Yes	
			Edge 2 (Right)	> 25 mm	No	1
			Edge 3 (Bottom)	> 25 mm	No	1
			Edge 4 (Left)	< 25 mm	Yes	

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within $\pm 2^\circ\text{C}$ 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.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head		Body	
	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
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
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:**SAR Lab 1**

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
3/30/2015	Body 2450	e'	50.7100	Relative Permittivity (ϵ_r):	50.71	52.70	-3.78	5
		e"	14.6300	Conductivity (σ):	1.99	1.95	2.21	5
	Body 2410	e'	50.8300	Relative Permittivity (ϵ_r):	50.83	52.76	-3.66	5
		e"	14.5000	Conductivity (σ):	1.94	1.91	1.87	5
	Body 2475	e'	50.7400	Relative Permittivity (ϵ_r):	50.74	52.67	-3.66	5
		e"	14.7300	Conductivity (σ):	2.03	1.99	2.11	5
4/3/2015	Body 2600	e'	51.5000	Relative Permittivity (ϵ_r):	51.50	52.51	-1.92	5
		e"	15.4000	Conductivity (σ):	2.23	2.16	3.03	5
	Body 2500	e'	51.7800	Relative Permittivity (ϵ_r):	51.78	52.64	-1.63	5
		e"	14.9600	Conductivity (σ):	2.08	2.02	2.93	5
	Body 2700	e'	51.2300	Relative Permittivity (ϵ_r):	51.23	52.38	-2.20	5
		e"	15.5300	Conductivity (σ):	2.33	2.30	1.31	5
4/7/2015	Body 5180	e'	50.0300	Relative Permittivity (ϵ_r):	50.03	49.05	2.00	5
		e"	18.6000	Conductivity (σ):	5.36	5.27	1.63	5
	Body 5200	e'	49.7100	Relative Permittivity (ϵ_r):	49.71	49.02	1.41	5
		e"	18.4900	Conductivity (σ):	5.35	5.29	0.97	5
	Body 5600	e'	49.2200	Relative Permittivity (ϵ_r):	49.22	48.48	1.53	5
		e"	19.0300	Conductivity (σ):	5.93	5.76	2.86	5
	Body 5800	e'	48.6400	Relative Permittivity (ϵ_r):	48.64	48.20	0.91	5
		e"	19.2200	Conductivity (σ):	6.20	6.00	3.31	5
	Body 5825	e'	48.6100	Relative Permittivity (ϵ_r):	48.61	48.20	0.85	5
		e"	19.4100	Conductivity (σ):	6.29	6.00	4.78	5
4/8/2015	Head 5180	e'	35.1100	Relative Permittivity (ϵ_r):	35.11	36.01	-2.51	5
		e"	15.5300	Conductivity (σ):	4.47	4.63	-3.40	5
	Head 5200	e'	35.0600	Relative Permittivity (ϵ_r):	35.06	35.99	-2.58	5
		e"	15.5400	Conductivity (σ):	4.49	4.65	-3.39	5
	Head 5600	e'	34.5100	Relative Permittivity (ϵ_r):	34.51	35.53	-2.88	5
		e"	15.7300	Conductivity (σ):	4.90	5.06	-3.21	5
	Head 5800	e'	34.2600	Relative Permittivity (ϵ_r):	34.26	35.30	-2.95	5
		e"	15.8300	Conductivity (σ):	5.11	5.27	-3.13	5
	Head 5825	e'	34.2300	Relative Permittivity (ϵ_r):	34.23	35.30	-3.03	5
		e"	15.8500	Conductivity (σ):	5.13	5.27	-2.59	5
4/13/2015	Body 5180	e'	48.9900	Relative Permittivity (ϵ_r):	48.99	49.05	-0.12	5
		e"	18.1000	Conductivity (σ):	5.21	5.27	-1.10	5
	Body 5200	e'	48.9700	Relative Permittivity (ϵ_r):	48.97	49.02	-0.10	5
		e"	18.1800	Conductivity (σ):	5.26	5.29	-0.72	5
	Body 5600	e'	48.3600	Relative Permittivity (ϵ_r):	48.36	48.48	-0.24	5
		e"	18.5400	Conductivity (σ):	5.77	5.76	0.21	5
	Body 5800	e'	48.1000	Relative Permittivity (ϵ_r):	48.10	48.20	-0.21	5
		e"	18.7900	Conductivity (σ):	6.06	6.00	1.00	5
Body 5825	e'	48.0500	Relative Permittivity (ϵ_r):	48.05	48.20	-0.31	5	
	e"	18.7900	Conductivity (σ):	6.09	6.00	1.43	5	

SAR Lab 2

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
3/31/2015	Head 1900	e'	40.2300	Relative Permittivity (ϵ_r):	40.23	40.00	0.57	5
		e"	13.6000	Conductivity (σ):	1.44	1.40	2.63	5
	Head 1850	e'	40.5100	Relative Permittivity (ϵ_r):	40.51	40.00	1.28	5
		e"	13.3800	Conductivity (σ):	1.38	1.40	-1.69	5
	Head 1910	e'	40.2100	Relative Permittivity (ϵ_r):	40.21	40.00	0.53	5
		e"	13.6000	Conductivity (σ):	1.44	1.40	3.17	5
3/31/2015	Body 1900	e'	51.5500	Relative Permittivity (ϵ_r):	51.55	53.30	-3.28	5
		e"	14.4500	Conductivity (σ):	1.53	1.52	0.43	5
	Body 1850	e'	51.7400	Relative Permittivity (ϵ_r):	51.74	53.30	-2.93	5
		e"	14.1700	Conductivity (σ):	1.46	1.52	-4.10	5
	Body 1910	e'	51.4200	Relative Permittivity (ϵ_r):	51.42	53.30	-3.53	5
		e"	14.4200	Conductivity (σ):	1.53	1.52	0.75	5
4/13/2015	Body 2450	e'	50.2700	Relative Permittivity (ϵ_r):	50.27	52.70	-4.61	5
		e"	14.8100	Conductivity (σ):	2.02	1.95	3.46	5
	Body 2410	e'	50.5800	Relative Permittivity (ϵ_r):	50.58	52.76	-4.13	5
		e"	14.8200	Conductivity (σ):	1.99	1.91	4.11	5
	Body 2475	e'	50.2100	Relative Permittivity (ϵ_r):	50.21	52.67	-4.67	5
		e"	14.9300	Conductivity (σ):	2.05	1.99	3.50	5

SAR Lab 3

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
3/30/2015	Head 835	e'	42.4500	Relative Permittivity (ϵ_r):	42.45	41.50	2.29	5
		e"	19.7200	Conductivity (σ):	0.92	0.90	1.73	5
	Head 820	e'	42.6500	Relative Permittivity (ϵ_r):	42.65	41.60	2.52	5
		e"	19.7100	Conductivity (σ):	0.90	0.90	0.02	5
	Head 850	e'	42.2500	Relative Permittivity (ϵ_r):	42.25	41.50	1.81	5
		e"	19.6400	Conductivity (σ):	0.93	0.92	1.45	5
3/30/2015	Body 835	e'	52.7300	Relative Permittivity (ϵ_r):	52.73	55.20	-4.47	5
		e"	21.4500	Conductivity (σ):	1.00	0.97	2.67	5
	Body 820	e'	52.9400	Relative Permittivity (ϵ_r):	52.94	55.28	-4.23	5
		e"	21.4900	Conductivity (σ):	0.98	0.97	1.17	5
	Body 850	e'	52.5800	Relative Permittivity (ϵ_r):	52.58	55.16	-4.67	5
		e"	21.3600	Conductivity (σ):	1.01	0.99	2.27	5
4/3/2015	Head 835	e'	40.0500	Relative Permittivity (ϵ_r):	40.05	41.50	-3.49	5
		e"	19.0100	Conductivity (σ):	0.88	0.90	-1.93	5
	Head 820	e'	40.2200	Relative Permittivity (ϵ_r):	40.22	41.60	-3.32	5
		e"	19.0900	Conductivity (σ):	0.87	0.90	-3.12	5
	Head 850	e'	39.8100	Relative Permittivity (ϵ_r):	39.81	41.50	-4.07	5
		e"	19.0900	Conductivity (σ):	0.90	0.92	-1.39	5
4/3/2015	Body 835	e'	54.5000	Relative Permittivity (ϵ_r):	54.50	55.20	-1.27	5
		e"	21.9000	Conductivity (σ):	1.02	0.97	4.82	5
	Body 820	e'	54.6000	Relative Permittivity (ϵ_r):	54.60	55.28	-1.22	5
		e"	21.9700	Conductivity (σ):	1.00	0.97	3.43	5
	Body 850	e'	54.3500	Relative Permittivity (ϵ_r):	54.35	55.16	-1.46	5
		e"	21.9300	Conductivity (σ):	1.04	0.99	5.00	5

SAR Lab 4

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
3/31/2015	Head 2450	e'	38.6900	Relative Permittivity (ϵ_r):	38.69	39.20	-1.30	5
		e"	13.6600	Conductivity (σ):	1.86	1.80	3.38	5
	Head 2410	e'	38.8800	Relative Permittivity (ϵ_r):	38.88	39.28	-1.02	5
		e"	13.6800	Conductivity (σ):	1.83	1.76	4.13	5
	Head 2475	e'	38.5800	Relative Permittivity (ϵ_r):	38.58	39.17	-1.50	5
		e"	13.7800	Conductivity (σ):	1.90	1.83	3.80	5
4/2/2015	Head 2600	e'	40.5400	Relative Permittivity (ϵ_r):	40.54	39.01	3.92	5
		e"	13.6500	Conductivity (σ):	1.97	1.96	0.57	5
	Head 2500	e'	40.9200	Relative Permittivity (ϵ_r):	40.92	39.14	4.56	5
		e"	13.3000	Conductivity (σ):	1.85	1.85	-0.28	5
	Head 2700	e'	40.1000	Relative Permittivity (ϵ_r):	40.10	38.88	3.13	5
		e"	13.9400	Conductivity (σ):	2.09	2.07	1.09	5
4/8/2015	Head 5180	e'	37.8000	Relative Permittivity (ϵ_r):	37.80	36.01	4.96	5
		e"	16.0300	Conductivity (σ):	4.62	4.63	-0.29	5
	Head 5200	e'	37.7700	Relative Permittivity (ϵ_r):	37.77	35.99	4.95	5
		e"	16.0500	Conductivity (σ):	4.64	4.65	-0.22	5
	Head 5600	e'	37.1800	Relative Permittivity (ϵ_r):	37.18	35.53	4.63	5
		e"	16.2900	Conductivity (σ):	5.07	5.06	0.24	5
	Head 5800	e'	36.9500	Relative Permittivity (ϵ_r):	36.95	35.30	4.67	5
		e"	16.3900	Conductivity (σ):	5.29	5.27	0.30	5
	Head 5825	e'	36.9500	Relative Permittivity (ϵ_r):	36.95	35.30	4.67	5
		e"	16.4100	Conductivity (σ):	5.32	5.27	0.85	5
4/13/2015	Head 5180	e'	36.7600	Relative Permittivity (ϵ_r):	36.76	36.01	2.07	5
		e"	15.3100	Conductivity (σ):	4.41	4.63	-4.77	5
	Head 5200	e'	36.7400	Relative Permittivity (ϵ_r):	36.74	35.99	2.08	5
		e"	15.4000	Conductivity (σ):	4.45	4.65	-4.26	5
	Head 5600	e'	36.2000	Relative Permittivity (ϵ_r):	36.20	35.53	1.87	5
		e"	15.6500	Conductivity (σ):	4.87	5.06	-3.70	5
	Head 5800	e'	35.8800	Relative Permittivity (ϵ_r):	35.88	35.30	1.64	5
		e"	15.8100	Conductivity (σ):	5.10	5.27	-3.25	5
	Head 5825	e'	35.8900	Relative Permittivity (ϵ_r):	35.89	35.30	1.67	5
		e"	15.8400	Conductivity (σ):	5.13	5.27	-2.65	5
4/20/2015	Head 835	e'	42.8100	Relative Permittivity (ϵ_r):	42.81	41.50	3.16	5
		e"	19.3000	Conductivity (σ):	0.90	0.90	-0.44	5
	Head 820	e'	42.8800	Relative Permittivity (ϵ_r):	42.88	41.60	3.07	5
		e"	19.3800	Conductivity (σ):	0.88	0.90	-1.65	5
	Head 850	e'	42.6500	Relative Permittivity (ϵ_r):	42.65	41.50	2.77	5
		e"	19.3000	Conductivity (σ):	0.91	0.92	-0.31	5
4/20/2015	Body 835	e'	53.6000	Relative Permittivity (ϵ_r):	53.60	55.20	-2.90	5
		e"	21.3900	Conductivity (σ):	0.99	0.97	2.38	5
	Body 820	e'	53.6000	Relative Permittivity (ϵ_r):	53.60	55.28	-3.03	5
		e"	21.4800	Conductivity (σ):	0.98	0.97	1.13	5
	Body 850	e'	53.4400	Relative Permittivity (ϵ_r):	53.44	55.16	-3.11	5
		e"	21.3700	Conductivity (σ):	1.01	0.99	2.32	5
4/28/2015	Body 1900	e'	51.3800	Relative Permittivity (ϵ_r):	51.38	53.30	-3.60	5
		e"	14.5200	Conductivity (σ):	1.53	1.52	0.92	5
	Body 1850	e'	51.5900	Relative Permittivity (ϵ_r):	51.59	53.30	-3.21	5
		e"	14.3100	Conductivity (σ):	1.47	1.52	-3.16	5
	Body 1910	e'	51.3600	Relative Permittivity (ϵ_r):	51.36	53.30	-3.64	5
		e"	14.4600	Conductivity (σ):	1.54	1.52	1.03	5

SAR Lab 5

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
4/2/2015	Head 790	e'	40.3300	Relative Permittivity (ϵ_r):	40.33	41.76	-3.42	5
		e"	21.2900	Conductivity (σ):	0.94	0.90	4.36	5
	Head 750	e'	40.7700	Relative Permittivity (ϵ_r):	40.77	41.96	-2.84	5
		e"	21.6200	Conductivity (σ):	0.90	0.89	0.95	5
	Head 770	e'	40.5300	Relative Permittivity (ϵ_r):	40.53	41.86	-3.17	5
		e"	21.5600	Conductivity (σ):	0.92	0.89	3.18	5
4/2/2015	Body 750	e'	54.6800	Relative Permittivity (ϵ_r):	54.68	55.55	-1.56	5
		e"	23.4200	Conductivity (σ):	0.98	0.96	1.41	5
	Body 770	e'	54.6800	Relative Permittivity (ϵ_r):	54.68	55.47	-1.42	5
		e"	23.0300	Conductivity (σ):	0.99	0.96	2.22	5
	Body 790	e'	54.1300	Relative Permittivity (ϵ_r):	54.13	55.39	-2.28	5
		e"	23.0300	Conductivity (σ):	1.01	0.97	4.71	5
4/2/2015	Head 1750	e'	40.3000	Relative Permittivity (ϵ_r):	40.30	40.08	0.54	5
		e"	13.8800	Conductivity (σ):	1.35	1.37	-1.34	5
	Head 1710	e'	40.4100	Relative Permittivity (ϵ_r):	40.41	40.15	0.66	5
		e"	13.6200	Conductivity (σ):	1.30	1.35	-3.82	5
	Head 1755	e'	40.3100	Relative Permittivity (ϵ_r):	40.31	40.08	0.58	5
		e"	13.7900	Conductivity (σ):	1.35	1.37	-1.90	5
4/6/2015	Body 1750	e'	52.0300	Relative Permittivity (ϵ_r):	52.03	53.44	-2.64	5
		e"	15.3400	Conductivity (σ):	1.49	1.49	0.44	5
	Body 1710	e'	52.2200	Relative Permittivity (ϵ_r):	52.22	53.54	-2.47	5
		e"	15.3400	Conductivity (σ):	1.46	1.46	-0.20	5
	Body 1755	e'	52.0800	Relative Permittivity (ϵ_r):	52.08	53.43	-2.52	5
		e"	15.4200	Conductivity (σ):	1.50	1.49	1.04	5
4/9/2015	Head 2450	e'	38.1800	Relative Permittivity (ϵ_r):	38.18	39.20	-2.60	5
		e"	13.4600	Conductivity (σ):	1.83	1.80	1.87	5
	Head 2410	e'	38.3000	Relative Permittivity (ϵ_r):	38.30	39.28	-2.49	5
		e"	13.4300	Conductivity (σ):	1.80	1.76	2.23	5
	Head 2475	e'	38.0600	Relative Permittivity (ϵ_r):	38.06	39.17	-2.83	5
		e"	13.4800	Conductivity (σ):	1.86	1.83	1.54	5

8.2. 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.

System Performance Check Measurement Conditions:

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ± 0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference Target SAR Values

The reference SAR values can be obtained from the calibration certificate of system validation dipoles

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (W/kg)		
				1g/10g	Head	Body
D750V3	1024	5/16/2014	750	1g	8.1	8.77
				10g	5.3	5.79
D835V2	4d142	9/9/2014	835	1g	8.91	9.22
				10g	5.77	6.05
D1750V2	1077	9/11/2014	1750	1g	36.5	36.9
				10g	19.4	19.8
D1900V2	5d163	9/11/2014	1900	1g	40.8	40.6
				10g	21.2	21.4
D2450V2	706	9/10/2014	2450	1g	53.0	50.2
				10g	24.5	23.4
D2450V2	899	3/13/2015	2450	1g	51.6	48.8
				10g	23.9	22.7
D2600V2	1006	9/10/2014	2600	1g	58.6	56.3
				10g	26.1	25.1
D5GHzV2	1168	12/4/2014	5200	1g	79.3	76.0
				10g	22.5	21.1
			5600	1g	81.7	82.0
				10g	23.2	22.7
			5800	1g	78.0	76.2
				10g	22.1	21.0

System Check Results

The 1-g 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.

SAR Lab 1

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
3/30/2015	D2450V2	706	Body	1g	5.27	52.7	50.2	4.98	1,2
				10g	2.45	24.5	23.4	4.70	
4/3/2015	D2600V2	1006	Body	1g	5.81	58.1	56.3	3.20	3,4
				10g	2.56	25.6	25.1	1.99	
4/7/2015	D5GHzV2 (5.8 GHz)	1168	Body	1g	7.72	77.2	76.2	1.31	
				10g	2.14	21.4	21	1.90	
4/8/2015	D5GHzV2 (5.8 GHz)	1168	Head	1g	8.36	83.6	78.0	7.18	5,6
				10g	2.38	23.8	22.1	7.69	
4/13/2015	D5GHzV2 (5.2 GHz)	1168	Body	1g	7.26	72.6	76.0	-4.47	
				10g	2.04	20.4	21.1	-3.32	
4/13/2015	D5GHzV2 (5.6 GHz)	1168	Body	1g	8.26	82.6	82.0	0.73	
				10g	2.29	22.9	22.7	0.88	

SAR Lab 2

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
3/31/2015	D1900V2	5d163	Head	1g	3.87	38.7	40.8	-5.15	7,8
				10g	1.99	19.9	21.2	-6.13	
3/31/2015	D1900V2	5d163	Body	1g	4.14	41.4	40.6	1.97	
				10g	2.13	21.3	21.4	-0.47	
4/13/2015	D2450V2	899	Body	1g	5.12	51.2	48.80	4.92	9,10
				10g	2.37	23.7	22.70	4.41	

SAR Lab 3

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
3/30/2015	D835V2	4d142	Head	1g	0.96	9.6	8.91	7.41	
				10g	0.63	6.3	5.77	8.84	
3/30/2015	D835V2	4d142	Body	1g	1.01	10.1	9.22	9.54	11,12
				10g	0.66	6.6	6.05	9.42	
4/3/2015	D835V2	4d142	Head	1g	0.93	9.3	8.91	4.60	
				10g	0.61	6.1	5.77	5.89	
4/3/2015	D835V2	4d142	Body	1g	0.99	9.9	9.22	6.83	
				10g	0.65	6.5	6.05	7.27	

SAR Lab 4

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
3/31/2015	D2450V2	706	Head	1g	5.61	56.1	53.00	5.85	
				10g	2.54	25.4	24.50	3.67	
4/2/2015	D2600V2	1006	Head	1g	5.78	57.8	58.60	-1.37	13,14
				10g	2.50	25.0	26.10	-4.21	
4/8/2015	D5GHzV2 (5.2GHz)	1168	Head	1g	8.19	81.9	79.3	3.28	
				10g	2.34	23.4	22.5	4.00	
4/8/2015	D5GHzV2 (5.6GHz)	1168	Head	1g	8.18	81.8	81.7	0.12	
				10g	2.31	23.1	23.2	-0.43	
4/8/2015	D5GHzV2 (5.8GHz)	1168	Head	1g	7.95	79.5	78.0	1.92	
				10g	2.24	22.4	22.1	1.36	
4/13/2015	D5GHzV2 (5.2GHz)	1168	Head	1g	7.79	77.9	79.3	-1.77	
				10g	2.20	22.0	22.5	-2.22	
4/13/2015	D5GHzV2 (5.6GHz)	1168	Head	1g	8.46	84.6	81.7	3.55	15,16
				10g	2.39	23.9	23.2	3.02	
4/13/2015	D5GHzV2 (5.8GHz)	1168	Head	1g	7.99	79.9	78.0	2.44	
				10g	2.25	22.5	22.1	1.81	
4/20/2015	D835V2	4d142	Head	1g	0.93	9.32	8.9	4.60	
				10g	0.62	6.16	5.8	6.76	
4/20/2015	D835V2	4d142	Body	1g	0.98	9.75	9.2	5.75	17,18
				10g	0.64	6.42	6.1	6.12	
4/28/2015	D1900V2	5d163	Body	1g	3.96	39.6	40.6	-2.46	19,20
				10g	2.06	20.6	21.4	-3.74	

SAR Lab 5

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta $\pm 10\%$	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
4/2/2015	D750V3	1024	Head	1g	0.77	7.7	8.1	-4.68	21,22
				10g	0.51	5.1	5.3	-3.80	
4/2/2015	D750V3	1024	Body	1g	0.86	8.6	8.77	-1.94	
				10g	0.57	5.7	5.79	-1.21	
4/2/2015	D1750V2	1077	Head	1g	3.54	35.4	36.5	-3.01	
				10g	1.89	18.9	19.4	-2.58	
4/6/2015	D1750V2	1077	Body	1g	3.49	34.9	36.9	-5.42	23,24
				10g	1.86	18.6	19.8	-6.06	
4/9/2015	D2450V2	899	Head	1g	5.21	52.1	51.6	0.97	25,26
				10g	2.38	23.8	23.9	-0.42	

9. Conducted Output Power Measurements

9.1. GSM

Per KDB 941225 D01 3G SAR Procedures:

SAR test reduction for GPRS and EDGE modes is determined by the source-based time-averaged output power specified for production units, including tune-up tolerance. The data mode with highest specified time-averaged output power should be tested for SAR compliance in the applicable exposure conditions. For modes with the same specified maximum output power and tolerance, the higher number time-slot configuration should be tested.

GSM850 Measured Results

Band	Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Max. Pwr			Reduced Pwr		
						Burst (dBm)	Frame (dBm)	Maximum Frame Pwr	Burst (dBm)	Frame (dBm)	Maximum Frame Pwr
850	GSM (Voice)	CS1	1	128	824.2	33.1	24.1	24.17	28.7	19.7	20.17
				190	836.6	33.0	24.0		28.7	19.7	
				251	848.8	33.0	24.0		28.7	19.7	
	GPRS (GMSK)	CS1	1	128	824.2	33.1	24.1	24.17	28.7	19.7	20.17
				190	836.6	33.0	24.0		28.7	19.7	
				251	848.8	33.0	24.0		27.7	18.7	
			2	128	824.2	32.1	26.1	26.18	27.4	21.4	22.18
				190	836.6	31.9	25.9		27.4	21.4	
				251	848.8	31.9	25.9		27.3	21.3	
			3	128	824.2	29.9	25.6	25.94	25.8	21.5	21.94
				190	836.6	29.9	25.6		25.7	21.4	
				251	848.8	29.9	25.6		25.6	21.3	
			4	128	824.2	29.1	26.1	26.19	23.9	20.9	22.19
				190	836.6	29.1	26.1		23.8	20.8	
				251	848.8	29.0	26.0		23.7	20.7	
	EGPRS (8PSK)	MCS5	1	128	824.2	27.0	18.0	18.97	27.0	18.0	18.97
				190	836.6	27.0	18.0		27.0	18.0	
				251	848.8	26.9	17.9		26.9	17.9	
			2	128	824.2	25.5	19.5	20.48	25.5	19.5	20.48
				190	836.6	25.3	19.3		25.3	19.3	
				251	848.8	25.3	19.3		25.3	19.3	
			3	128	824.2	23.5	19.2	20.24	23.5	19.2	20.24
				190	836.6	23.3	19.0		23.3	19.0	
				251	848.8	23.2	18.9		23.2	18.9	
			4	128	824.2	22.7	19.7	20.49	22.7	19.7	20.49
				190	836.6	22.5	19.5		22.5	19.5	
				251	848.8	22.5	19.5		22.5	19.5	

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Head & Body-worn: GMSK Voice Mode
- Hotspot mode: GMSK (GPRS) mode with 4 time slots for Max power and 4 time slots for Reduced power
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

GSM1900 Measured Results

Band	Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Max. Pwr			Reduced Pwr		
						Burst (dBm)	Frame (dBm)	Maximum Frame Pwr	Burst (dBm)	Frame (dBm)	Maximum Frame Pwr
1900	GSM (Voice)	CS1	1	512	1850.2	29.3	20.3	21.17	28.3	19.3	19.97
				661	1880.0	29.4	20.4		27.9	18.9	
				810	1909.8	29.5	20.5		28.0	19.0	
	GPRS (GMSK)	CS1	1	512	1850.2	29.3	20.3	21.17	28.3	19.3	19.97
				661	1880.0	29.4	20.4		27.9	18.9	
				810	1909.8	29.5	20.5		28.0	19.0	
			2	512	1850.2	28.4	22.4	23.18	27.5	21.5	22.58
				661	1880.0	28.4	22.4		27.7	21.7	
				810	1909.8	28.0	22.0		27.5	21.5	
			3	512	1850.2	26.6	22.3	22.94	26.5	22.2	22.34
				661	1880.0	26.7	22.4		26.5	22.2	
				810	1909.8	26.7	22.4		26.5	22.2	
			4	512	1850.2	25.2	22.2	23.19	25.1	22.1	22.59
				661	1880.0	25.4	22.4		25.2	22.2	
				810	1909.8	25.5	22.5		25.4	22.4	
	EGPRS (8PSK)	MCS5	1	512	1850.2	26.0	17.0	17.67	26.0	17.0	17.97
				661	1880.0	26.0	17.0		26.0	17.0	
				810	1909.8	26.0	17.0		26.0	17.0	
			2	512	1850.2	24.5	18.5	19.18	24.5	18.5	19.48
				661	1880.0	24.5	18.5		24.5	18.5	
				810	1909.8	24.5	18.5		24.5	18.5	
			3	512	1850.2	22.5	18.2	18.94	22.5	18.2	19.24
				661	1880.0	22.5	18.2		22.5	18.2	
				810	1909.8	22.6	18.3		22.6	18.3	
			4	512	1850.2	21.9	18.9	19.19	21.9	18.9	19.49
				661	1880.0	21.9	18.9		21.9	18.9	
				810	1909.8	21.9	18.9		21.9	18.9	

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- Head & Body-worn: GMSK Voice Mode
- Hotspot mode: GMSK (GPRS) mode with 4 time slots for Max power and 4 time slots for Reduced power
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

GSM850 DTM Measured Results

Band	Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Max. Pwr				Reduced Pwr			
						CS		PS		CS		PS	
						Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)
850	GSM(Voice) + GPRS(GMSK)	CS1	1	128	824.2	33.1	24.1			28.7	19.7		
				190	836.6	33.0	24.0			28.7	19.7		
				251	848.8	33.0	24.0			28.7	19.7		
			2	128	824.2	31.6	25.6	31.6	25.6	27.5	21.5	27.6	21.6
				190	836.6	31.3	25.3	31.4	25.4	26.8	20.8	26.9	20.9
				251	848.8	31.4	25.4	31.4	25.4	26.8	20.8	26.9	20.9
			3	128	824.2	29.6	25.3	29.6	25.3	25.4	21.1	25.4	21.1
				190	836.6	29.4	25.1	29.5	25.2	25.3	21.0	25.3	21.0
				251	848.8	29.5	25.2	29.5	25.2	25.2	20.9	25.2	20.9
	GSM(Voice) + EGPRS(8PSK)	MCS5	1	128	824.2	33.1	24.1			28.7	19.7		
				190	836.6	33.0	24.0			28.7	19.7		
				251	848.8	33.0	24.0			28.7	19.7		
			2	128	824.2	31.7	25.7	24.8	18.8	27.5	21.5	25.3	19.3
				190	836.6	31.4	25.4	24.9	18.9	27.9	21.9	25.1	19.1
				251	848.8	31.4	25.4	24.7	18.7	27.8	21.8	25.1	19.1
			3	128	824.2	29.7	25.4	22.8	18.5	25.4	21.1	23.2	18.9
				190	836.6	29.6	25.3	22.8	18.5	25.4	21.1	23.2	18.9
				251	848.8	29.7	25.4	22.7	18.4	25.3	21.0	23.1	18.8

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GSM(Voice) + GMSK (GPRS) mode with 2 time slot for both Max and Reduced power, based on the output power measurements above.
- SAR is not required for GSM(Voice) + EGPRS (8PSK) mode because its output power is less than that of GSM(Voice) + GMSK (GPRS) mode.

GSM1900 DTM Measured Results

Band	Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Max. Pwr				Reduced Pwr			
						CS		PS		CS		PS	
						Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)	Burst (dBm)	Frame (dBm)
1900	GSM(Voice) + GPRS(GMSK)	CS1	1	512	1850.2	29.3	20.3			28.3	19.3		
				661	1880.0	29.4	20.4			27.9	18.9		
				810	1909.8	29.5	20.5			28.0	19.0		
			2	512	1850.2	27.4	21.4	27.4	21.4	26.6	20.6	26.6	20.6
				661	1880.0	27.5	21.5	27.5	21.5	26.6	20.6	26.6	20.6
				810	1909.8	27.6	21.6	27.6	21.6	26.8	20.8	26.8	20.8
			3	512	1850.2	25.6	21.3	25.6	21.3	24.4	20.1	24.4	20.1
				661	1880.0	25.7	21.4	25.7	21.4	24.5	20.2	24.5	20.2
				810	1909.8	25.8	21.5	25.8	21.5	24.5	20.2	24.5	20.2
	GSM(Voice) + EGPRS(8PSK)	MCS5	1	512	1850.2	29.3	20.3			28.3	19.3		
				661	1880.0	29.4	20.4			27.9	18.9		
				810	1909.8	29.5	20.5			28.0	19.0		
			2	512	1850.2	28.0	22.0	24.0	18.0	27.3	21.3	24.1	18.1
				661	1880.0	28.2	22.2	24.0	18.0	27.3	21.3	24.0	18.0
				810	1909.8	28.2	22.2	24.1	18.1	27.4	21.4	23.9	17.9
			3	512	1850.2	26.3	22.0	22.4	18.1	25.2	20.9	22.4	18.1
				661	1880.0	26.4	22.1	22.0	17.7	25.1	20.8	22.1	17.8
				810	1909.8	26.4	22.1	22.1	17.8	25.2	20.9	22.2	17.9

Notes:

The worst-case configuration and mode for SAR testing is determined to be as follows:

- GSM(Voice) + GMSK (GPRS) mode with 2 time slot for both Max and Reduced power, based on the output power measurements above.
- SAR is not required for GSM(Voice) + EGPRS (8PSK) mode because its output power is less than that of GSM(Voice) + GMSK (GPRS) mode.

9.2. W-CDMA

Release 99 Setup Procedures used to establish the test signals

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

HSDPA Setup Procedures used to establish the test signals

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	4/15	24/15	30/15	30/15
HSDPA Specific Settings	MPR (dB)	0	0	0.5	0.5
	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	$A_{hs}=\beta_{hs}/\beta_c$	30/15			

HSPA (HSDPA & HSUPA) Setup Procedures used to establish the test signals

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	15/1
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	1309/225	94/75	47/15	56/75	47/15
HSDPA Specific Settings	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
HSUPA Specific Settings	CQI Repetition Factor (Table 5.2B.4)	2				
	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
	E-DPDCCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

HSPA+

Since 16QAM is not used for uplink, the uplink Category and release is same as HSUPA, i.e., Rel. 7 Therefore, the RF conducted power is not measured.

Measured Results

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Max. Pwr (dBm)	Reduced Pwr (dBm)
W-CDMA Band II	Rel 99	RMC, 12.2 kbps	9262	1852.4	N/A	23.9	20.7
			9400	1880.0	N/A	24.1	20.9
			9538	1907.6	N/A	23.7	20.9
	HSDPA	Subtest 1	9262	1852.4	0	22.9	19.7
			9400	1880.0	0	22.9	19.8
			9538	1907.6	0	22.9	19.9
		Subtest 2	9262	1852.4	0	22.4	18.8
			9400	1880.0	0	22.4	18.6
			9538	1907.6	0	22.3	18.7
		Subtest 3	9262	1852.4	0.5	20.2	18.5
			9400	1880.0	0.5	20.5	17.9
			9538	1907.6	0.5	20.3	17.9
		Subtest 4	9262	1852.4	0.5	21.8	18.5
			9400	1880.0	0.5	21.6	18.4
			9538	1907.6	0.5	21.7	18.6
	HSUPA	Subtest 1	9262	1852.4	0	22.9	19.8
			9400	1880.0	0	22.9	19.5
			9538	1907.6	0	23.0	18.4
		Subtest 2	9262	1852.4	2	21.4	18.3
			9400	1880.0	2	21.1	18.0
			9538	1907.6	2	21.1	18.0
		Subtest 3	9262	1852.4	1	21.5	18.1
			9400	1880.0	1	21.5	18.1
			9538	1907.6	1	22.5	18.3
		Subtest 4	9262	1852.4	2	21.8	18.7
			9400	1880.0	2	21.6	18.6
			9538	1907.6	2	21.8	18.6
		Subtest 5	9262	1852.4	0	22.9	19.8
			9400	1880.0	0	22.9	19.8
			9538	1907.6	0	23.0	19.9

Band	Mode		UL Ch No.	Freq. (MHz)	MPR (dB)	Max. Pwr (dBm)	Reduced Pwr (dBm)
W-CDMA Band V	Rel 99	RMC, 12.2 kbps	4132	826.4	N/A	23.7	23.4
			4183	836.6	N/A	23.5	23.3
			4233	846.6	N/A	23.5	23.3
	HSDPA	Subtest 1	4132	826.4	0	22.7	22.4
			4183	836.6	0	22.5	22.3
			4233	846.6	0	22.5	22.2
		Subtest 2	4132	826.4	0	22.8	22.4
			4183	836.6	0	22.6	22.3
			4233	846.6	0	22.6	22.2
		Subtest 3	4132	826.4	0.5	22.1	21.8
			4183	836.6	0.5	22.1	21.7
			4233	846.6	0.5	22.2	21.8
		Subtest 4	4132	826.4	0.5	22.1	21.9
			4183	836.6	0.5	22.1	21.8
			4233	846.6	0.5	22.2	21.8
	HSUPA	Subtest 1	4132	826.4	0	22.8	22.4
			4183	836.6	0	22.6	22.3
			4233	846.6	0	22.6	22.3
		Subtest 2	4132	826.4	2	21.1	21.1
			4183	836.6	2	21.0	20.6
			4233	846.6	2	21.0	20.7
		Subtest 3	4132	826.4	1	21.3	21.3
			4183	836.6	1	21.5	21.2
			4233	846.6	1	21.5	21.1
		Subtest 4	4132	826.4	2	21.5	21.7
			4183	836.6	2	21.7	21.3
			4233	846.6	2	21.4	21.1
		Subtest 5	4132	826.4	0	22.8	22.4
			4183	836.6	0	22.6	22.3
			4233	846.6	0	22.6	22.3

9.3. CDMA

Measured Results

Band	Mode		Ch No.	Freq. (MHz)	Max. Pwr (dBm)	Reduced Pwr (dBm)
BC 0	1xRTT	RC1 SO55 (Loopback)	1013	824.70	23.6	23.1
			384	836.52	23.7	23.2
			777	848.31	23.6	23.1
		RC3 SO55 (Loopback)	1013	824.70	23.6	23.1
			384	836.52	23.6	23.2
			777	848.31	23.6	23.1
		RC3 SO32 (+F-SCH)	1013	824.70	23.6	23.1
			384	836.52	23.6	23.2
			777	848.31	23.6	23.1
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK) RTAP Rate: 153.6 kbps	1013	824.70	23.5	23.1
			384	836.52	23.5	23.1
			777	848.31	23.5	23.1
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK RETAP: 4096	1013	824.70	23.3	22.9
			384	836.52	23.4	22.9
			777	848.31	23.4	22.9
Band	Mode		Ch No.	Freq. (MHz)	Max. Pwr (dBm)	Reduced Pwr (dBm)
BC 1	1xRTT	RC1 SO55 (Loopback)	25	1851.25	22.8	21.3
			600	1880.00	22.6	21.1
			1175	1908.75	22.9	21.3
		RC3 SO55 (Loopback)	25	1851.25	22.8	21.3
			600	1880.00	22.6	21.1
			1175	1908.75	22.9	21.3
		RC3 SO32 (+F-SCH)	25	1851.25	22.8	21.3
			600	1880.00	22.6	21.1
			1175	1908.75	22.9	21.3
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK) RTAP Rate: 153.6 kbps	25	1851.25	22.7	21.3
			600	1880.00	22.5	21.1
			1175	1908.75	22.8	21.3
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK RETAP: 4096	25	1851.25	22.5	21.3
			600	1880.00	22.4	21.1
			1175	1908.75	22.7	21.3

9.4. LTE

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

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

The allowed A-MPR values specified below in Table 6.2.4-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

LTE Band 2 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1860 MHz	1880 MHz	1900 MHz		1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	23.3	23.4	23.2	0	18.8	18.8	19.0
			1	49	0	22.8	23.0	22.8	0	17.8	17.8	18.0
			1	99	0	23.2	23.3	22.4	0	18.1	18.2	18.3
			50	0	1	22.4	22.5	22.2	0	18.2	18.3	18.6
			50	24	1	22.1	22.3	22.0	0	17.9	18.0	18.3
			50	50	1	22.2	22.4	21.9	0	17.9	18.1	18.2
			100	0	1	22.4	22.5	22.0	0	18.1	18.2	18.5
		16QAM	1	0	1	22.8	22.8	22.6	0	18.8	18.8	18.8
			1	49	1	22.5	22.6	22.2	0	18.2	18.4	18.4
			1	99	1	22.8	22.7	21.8	0	18.5	18.6	18.6
			50	0	2	21.5	21.7	21.3	0	18.2	18.4	18.7
			50	24	2	21.2	21.3	21.1	0	17.9	18.1	18.4
			50	50	2	21.2	21.4	21.0	0	17.9	18.1	18.3
			100	0	2	21.4	21.5	21.1	0	18.1	18.2	18.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1857.5 MHz	1880 MHz	1902.5 MHz		1857.5 MHz	1880 MHz	1902.5 MHz
LTE Band 2	15	QPSK	1	0	0	23.3	23.5	23.5	0	18.4	18.7	18.9
			1	37	0	22.9	23.1	23.1	0	17.8	18.0	18.2
			1	74	0	23.2	23.4	23.4	0	18.0	18.2	18.4
			36	0	1	22.4	22.5	22.5	0	18.1	18.2	18.4
			36	20	1	22.3	22.3	22.3	0	18.0	18.0	18.3
			36	39	1	22.2	22.3	22.3	0	17.9	18.0	18.2
			75	0	1	22.2	22.4	22.4	0	18.0	18.1	18.4
		16QAM	1	0	1	22.3	23.0	23.0	0	18.4	18.9	18.8
			1	37	1	21.8	22.4	22.4	0	17.8	18.2	18.1
			1	74	1	22.2	22.7	22.7	0	18.1	18.5	18.9
			36	0	2	21.4	21.6	21.6	0	18.1	18.3	18.5
			36	20	2	21.2	21.4	21.4	0	18.0	18.1	18.2
			36	39	2	21.2	21.3	21.3	0	17.9	18.1	18.2
			75	0	2	21.3	21.4	21.4	0	18.0	18.2	18.4
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1855 MHz	1880 MHz	1905 MHz		1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	23.0	23.2	23.0	0	17.8	18.1	18.3
			1	25	0	22.6	23.2	22.9	0	17.8	18.1	17.9
			1	49	0	22.7	22.9	22.4	0	17.8	17.8	17.9
			25	0	1	21.9	22.1	22.1	0	17.8	17.8	17.9
			25	12	1	21.7	22.0	22.1	0	17.8	17.8	17.8
			25	25	1	21.7	22.0	21.9	0	17.8	17.8	17.8
			50	0	1	21.9	22.1	22.0	0	17.8	17.8	17.9
		16QAM	1	0	1	22.1	22.5	22.0	0	18.0	18.4	18.5
			1	25	1	22.0	22.3	22.0	0	18.0	18.2	18.3
			1	49	1	21.8	22.2	21.5	0	17.8	18.1	18.0
			25	0	2	20.9	21.1	21.3	0	17.8	17.8	18.0
			25	12	2	20.7	21.0	21.2	0	17.8	17.8	17.9
			25	25	2	20.8	21.0	21.1	0	17.8	17.8	17.9
			50	0	2	20.8	21.1	21.1	0	17.8	17.8	17.9

LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1852.5 MHz	1880 MHz	1907.5 MHz		1852.5 MHz	1880 MHz	1907.5 MHz
LTE Band 2	5	QPSK	1	0	0	22.8	23.0	23.0	0	17.8	17.8	18.0
			1	12	0	23.0	22.9	22.7	0	18.1	17.8	17.9
			1	24	0	22.7	23.0	22.4	0	17.8	17.8	17.9
			12	0	1	21.8	22.0	22.0	0	17.8	17.8	17.9
			12	7	1	21.8	22.1	22.0	0	17.8	17.8	17.9
			12	13	1	21.7	22.0	21.9	0	17.8	17.8	17.8
			25	0	1	21.8	21.9	21.9	0	17.8	17.8	17.9
		16QAM	1	0	1	21.8	22.2	22.7	0	17.8	18.0	18.6
			1	12	1	21.7	22.2	22.5	0	17.8	18.1	18.6
			1	24	1	21.8	22.2	22.2	0	17.8	18.0	18.5
			12	0	2	20.8	21.1	21.1	0	17.8	17.8	17.9
			12	7	2	20.8	21.1	21.1	0	17.8	17.8	17.9
			12	13	2	20.7	21.0	21.0	0	17.8	17.8	17.9
			25	0	2	20.9	21.0	21.0	0	17.8	17.8	17.8
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1851.5 MHz	1880 MHz	1908.5 MHz		1851.5 MHz	1880 MHz	1908.5 MHz
LTE Band 2	3	QPSK	1	0	0	22.7	22.9	22.8	0	17.8	17.8	18.1
			1	8	0	23.1	23.0	22.7	0	18.1	17.8	18.5
			1	14	0	22.7	22.9	22.4	0	17.8	17.8	18.0
			8	0	1	21.8	22.0	21.9	0	17.8	17.8	17.9
			8	4	1	21.8	22.0	21.8	0	17.8	17.8	17.9
			8	7	1	21.8	22.0	21.8	0	17.8	17.8	17.9
			15	0	1	21.7	22.0	21.8	0	17.8	17.8	17.9
		16QAM	1	0	1	21.7	22.5	21.9	0	17.8	18.3	18.2
			1	8	1	21.6	22.3	21.8	0	17.8	18.2	18.0
			1	14	1	21.7	22.4	21.6	0	17.8	18.3	18.0
			8	0	2	20.9	20.9	21.2	0	17.8	17.8	18.0
			8	4	2	20.8	20.9	21.2	0	17.8	17.8	18.0
			8	7	2	20.9	20.9	21.1	0	17.8	17.8	18.1
			15	0	2	20.8	21.0	20.9	0	17.8	17.8	17.9
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1850.7 MHz	1880 MHz	1909.3 MHz		1850.7 MHz	1880 MHz	1909.3 MHz
LTE Band 2	1.4	QPSK	1	0	0	22.7	23.3	22.5	0	17.8	18.1	18.2
			1	3	0	22.7	22.7	22.3	0	17.8	17.8	17.8
			1	5	0	22.7	22.7	22.4	0	17.8	17.8	18.3
			3	0	0	22.6	22.7	22.5	0	17.8	17.8	18.3
			3	1	0	22.6	22.7	22.5	0	17.8	17.8	18.4
			3	3	0	22.6	22.7	22.4	0	17.8	17.8	18.4
			6	0	1	21.7	21.9	21.6	0	17.8	17.8	18.4
		16QAM	1	0	1	21.7	22.7	21.6	0	17.8	18.7	18.2
			1	3	1	21.8	22.5	21.6	0	17.8	18.5	18.7
			1	5	1	21.8	22.8	21.5	0	17.8	18.5	18.0
			3	0	1	21.7	22.7	21.7	0	17.8	18.3	18.2
			3	1	1	21.7	22.8	21.8	0	17.8	18.3	18.3
			3	3	1	21.6	22.8	21.8	0	17.8	18.3	18.3
			6	0	2	20.8	21.7	20.9	0	17.8	18.1	18.6

LTE Band 4 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1720 MHz	1732.5 MHz	1745 MHz		1720 MHz	1732.5 MHz	1745 MHz
LTE Band 4	20	QPSK	1	0	0	23.0	23.0	22.6	0	19.9	18.6	18.6
			1	49	0	22.6	22.6	22.5	0	18.7	17.6	17.7
			1	99	0	22.5	22.5	22.9	0	19.2	17.9	18.0
			50	0	1	22.0	22.0	21.6	0	19.3	18.2	18.2
			50	24	1	21.8	21.8	21.7	0	18.9	17.9	18.0
			50	50	1	21.6	21.6	21.8	0	18.9	17.8	17.9
			100	0	1	21.8	21.8	21.7	0	19.2	18.0	18.1
		16QAM	1	0	1	22.6	22.6	22.0	0	20.3	18.9	18.9
			1	49	1	22.2	22.2	21.9	0	19.4	18.3	18.1
			1	99	1	22.1	22.1	22.3	0	19.7	18.4	18.3
			50	0	2	21.2	21.2	20.8	0	19.4	18.2	18.3
			50	24	2	21.0	21.0	20.8	0	19.1	17.8	18.1
			50	50	2	20.8	20.8	21.0	0	19.0	17.8	17.9
			100	0	2	21.0	21.0	20.9	0	19.2	17.9	18.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1717.5 MHz	1732.5 MHz	1747.5 MHz		1717.5 MHz	1732.5 MHz	1747.5 MHz
LTE Band 4	15	QPSK	1	0	0	22.3	23.1	22.7	0	18.2	18.3	18.4
			1	37	0	22.8	22.6	22.7	0	17.5	17.5	17.7
			1	74	0	23.1	22.6	23.0	0	17.8	17.9	17.9
			36	0	1	21.5	22.0	21.7	0	18.1	18.1	18.0
			36	20	1	21.9	21.9	21.9	0	17.8	17.8	17.9
			36	39	1	22.0	21.7	22.0	0	17.7	17.7	17.8
			75	0	1	21.8	21.8	21.8	0	17.8	17.8	17.9
		16QAM	1	0	1	21.3	22.6	22.0	0	18.4	18.4	18.7
			1	37	1	21.8	22.1	22.1	0	17.4	17.5	18.0
			1	74	1	22.1	22.0	22.3	0	17.9	17.9	18.2
			36	0	2	20.7	21.2	20.8	0	18.0	18.0	18.1
			36	20	2	21.0	21.1	21.0	0	17.7	17.7	17.9
			36	39	2	21.2	21.0	21.1	0	17.7	17.7	17.8
			75	0	2	20.9	21.0	20.9	0	17.8	17.8	17.9
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1715 MHz	1732.5 MHz	1750 MHz		1715 MHz	1732.5 MHz	1750 MHz
LTE Band 4	10	QPSK	1	0	0	22.2	22.9	22.7	0	19.2	19.2	18.3
			1	25	0	22.6	22.7	22.9	0	18.7	19.1	17.7
			1	49	0	22.9	22.5	22.9	0	18.8	18.8	17.8
			25	0	1	21.5	22.0	21.8	0	19.0	18.8	17.9
			25	12	1	21.7	21.9	22.0	0	18.8	18.7	17.7
			25	25	1	21.9	21.8	22.0	0	18.7	18.6	17.6
			50	0	1	21.7	21.9	21.9	0	18.7	18.7	17.8
		16QAM	1	0	1	21.2	22.4	21.8	0	19.3	19.6	18.5
			1	25	1	21.5	22.2	22.0	0	19.4	19.1	18.4
			1	49	1	21.9	22.0	22.0	0	19.1	19.3	18.2
			25	0	2	20.6	21.2	21.1	0	19.0	19.0	17.9
			25	12	2	20.9	21.1	21.2	0	18.9	18.9	17.8
			25	25	2	21.0	20.9	21.3	0	18.9	18.8	17.7
			50	0	2	20.8	21.0	21.1	0	18.8	18.9	17.8

LTE Band 4 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1712.5 MHz	1732.5 MHz	1752.5 MHz		1712.5 MHz	1732.5 MHz	1752.5 MHz
LTE Band 4	5	QPSK	1	0	0	22.2	22.9	23.0	0	18.6	18.9	17.8
			1	12	0	22.4	22.8	23.0	0	18.9	18.7	17.7
			1	24	0	22.6	22.7	23.0	0	18.7	18.7	17.8
			12	0	1	21.4	22.0	22.1	0	18.6	18.6	17.7
			12	7	1	21.4	21.9	22.1	0	18.7	18.6	17.7
			12	13	1	21.5	21.8	22.1	0	18.8	18.5	17.7
			25	0	1	21.4	21.9	22.1	0	18.7	18.5	17.7
		16QAM	1	0	1	21.2	22.2	22.7	0	18.7	18.9	18.5
			1	12	1	21.4	22.1	22.8	0	18.7	18.8	18.6
			1	24	1	21.6	22.0	22.8	0	18.8	18.8	18.6
			12	0	2	20.5	21.2	21.2	0	18.9	18.9	17.7
			12	7	2	20.6	21.2	21.3	0	18.9	18.9	17.6
			12	13	2	20.7	21.1	21.3	0	18.9	18.8	17.6
			25	0	2	20.6	21.1	21.1	0	18.9	18.7	17.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1711.5 MHz	1732.5 MHz	1753.5 MHz		1711.5 MHz	1732.5 MHz	1753.5 MHz
LTE Band 4	3	QPSK	1	0	0	22.2	22.9	23.0	0	18.5	18.7	17.8
			1	8	0	22.3	22.8	23.1	0	18.9	18.7	18.3
			1	14	0	22.4	22.7	23.0	0	18.5	18.6	17.9
			8	0	1	21.3	21.9	22.1	0	18.5	18.6	17.7
			8	4	1	21.3	21.9	22.0	0	18.6	18.5	17.7
			8	7	1	21.3	21.9	22.1	0	18.5	18.6	17.8
			15	0	1	21.3	21.9	22.1	0	18.5	18.6	17.8
		16QAM	1	0	1	21.1	22.3	22.1	0	18.8	19.2	18.1
			1	8	1	21.3	22.3	22.2	0	18.5	19.0	18.1
			1	14	1	21.4	22.1	22.1	0	18.7	19.2	18.1
			8	0	2	20.5	21.0	21.4	0	18.8	18.7	17.8
			8	4	2	20.5	21.0	21.4	0	18.9	18.7	17.8
			8	7	2	20.6	21.0	21.4	0	18.8	18.7	17.9
			15	0	2	20.5	21.1	21.2	0	18.7	18.8	17.7
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						1710.7 MHz	1732.5 MHz	1754.3 MHz		1710.7 MHz	1732.5 MHz	1754.3 MHz
LTE Band 4	1.4	QPSK	1	0	0	22.1	22.8	23.0	0	18.2	18.6	18.1
			1	3	0	22.2	22.8	22.6	0	18.4	18.2	17.4
			1	5	0	22.2	22.7	22.9	0	18.4	18.2	18.2
			3	0	0	22.1	22.7	22.9	0	18.2	18.3	18.2
			3	1	0	22.2	22.8	22.9	0	18.3	18.3	18.3
			3	3	0	22.2	22.7	22.9	0	18.3	18.3	18.3
			6	0	1	21.2	21.8	21.9	0	18.2	18.4	18.2
		16QAM	1	0	1	21.3	22.2	22.0	0	18.6	19.2	18.2
			1	3	1	21.4	22.2	22.1	0	18.6	18.9	18.5
			1	5	1	21.4	22.1	22.0	0	18.6	19.0	18.2
			3	0	1	21.3	22.0	22.2	0	18.5	18.9	18.3
			3	1	1	21.3	22.1	22.2	0	18.5	18.9	18.3
			3	3	1	21.3	22.1	22.2	0	18.4	18.9	18.3
			6	0	2	20.5	20.9	21.3	0	18.6	19.1	18.7

LTE Band 5 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						829 MHz	836.5 MHz	844 MHz		829 MHz	836.5 MHz	844 MHz
LTE Band 5	10	QPSK	1	0	0	23.4	23.4	23.4	0	20.1	20.1	20.1
			1	25	0	23.3	23.6	23.4	0	20.0	20.2	20.2
			1	49	0	23.3	23.2	23.3	0	20.0	20.1	20.0
			25	0	1	22.2	22.2	22.2	1	20.0	20.0	20.1
			25	12	1	22.2	22.1	22.2	1	19.9	19.9	20.1
			25	25	1	22.2	22.1	22.2	1	20.0	19.9	20.0
		16QAM	50	0	1	22.2	22.2	22.2	1	20.0	20.0	20.1
			1	0	1	22.4	22.7	22.6	1	20.2	20.5	20.4
			1	25	1	22.3	22.5	22.7	1	20.4	20.4	20.6
			1	49	1	22.4	22.6	22.6	1	20.2	20.4	20.3
			25	0	2	21.3	21.3	21.3	2	20.0	20.1	20.1
			25	12	2	21.2	21.2	21.4	2	19.9	20.0	20.2
			25	25	2	21.2	21.1	21.2	2	20.0	19.9	20.0
			50	0	2	21.2	21.3	21.3	2	20.0	20.1	20.1
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						826.5 MHz	836.5 MHz	846.5 MHz		826.5 MHz	836.5 MHz	846.5 MHz
LTE Band 5	5	QPSK	1	0	0	23.2	23.5	23.5	0	20.0	20.2	20.2
			1	12	0	23.5	23.3	23.4	0	19.9	20.0	20.2
			1	24	0	23.2	23.4	23.5	0	20.0	20.1	20.2
			12	0	1	22.1	22.3	22.4	1	19.9	20.0	20.0
			12	7	1	22.1	22.2	22.3	1	19.8	19.9	20.0
			12	13	1	22.1	22.2	22.3	1	19.8	19.9	20.0
		16QAM	25	0	1	22.2	22.1	22.3	1	19.9	19.9	20.0
			1	0	1	22.2	22.6	22.4	1	20.0	20.5	20.1
			1	12	1	22.4	22.5	22.5	1	20.1	20.6	20.2
			1	24	1	22.3	22.5	22.5	1	20.0	20.3	20.2
			12	0	2	21.2	21.4	21.3	2	19.8	20.1	20.0
			12	7	2	21.1	21.3	21.3	2	19.8	20.0	20.0
			12	13	2	21.1	21.3	21.3	2	19.8	20.0	20.0
			25	0	2	21.2	21.2	21.3	2	19.9	19.9	20.0
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						825.5 MHz	836.5 MHz	847.5 MHz		825.5 MHz	836.5 MHz	847.5 MHz
LTE Band 5	3	QPSK	1	0	0	23.2	23.4	23.5	0	20.1	20.1	20.2
			1	8	0	23.5	23.4	23.9	0	20.6	20.0	20.6
			1	14	0	23.1	23.3	23.5	0	19.9	20.0	20.3
			8	0	1	22.0	22.3	22.2	1	19.9	20.1	19.9
			8	4	1	22.1	22.2	22.3	1	19.9	19.9	20.0
			8	7	1	22.1	22.2	22.3	1	19.9	20.0	20.1
			15	0	1	22.1	22.2	22.3	1	20.0	19.9	20.0
		16QAM	1	0	1	22.2	23.0	22.6	1	20.1	20.6	20.4
			1	8	1	22.0	22.8	22.6	1	19.9	20.4	20.3
			1	14	1	22.2	22.8	22.6	1	19.9	20.4	20.3
			8	0	2	21.2	21.2	21.4	2	20.0	19.9	20.1
			8	4	2	21.2	21.1	21.5	2	20.0	19.8	20.2
			8	7	2	21.3	21.1	21.6	2	20.0	19.8	20.2
			15	0	2	21.1	21.2	21.3	2	19.9	19.9	19.9

LTE Band 5 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						824.7 MHz	836.5 MHz	848.3 MHz		824.7 MHz	836.5 MHz	848.3 MHz
LTE Band 5	1.4	QPSK	1	0	0	23.3	23.6	23.6	0	19.8	19.8	20.2
			1	3	0	23.3	23.1	22.2	0	19.9	19.9	20.2
			1	5	0	23.2	23.0	23.5	0	19.9	19.9	20.1
			3	0	0	23.0	23.0	23.6	0	20.3	20.3	19.9
			3	1	0	23.1	23.1	23.6	0	20.3	20.3	20.0
			3	3	0	23.1	23.0	23.6	0	20.3	20.3	20.1
			6	0	1	22.0	22.1	22.5	1	20.7	20.7	20.0
		16QAM	1	0	1	22.3	23.0	22.7	1	20.0	20.0	20.3
			1	3	1	22.4	23.0	22.6	1	20.1	20.1	20.2
			1	5	1	22.4	23.0	22.6	1	20.0	20.0	20.3
			3	0	1	22.1	22.9	22.8	1	20.2	20.2	20.0
			3	1	1	22.1	23.0	22.8	1	20.4	20.4	20.1
			3	3	1	22.2	22.9	22.8	1	20.3	20.3	20.1
			6	0	2	21.2	21.8	21.8	2	20.6	20.6	20.1

LTE Band 7 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						2510 MHz	2535 MHz	2560 MHz		2510 MHz	2535 MHz	2560 MHz
LTE Band 7	20	QPSK	1	0	0	22.6	22.7	23.0	0	16.8	16.7	16.8
			1	49	0	22.5	22.6	22.7	0	16.7	16.8	16.7
			1	99	0	22.2	22.4	22.4	0	16.8	16.7	16.7
			50	0	1	21.2	21.4	21.6	0	16.7	16.8	16.7
			50	24	1	21.1	21.4	21.5	0	16.7	16.9	16.7
			50	50	1	21.0	21.2	21.4	0	16.8	16.9	17.0
		16QAM	100	0	1	21.1	21.3	21.5	0	16.7	16.7	16.7
			1	0	1	22.2	22.6	22.3	0	16.9	17.0	16.9
			1	49	1	22.2	22.4	22.0	0	16.7	16.8	16.9
			1	99	1	22.0	22.4	21.8	0	16.7	16.7	16.7
			50	0	2	20.3	20.4	20.6	0	16.7	16.7	16.7
			50	24	2	20.2	20.5	20.5	0	16.7	16.7	16.7
			50	50	2	20.0	20.3	20.3	0	16.7	16.7	16.7
			100	0	2	20.2	20.3	20.5	0	16.7	16.8	16.7
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						2507.5 MHz	2535 MHz	2562.5 MHz		2507.5 MHz	2535 MHz	2562.5 MHz
LTE Band 7	15	QPSK	1	0	0	22.7	22.9	23.1	0	16.3	16.5	16.7
			1	37	0	22.5	22.7	22.8	0	15.9	16.3	16.5
			1	74	0	22.4	22.6	22.7	0	16.0	16.3	16.4
			36	0	1	21.2	21.4	21.5	0	16.3	16.4	16.7
			36	20	1	21.2	21.3	21.4	0	16.3	16.3	16.5
			36	39	1	21.1	21.3	21.3	0	16.0	16.3	16.4
		16QAM	75	0	1	21.1	21.3	21.4	0	16.2	16.3	16.5
			1	0	1	21.8	22.1	22.6	0	16.4	16.8	17.4
			1	37	1	21.5	22.0	21.9	0	16.1	16.5	16.7
			1	74	1	21.7	21.9	22.2	0	16.0	16.5	17.0
			36	0	2	20.3	20.4	20.5	0	16.2	16.6	16.5
			36	20	2	20.3	20.4	20.4	0	16.2	16.5	16.4
			36	39	2	20.1	20.4	20.4	0	16.2	16.5	16.4
			75	0	2	20.2	20.4	20.4	0	16.2	16.5	16.4
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						2505 MHz	2535 MHz	2565 MHz		2505 MHz	2535 MHz	2565 MHz
LTE Band 7	10	QPSK	1	0	0	22.6	22.6	22.9	0	16.1	16.3	16.7
			1	25	0	22.5	23.0	22.8	0	16.1	16.6	16.6
			1	49	0	22.3	22.6	22.8	0	15.8	16.2	16.5
			25	0	1	21.4	21.6	21.9	0	15.9	16.2	16.7
			25	12	1	21.5	21.7	22.0	0	16.0	16.2	16.7
			25	25	1	21.3	21.6	21.8	0	15.7	16.1	16.6
			50	0	1	21.5	21.6	21.9	0	15.9	16.1	16.6
		16QAM	1	0	1	21.7	22.0	22.1	0	16.3	16.6	17.0
			1	25	1	21.8	22.0	22.1	0	16.5	16.6	17.2
			1	49	1	21.4	21.9	22.0	0	15.9	16.5	16.8
			25	0	2	20.5	20.7	21.1	0	16.0	16.3	16.8
			25	12	2	20.6	20.7	21.1	0	16.1	16.3	16.8
			25	25	2	20.4	20.6	20.9	0	15.9	16.2	16.6
			50	0	2	20.5	20.7	20.9	0	16.1	16.3	16.7

LTE Band 7 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)			Target MPR	Reduced Avg Pwr (dBm)		
						2502.5 MHz	2535 MHz	2567.5 MHz		2502.5 MHz	2535 MHz	2567.5 MHz
LTE Band 7	5	QPSK	1	0	0	22.5	22.7	23.0	0	16.0	16.4	16.7
			1	12	0	22.9	22.7	22.9	0	16.5	16.3	16.7
			1	24	0	22.4	22.7	22.8	0	16.1	16.3	16.5
			12	0	1	21.4	21.6	21.9	0	16.0	16.1	16.6
			12	7	1	21.4	21.6	21.9	0	16.1	16.2	16.6
			12	13	1	21.4	21.6	21.9	0	16.0	16.1	16.5
			25	0	1	21.3	21.6	21.9	0	16.0	16.1	16.5
		16QAM	1	0	1	21.6	22.0	22.8	0	16.3	16.5	17.5
			1	12	1	21.6	22.2	22.9	0	16.4	16.5	17.4
			1	24	1	21.5	22.0	22.8	0	16.3	16.4	17.3
			12	0	2	20.4	20.7	20.9	0	16.0	16.3	16.5
			12	7	2	20.5	20.8	20.9	0	16.1	16.3	16.5
			12	13	2	20.4	20.7	20.9	0	16.0	16.3	16.5
			25	0	2	20.5	20.7	20.8	0	16.0	16.2	16.4

LTE Band 13 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)	Target MPR	Reduced Avg Pwr (dBm)
						782 MHz		782 MHz
LTE Band 13	10	QPSK	1	0	0	22.9	0	19.5
			1	25	0	23.0	0	19.5
			1	49	0	23.1	0	19.5
			25	0	1	22.0	0	19.6
			25	12	1	22.1	0	19.6
			25	25	1	22.0	0	19.6
			50	0	1	22.2	0	19.8
		16QAM	1	0	1	21.9	0	19.5
			1	25	1	22.5	0	20.1
			1	49	1	22.2	0	19.8
			25	0	2	21.1	0	19.7
			25	12	2	21.1	0	19.7
			25	25	2	21.1	0	19.7
			50	0	2	21.1	0	19.7
Band	BW (MHz)	Mode	RB Allocation	RB offset	Target MPR	Max. Avg Pwr (dBm)	Target MPR	Reduced Avg Pwr (dBm)
						782 MHz		782 MHz
LTE Band 13	5	QPSK	1	0	0	22.9	0	19.5
			1	12	0	23.4	0	20.0
			1	24	0	23.1	0	19.5
			12	0	1	22.0	0	19.5
			12	7	1	22.1	0	19.6
			12	13	1	22.0	0	19.6
			25	0	1	22.1	0	19.6
		16QAM	1	0	1	21.9	0	19.5
			1	12	1	22.2	0	19.6
			1	24	1	22.2	0	19.7
			12	0	2	21.0	0	19.6
			12	7	2	21.1	0	19.7
			12	13	2	21.0	0	19.6
			25	0	2	21.2	0	19.7

Note(s):

10/5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices

9.5. Wi-Fi 2.4GHz (DTS Band)

Measured Results for Cheek

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Chain 0 (Max. Pwr)	2.4 DTS	802.11b	1 Mbps	1	2412	11.9	12.6	Yes
				6	2437	17.7	18.6	
				11	2462	12.8	13.6	
				12	2467	Not Required	17.2	
				13	2472		13.4	
		802.11g	6 Mbps	1	2412		12.6	No
				6	2437		18.6	
				11	2462		13.6	
				12	2467		11.7	
				13	2472		4.7	
		802.11n (HT20)	MCS0	1	2412		12.6	No
				6	2437		18.6	
				11	2462		13.6	
				12	2467		9.7	
				13	2472		4.6	
SISO Chain 1 (Red. Pwr)	2.4 DTS	802.11b	1 Mbps	1	2412	11.6	12.5	Yes
				6	2437	15.1	16.0	
				11	2462	13.3	13.5	
				12	2467	Not Required	16	
				13	2472		13.4	
		802.11g	6 Mbps	1	2412		12.5	No
				6	2437		16.0	
				11	2462		13.5	
				12	2467		11.3	
				13	2472		4.3	
		802.11n (HT20)	MCS0	1	2412		12.5	No
				6	2437		16.0	
				11	2462		13.3	
				12	2467		9.2	
				13	2472		3.7	

Note(s):

- Output Power and SAR is not required for 802.11g/n HT20 channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels.

Measured Results for Body

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
2.4 DTS	SISO Chain 0 (Max. Pwr)	802.11b	1 Mbps	1	2412	11.9	12.6	Yes
				6	2437	17.7	18.6	
				11	2462	12.8	13.6	
				12	2467	Not Required	17.2	
				13	2472		13.4	
		802.11g	6 Mbps	1	2412		12.6	No
				6	2437		18.6	
				11	2462		13.6	
				12	2467		11.7	
				13	2472		4.7	
		802.11n (HT20)	MCS0	1	2412		12.6	No
				6	2437		18.6	
				11	2462		13.6	
				12	2467		9.7	
				13	2472		4.6	
	SISO Chain 1 (Red. Pwr)	802.11b	1 Mbps	1	2412	11.5	12.5	Yes
				6	2437	16.9	18.0	
				11	2462	12.9	13.5	
				12	2467	Not Required	17.2	
				13	2472		13.4	
		802.11g	6 Mbps	1	2412		12.5	No
				6	2437		18.0	
				11	2462		13.5	
				12	2467		11.3	
				13	2472		4.3	
		802.11n (HT20)	MCS0	1	2412		12.5	No
				6	2437		18.0	
				11	2462		13.3	
				12	2467		9.2	
				13	2472		3.7	

Note(s):

- Output Power and SAR is not required for 802.11g/n HT20 channels when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels.

9.6. Wi-Fi 5GHz (U-NII Bands)

Measured Results for Cheek

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 2A	SISO Chain0 (Main)	802.11a	6 Mbps	52	5260	15.1	15.7	Yes
				56	5280	15.0		
				60	5300	14.9		
				64	5320	14.9		
		802.11n (HT20)	MCS0	52-64	5260-5320	Not Required	15.7	No
		802.11n (HT40)	MCS0	54-62	5270-5310	Not Required	13.7	No
		802.11ac (VHT20)	MCS0	52-64	5260-5320	Not Required	15.7	No
		802.11ac (VHT40)	MCS0	54-62	5270-5310	Not Required	13.7	No
		802.11ac (VHT80)	MCS0	58	5290	Not Required	10.7	No
	SISO Chain1 (Aux)	802.11a	MCS0	52-64	5260-5320	Not Required	14.4	No
		802.11n (HT20)	MCS0	52-64	5260-5320	Not Required	14.4	No
		802.11n (HT40)	MCS0	54	5270	14.0	14.4	Yes
				62	5310	14.1		
		802.11ac (VHT20)	MCS0	52-64	5260-5320	Not Required	14.4	No
		802.11ac (VHT40)	MCS0	54-62	5270-5310	Not Required	14.4	No
		802.11ac (VHT80)	MCS0	58	5290	Not Required	11.4	No

Measured Results for Cheek (continued)

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 2C	SISO Chain0 (Main)	802.11a	6 Mbps	100	5500	15.1	15.8	Yes
				104	5520	15.1		
				108	5540	14.9		
				112	5560	15.0		
				116	5580	15.3		
				120	5600	15.0		
				124	5620	15.0		
				128	5640	15.0		
				132	5660	14.8		
				136	5680	15.0		
				140	5700	15.1		
				144	5720	15.0		
		802.11n (HT20)	MCS0	100-144	5500-5720	Not Required	15.8	No
		802.11n (HT40)	MCS0	102-142	5510-5710	Not Required	13.8	No
		802.11ac (VHT20)	MCS0	100-144	5500-5720	Not Required	15.8	No
		802.11ac (VHT40)	MCS0	102-142	5510-5710	Not Required	13.8	No
		802.11ac (VHT80)	MCS0	106-138	5530-5690	Not Required	10.8	No
	SISO Chain1 (Aux)	802.11a	6 Mbps	100-144	5500-5720	Not Required	15.1	No
		802.11n (HT20)	MCS0	100-144	5500-5720	Not Required	15.1	No
		802.11n (HT40)	MCS0	102	5510	14.0	15.1	No
				110	5550	13.9		
				118	5590	13.9		
				126	5630	13.8		
				134	5670	13.4		
				142	5710	13.4		
		802.11ac (VHT20)	MCS0	100-144	5500-5720	Not Required	15.1	No
		802.11ac (VHT40)	MCS0	102-142	5510-5710	Not Required	15.1	No
		802.11ac (VHT80)	MCS0	106-138	5530-5690	Not Required	12.1	No

Measured Results for Cheek (continued)

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 3	SISO Chain0 (Main)	802.11a	6 Mbps	149	5745	15.4	16.3	Yes
				153	5765	15.0		
				157	5785	15.1		
				161	5805	14.8		
				165	5825	15.0		
		802.11n (HT20)	MCS0	149-165	5745-5825	Not Required	16.3	No
		802.11n (HT40)	MCS0	151-159	5755-5795	Not Required	14.3	No
		802.11ac (VHT20)	MCS0	149-165	5745-5825	Not Required	16.3	No
		802.11ac (VHT40)	MCS0	151-159	5755-5795	Not Required	14.3	No
		802.11ac (VHT80)	MCS0	155	5775	Not Required	11.3	No
	SISO Chain1 (Aux)	802.11a	6 Mbps	149-165	5745-5825	Not Required	15.1	No
		802.11n (HT20)	MCS0	149-165	5745-5825	Not Required	15.1	No
		802.11n (HT40)	MCS0	151	5755	13.4	15.1	Yes
				159	5795	13.3		
		802.11ac (VHT20)	MCS0	149-165	5745-5825	Not Required	15.1	No
		802.11ac (VHT40)	MCS0	151-159	5755-5795	Not Required	15.1	No
		802.11ac (VHT80)	MCS0	155	5775	Not Required	12.1	No

Note(s):

- Output Power and SAR measurement is not required for 802.11n HT20/HT40 channels when the specified tune-up tolerances for 802.11n HT20/HT40 are lower than 802.11a by more than ½ dB and the measured SAR is ≤ 1.2 W/Kg.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
 - ≤ 1.2 W/kg, SAR is not required for UNII band I
 - > 1.2 W/kg, both bands should be tested independently for SAR.

Measured Results for Body

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 2A	SISO Chain0 (Main)	802.11a	6 Mbps	52	5260	15.1	15.7	Yes
				56	5280	15.0		
				60	5300	14.9		
				64	5320	14.9		
		802.11n (HT20)	MCS0	52-64	5260-5320	Not Required	15.7	No
		802.11n (HT40)	MCS0	54-62	5270-5310	Not Required	13.7	No
		802.11ac (VHT20)	MCS0	52-64	5260-5320	Not Required	15.7	No
	SISO Chain1 (Aux)	802.11a	6 Mbps	52	5260	15.8	16.4	Yes
				56	5280	15.5		
				60	5300	15.8		
				64	5320	15.8		
		802.11n (HT20)	MCS0	52-64	5260-5320	Not Required	16.4	No
		802.11n (HT40)	MCS0	54-62	5270-5310	Not Required	14.4	No
		802.11ac (VHT20)	MCS0	52-64	5260-5320	Not Required	16.4	No
		802.11ac (VHT40)	MCS0	54-62	5270-5310	Not Required	14.4	No
		802.11ac (VHT80)	MCS0	58	5290	Not Required	11.4	No

Measured Results for Body (continue)

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 2C	SISO Chain0 (Main)	802.11a	6 Mbps	100	5500	15.1	15.8	Yes
				104	5520	15.1		
				108	5540	14.9		
				112	5560	15.0		
				116	5580	15.3		
				120	5600	15.0		
				124	5620	15.0		
				128	5640	15.0		
				132	5660	14.8		
				136	5680	15.0		
				140	5700	15.1		
				144	5720	15.0		
		802.11n (HT20)	MCS0	100-144	5500-5720	Not Required	15.8	No
		802.11n (HT40)	MCS0	102-142	5510-5710	Not Required	13.8	No
	SISO Chain1 (Aux)	802.11ac (VHT20)	MCS0	100-144	5500-5720	Not Required	15.8	No
		802.11ac (VHT40)	MCS0	102-142	5510-5710	Not Required	13.8	No
		802.11ac (VHT80)	MCS0	106-138	5530-5690	Not Required	10.8	No
		802.11a	6 Mbps	100	5500	16.7	17.1	Yes
				104	5520	16.6		
				108	5540	16.6		
				112	5560	16.4		
				116	5580	16.5		
				120	5600	16.2		
				124	5620	16.2		
				128	5640	16.2		
				132	5660	16.2		
				136	5680	16.2		
				140	5700	16.4		
				144	5720	16.3		
		802.11n (HT20)	MCS0	100-144	5500-5720	Not Required	17.1	No
		802.11n (HT40)	MCS0	102-142	5510-5710	Not Required	15.1	No
		802.11ac (VHT20)	MCS0	100-144	5500-5720	Not Required	17.1	No
		802.11ac (VHT40)	MCS0	102-142	5510-5710	Not Required	15.1	No
		802.11ac (VHT80)	MCS0	106-138	5530-5690	Not Required	12.1	No

Measured Results for Body (continue)

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
U-NII 3	SISO Chain0 (Main)	802.11a	6 Mbps	149	5745	15.4	16.3	Yes
				153	5765	15.0		
				157	5785	15.1		
				161	5805	14.8		
				165	5825	15.0		
		802.11n (HT20)	MCS0	149-165	5745-5825	Not Required	16.3	No
		802.11n (HT40)	MCS0	151-159	5755-5795	Not Required	14.3	No
		802.11ac (VHT20)	MCS0	149-165	5745-5825	Not Required	16.3	No
		802.11ac (VHT40)	MCS0	151-159	5755-5795	Not Required	14.3	No
		802.11ac (VHT80)	MCS0	155	5775	Not Required	11.3	No
	SISO Chain1 (Aux)	802.11a	6 Mbps	149	5745	16.0	17.1	Yes
				153	5765	16.0		
				157	5785	16.0		
				161	5805	15.8		
				165	5825	16.2		
		802.11n (HT20)	MCS0	149-165	5745-5825	Not Required	17.1	No
		802.11n (HT40)	MCS0	151-159	5755-5795	Not Required	15.1	No
		802.11ac (VHT20)	MCS0	149-165	5745-5825	Not Required	17.1	No
		802.11ac (VHT40)	MCS0	151-159	5755-5795	Not Required	15.1	No
		802.11ac (VHT80)	MCS0	155	5775	Not Required	12.1	No

Note(s):

- Output Power and SAR measurement is not required for 802.11n HT20/HT40 channels when the specified tune-up tolerances for 802.11n HT20/HT40 are lower than 802.11a by more than ½ dB and the measured SAR is ≤ 1.2 W/Kg.
- When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n then ac) is selected.
- When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest reported SAR for UNII band 2A is
 - ≤ 1.2 W/kg, SAR is not required for UNII band I
 - > 1.2 W/kg, both bands should be tested independently for SAR.

9.7. Bluetooth

Maximum tune-up tolerance limit is 10.5 dBm. This power level qualifies for exclusion of SAR testing.

10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

KDB 447498 D01 General RF Exposure Guidance:

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

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz

KDB 648474 D04 Handset SAR:

With headset attached, when the reported SAR for body-worn accessory, measured without a headset connected to the handset, is > 1.2 W/kg, the highest reported SAR configuration for that wireless mode and frequency band should be repeated for that body-worn accessory with a headset attached to the handset.

KDB 941225 D01 SAR test for 3G devices:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11 v02:

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

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

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested.

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

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

10.1. GSM850

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	Voice	0	Left Touch	190	836.6	33.2	33.0	0.329	0.345	1
			Left Tilt	190	836.6	33.2	33.0	0.184	0.193	
			Right Touch	190	836.6	33.2	33.0	0.303	0.317	
			Right Tilt	190	836.6	33.2	33.0	0.175	0.183	
Head VoIP	GPRS 4 Slots	0	Left Touch	190	836.6	29.2	29.1	0.481	0.492	2
			Left Tilt	190	836.6	29.2	29.1	0.264	0.270	
			Right Touch	190	836.6	29.2	29.1	0.441	0.451	
			Right Tilt	190	836.6	29.2	29.1	0.284	0.291	
Body-worn	Voice	15	Rear	190	836.6	33.2	33.0	0.281	0.294	
			Front	190	836.6	33.2	33.0	0.289	0.303	3
Hotspot	GPRS 4 Slots	10	Rear	190	836.6	25.2	23.8	0.194	0.268	
			Front	190	836.6	25.2	23.8	0.205	0.283	
			Edge 2	190	836.6	25.2	23.8	0.196	0.271	
			Edge 3	190	836.6	25.2	23.8	0.098	0.135	
			Edge 4	190	836.6	25.2	23.8	0.276	0.381	4

DTM (Dual Transfer Mode)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	DTM 2 Slots	10	Left Touch	190	836.6	32.2	31.3	0.183	0.225	

10.2. GSM1900

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	Voice	0	Left Touch	661	1880.0	30.2	29.4	0.220	0.264	5
			Left Tilt	661	1880.0	30.2	29.4	0.047	0.057	
			Right Touch	661	1880.0	30.2	29.4	0.121	0.145	
			Right Tilt	661	1880.0	30.2	29.4	0.051	0.061	
Head VoIP	GPRS 4 Slots	0	Left Touch	661	1880.0	26.2	25.4	0.345	0.415	6
			Left Tilt	661	1880.0	26.2	25.4	0.071	0.085	
			Right Touch	661	1880.0	26.2	25.4	0.179	0.215	
			Right Tilt	661	1880.0	26.2	25.4	0.080	0.096	
Body-worn	Voice	15	Rear	661	1880.0	30.2	29.4	0.228	0.274	7
			Front	661	1880.0	30.2	29.4	0.154	0.185	
Hotspot	GPRS 4 Slots	10	Rear	810	1909.8	25.6	25.4	0.513	0.537	
			Front	810	1909.8	25.6	25.4	0.338	0.354	
			Edge 2	810	1909.8	25.6	25.4	0.048	0.050	
			Edge 3	810	1909.8	25.6	25.4	0.256	0.268	
			Edge 4	810	1909.8	25.6	25.4	0.162	0.170	

DTM (Dual Transfer Mode)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Hotspot	DTM 2 Slots	10	Rear	810	1909.8	27.7	26.8	0.494	0.608	8

10.3. W-CDMA Band V

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	4183	836.6	24.2	23.5	0.297	0.349	9
			Left Tilt	4183	836.6	24.2	23.5	0.162	0.190	
			Right Touch	4183	836.6	24.2	23.5	0.296	0.348	
			Right Tilt	4183	836.6	24.2	23.5	0.153	0.180	
Body-worn	Rel 99 RMC	15	Rear	4183	836.6	24.2	23.5	0.265	0.311	
			Front	4183	836.6	24.2	23.5	0.285	0.335	10
Hotspot	Rel 99 RMC	10	Rear	4183	836.6	23.7	23.3	0.282	0.309	
			Front	4183	836.6	23.7	23.3	0.299	0.328	11
			Edge 2	4183	836.6	23.7	23.3	0.149	0.163	
			Edge 3	4183	836.6	23.7	23.3	0.180	0.197	
			Edge 4	4183	836.6	23.7	23.3	0.275	0.302	

10.4. W-CDMA Band II

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	Rel 99 RMC	0	Left Touch	9400	1880.0	24.2	24.1	0.456	0.467	12
			Left Tilt	9400	1880.0	24.2	24.1	0.138	0.141	
			Right Touch	9400	1880.0	24.2	24.1	0.293	0.300	
			Right Tilt	9400	1880.0	24.2	24.1	0.108	0.111	
Body-worn	Rel 99 RMC	15	Rear	9400	1880.0	24.2	24.1	0.568	0.581	13
			Front	9400	1880.0	24.2	24.1	0.382	0.391	
Hotspot	Rel 99 RMC	10	Rear	9400	1880.0	21.3	20.9	0.559	0.613	14
			Front	9400	1880.0	21.3	20.9	0.406	0.445	
			Edge 2	9400	1880.0	21.3	20.9	0.076	0.083	
			Edge 3	9400	1880.0	21.3	20.9	0.291	0.319	
			Edge 4	9400	1880.0	21.3	20.9	0.217	0.238	

10.5. CDMA BC0

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	1xRTT (RC3 SO55)	0	Left Touch	384	836.5	24.6	23.6	0.291	0.366	
			Left Tilt	384	836.5	24.6	23.6	0.164	0.206	
			Right Touch	384	836.5	24.6	23.6	0.281	0.354	
			Right Tilt	384	836.5	24.6	23.6	0.165	0.208	
	1xEVDO (Rel. 0)	0	Left Touch	384	836.5	24.6	23.5	0.297	0.383	15
			Left Tilt	384	836.5	24.6	23.5	0.162	0.209	
			Right Touch	384	836.5	24.6	23.5	0.272	0.350	
			Right Tilt	384	836.5	24.6	23.5	0.163	0.210	
Body-worn	1xRTT (RC3 SO32)	15	Rear	384	836.5	24.6	23.6	0.287	0.361	
			Front	384	836.5	24.6	23.6	0.293	0.369	16
Hotspot	1xRTT (RC3 SO32)	10	Rear	384	836.5	23.8	23.2	0.325	0.373	17
			Front	384	836.5	23.8	23.2	0.255	0.293	
			Edge 2	384	836.5	23.8	23.2	0.129	0.148	
			Edge 3	384	836.5	23.8	23.2	0.207	0.238	
			Edge 4	384	836.5	23.8	23.2	0.245	0.281	

10.6. CDMA BC1

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	
Head	1xRTT (RC3 SO55)	0	Left Touch	600	1880.0	24.0	22.6	0.372	0.514	
			Left Tilt	600	1880.0	24.0	22.6	0.101	0.139	
			Right Touch	600	1880.0	24.0	22.6	0.235	0.324	
			Right Tilt	600	1880.0	24.0	22.6	0.080	0.110	
	1xEVDO (Rel. 0)	0	Left Touch	600	1880.0	24.0	22.5	0.379	0.535	18
			Left Tilt	600	1880.0	24.0	22.5	0.106	0.150	
			Right Touch	600	1880.0	24.0	22.5	0.229	0.323	
			Right Tilt	600	1880.0	24.0	22.5	0.079	0.112	
Body-worn	1xRTT (RC3 SO32)	15	Rear	600	1880.0	24.0	22.6	0.433	0.598	19
			Front	600	1880.0	24.0	22.6	0.282	0.389	
Hotspot	1xRTT (RC3 SO32)	10	Rear	600	1880.0	21.5	21.1	0.613	0.672	20
			Front	600	1880.0	21.5	21.1	0.432	0.474	
			Edge 2	600	1880.0	21.5	21.1	0.091	0.100	
			Edge 3	600	1880.0	21.5	21.1	0.346	0.379	
			Edge 4	600	1880.0	21.5	21.1	0.227	0.249	

10.7. LTE Band 2 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Head	QPSK	0	Left Touch	18900	1880.0	1	0	24.0	23.4	0.435	0.499	21
						50	0	23.0	22.5	0.313	0.351	
			Left Tilt	18900	1880.0	1	0	24.0	23.4	0.137	0.157	
						50	0	23.0	22.5	0.099	0.111	
			Right Touch	18900	1880.0	1	0	24.0	23.4	0.285	0.327	
						50	0	23.0	22.5	0.206	0.231	
			Right Tilt	18900	1880.0	1	0	24.0	23.4	0.099	0.114	
						50	0	23.0	22.5	0.083	0.093	
Body-worn	QPSK	15	Rear	18900	1880.0	1	0	24.0	23.4	0.546	0.627	22
						50	0	23.0	22.5	0.422	0.473	
			Front	18900	1880.0	1	0	24.0	23.4	0.383	0.440	
						50	0	23.0	22.5	0.273	0.306	
Hotspot	QPSK	10	Rear	18900	1880.0	1	0	20.8	18.8	0.379	0.601	23
						50	0	20.8	18.3	0.329	0.585	
			Front	18900	1880.0	1	0	20.8	18.8	0.289	0.458	
						50	0	20.8	18.3	0.251	0.446	
			Edge 2	18900	1880.0	1	0	20.8	18.8	0.054	0.086	
						50	0	20.8	18.3	0.046	0.082	
			Edge 3	18900	1880.0	1	0	20.8	18.8	0.189	0.300	
						50	0	20.8	18.3	0.161	0.286	
			Edge 4	18900	1880.0	1	0	20.8	18.8	0.128	0.203	
						50	0	20.8	18.3	0.113	0.201	

10.8. LTE Band 4 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Head	QPSK	0	Left Touch	20175	1732.5	1	0	24.0	23.0	0.506	0.637	24
						50	0	23.0	22.0	0.380	0.478	
			Left Tilt	20175	1732.5	1	0	24.0	23.0	0.251	0.316	
						50	0	23.0	22.0	0.187	0.235	
			Right Touch	20175	1732.5	1	0	24.0	23.0	0.371	0.467	
						50	0	23.0	22.0	0.322	0.405	
Body-worn	QPSK	15	Rear	20175	1732.5	1	0	24.0	23.0	0.628	0.791	
						50	0	23.0	22.0	0.481	0.606	
			Front	20050	1720.0	1	0	24.0	23.0	0.470	0.592	
				20175	1732.5	1	0	24.0	23.0	0.675	0.850	25
						50	0	23.0	22.0	0.506	0.637	
				20300	1745.0	1	99	24.0	22.9	0.578	0.745	
Hotspot	QPSK	10	Rear	20175	1732.5	1	0	20.4	18.6	0.293	0.443	26
						50	0	20.4	18.2	0.262	0.435	
			Front	20175	1732.5	1	0	20.4	18.6	0.251	0.380	
						50	0	20.4	18.2	0.236	0.392	
			Edge 2	20175	1732.5	1	0	20.4	18.6	0.043	0.065	
						50	0	20.4	18.2	0.039	0.065	
			Edge 3	20175	1732.5	1	0	20.4	18.6	0.192	0.291	
						50	0	20.4	18.2	0.176	0.292	
			Edge 4	20175	1732.5	1	0	20.4	18.6	0.108	0.163	
						50	0	20.4	18.2	0.099	0.165	

10.9. LTE Band 5 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Head	QPSK	0	Left Touch	20525	836.5	1	25	24.0	23.6	0.250	0.274	27
						25	0	23.0	22.2	0.155	0.186	
			Left Tilt	20525	836.5	1	25	24.0	23.6	0.127	0.139	
						25	0	23.0	22.2	0.085	0.102	
			Right Touch	20525	836.5	1	25	24.0	23.6	0.225	0.247	
						25	0	23.0	22.2	0.142	0.171	
			Right Tilt	20525	836.5	1	25	24.0	23.6	0.121	0.133	
						25	0	23.0	22.2	0.078	0.094	
Body-worn	QPSK	15	Rear	20525	836.5	1	25	24.0	23.6	0.232	0.254	28
						25	0	23.0	22.2	0.153	0.184	
			Front	20525	836.5	1	25	24.0	23.6	0.222	0.243	
						25	0	23.0	22.2	0.149	0.179	
Hotspot	QPSK	10	Rear	20525	836.5	1	25	20.7	20.2	0.139	0.156	
						25	0	20.7	20.0	0.138	0.162	29
			Front	20525	836.5	1	25	20.7	20.2	0.103	0.116	
						25	0	20.7	20.0	0.104	0.122	
			Edge 2	20525	836.5	1	25	20.7	20.2	0.054	0.061	
						25	0	20.7	20.0	0.061	0.072	
			Edge 3	20525	836.5	1	25	20.7	20.2	0.092	0.103	
						25	0	20.7	20.0	0.097	0.114	
			Edge 4	20525	836.5	1	25	20.7	20.2	0.101	0.113	
						25	0	20.7	20.0	0.106	0.125	

10.10. LTE Band 7 (20MHz Bandwidth)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Head	QPSK	0	Left Touch	21100	2535.0	1	0	24.0	22.7	0.213	0.287	30
						50	0	23.0	21.4	0.154	0.223	
			Left Tilt	21100	2535.0	1	0	24.0	22.7	0.045	0.061	
						50	0	23.0	21.4	0.027	0.039	
			Right Touch	21100	2535.0	1	0	24.0	22.7	0.121	0.163	
						50	0	23.0	21.4	0.086	0.124	
Body-worn	QPSK	15	Rear	21100	2535.0	1	0	24.0	22.7	0.456	0.615	31
						50	0	24.0	21.4	0.338	0.615	
			Front	21100	2535.0	1	0	24.0	22.7	0.196	0.264	
						50	0	24.0	21.4	0.141	0.257	
Hotspot	QPSK	10	Rear	21100	2535.0	1	0	19.7	16.7	0.299	0.597	32
						50	0	19.7	16.8	0.298	0.581	
			Front	21100	2535.0	1	0	19.7	16.7	0.149	0.297	
						50	0	19.7	16.8	0.151	0.294	
			Edge 2	21100	2535.0	1	0	19.7	16.7	0.007	0.014	
						50	0	19.7	16.8	0.002	0.003	
			Edge 3	21100	2535.0	1	0	19.7	16.7	0.161	0.321	
						50	0	19.7	16.8	0.155	0.302	
			Edge 4	21100	2535.0	1	0	19.7	16.7	0.084	0.168	
						50	0	19.7	16.8	0.082	0.160	

10.11. LTE Band 13 (10MHz Bandwidth)

RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Head	QPSK	0	Left Touch	23230	782.0	1	49	24.0	23.1	0.273	0.336	33
						25	12	23.0	22.1	0.228	0.281	
			Left Tilt	23230	782.0	1	49	24.0	23.1	0.161	0.198	
						25	12	23.0	22.1	0.133	0.164	
			Right Touch	23230	782.0	1	49	24.0	23.1	0.236	0.290	
						25	12	23.0	22.1	0.195	0.240	
Body-worn	QPSK	15	Rear	23230	782.0	1	49	24.0	23.1	0.340	0.418	
						25	12	23.0	22.1	0.282	0.347	
			Front	23230	782.0	1	49	24.0	23.1	0.362	0.445	34
						25	12	23.0	22.1	0.304	0.374	
Hotspot	QPSK	10	Rear	23230	782.0	1	0	22.5	19.5	0.334	0.666	
						25	0	22.5	19.6	0.284	0.554	
			Front	23230	782.0	1	0	22.5	19.5	0.304	0.607	
						25	0	22.5	19.6	0.264	0.515	
			Edge 2	23230	782.0	1	0	22.5	19.5	0.196	0.391	
						25	0	22.5	19.6	0.168	0.328	
			Edge 3	23230	782.0	1	0	22.5	19.5	0.189	0.377	
						25	0	22.5	19.6	0.159	0.310	
			Edge 4	23230	782.0	1	0	22.5	19.5	0.350	0.698	35
						25	0	22.5	19.6	0.305	0.595	

10.12. Wi-Fi (DTS Band)

Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Power (dBm)		1-g SAR (W/kg)		Notes	Plot No.
								Tune-up limit	Meas.	Meas.	Scaled		
2.4GHz	SISO 802.11b 1 Mbps (Main)	Head	0	Left Touch	6	2437.0	0.847	18.6	17.7	0.709	0.872	2, 3	36
					11	2462.0	0.213	13.6	12.8	0.156	0.188	2	
				Left Tilt	6	2437.0	0.371	18.6	17.7	0.290	0.357	2	
				Right Touch	6	2437.0	0.302						
				Right Tilt	6	2437.0	0.218						
		Body-worn	15	Rear	6	2437.0	0.473	18.6	17.7	0.374	0.460	2	
					11	2462.0		13.6	12.8	0.530	0.637	2, 3	37
				Front	6	2437.0	0.124	18.6	17.7	0.099	0.122	2	
		Hotspot & Wi-Fi Direct	10	Rear	6	2437.0	0.979	18.6	17.7	0.787	0.968	2, 3	38
				Front	6	2437.0	0.224	18.6	17.7	0.166	0.204	2	
				Edge 1	6	2437.0	0.077						
				Edge 2	6	2437.0	0.456						
	SISO 802.11b 1 Mbps (Aux)	Head	0	Left Touch	6	2437.0	0.359						
				Left Tilt	6	2437.0	0.379						
				Right Touch	6	2437.0	0.619	16.0	15.1	0.537	0.661	2	
				Right Tilt	6	2437.0	0.423	16.0	15.1	0.328	0.404	2	
		Body-worn	15	Rear	6	2437.0	0.069						
				Front	6	2437.0	0.071	18.0	16.9	0.052	0.067	1	
		Hotspot & Wi-Fi Direct	10	Rear	6	2437.0	0.152	18.0	16.9	0.155	0.200	1	
				Front	6	2437.0	0.116						
				Edge 1	6	2437.0	0.111						
				Edge 4	6	2437.0	0.070	18.0	16.9	0.057	0.073	4	

Note(s):

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

10.13. Wi-Fi (U-NII Band)

Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Power (dBm)		1-g SAR (W/kg)		Notes	Plot No.
								Tune-up limit	Meas.	Meas.	Scaled		
5.3 GHz U-NII 2A	SISO 802.11a 6 Mbps (Main)	Head	0	Left Touch	52	5260.0	0.190	15.7	15.1	0.230	0.264	1	
				Left Tilt	52	5260.0	0.059						
				Right Touch	52	5260.0	0.051						
				Right Tilt	52	5260.0	0.045						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Head	0	Left Touch	62	5310.0	0.154						
				Left Tilt	62	5310.0	0.107						
				Right Touch	62	5310.0	0.294	14.4	14.1	0.263	0.282	1	40
				Right Tilt	62	5310.0	0.233						
	SISO 802.11a 6 Mbps (Aux)	Body-worn	15	Rear	64	5320.0	0.339	16.4	15.8	0.163	0.187	1	
				Front	64	5320.0	0.101						
Frequency Band	Mode	RF Exposure Conditions	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Tune-up limit	Meas.	Meas.	Scaled	Notes	Plot No.
5.5 GHz U-NII 2C	SISO 802.11a 6 Mbps (Main)	Head	0	Left Touch	116	5580.0	0.085	15.8	15.3	0.076	0.085	1	41
				Left Tilt	116	5580.0	0.057						
				Right Touch	116	5580.0	0.080						
				Right Tilt	116	5580.0	0.056						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Head	0	Rear	116	5580.0	0.192	15.8	15.3	0.097	0.109	1	
				Front	116	5580.0	0.020						
		Body-worn	15	Left Touch	102	5510.0	0.012						
				Left Tilt	102	5510.0	0.063						
				Right Touch	102	5510.0	0.067	15.1	14.0	0.042	0.053	1	
				Right Tilt	102	5510.0	0.051						
5.8 GHz U-NII 3	SISO 802.11a 6 Mbps (Main)	Head	0	Rear	100	5500.0	0.416	17.1	16.7	0.221	0.242	1	42
				Front	100	5500.0	0.032						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Head	0	Left Touch	149	5745.0	0.199	16.3	15.4	0.129	0.159	1	43
				Left Tilt	149	5745.0	0.141						
				Right Touch	149	5745.0	0.065						
				Right Tilt	149	5745.0	0.090						
	SISO 802.11a 6 Mbps (Main)	Body-worn	15	Rear	149	5745.0	0.166	16.3	15.4	0.083	0.102	1	44
				Front	149	5745.0	0.020						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Hotspot & Wi-Fi Direct	10	Rear	149	5745.0	0.231	16.3	15.4	0.105	0.129	1	45
				Front	149	5745.0	0.025						
5.8 GHz U-NII 3	SISO 802.11a 6 Mbps (Main)	Head	0	Edge 1	149	5745.0	0.032						
				Edge 2	149	5745.0	0.100						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Head	0	Left Touch	157	5785.0	0.116						
				Left Tilt	157	5785.0	0.082						
				Right Touch	157	5785.0	0.195	15.1	13.7	0.076	0.105	1	46
				Right Tilt	157	5785.0	0.161						
	SISO 802.11a 6 Mbps (Aux)	Body-worn	15	Rear	165	5825.0	0.194	17.1	16.2	0.103	0.127	1	47
				Front	165	5825.0	0.031						
	SISO 802.11n (HT40) 13.5 Mbps (Aux)	Hotspot & Wi-Fi Direct	10	Rear	165	5825.0	0.297	17.1	16.2	0.145	0.178	1	48
				Front	165	5825.0	0.036						
				Edge 1	165	5825.0	0.030						
				Edge 4	165	5825.0	0.099						

Note(s):

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

10.14. Bluetooth

Standalone SAR Test Exclusion Considerations & Estimated SAR

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$, for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

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

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

When the standalone SAR test exclusion is applied to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

- $(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm}) \cdot [\sqrt{f_{(\text{GHz})}/x}]$ W/kg for test separation distances ≤ 50 mm;
where $x = 7.5$ for 1-g SAR, and $x = 18.75$ for 10-g SAR.
- 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the test separation distances is > 50 mm.

Body-worn Accessory Exposure Conditions

Max. tune-up tolerance limit		Min. test separation distance (mm)	Frequency (GHz)	SAR test exclusion Result*	Test Configuration	Estimated 1-g SAR (W/kg)
(dBm)	(mW)					
10.5	11	15	2.480	1.2	Rear/Front	0.154

Conclusion:

*: The computed value is < 3 ; therefore, Bluetooth qualifies for Standalone SAR test exclusion.

11. SAR Measurement Variability

In accordance with published RF Exposure KDB 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.

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 13	Body	Front	No	0.362	N/A	N/A
850	GSM 850	Head	Left Touch	No	0.481	N/A	N/A
	CDMA BC0	Hotspot	Rear	No	0.325	N/A	N/A
	WCDMA Band V	Hotspot	Front	No	0.299	N/A	N/A
	LTE Band 5	Head	Left Touch	No	0.250	N/A	N/A
1900	GSM 1900	Head	Left Touch	No	0.345	N/A	N/A
	CDMA BC1	Body & Hotspot	Rear	No	0.613	N/A	N/A
	WCDMA Band II	Body	Rear	No	0.568	N/A	N/A
	LTE Band 2	Body	Rear	No	0.546	N/A	N/A
1700	LTE Band 4	Body	Front	No	0.675	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Hotspot	Rear	No	0.787	N/A	N/A
2600	LTE Band 7	Body	Rear	No	0.456	N/A	N/A
5300	Wi-Fi 802.11a/n/ac	Body	Rear	No	0.409	N/A	N/A
5500	Wi-Fi 802.11a/n/ac	Body	Rear	No	0.221	N/A	N/A
5800	Wi-Fi 802.11a/n/ac	Hotspot	Rear	No	0.145	N/A	N/A

Note(s):

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.

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations			
Head	1	GSM(Voice)	+	DTS	
	2	GSM(Voice)	+	U-NII	
	3	GSM(GPRS/EDGE)	+	DTS	
	4	GSM(GPRS/EDGE)	+	U-NII	
	5	W-CDMA	+	DTS	
	6	W-CDMA	+	U-NII	
	7	CDMA	+	DTS	
	8	CDMA	+	U-NII	
	9	LTE	+	DTS	
	10	LTE	+	U-NII	
Body-worn	11	GSM(Voice)	+	DTS	
	12	GSM(Voice)	+	U-NII	
	13	GSM(Voice)	+	BT	
	14	GSM(Voice)	+	U-NII	+ BT
	15	GSM(GPRS/EDGE)	+	DTS	
	16	GSM(GPRS/EDGE)	+	U-NII	
	17	GSM(GPRS/EDGE)	+	BT	
	18	GSM(GPRS/EDGE)	+	U-NII	+ BT
	19	W-CDMA	+	DTS	
	20	W-CDMA	+	U-NII	
	21	W-CDMA	+	BT	
	22	W-CDMA	+	U-NII	+ BT
	23	CDMA	+	DTS	
	24	CDMA	+	U-NII	
	25	CDMA	+	BT	
	26	CDMA	+	U-NII	+ BT
	27	LTE	+	DTS	
	28	LTE	+	U-NII	
	29	LTE	+	BT	
	30	LTE	+	U-NII	+ BT
	31			U-NII	+ BT
Hotspot & Wi-Fi Direct	32	GSM(GPRS/EDGE)	+	DTS	
	33	GSM(GPRS/EDGE)	+	U-NII	
	34	W-CDMA	+	DTS	
	35	W-CDMA	+	U-NII	
	36	CDMA	+	DTS	
	37	CDMA	+	U-NII	
	38	LTE	+	DTS	
	39	LTE	+	U-NII	

Notes:

1. DTS and U-NII 1 and U-NII 3 supports Hotspot and Wi-Fi Direct.
2. GPRS/EDGE, W-CDMA, CDMA and LTE support Hotspot.
3. VoIP is supported in GPRS/EDGE, W-CDMA, CDMA and LTE.
4. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
5. U-NII Radio can transmit simultaneously with Bluetooth Radio.

12.1. Sum of the SAR for GSM850 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.492	0.872	0.264		1364	No	0.756	No		
	Left Tilt	0.270	0.357	0.282		0.627	No	0.552	No		
	Right Touch	0.451	0.661	0.282		1112	No	0.733	No		
	Right Tilt	0.291	0.404	0.282		0.695	No	0.573	No		
Body-worn	Rear	0.294	0.637	0.470	0.154	0.931	No	0.764	No	0.938	No
	Front	0.303	0.122	0.069	0.154	0.425	No	0.372	No	0.526	No
Hotspot	Rear	0.268	0.968	0.178		1236	No	0.446	No		
	Front	0.283	0.204	0.178		0.487	No	0.461	No		
	Edge 2	0.271	0.968	0.178		1239	No	0.449	No		
	Edge 3	0.135	0.968	0.178		1103	No	0.313	No		
	Edge 4	0.381	0.073	0.178		0.454	No	0.559	No		

12.2. Sum of the SAR for GSM1900 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.415	0.872	0.264		1287	No	0.679	No		
	Left Tilt	0.085	0.357	0.282		0.442	No	0.367	No		
	Right Touch	0.215	0.661	0.282		0.876	No	0.497	No		
	Right Tilt	0.096	0.404	0.282		0.500	No	0.378	No		
Body-worn	Rear	0.274	0.637	0.470	0.154	0.911	No	0.744	No	0.898	No
	Front	0.185	0.122	0.069	0.154	0.307	No	0.254	No	0.408	No
Hotspot	Rear	0.537	0.968	0.178		1505	No	0.715	No		
	Front	0.354	0.204	0.178		0.558	No	0.532	No		
	Edge 2	0.050	0.968	0.178		1018	No	0.228	No		
	Edge 3	0.256	0.968	0.178		1224	No	0.434	No		
	Edge 4	0.170	0.073	0.178		0.243	No	0.348	No		

12.3. Sum of the SAR for WCDMA Band V & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.349	0.872	0.264		1221	No	0.613	No		
	Left Tilt	0.190	0.357	0.282		0.547	No	0.472	No		
	Right Touch	0.348	0.661	0.282		1008	No	0.630	No		
	Right Tilt	0.180	0.404	0.282		0.583	No	0.462	No		
Body-worn	Rear	0.311	0.637	0.470	0.154	0.949	No	0.781	No	0.935	No
	Front	0.335	0.122	0.069	0.154	0.456	No	0.404	No	0.558	No
Hotspot	Rear	0.309	0.968	0.178		1277	No	0.488	No		
	Front	0.328	0.204	0.178		0.532	No	0.506	No		
	Edge 2	0.163	0.968	0.178		1131	No	0.341	No		
	Edge 3	0.197	0.968	0.178		1165	No	0.375	No		
	Edge 4	0.302	0.073	0.178		0.375	No	0.480	No		

12.4. Sum of the SAR for WCDMA Band II & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.467	0.872	0.264		1339	No	0.731	No		
	Left Tilt	0.441	0.357	0.282		0.498	No	0.423	No		
	Right Touch	0.300	0.661	0.282		0.960	No	0.582	No		
	Right Tilt	0.111	0.404	0.282		0.514	No	0.393	No		
Body-worn	Rear	0.581	0.637	0.470	0.154	1218	No	1051	No	1205	No
	Front	0.391	0.122	0.069	0.154	0.512	No	0.460	No	0.614	No
Hotspot	Rear	0.613	0.968	0.178		1581	No	0.791	No		
	Front	0.445	0.204	0.178		0.649	No	0.623	No		
	Edge 2	0.083	0.968	0.178		1051	No	0.261	No		
	Edge 3	0.319	0.968	0.178		1287	No	0.497	No		
	Edge 4	0.238	0.073	0.178		0.311	No	0.416	No		

12.5. Sum of the SAR for CDMA BC0 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.420	0.872	0.264		1292	No	0.684	No		
	Left Tilt	0.229	0.357	0.282		0.586	No	0.511	No		
	Right Touch	0.388	0.661	0.282		1049	No	0.670	No		
	Right Tilt	0.230	0.404	0.282		0.634	No	0.512	No		
Body-worn	Rear	0.396	0.637	0.470	0.154	1033	No	0.866	No	1020	No
	Front	0.404	0.122	0.069	0.154	0.526	No	0.473	No	0.627	No
Hotspot	Rear	0.356	0.968	0.178		1325	No	0.535	No		
	Front	0.280	0.204	0.178		0.484	No	0.458	No		
	Edge 2	0.141	0.968	0.178		1109	No	0.319	No		
	Edge 3	0.227	0.968	0.178		1195	No	0.405	No		
	Edge 4	0.269	0.073	0.178		0.342	No	0.447	No		

12.6. Sum of the SAR for CDMA BC1 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.523	0.872	0.264		1395	No	0.787	No		
	Left Tilt	0.146	0.357	0.282		0.503	No	0.428	No		
	Right Touch	0.324	0.661	0.282		0.985	No	0.606	No		
	Right Tilt	0.110	0.404	0.282		0.514	No	0.392	No		
Body-worn	Rear	0.598	0.637	0.470	0.154	1235	No	1067	No	1020	No
	Front	0.389	0.122	0.069	0.154	0.511	No	0.458	No	0.627	No
Hotspot	Rear	0.672	0.968	0.178		1640	Yes	0.851	No		
	Front	0.474	0.204	0.178		0.678	No	0.652	No		
	Edge 2	0.100	0.968	0.178		1068	No	0.278	No		
	Edge 3	0.379	0.968	0.178		1347	No	0.557	No		
	Edge 4	0.249	0.073	0.178		0.322	No	0.427	No		

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Worst-case combination		Σ 1-g SAR (mW/g)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS						
Rear	0.672	0.968	① + ②	1.640	134.1	0.016	No	1

12.7. Sum of the SAR for LTE Band 2 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.499	0.872	0.264		1372	No	0.764	No		
	Left Tilt	0.357	0.357	0.282		0.514	No	0.439	No		
	Right Touch	0.327	0.661	0.282		0.988	No	0.609	No		
	Right Tilt	0.114	0.404	0.282		0.517	No	0.396	No		
Body-worn	Rear	0.627	0.637	0.470	0.154	1264	No	1096	No	1250	No
	Front	0.440	0.122	0.069	0.154	0.561	No	0.509	No	0.663	No
Hotspot	Rear	0.601	0.968	0.178		1569	No	0.779	No		
	Front	0.458	0.204	0.178		0.662	No	0.636	No		
	Edge 2	0.086	0.968	0.178		1054	No	0.264	No		
	Edge 3	0.300	0.968	0.178		1268	No	0.478	No		
	Edge 4	0.203	0.073	0.178		0.276	No	0.381	No		

12.8. Sum of the SAR for LTE Band 4 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.637	0.872	0.264		1509	No	0.901	No		
	Left Tilt	0.316	0.357	0.282		0.673	No	0.598	No		
	Right Touch	0.467	0.661	0.282		1128	No	0.749	No		
	Right Tilt	0.266	0.404	0.282		0.669	No	0.548	No		
Body-worn	Rear	0.791	0.637	0.470	0.154	1428	No	1260	No	1414	No
	Front	0.850	0.122	0.069	0.154	0.971	No	0.919	No	1073	No
Hotspot	Rear	0.443	0.968	0.178		1412	No	0.622	No		
	Front	0.392	0.204	0.178		0.596	No	0.570	No		
	Edge 2	0.065	0.968	0.178		1033	No	0.243	No		
	Edge 3	0.292	0.968	0.178		1260	No	0.470	No		
	Edge 4	0.165	0.073	0.178		0.238	No	0.343	No		

12.9. Sum of the SAR for LTE Band 5 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.274	0.872	0.264		1146	No	0.538	No		
	Left Tilt	0.139	0.357	0.282		0.496	No	0.421	No		
	Right Touch	0.247	0.661	0.282		0.907	No	0.529	No		
	Right Tilt	0.133	0.404	0.282		0.536	No	0.415	No		
Body-worn	Rear	0.254	0.637	0.470	0.154	0.892	No	0.724	No	0.878	No
	Front	0.243	0.122	0.069	0.154	0.365	No	0.312	No	0.466	No
Hotspot	Rear	0.162	0.968	0.178		1130	No	0.341	No		
	Front	0.122	0.204	0.178		0.326	No	0.300	No		
	Edge 2	0.072	0.968	0.178		1040	No	0.250	No		
	Edge 3	0.114	0.968	0.178		1082	No	0.292	No		
	Edge 4	0.125	0.073	0.178		0.198	No	0.303	No		

12.10. Sum of the SAR for LTE Band 7 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.287	0.872	0.264		1160	No	0.551	No		
	Left Tilt	0.061	0.357	0.282		0.417	No	0.343	No		
	Right Touch	0.163	0.661	0.282		0.824	No	0.445	No		
	Right Tilt	0.082	0.404	0.282		0.486	No	0.364	No		
Body-worn	Rear	0.615	0.637	0.470	0.154	1252	No	1085	No	1239	No
	Front	0.264	0.122	0.069	0.154	0.386	No	0.333	No	0.487	No
Hotspot	Rear	0.595	0.968	0.178		1563	No	0.773	No		
	Front	0.297	0.204	0.178		0.502	No	0.475	No		
	Edge 2	0.014	0.968	0.178		0.982	No	0.192	No		
	Edge 3	0.321	0.968	0.178		1289	No	0.499	No		
	Edge 4	0.168	0.073	0.178		0.241	No	0.346	No		

12.11. Sum of the SAR for LTE Band 13 & Wi-Fi & BT

RF Exposure conditions	Test Position	① WWAN	② DTS	③ U-NII	④ BT	①+② WWAN+DTS		①+③ WWAN+U-NII		①+③+④ WWAN+U-NII+BT	
						Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)	Σ 1-g SAR (mW/g)	SPLSR (Yes/ No)
Head	Left Touch	0.336	0.872	0.264		1208	No	0.600	No		
	Left Tilt	0.198	0.357	0.282		0.555	No	0.480	No		
	Right Touch	0.290	0.661	0.282		0.951	No	0.572	No		
	Right Tilt	0.157	0.404	0.282		0.561	No	0.439	No		
Body-worn	Rear	0.418	0.637	0.470	0.154	1055	No	0.888	No	1042	No
	Front	0.445	0.122	0.069	0.154	0.567	No	0.514	No	0.668	No
Hotspot	Rear	0.666	0.968	0.178		1635	Yes	0.845	No		
	Front	0.607	0.204	0.178		0.811	No	0.785	No		
	Edge 2	0.391	0.968	0.178		1359	No	0.569	No		
	Edge 3	0.377	0.968	0.178		1345	No	0.555	No		
	Edge 4	0.698	0.073	0.178		0.772	No	0.876	No		

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Worst-case combination		Σ 1-g SAR (mW/g)	Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS					
Rear	0.666	0.968	① + ② 1.635	115.6	0.018	No	2

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because either the sum of the 1-g SAR is < 1.6 W/kg or the SPLSR is < 0.04 for all circumstances that require SPLSR calculation.

Figure (1)

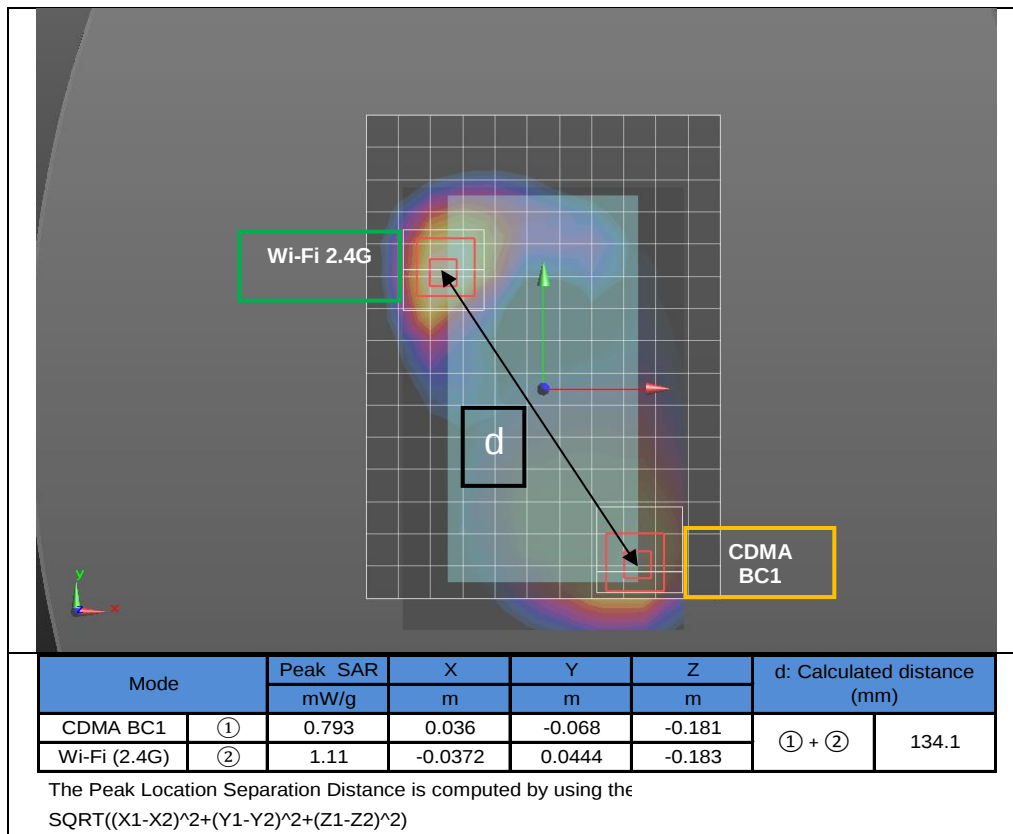
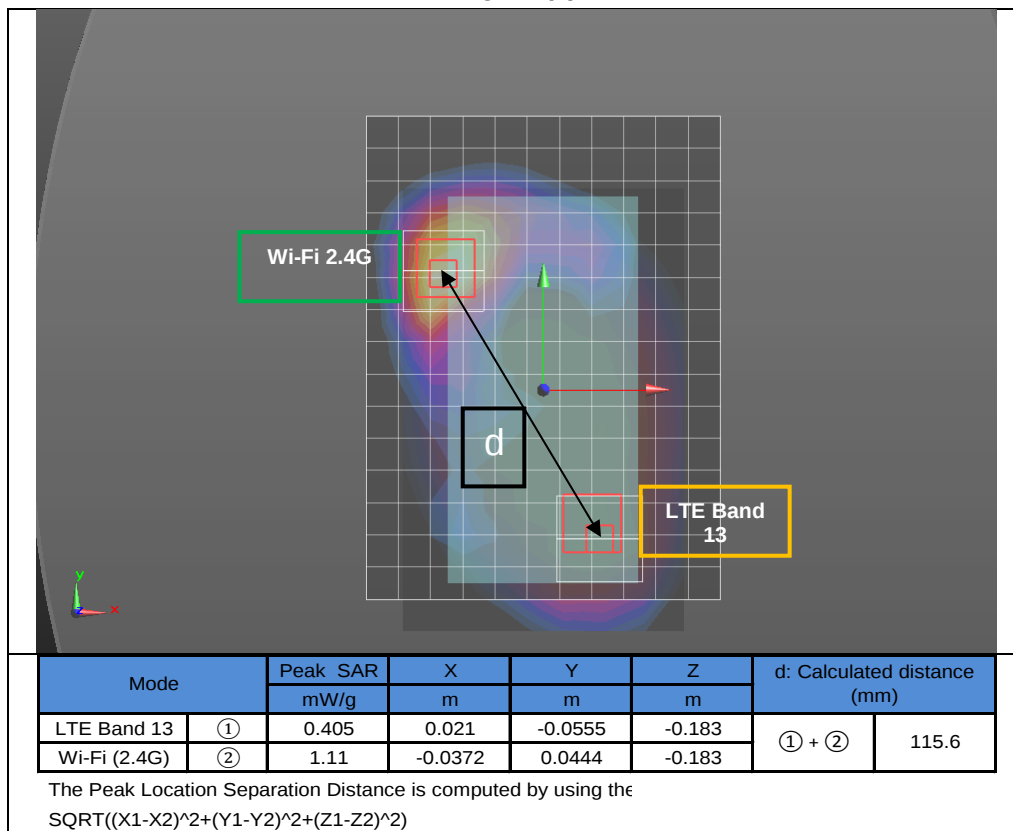


Figure (2)



Appendixes

Refer to separated files for the following appendixes.

A_15U20107v0 SAR Photos & Ant. Locations

B_15U20107v0 SAR System Check Plots

C_15U20107v0 SAR Highest Test Plots

D_15U20107v0 SAR Tissue Ingredients

E_15U20107v0 SAR Probe Cal. Certificates

F_15U20107v0 SAR Dipole Cal. Certificates

G_15U20107v1 Proximity Sensor Trigger Distance

END OF REPORT