FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

CDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n and ANT+

MODEL NUMBER: SM-T387P

FCC ID: A3LSMT387P

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Prepared for
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ACCREDITED
Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	7/17/2018	Initial Issue	Eunji Choi
V2	7/30/2018	Revised Sec.1, Sec.10.13 and Sec.12 (Bluetooth SAR value)	Eunji Choi

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1. Attestation of Test Results

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID	A3LSMT387P			
Model Number	SM-T387P			
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**	**UNII**	**DSS(BT)**
Standalone	1.19	0.87	1.07	0.33
Simultaneous TX	1.58	1.58	1.58	1.58
Date Tested	6/18/2018 to 7/17/2018			
Test Results	Pass			

UL Korea, Ltd. 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 Korea, Ltd. 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 Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. 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 IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released By:	Prepared By:
Justin Park Lead Test Engineer UL Korea, Ltd. Suwon Laboratory	Eunji Choi Associate Test Engineer UL Korea, Ltd. Suwon Laboratory

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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 v02r02
- 447498 D01 General RF Exposure Guidance v06
- 616217 D04 SAR for laptop and tablets v01r02
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01

In addition to the above, the following information was used:

- TCB workshop October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)
- TCB workshop May, 2017; Page 7, RF Exposure Procedures (LTE Band 41 Power Class 2)

Additional Guidance: KDB inquiry

- Additional SAR test of corner side – KDB guidance to identify that SAR test when sensor and antenna is located near corner side.

3. Facilities and Accreditation

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

Suwon
SAR 1 Room
SAR 2 Room
SAR 3 Room

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at http://www.iasonline.org/PDF/TL/TL-637.pdf.

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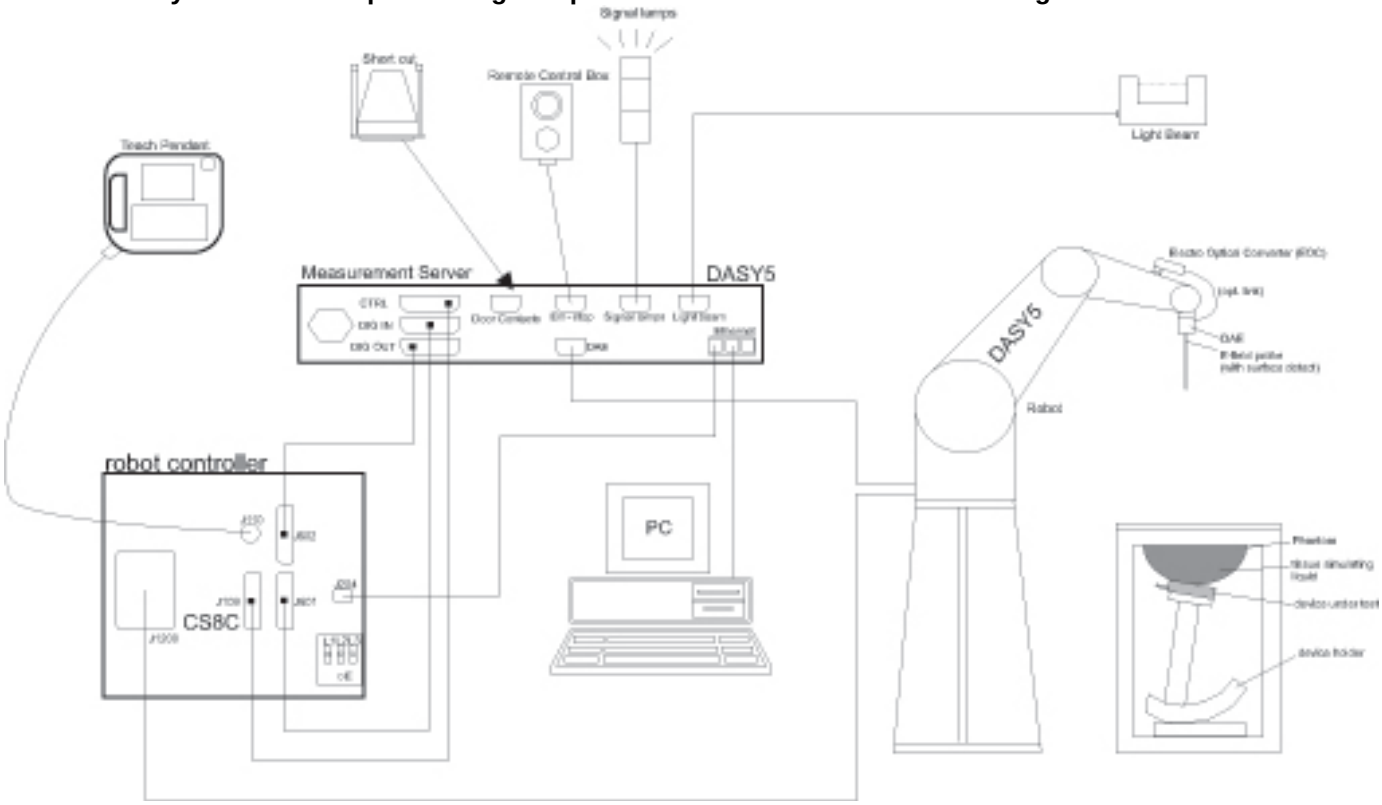
4. SAR Measurement System & Test Equipment

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.

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

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Step 3: Zoom Scan

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

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

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

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4.3. 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	E5071C	MY46522054	8-8-2018
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-26-2019
Dielectric Assessment Kit	SPEAG	DAK-3.5	1046	4-17-2019
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3424	8-11-2018
Thermometer	Lutron	MHB-382SD	AH.91478	8-10-2018

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-7-2018
Power Sensor	Agilent	U2000A	MY54260010	8-8-2018
Power Sensor	Agilent	U2000A	MY54260007	8-8-2018
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-8-2018
Directional Coupler	Agilent	772D	MY52180193	8-7-2018
Directional Coupler	Agilent	778D	MY52180432	8-7-2018
Low Pass Filter	MICROLAB	LA-15N	03943	8-7-2018
Low Pass Filter	FILTRON	L14012FL	1410003S	8-7-2018
Low Pass Filter	MICROLAB	LA-60N	03942	8-7-2018
Attenuator	Agilent	8491B/003	MY39269292	8-7-2018
Attenuator	Agilent	8491B/010	MY39269315	8-7-2018
Attenuator	Agilent	8491B/020	MY39269298	8-7-2018
E-Field Probe (SAR1)	SPEAG	EX3DV4	7376	8-22-2018
E-Field Probe (SAR1)	SPEAG	EX3DV4	7330	1-22-2019
E-Field Probe (SAR2)	SPEAG	EX3DV4	7330	1-22-2019
E-Field Probe (SAR2)	SPEAG	EX3DV4	7313	2-20-2019
E-Field Probe (SAR3)	SPEAG	EX3DV4	7314	9-28-2018
Data Acquisition Electronics (SAR1)	SPEAG	DAE4	1468	8-22-2018
Data Acquisition Electronics (SAR2)	SPEAG	DAE4	1447	3-15-2019
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	1494	7-20-2018
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	614	6-22-2019
System Validation Dipole	SPEAG	D750V3	1122	2-19-2019
System Validation Dipole	SPEAG	D835V2	4d194	7-19-2018
System Validation Dipole	SPEAG	D835V2	4d174	9-21-2018
System Validation Dipole	SPEAG	D1750V2	1125	2-16-2019
System Validation Dipole	SPEAG	D1900V2	5d190	9-20-2018
System Validation Dipole	SPEAG	D2450V2	939	9-19-2018
System Validation Dipole	SPEAG	D2600V2	1097	1-17-2019
System Validation Dipole	SPEAG	D5GHzV2	1209	2-15-2019
Thermometer (SAR1)	Lutron	MHB-382SD	AH.91463	8-10-2018
Thermometer (SAR2)	Lutron	MHB-382SD	AH.50215	2-9-2019
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-16-2018

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	12-08-2018
Base Station Simulator	R & S	CMW500	150314	12-05-2018
Base Station Simulator	Agilent	8960	MY53211024	8-9-2018
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	8-7-2018

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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 and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

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6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Overall (Length x Width): 206.6 mm x 126.7 mm Overall Diagonal: 234.0 mm Display Diagonal: 203.1 mm
Back Cover	☒ The Back Cover is not removable.
Battery Options	☒ The rechargeable battery is not user accessible.
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, Ch.149, Ch.151)
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz) ☒ Wi-Fi Direct (Wi-Fi 5 GHz, Ch.149)
Test Sample Information	**No.** / **S/N** / **Notes** 1 / 357635090013899 / Main Conducted 2 / 357635090012842 / Main Conducted 3 / 357635090010861 / Wi-Fi Conducted 4 / 357635090010747 / SAR 5 / 357635090012974 / SAR

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6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode	Duty Cycle used for SAR testing
CDMA (CDMA2000)	BC0 BC1	1xRTT (Voice & Data) 1xEV-DO Rel. 0 1xEV-DO Rev. A 1xAdvanced	100%
	BC10	1xRTT (Voice & Data) 1xAdvanced	100%
	Does this device support SV-DO (1xRTT-1xEVDO)? ☐ Yes ☒ No		
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 25 FDD Band 26 TDD Band 41	QPSK 16QAM Rel. 10 Does not support Carrier Aggregation (CA)	100% (FDD) 63.3% (TDD, Power class 3) 43.3% (TDD, Power class 2)
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No		
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20)	99.7% (802.11b) 98.2% (802.11g) 98.1% (802.11n 20MHz BW)
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40)	98.2% (802.11a) 98.1% (802.11n 20MHz BW) 96.1% (802.11n 40MHz BW)
	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 4.2 LE	76.9% (DH5)

Notes:

1. This device supports uplink-downlink configuration 0-6. The configuration with the highest duty cycle was used for Power class 3(uplink-downlink configuration 0 at 63.3%). Power class 2 does not support uplink-downlink configuration 0 and 6, therefore the highest available duty cycle was used for Power class 2(uplink-downlink configuration 1 at 43.3%).
2. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.9% and was considered and used for SAR Testing.
3. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.

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6.3. Nominal and Maximum Output Power

KDB 447498 sec.4.1. 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	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
CDMA BC0	Ant.1	1xRTT	**25.0**	**21.0**
		1xEVDO Rel.0	**25.0**	**21.0**
		1xEVDO Rel.A	**25.0**	**21.0**
		1xAdvanced	**25.0**	**21.0**
CDMA BC1	Ant.1	1xRTT	**25.0**	**11.0**
		1xEVDO Rel.0	**25.0**	**11.0**
		1xEVDO Rel.A	**25.0**	**11.0**
		1xAdvanced	**25.0**	**11.0**
CDMA BC10	Ant.1	1xRTT	**25.0**	**20.5**
		1xAdvanced	**25.0**	**20.5**

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
LTE Band 2	Ant.1	QPSK	**24.5**	**12.0**
LTE Band 4	Ant.1	QPSK	**24.5**	**13.0**
LTE Band 5	Ant.1	QPSK	**25.2**	**16.0**
LTE Band 12	Ant.1	QPSK	**25.0**	**17.0**
LTE Band 25	Ant.1	QPSK	**24.0**	**13.0**
LTE Band 26	Ant.1	QPSK	**25.0**	**12.0**
LTE Band 41 -Power class 3-	Ant.2	QPSK	**25.0**	**14.0**
LTE Band 41 (HPUE) - Power class 2-	Ant.2	QPSK	**26.5**	**14.0**

RF Air interface	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
WiFi 2.4 GHz (Ch.1)	802.11b	**21.0**	**14.0**
	802.11g	**14.0**	**14.0**
	802.11n HT20	**14.0**	**14.0**
WiFi 2.4 GHz (Ch.2)	802.11b	**21.0**	**14.0**
	802.11g	**18.0**	**14.0**
	802.11n HT20	**17.0**	**14.0**
WiFi 2.4 GHz (Ch.3 - Ch.10)	802.11b	**21.0**	**14.0**
	802.11g	**19.0**	**14.0**
	802.11n HT20	**18.0**	**14.0**
WiFi 2.4 GHz (Ch.11)	802.11b	**19.0**	**14.0**
	802.11g	**12.0**	**12.0**
	802.11n HT20	**12.0**	**12.0**
WiFi 5.2 GHz (U-NII 1)	802.11a	**17.0**	**10.0**
	802.11n HT20	**16.0**	**10.0**
	802.11n HT40	**12.0**	**10.0**
WiFi 5.3 GHz (U-NII 2A)	802.11a	**17.0**	**10.0**
	802.11n HT20	**16.0**	**10.0**
	802.11n HT40	**12.0**	**10.0**
WiFi 5.5 GHz (U-NII 2C)	802.11a	**15.0**	**10.0**
	802.11n HT20	**15.0**	**10.0**
	802.11n HT40	**11.0**	**10.0**
WiFi 5.8 GHz (U-NII 3)	802.11a	**17.0**	**10.0**
	802.11n HT20	**16.0**	**10.0**
	802.11n HT40	**12.0**	**10.0**
Bluetooth		**10.0**	
Bluetooth LE		**7.0**	

Note(s):

1. LTE QPSK configuration has the highest maximum average output power per 3GPP standard.

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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 12	Frequency range: 699 – 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 25	Frequency range: 1850 - 1915 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3
	Band 26	Frequency range: 814 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
	Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
	High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3
	Band 41	Frequency range: 2496 - 2690 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	39750 / 2506.0					
	Low-Mid	40185 / 2549.5					
	Mid	40620 / 2593.0					
	Mid-High	41055 / 2636.5					
	High	41490 / 2680.0					

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General LTE SAR Test and Reporting Considerations (Continued)

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>LTE transmitter and antenna implementation</td><td>Refer to Appendix A.</td></tr>
<tr><td>Maximum power reduction (MPR)</td><td>

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

<table>
<tr><th rowspan="2">Modulation</th><th colspan="6">Channel bandwidth / Transmission bandwidth (N_{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>
<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>
<tr><td>64 QAM</td><td>≤ 5</td><td>≤ 4</td><td>≤ 8</td><td>≤ 12</td><td>≤ 16</td><td>≤ 18</td><td>≤ 2</td></tr>
<tr><td>64 QAM</td><td>> 5</td><td>> 4</td><td>> 8</td><td>> 12</td><td>> 16</td><td>> 18</td><td>≤ 3</td></tr>
<tr><td>256 QAM</td><td colspan="6">≥ 1</td><td>≤ 5</td></tr>
</table>

MPR Built-in by design
The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values.
A-MPR (additional MPR) was disabled during SAR testing

</td></tr>
<tr><td>Power reduction</td><td>Yes</td></tr>
<tr><td>Spectrum plots for RB configurations</td><td>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.</td></tr>
</table>

Note(s):

SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI)

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6.5. LTE (TDD) Considerations

According to KDB 941225 D05 SAR for LTE Devices, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame Structure and Table 4.2-2 for uplink-downlink configurations and Table 4.2-1 for Special subframe configurations.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS).

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

Calculated Duty Cycle

Uplink-Downlink Configuration	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.33
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.33
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.33
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.67
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.67
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.67
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.33

Calculated Duty Cycle = Extended cyclic prefix in uplink x (T_s) x # of S + # of U

<u>Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:</u>
Calculated Duty Cycle = 5120 x [1/(15000 x 2048)] x 2 + 6 ms = 63.33%
where
T_s = 1/(15000 x 2048) seconds

Note(s):

This device supports uplink-downlink configurations 0-6. The configuration with highest duty cycle was used for SAR Testing: configuration 0 at 63.3% duty cycle for Power class 3, configuration 1 at 43.3% duty cycle for Power class 2 and Special Subframe 7.

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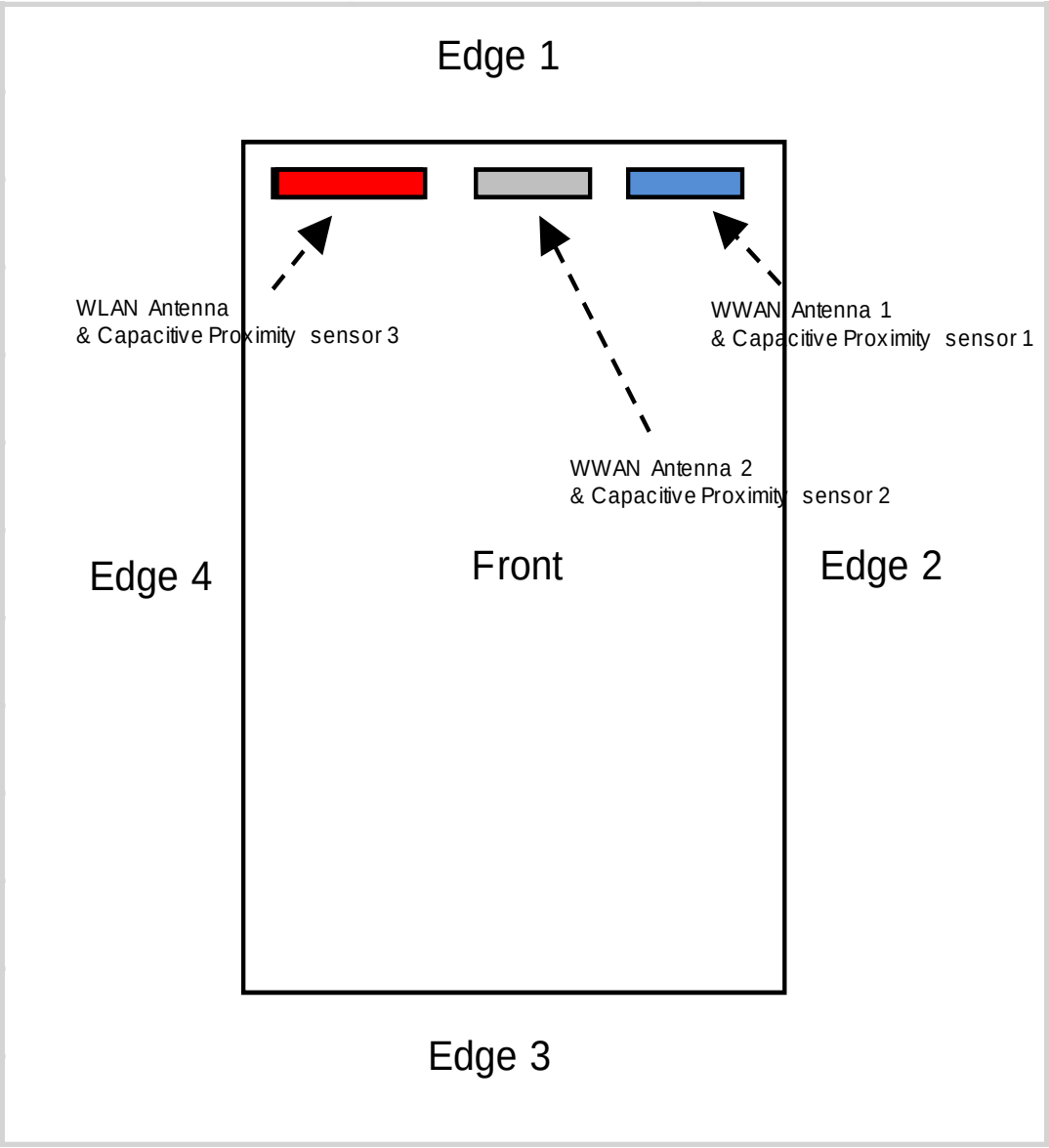
6.6. Proximity sensor feature

The DUT has three proximity sensors to reduce the output power. The position of the sensors and antenna are as shown in the graphic.



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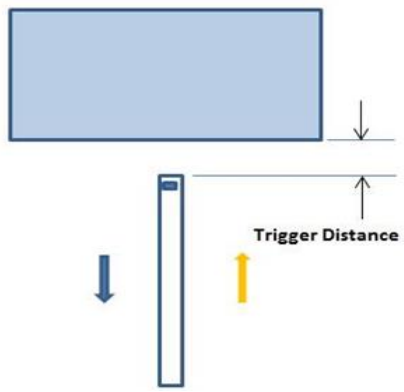
6.6.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

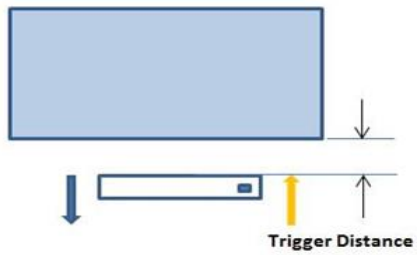
Rear, Edge 1, Edge 2, Edge 4, Corner A (Side of between Edge 1 and Edge 2), Corner B (Side of between Edge 1 and Edge 4) of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The DUT featured a visual indicator on its display that showed the status of the proximity sensor (Triggered or not triggered). 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.

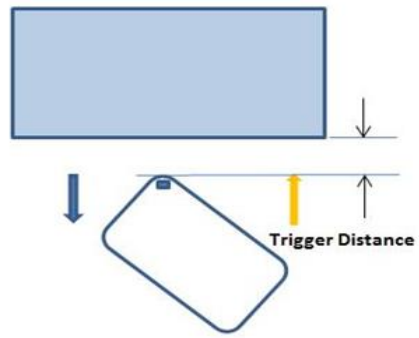
It was confirmed separately that the output power was altered according to the proximity sensor status indication. This was achieved by observing the proximity sensor status at the same time as monitoring the conducted power. Section 9 contains both the full and reduced conducted power measurements.



Proximity Sensor Trigger Distance Assessment KDB 616217 §6.2, Edge 1, Edge 2, Edge 4



Proximity Sensor Trigger Distance Assessment KDB 616217 §6.2, Rear



Proximity Sensor Trigger Distance Assessment KDB 616217 §6.2, Corner A, Corner B

LEGEND

→ Direction of DUT travel for determination of power reduction triggering point

→ Direction of DUT travel for determination of full power resumption triggering point

Summary of Trigger Distances

Antenna	Tissue simulating liquid	Trigger distance - Rear		Trigger distance – Edge 1		Trigger distance – Edge 2		Trigger distance – Edge 4		Trigger distance – Corner A		Trigger distance – Corner B	
		Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
WWAN Ant.1	750 muscle	20 mm	20 mm	16 mm	16 mm	6 mm	6 mm	N/A	N/A	11 mm	11 mm	N/A	N/A
	850 muscle	20 mm	20 mm	16 mm	16 mm	6 mm	6 mm	N/A	N/A	11 mm	11 mm	N/A	N/A
	1750 muscle	20 mm	20 mm	16 mm	16 mm	6 mm	6 mm	N/A	N/A	11 mm	11 mm	N/A	N/A
	1900 muscle	20 mm	20 mm	16 mm	16 mm	6 mm	6 mm	N/A	N/A	11 mm	11 mm	N/A	N/A
WWAN Ant.2	2600 muscle	15 mm	15 mm	11 mm	11 mm	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
WLAN Ant.	2450 muscle	12 mm	12 mm	9 mm	9 mm	N/A	N/A	7 mm	7 mm	N/A	N/A	7 mm	7 mm
	5000 muscle	12 mm	12 mm	9 mm	9 mm	N/A	N/A	7 mm	7 mm	N/A	N/A	7 mm	7 mm

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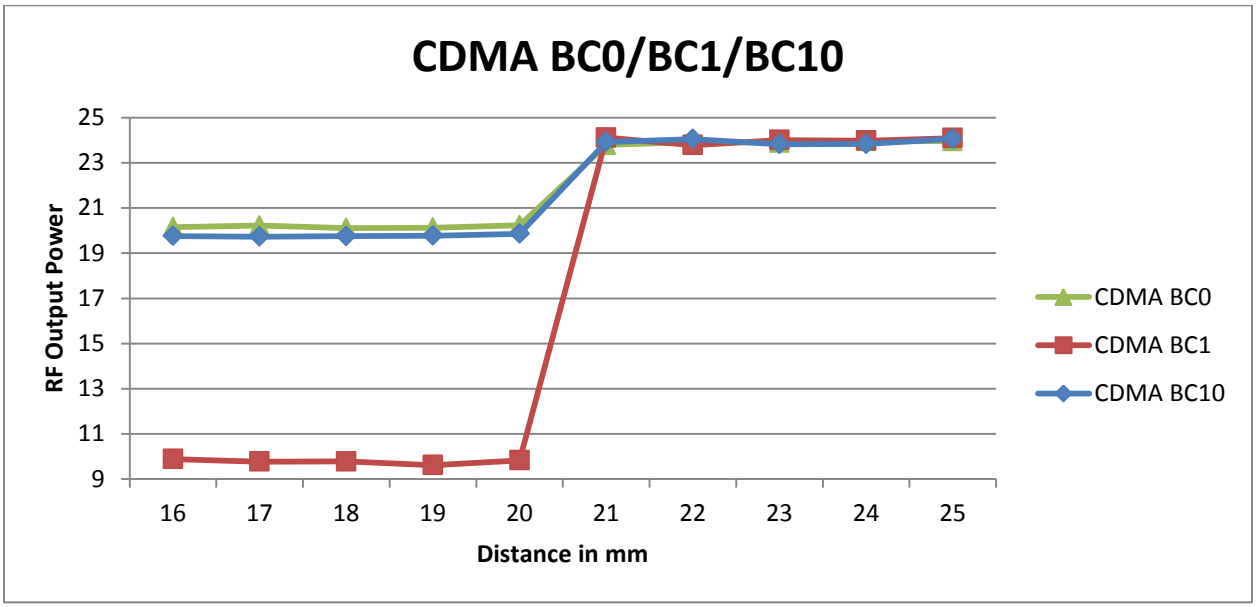
Proximity Sensor Triggering Distance Measurement Results

CDMA BC0 / BC1 / BC10

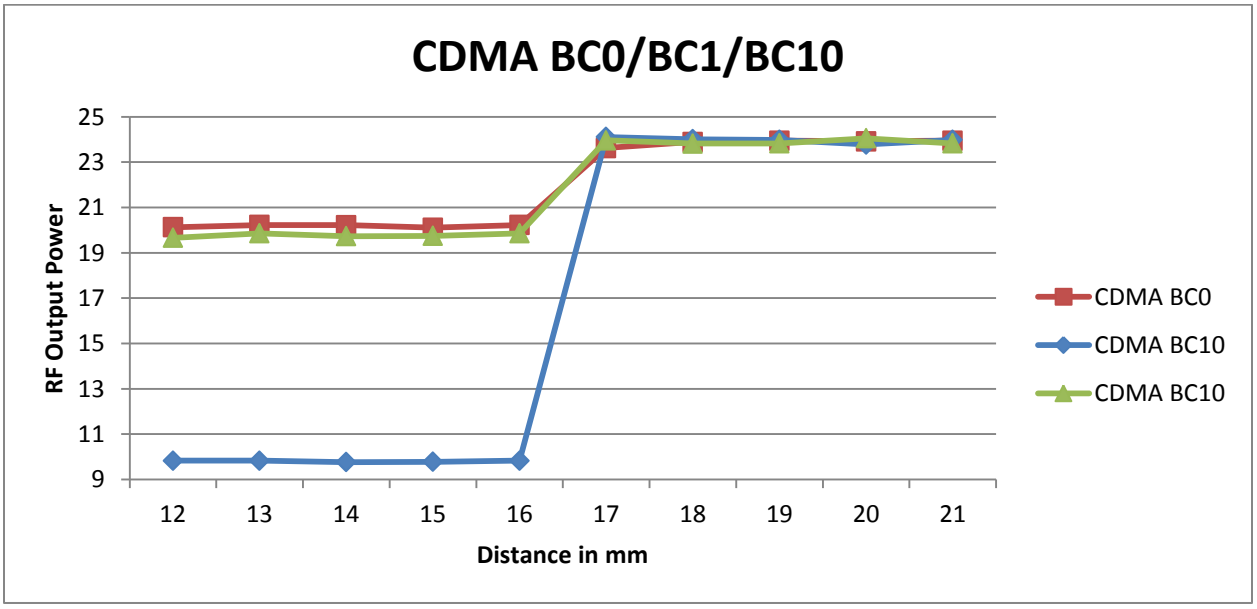
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	16	17	18	19	20	21	22	23	24	25
CDMA BC0	20.2	20.2	20.1	20.1	20.2	23.8	23.9	23.9	24.0	24.0
CDMA BC1	9.9	9.8	9.8	9.6	9.8	24.1	23.8	24.0	24.0	24.1
CDMA BC10	19.8	19.7	19.8	19.8	19.9	23.9	24.1	23.8	23.8	24.1



Edge 1, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	12	13	14	15	16	17	18	19	20	21
CDMA BC0	20.1	20.2	20.2	20.1	20.2	23.6	23.9	24.0	23.9	24.0
CDMA BC10	9.8	9.8	9.8	9.8	9.8	24.1	24.0	24.0	23.8	24.0
CDMA BC10	19.7	19.9	19.7	19.8	19.9	24.0	23.8	23.8	24.1	23.8



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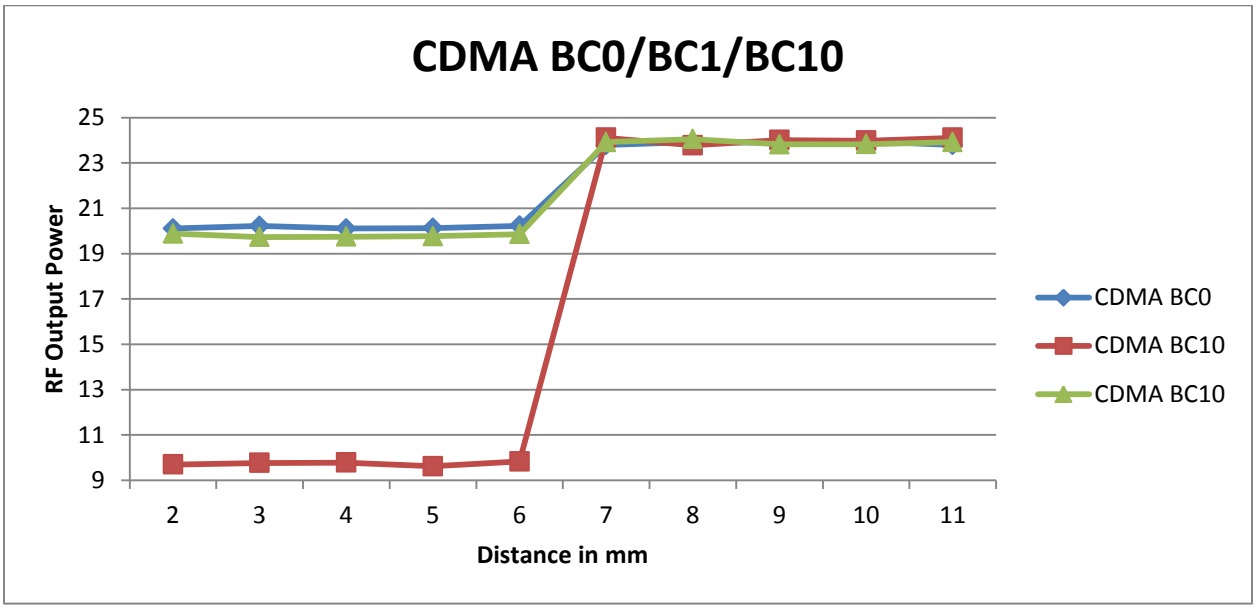
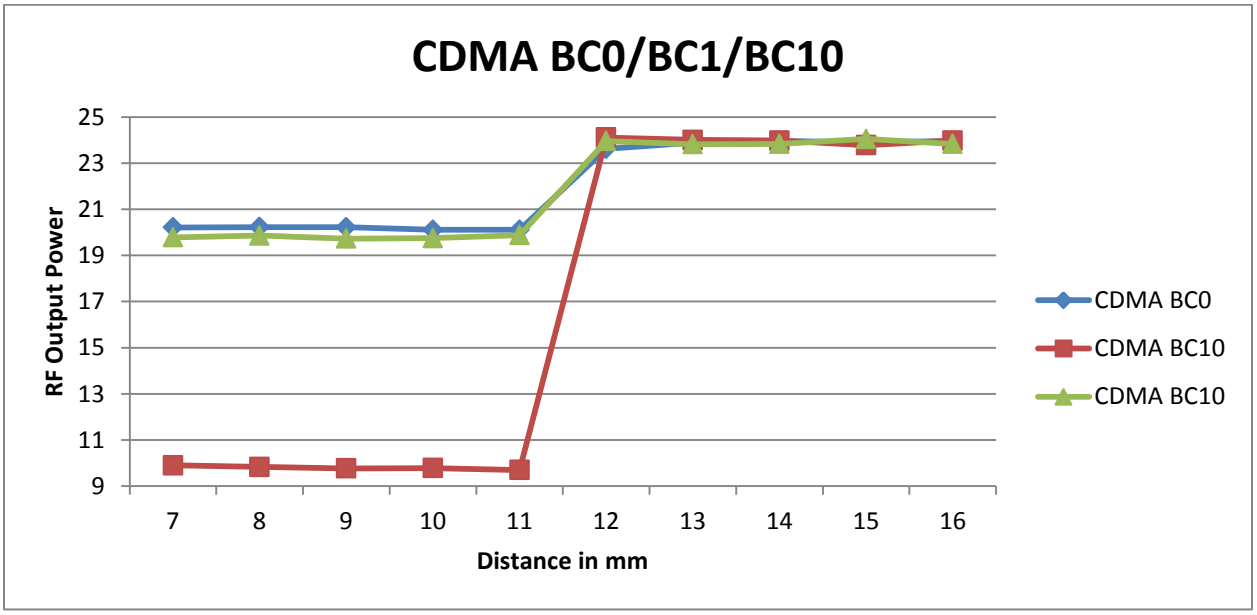
Edge 2, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	2	3	4	5	6	7	8	9	10	11
CDMA BC0	20.1	20.2	20.1	20.1	20.2	23.8	23.9	23.9	24.0	23.8
CDMA BC10	9.7	9.8	9.8	9.6	9.8	24.1	23.8	24.0	24.0	24.1
CDMA BC10	19.9	19.7	19.8	19.8	19.9	23.9	24.1	23.8	23.8	23.9



Corner A, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	7	8	9	10	11	12	13	14	15	16
CDMA BC0	20.2	20.2	20.2	20.1	20.1	23.6	23.9	24.0	23.9	24.0
CDMA BC10	9.9	9.8	9.8	9.8	9.7	24.1	24.0	24.0	23.8	24.0
CDMA BC10	19.8	19.9	19.7	19.8	19.9	24.0	23.8	23.8	24.1	23.8



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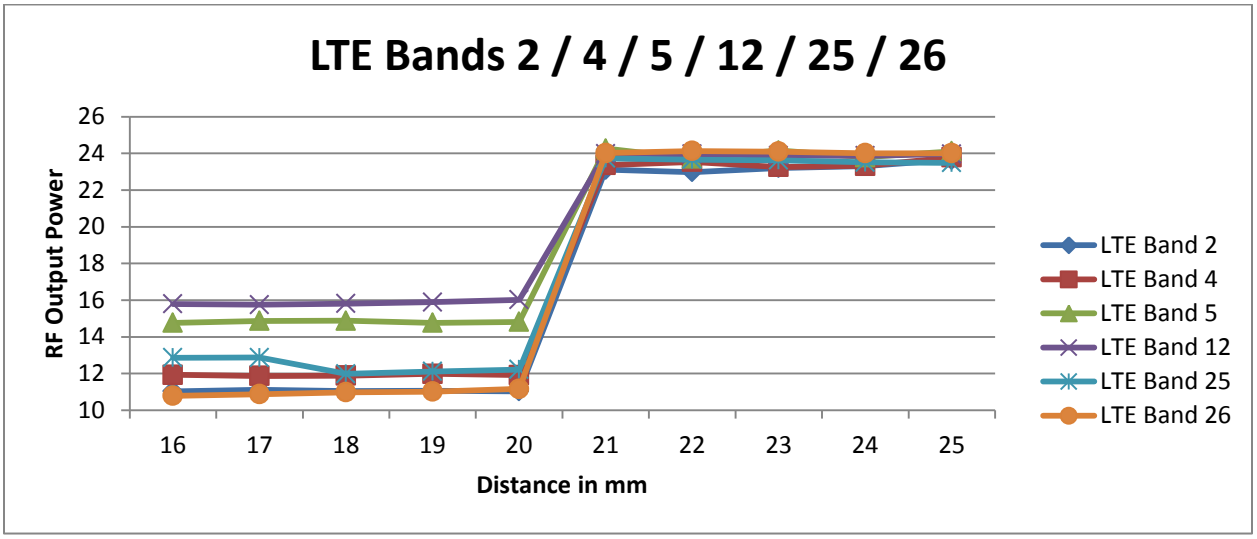
LTE Band 2 / 4 / 5 / 12 / 25 / 26

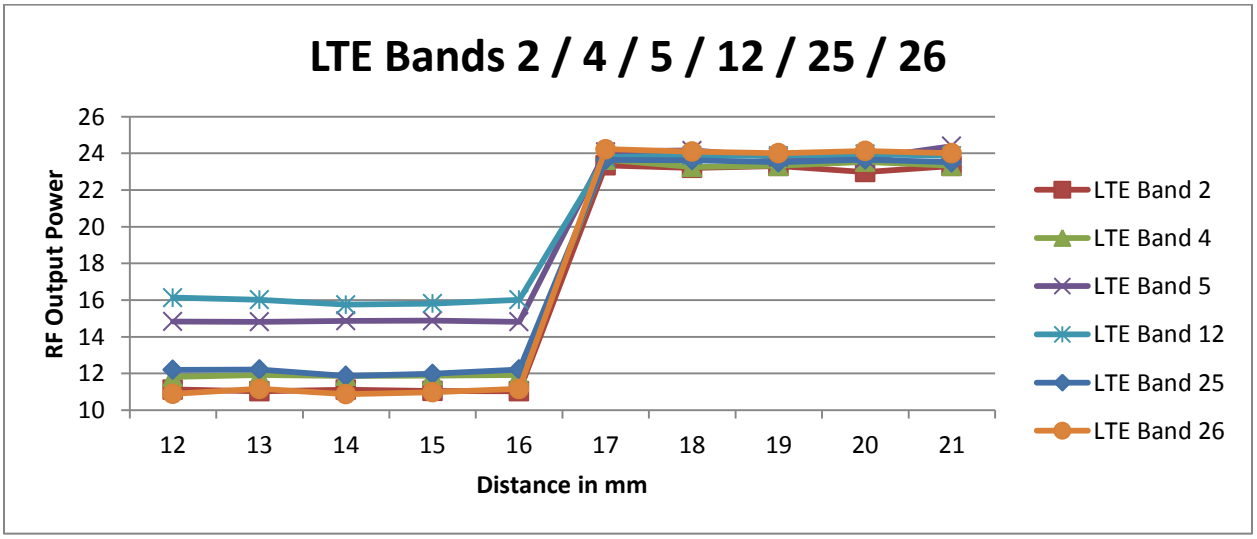
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	16	17	18	19	20	21	22	23	24	25
LTE Band 2	11.0	11.1	11.1	11.1	11.0	23.1	23.0	23.2	23.3	23.7
LTE Band 4	11.9	11.9	11.9	12.0	11.9	23.4	23.5	23.3	23.3	23.8
LTE Band 5	14.8	14.9	14.9	14.8	14.8	24.3	23.7	24.2	23.8	24.1
LTE Band 12	15.8	15.8	15.8	15.9	16.0	24.0	24.0	23.9	23.9	24.0
LTE Band 25	12.9	12.9	12.0	12.1	12.2	23.7	23.7	23.6	23.5	23.5
LTE Band 26	10.8	10.9	11.0	11.0	11.2	24.0	24.1	24.1	24.0	24.0



Edge 1, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	12	13	14	15	16	17	18	19	20	21
LTE Band 2	11.1	11.0	11.1	11.1	11.0	23.4	23.2	23.3	23.0	23.3
LTE Band 4	11.8	11.9	11.9	11.9	11.9	23.7	23.3	23.3	23.5	23.3
LTE Band 5	14.8	14.8	14.9	14.9	14.8	24.1	24.2	23.8	23.7	24.4
LTE Band 12	16.1	16.0	15.8	15.8	16.0	23.8	23.9	23.9	24.0	23.9
LTE Band 25	12.2	12.2	11.9	12.0	12.2	23.6	23.6	23.5	23.7	23.5
LTE Band 26	10.9	11.2	10.9	11.0	11.2	24.2	24.1	24.0	24.1	24.0



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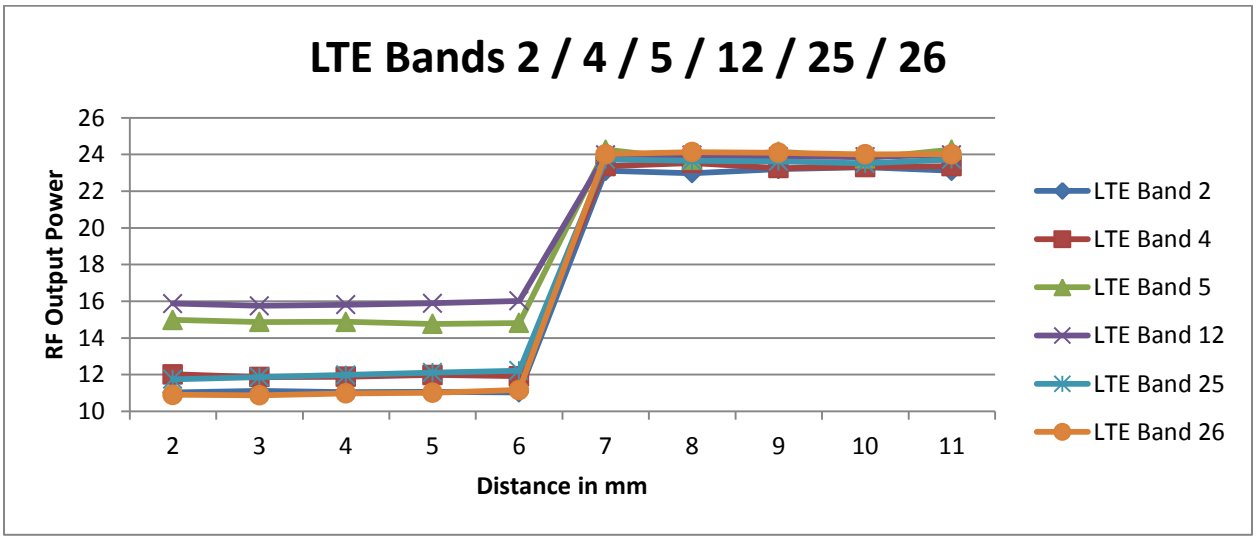
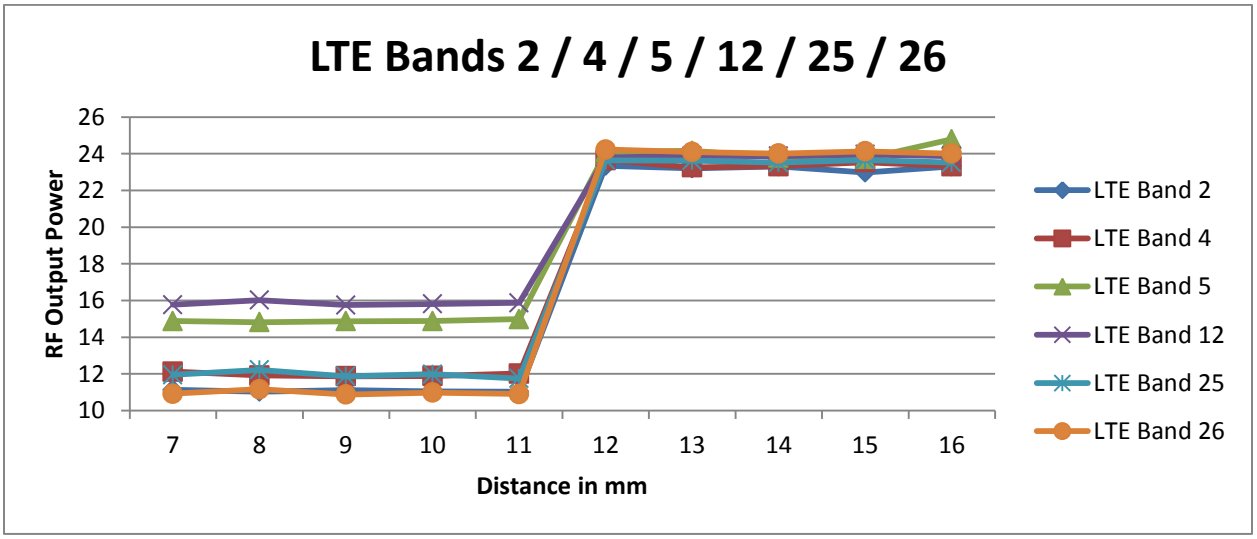
Edge 2, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	2	3	4	5	6	7	8	9	10	11
LTE Band 2	11.0	11.1	11.1	11.1	11.0	23.1	23.0	23.2	23.3	23.1
LTE Band 4	12.0	11.9	11.9	12.0	11.9	23.4	23.5	23.3	23.3	23.4
LTE Band 5	15.0	14.9	14.9	14.8	14.8	24.3	23.7	24.2	23.8	24.3
LTE Band 12	15.9	15.8	15.8	15.9	16.0	24.0	24.0	23.9	23.9	24.0
LTE Band 25	11.8	11.9	12.0	12.1	12.2	23.7	23.7	23.6	23.5	23.7
LTE Band 26	10.9	10.9	11.0	11.0	11.2	24.0	24.1	24.1	24.0	24.0



Corner A, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	7	8	9	10	11	12	13	14	15	16
LTE Band 2	11.1	11.0	11.1	11.1	11.0	23.4	23.2	23.3	23.0	23.3
LTE Band 4	12.1	11.9	11.9	11.9	12.0	23.7	23.3	23.3	23.5	23.3
LTE Band 5	14.9	14.8	14.9	14.9	15.0	24.1	24.2	23.8	23.7	24.8
LTE Band 12	15.8	16.0	15.8	15.8	15.9	23.8	23.9	23.9	24.0	23.9
LTE Band 25	12.0	12.2	11.9	12.0	11.8	23.6	23.6	23.5	23.7	23.5
LTE Band 26	10.9	11.2	10.9	11.0	10.9	24.2	24.1	24.0	24.1	24.0



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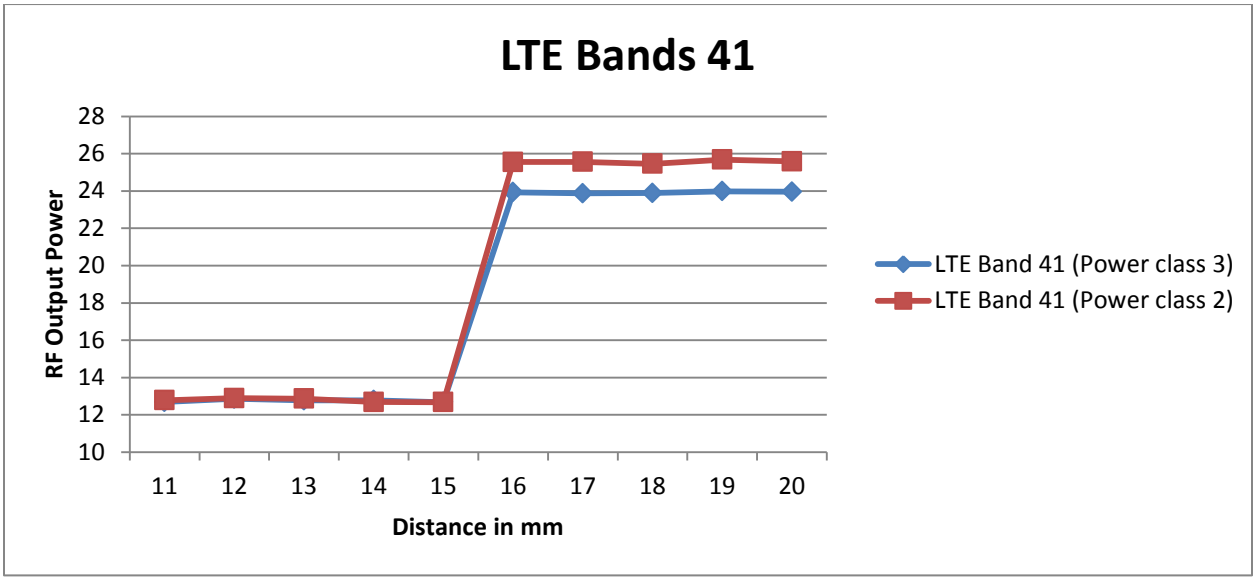
LTE Band 41

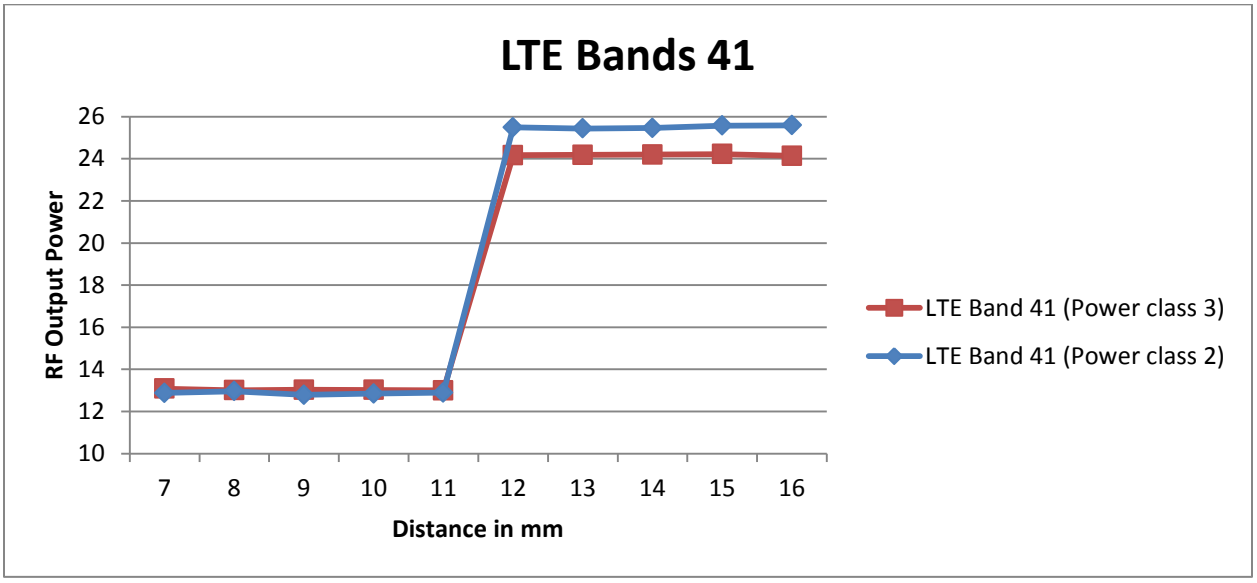
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	11	12	13	14	15	16	17	18	19	20
LTE Band 41 (Power class 3)	12.7	12.9	12.8	12.8	12.7	23.9	23.9	23.9	24.0	24.0
LTE Band 41 (Power class 2)	12.8	12.9	12.9	12.7	12.7	25.6	25.6	25.5	25.7	25.6



Edge 1, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	7	8	9	10	11	12	13	14	15	16
LTE Band 41 (Power class 3)	13.1	13.0	13.0	13.0	13.0	24.2	24.2	24.2	24.2	24.1
LTE Band 41 (Power class 2)	12.9	13.0	12.8	12.9	12.9	25.5	25.4	25.5	25.6	25.6



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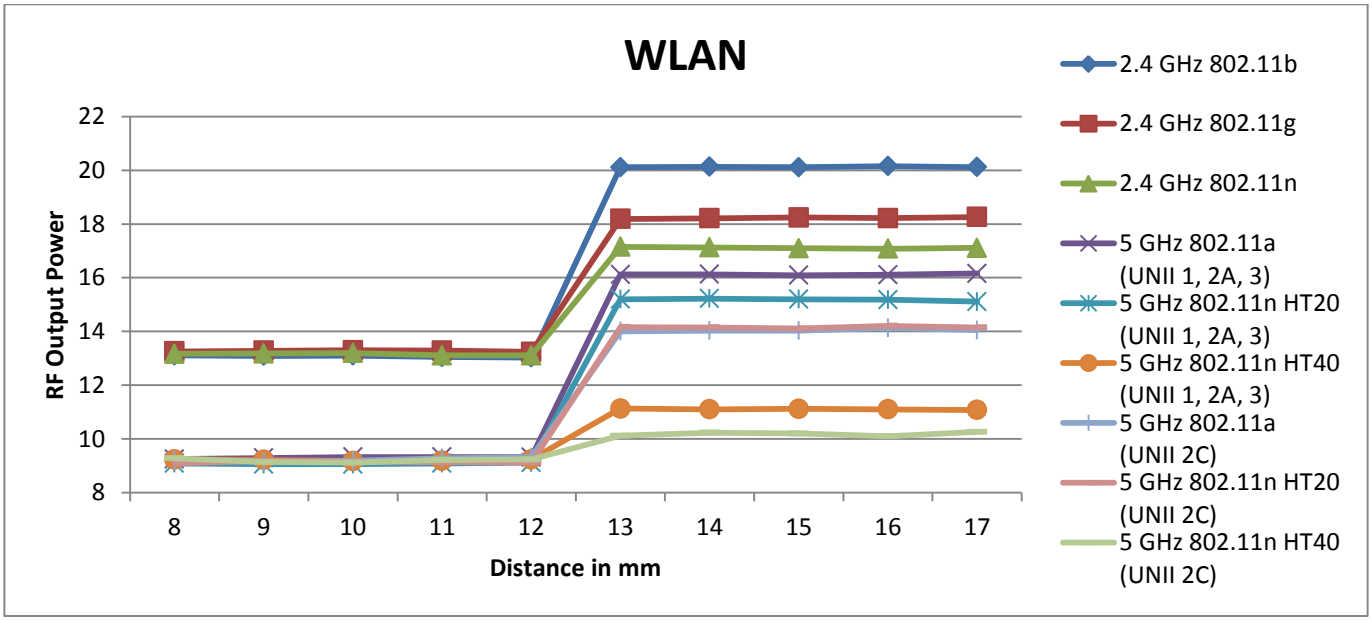
WLAN 2.4GHz and 5GHz

Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance	8	9	10	11	12	13	14	15	16	17
2.4 GHz 802.11b	13.1	13.1	13.1	13.1	13.0	20.1	20.1	20.1	20.2	20.1
2.4 GHz 802.11g	13.3	13.3	13.3	13.3	13.2	18.2	18.2	18.2	18.2	18.3
2.4 GHz 802.11n	13.2	13.2	13.2	13.1	13.1	17.2	17.1	17.1	17.1	17.1
5 GHz 802.11a (UNII 1, 2A, 3)	9.3	9.3	9.3	9.3	9.3	16.1	16.1	16.1	16.1	16.2
5 GHz 802.11n HT20 (UNII 1, 2A, 3)	9.1	9.1	9.1	9.1	9.1	15.2	15.2	15.2	15.2	15.1
5 GHz 802.11n HT40 (UNII 1, 2A, 3)	9.2	9.2	9.2	9.2	9.2	11.1	11.1	11.1	11.1	11.1
5 GHz 802.11a (UNII 2C)	9.2	9.2	9.2	9.3	9.3	14.0	14.0	14.0	14.1	14.1
5 GHz 802.11n HT20 (UNII 2C)	9.1	9.2	9.2	9.1	9.1	14.2	14.2	14.1	14.2	14.2
5 GHz 802.11n HT40 (UNII 2C)	9.3	9.1	9.1	9.2	9.2	10.1	10.2	10.2	10.1	10.3



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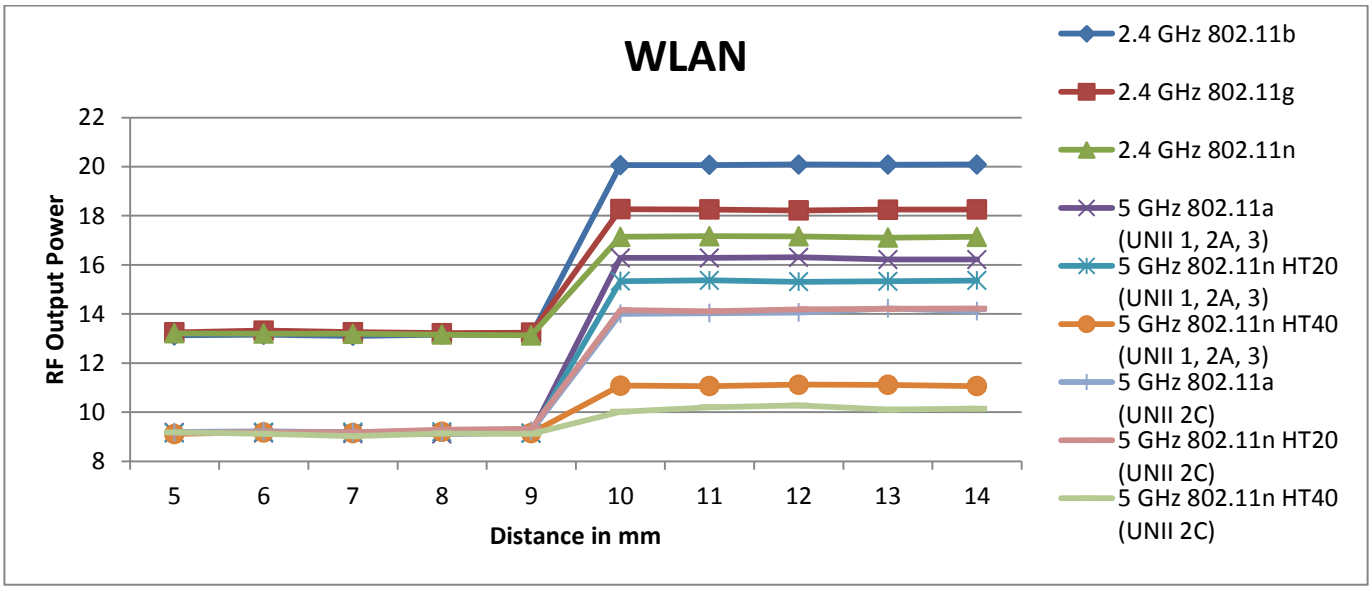
Edge 1, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	5	6	7	8	9	10	11	12	13	14
2.4 GHz 802.11b	13.1	13.2	13.1	13.2	13.2	20.1	20.1	20.1	20.1	20.1
2.4 GHz 802.11g	13.3	13.3	13.3	13.2	13.2	18.3	18.3	18.2	18.3	18.3
2.4 GHz 802.11n	13.2	13.2	13.2	13.2	13.1	17.1	17.2	17.2	17.1	17.1
5 GHz 802.11a (UNII 1, 2A, 3)	9.2	9.2	9.1	9.1	9.2	16.3	16.3	16.3	16.2	16.2
5 GHz 802.11n HT20 (UNII 1, 2A, 3)	9.2	9.2	9.2	9.2	9.1	15.3	15.4	15.3	15.3	15.4
5 GHz 802.11n HT40 (UNII 1, 2A, 3)	9.1	9.2	9.2	9.2	9.2	11.1	11.1	11.1	11.1	11.1
5 GHz 802.11a (UNII 2C)	9.2	9.2	9.2	9.2	9.2	14.0	14.0	14.1	14.2	14.1
5 GHz 802.11n HT20 (UNII 2C)	9.2	9.2	9.2	9.3	9.3	14.2	14.1	14.2	14.2	14.2
5 GHz 802.11n HT40 (UNII 2C)	9.2	9.1	9.0	9.1	9.1	10.0	10.2	10.3	10.1	10.1



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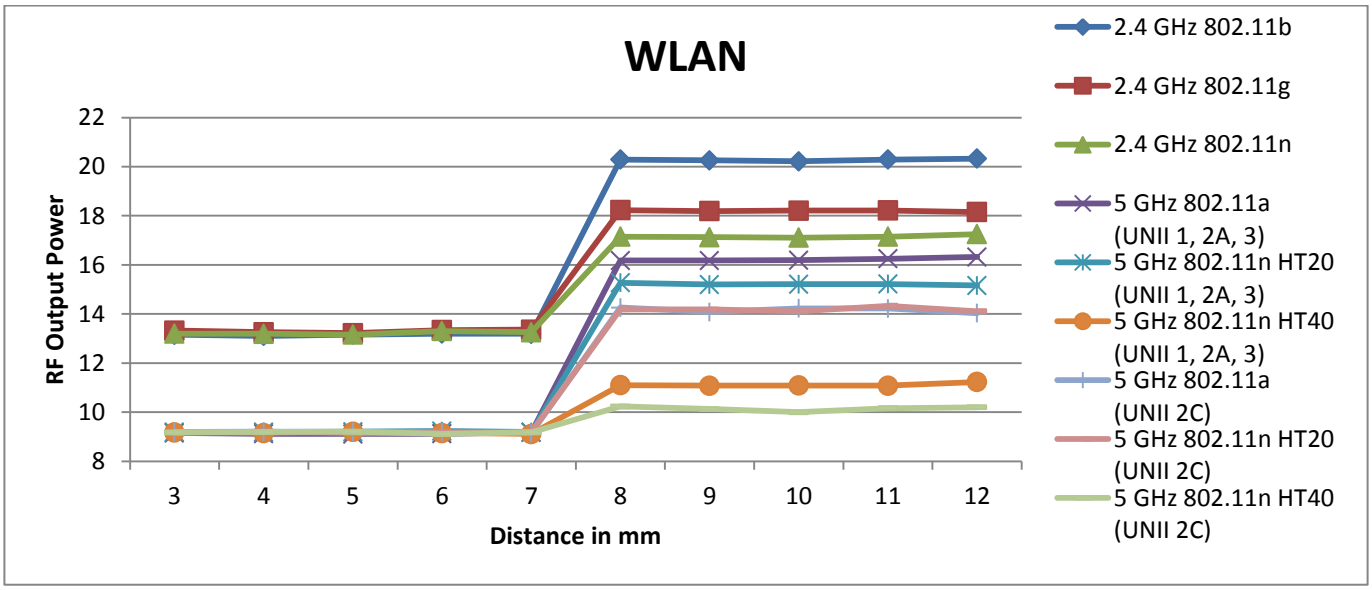
Edge 4, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	3	4	5	6	7	8	9	10	11	12
2.4 GHz 802.11b	13.2	13.1	13.2	13.2	13.2	20.3	20.3	20.2	20.3	20.3
2.4 GHz 802.11g	13.3	13.3	13.2	13.3	13.4	18.2	18.2	18.2	18.2	18.2
2.4 GHz 802.11n	13.2	13.2	13.2	13.3	13.3	17.2	17.1	17.1	17.2	17.3
5 GHz 802.11a (UNII 1, 2A, 3)	9.2	9.1	9.1	9.1	9.2	16.2	16.2	16.2	16.3	16.3
5 GHz 802.11n HT20 (UNII 1, 2A, 3)	9.2	9.2	9.2	9.2	9.2	15.3	15.2	15.2	15.2	15.2
5 GHz 802.11n HT40 (UNII 1, 2A, 3)	9.2	9.2	9.2	9.2	9.1	11.1	11.1	11.1	11.1	11.2
5 GHz 802.11a (UNII 2C)	9.2	9.2	9.2	9.2	9.2	14.3	14.1	14.2	14.2	14.0
5 GHz 802.11n HT20 (UNII 2C)	9.2	9.2	9.2	9.2	9.2	14.2	14.2	14.1	14.3	14.1
5 GHz 802.11n HT40 (UNII 2C)	9.2	9.2	9.2	9.1	9.2	10.2	10.1	10.0	10.2	10.2



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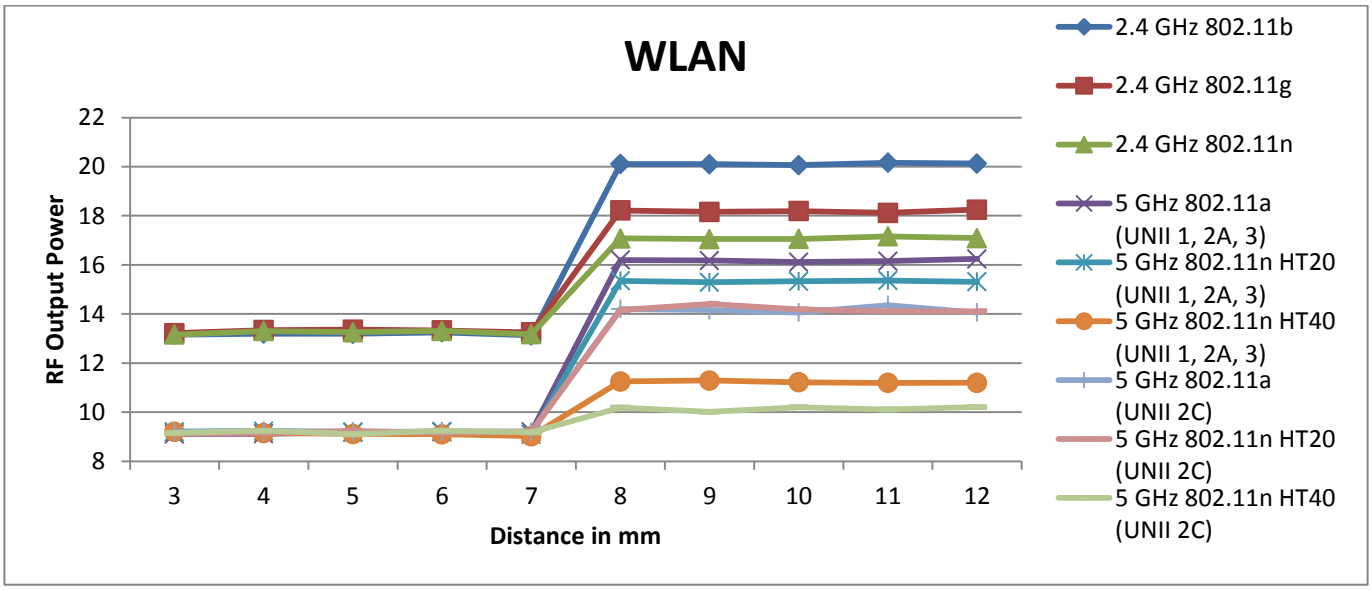
Corner B, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	3	4	5	6	7	8	9	10	11	12
2.4 GHz 802.11b	13.2	13.2	13.2	13.3	13.1	20.1	20.1	20.1	20.2	20.1
2.4 GHz 802.11g	13.2	13.3	13.4	13.3	13.3	18.2	18.2	18.2	18.1	18.3
2.4 GHz 802.11n	13.2	13.3	13.3	13.3	13.2	17.1	17.1	17.1	17.2	17.1
5 GHz 802.11a (UNII 1, 2A, 3)	9.1	9.1	9.2	9.2	9.2	16.2	16.2	16.1	16.2	16.2
5 GHz 802.11n HT20 (UNII 1, 2A, 3)	9.2	9.2	9.2	9.2	9.1	15.4	15.3	15.3	15.4	15.3
5 GHz 802.11n HT40 (UNII 1, 2A, 3)	9.2	9.2	9.1	9.1	9.0	11.3	11.3	11.2	11.2	11.2
5 GHz 802.11a (UNII 2C)	9.2	9.2	9.2	9.2	9.2	14.2	14.2	14.1	14.4	14.1
5 GHz 802.11n HT20 (UNII 2C)	9.1	9.2	9.2	9.2	9.2	14.2	14.4	14.2	14.1	14.1
5 GHz 802.11n HT40 (UNII 2C)	9.2	9.2	9.1	9.2	9.2	10.2	10.0	10.2	10.1	10.2



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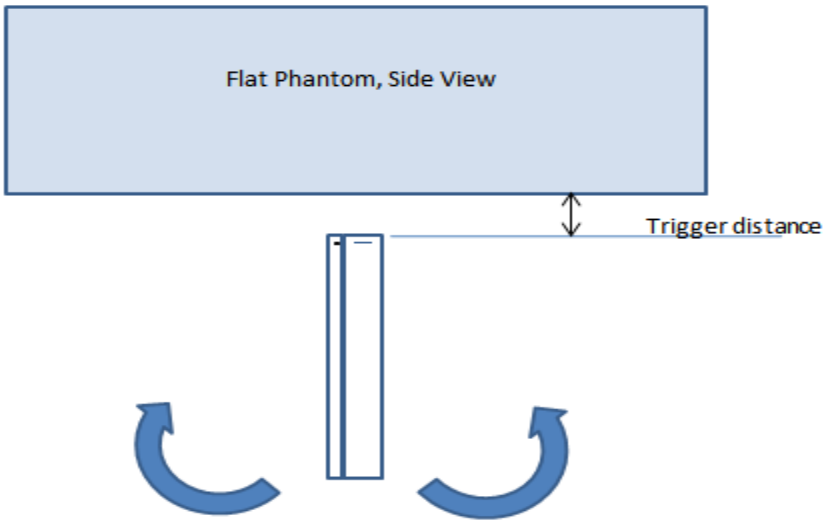
6.6.2. Proximity Sensor Coverage (KDB 616217 §6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

6.6.3. Proximity Sensor Tilt Angle Assessment (KDB 616217 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Edge 1, Edge 2, Edge 4 parallel to the base of the flat phantom for each band.

The EUT was rotated about Edge 1, Edge 2, Edge 4 for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.



Proximity sensor tilt angle assessment (Edge 1, Edge 2, Edge 4) KDB 616217 §6.4

Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Edge 1)

Band (MHz)	Minimum trigger distance measured according to KDB 616217 §6.2	Minimum distance at which power reduction was maintained over +/-45°	Power reduction status										
			-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
750	16 mm	16 mm	On	On	On	On	On	On	On	On	On	On	On
850	16 mm	16 mm	On	On	On	On	On	On	On	On	On	On	On
1750	16 mm	16 mm	On	On	On	On	On	On	On	On	On	On	On
1900	16 mm	16 mm	On	On	On	On	On	On	On	On	On	On	On
2450	9 mm	9 mm	On	On	On	On	On	On	On	On	On	On	On
2600	11 mm	11 mm	On	On	On	On	On	On	On	On	On	On	On
5000	9 mm	9 mm	On	On	On	On	On	On	On	On	On	On	On

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Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Edge 2)

Band (MHz)	Minimum trigger distance measured according to KDB 616217 §6.2	Minimum distance at which power reduction was maintained over +/- 45°	Power reduction status										
			-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
750	6 mm	6 mm	On	On	On	On	On	On	On	On	On	On	On
850	6 mm	6 mm	On	On	On	On	On	On	On	On	On	On	On
1750	6 mm	6 mm	On	On	On	On	On	On	On	On	On	On	On
1900	6 mm	6 mm	On	On	On	On	On	On	On	On	On	On	On

Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Edge 4)

Band (MHz)	Minimum trigger distance measured according to KDB 616217 §6.2	Minimum distance at which power reduction was maintained over +/- 45°	Power reduction status										
			-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
2450	7 mm	7 mm	On	On	On	On	On	On	On	On	On	On	On
5000	7 mm	7 mm	On	On	On	On	On	On	On	On	On	On	On

6.6.4. Resulting test positions for SAR measurements

Wireless technologies	Position	§6.6.1 Triggering Distance	§6.6.2 Coverage	§6.6.3 Tilt Angle	Worst case distance for SAR
WWAN (Ant.1)	Rear	20 mm	N/A	N/A	19 mm
	Edge 1	16 mm	N/A	14 mm	15 mm
	Edge 2	6 mm	N/A	6 mm	5 mm
	Corner A	11 mm	N/A	N/A	10 mm
WWAN (Ant.2)	Rear	15 mm	N/A	N/A	14 mm
	Edge 1	11 mm	N/A	11 mm	10 mm
WLAN	Rear	12 mm	N/A	N/A	11 mm
	Edge 1	9 mm	N/A	9 mm	8 mm
	Edge 4	7 mm	N/A	7 mm	6 mm
	Corner B	7 mm	N/A	N/A	6 mm

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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.

7.1 Standalone SAR Test Exclusion Considerations

Since the *Dedicated Host Approach* is applied, the standalone SAR test exclusion procedure in KDB 447498 § 4.3.1 is applied in conjunction with KDB 616217 § 4.3 to determine the minimum test separation distance:

- When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.
- When the separation distance from the antenna to an adjacent edge is > 5 mm, the actual antenna-to-edge separation distance is applied to determine SAR test exclusion.

SAR Test Exclusion Calculations for WWAN

Antennas < 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off																
Cellular	CDMA BC0	848.31	25.00	316	0	2	2	185	82		58.2 -MEASURE-	58.2 -MEASURE-	58.2 -MEASURE-	> 50 mm	> 50 mm	
Cellular	CDMA BC1	1908.75	25.00	316	0	2	2	185	82		87.3 -MEASURE-	87.3 -MEASURE-	87.3 -MEASURE-	> 50 mm	> 50 mm	
Cellular	CDMA BC10	823.1	25.00	316	0	2	2	185	82		57.3 -MEASURE-	57.3 -MEASURE-	57.3 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 2	1900	24.50	282	0	2	2	185	82		77.7 -MEASURE-	77.7 -MEASURE-	77.7 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 4	1745	24.50	282	0	2	2	185	82		74.5 -MEASURE-	74.5 -MEASURE-	74.5 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 5	844	25.20	331	0	2	2	185	82		60.8 -MEASURE-	60.8 -MEASURE-	60.8 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 12	711	25.00	316	0	2	2	185	82		53.3 -MEASURE-	53.3 -MEASURE-	53.3 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 25	1905	24.00	251	0	2	2	185	82		69.3 -MEASURE-	69.3 -MEASURE-	69.3 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 26	841.5	25.00	316	0	2	2	185	82		58 -MEASURE-	58 -MEASURE-	58 -MEASURE-	> 50 mm	> 50 mm	
Cellular	LTE Band 41	2680	25.00	316	0	2	48	185	59		103.5 -MEASURE-	103.5 -MEASURE-	10.8 -MEASURE-	> 50 mm	> 50 mm	
Power Back-off, Proximity Sensor On																
Cellular	CDMA BC0	848.31	21.00	126	0	2	2				23.2 -MEASURE-	23.2 -MEASURE-	23.2 -MEASURE-			
Cellular	CDMA BC1	1908.75	11.00	13	0	2	2				3.6 -MEASURE-	3.6 -MEASURE-	3.6 -MEASURE-			
Cellular	CDMA BC10	823.1	20.50	112	0	2	2				20.3 -MEASURE-	20.3 -MEASURE-	20.3 -MEASURE-			
Cellular	LTE Band 2	1900	12.00	16	0	2	2				4.4 -MEASURE-	4.4 -MEASURE-	4.4 -MEASURE-			
Cellular	LTE Band 4	1745	13.00	20	0	2	2				5.3 -MEASURE-	5.3 -MEASURE-	5.3 -MEASURE-			
Cellular	LTE Band 5	844	16.00	40	0	2	2				7.3 -MEASURE-	7.3 -MEASURE-	7.3 -MEASURE-			
Cellular	LTE Band 12	711	17.00	50	0	2	2				8.4 -MEASURE-	8.4 -MEASURE-	8.4 -MEASURE-			
Cellular	LTE Band 25	1905	13.00	20	0	2	2				5.5 -MEASURE-	5.5 -MEASURE-	5.5 -MEASURE-			
Cellular	LTE Band 26	841.5	12.00	16	0	2	2				2.9 -EXEMPT-	2.9 -EXEMPT-	2.9 -EXEMPT-			
Cellular	LTE Band 41	2680	14.00	25	0	2					8.2 -MEASURE-	8.2 -MEASURE-				

Note(s):

1. According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.
2. SAR testing for Power Back-off mode in LTE Band 26 was performed.

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Antennas > 50mm to adjacent edges

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off																
Cellular	CDMA BC0	848.31	25.00	316	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	926.3 mW -EXEMPT-	343.8 mW -EXEMPT-	
Cellular	CDMA BC1	1908.75	25.00	316	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	1458.6 mW -EXEMPT-	428.6 mW -EXEMPT-	
Cellular	CDMA BC10	823.1	25.00	316	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	906.1 mW -EXEMPT-	340.9 mW -EXEMPT-	
Cellular	LTE Band 2	1900	24.50	282	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	1458.8 mW -EXEMPT-	428.8 mW -EXEMPT-	
Cellular	LTE Band 4	1745	24.50	282	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	1463.6 mW -EXEMPT-	433.6 mW -EXEMPT-	
Cellular	LTE Band 5	844	25.20	331	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	922.9 mW -EXEMPT-	343.3 mW -EXEMPT-	
Cellular	LTE Band 12	711	25.00	316	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	817.8 mW -EXEMPT-	329.6 mW -EXEMPT-	
Cellular	LTE Band 25	1905	24.00	251	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	1458.7 mW -EXEMPT-	428.7 mW -EXEMPT-	
Cellular	LTE Band 26	841.5	25.00	316	0	2	2	185	82		< 50 mm	< 50 mm	< 50 mm	920.9 mW -EXEMPT-	343 mW -EXEMPT-	
Cellular	LTE Band 41	2680	25.00	316	0	2	48	185	59		< 50 mm	< 50 mm	< 50 mm	1441.6 mW -EXEMPT-	181.6 mW -MEASURE-	
Power Back-off, Proximity Sensor On																
Cellular	CDMA BC0	848.31	21.00	126	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	CDMA BC1	1908.75	11.00	13	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	CDMA BC10	823.1	20.50	112	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 2	1900	12.00	16	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 4	1745	13.00	20	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 5	844	16.00	40	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 12	711	17.00	50	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 25	1905	13.00	20	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 26	841.5	12.00	16	0	2	2				< 50 mm	< 50 mm	< 50 mm			
Cellular	LTE Band 41	2680	14.00	25	0	2					< 50 mm	< 50 mm				

Note(s):

1. According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required.

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SAR Test Exclusion Calculations for WLAN

Antennas < 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off															
Wi-Fi 2.4 GHz	2462	21.00	126	0	2	87	185	2		39.5 -MEASURE-	39.5 -MEASURE-	> 50 mm	> 50 mm	39.5 -MEASURE-	
Wi-Fi 5.3 GHz	5320	17.00	50	0	2	87	185	2		23.1 -MEASURE-	23.1 -MEASURE-	> 50 mm	> 50 mm	23.1 -MEASURE-	
Wi-Fi 5.5 GHz	5700	15.00	32	0	2	87	185	2		15.3 -MEASURE-	15.3 -MEASURE-	> 50 mm	> 50 mm	15.3 -MEASURE-	
Wi-Fi 5.8 GHz	5825	17.00	50	0	2	87	185	2		24.1 -MEASURE-	24.1 -MEASURE-	> 50 mm	> 50 mm	24.1 -MEASURE-	
Bluetooth	2480	10.50	10	0	2	87	185	2		3.1 -MEASURE-	3.1 -MEASURE-	> 50 mm	> 50 mm	3.1 -MEASURE-	
Power Back-off, Proximity Sensor On															
Wi-Fi 2.4 GHz	2462	14.00	25	0	2			2		7.8 -MEASURE-	7.8 -MEASURE-			7.8 -MEASURE-	
Wi-Fi 5.3 GHz	5320	10.00	10	0	2			2		4.6 -MEASURE-	4.6 -MEASURE-			4.6 -MEASURE-	
Wi-Fi 5.5 GHz	5700	10.00	10	0	2			2		4.8 -MEASURE-	4.8 -MEASURE-			4.8 -MEASURE-	
Wi-Fi 5.8 GHz	5825	10.00	10	0	2			2		4.8 -MEASURE-	4.8 -MEASURE-			4.8 -MEASURE-	

Note(s):

1. According to KDB 447498, if the calculated threshold value is >3 then SAR testing is required.

Antennas > 50mm to adjacent edges

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Calculated Threshold Value					
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off															
Wi-Fi 2.4 GHz	2462	21.00	126	0	2	87	185	2		< 50 mm	< 50 mm	465.6 mW -EXEMPT-	1445.6 mW -EXEMPT-	< 50 mm	
Wi-Fi 5.3 GHz	5320	17.00	50	0	2	87	185	2		< 50 mm	< 50 mm	435 mW -EXEMPT-	1415 mW -EXEMPT-	< 50 mm	
Wi-Fi 5.5 GHz	5700	15.00	32	0	2	87	185	2		< 50 mm	< 50 mm	432.8 mW -EXEMPT-	1412.8 mW -EXEMPT-	< 50 mm	
Wi-Fi 5.8 GHz	5825	17.00	50	0	2	87	185	2		< 50 mm	< 50 mm	432.2 mW -EXEMPT-	1412.2 mW -EXEMPT-	< 50 mm	
Bluetooth	2480	10.50	10	0	2	87	185	2		< 50 mm	< 50 mm	465.3 mW -EXEMPT-	1445.3 mW -EXEMPT-	< 50 mm	
Power Back-off, Proximity Sensor On															
Wi-Fi 2.4 GHz	2462	14.00	25	0	2			2		< 50 mm	< 50 mm			< 50 mm	
Wi-Fi 5.3 GHz	5320	10.00	10	0	2			2		< 50 mm	< 50 mm			< 50 mm	
Wi-Fi 5.5 GHz	5700	10.00	10	0	2			2		< 50 mm	< 50 mm			< 50 mm	
Wi-Fi 5.8 GHz	5825	10.00	10	0	2			2		< 50 mm	< 50 mm			< 50 mm	

Note(s):

1. According to KDB 447498, if the calculated Power threshold is less than the output power then SAR testing is required

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7.2 Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 7.1:

Test Configurations	Pwr Back-off	Rear	Edge 1 (Top Edge)	Edge 2 (Right Edge)	Edge 3 (Bottom Edge)	Edge 4 (Left Edge)	Corner A Note 2	Corner B Note 3
CDMA BC0	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
CDMA BC1	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
CDMA BC10	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 2	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 4	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 5	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 25	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 26	OFF	Yes	Yes	Yes	No	No	Yes	
	ON	Yes	Yes	Yes	No	No	Yes	
LTE Band 41	OFF	Yes	Yes	Yes	No	Yes	No	
	ON	Yes	Yes	Yes	No	No	No	
Wi-Fi 2.4 GHz	OFF	Yes	Yes	No	No	Yes		Yes
	ON	Yes	Yes	No	No	Yes		Yes
Wi-Fi 5.3 GHz	OFF	Yes	Yes	No	No	Yes		Yes
	ON	Yes	Yes	No	No	Yes		Yes
Wi-Fi 5.5 GHz	OFF	Yes	Yes	No	No	Yes		Yes
	ON	Yes	Yes	No	No	Yes		Yes
Wi-Fi 5.8 GHz	OFF	Yes	Yes	No	No	Yes		Yes
	ON	Yes	Yes	No	No	Yes		Yes
Bluetooth	OFF	Yes	Yes	No	No	Yes		No

Note(s):

1. Yes = Testing is required. No = Testing is not required.
2. Corner A side is located between Edge 1 and Edge 2.
3. Corner B side is located between Edge 1 and Edge 4.
4. For Corner A and Corner B, Additional Corner side tests are evaluated for bands that support reduced power due to proximity sensor operation.

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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 ± 2°C of the temperature when the tissue parameters are characterized.

The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.

Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

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

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Dielectric Property Measurements Results:

SAR 1 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
07-03-2018	Body 2450	e'	53.7800	Relative Permittivity (ε_r):	53.78	52.70	2.05	5
		e''	14.6200	Conductivity (σ):	1.99	1.95	2.14	5
	Body 2400	e'	53.9800	Relative Permittivity (ε_r):	53.98	52.77	2.29	5
		e''	14.5000	Conductivity (σ):	1.93	1.90	1.95	5
	Body 2480	e'	53.7200	Relative Permittivity (ε_r):	53.72	52.66	2.01	5
		e''	14.7200	Conductivity (σ):	2.03	1.99	1.89	5
07-05-2018	Body 835	e'	54.1800	Relative Permittivity (ε_r):	54.18	55.20	-1.85	5
		e''	21.6800	Conductivity (σ):	1.01	0.97	3.77	5
	Body 820	e'	54.3200	Relative Permittivity (ε_r):	54.32	55.28	-1.73	5
		e''	21.7600	Conductivity (σ):	0.99	0.97	2.44	5
	Body 850	e'	54.0500	Relative Permittivity (ε_r):	54.05	55.16	-2.01	5
		e''	21.5900	Conductivity (σ):	1.02	0.99	3.37	5
07-10-2018	Body 2600	e'	50.6900	Relative Permittivity (ε_r):	50.69	52.51	-3.47	5
		e''	14.9800	Conductivity (σ):	2.17	2.16	0.22	5
	Body 2500	e'	51.0200	Relative Permittivity (ε_r):	51.02	52.64	-3.07	5
		e''	14.7300	Conductivity (σ):	2.05	2.02	1.35	5
	Body 2700	e'	50.3700	Relative Permittivity (ε_r):	50.37	52.38	-3.85	5
		e''	15.1600	Conductivity (σ):	2.28	2.30	-1.10	5
07-13-2018	Body 835	e'	54.4400	Relative Permittivity (ε_r):	54.44	55.20	-1.38	5
		e''	21.6300	Conductivity (σ):	1.00	0.97	3.53	5
	Body 820	e'	54.5900	Relative Permittivity (ε_r):	54.59	55.28	-1.24	5
		e''	21.7000	Conductivity (σ):	0.99	0.97	2.16	5
	Body 850	e'	54.3000	Relative Permittivity (ε_r):	54.30	55.16	-1.55	5
		e''	21.5600	Conductivity (σ):	1.02	0.99	3.23	5
07-17-2018	Body 2600	e'	52.6800	Relative Permittivity (ε_r):	52.68	52.51	0.32	5
		e''	14.8000	Conductivity (σ):	2.14	2.16	-0.98	5
	Body 2500	e'	53.0100	Relative Permittivity (ε_r):	53.01	52.64	0.71	5
		e''	14.5400	Conductivity (σ):	2.02	2.02	0.04	5
	Body 2700	e'	52.3900	Relative Permittivity (ε_r):	52.39	52.38	0.01	5
		e''	15.0100	Conductivity (σ):	2.25	2.30	-2.08	5

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SAR 2 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
06-18-2018	Body 1750	e'	53.5700	Relative Permittivity (ε_r):	53.57	53.44	0.24	5
		e''	14.8300	Conductivity (σ):	1.44	1.49	-2.90	5
	Body 1710	e'	53.6500	Relative Permittivity (ε_r):	53.65	53.54	0.20	5
		e''	14.8400	Conductivity (σ):	1.41	1.46	-3.46	5
	Body 1755	e'	53.5600	Relative Permittivity (ε_r):	53.56	53.43	0.25	5
		e''	14.8200	Conductivity (σ):	1.45	1.49	-2.89	5
06-25-2018	Body 1750	e'	52.3100	Relative Permittivity (ε_r):	52.31	53.44	-2.12	5
		e''	14.8000	Conductivity (σ):	1.44	1.49	-3.10	5
	Body 1710	e'	52.5500	Relative Permittivity (ε_r):	52.55	53.54	-1.86	5
		e''	14.8000	Conductivity (σ):	1.41	1.46	-3.72	5
	Body 1755	e'	52.2900	Relative Permittivity (ε_r):	52.29	53.43	-2.13	5
		e''	14.8000	Conductivity (σ):	1.44	1.49	-3.02	5
06-28-2018	Body 750	e'	55.3400	Relative Permittivity (ε_r):	55.34	55.55	-0.37	5
		e''	23.0500	Conductivity (σ):	0.96	0.96	-0.19	5
	Body 700	e'	55.8400	Relative Permittivity (ε_r):	55.84	55.74	0.18	5
		e''	23.5100	Conductivity (σ):	0.92	0.96	-4.60	5
	Body 795	e'	54.8900	Relative Permittivity (ε_r):	54.89	55.37	-0.87	5
		e''	22.6700	Conductivity (σ):	1.00	0.97	3.68	5
07-02-2018	Body 1900	e'	51.5800	Relative Permittivity (ε_r):	51.58	53.30	-3.23	5
		e''	14.9000	Conductivity (σ):	1.57	1.52	3.56	5
	Body 1850	e'	51.6800	Relative Permittivity (ε_r):	51.68	53.30	-3.04	5
		e''	14.8700	Conductivity (σ):	1.53	1.52	0.63	5
	Body 1910	e'	51.5600	Relative Permittivity (ε_r):	51.56	53.30	-3.26	5
		e''	14.9200	Conductivity (σ):	1.58	1.52	4.25	5
07-04-2018	Body 1750	e'	53.5600	Relative Permittivity (ε_r):	53.56	53.44	0.22	5
		e''	14.7000	Conductivity (σ):	1.43	1.49	-3.75	5
	Body 1710	e'	53.6800	Relative Permittivity (ε_r):	53.68	53.54	0.25	5
		e''	14.7400	Conductivity (σ):	1.40	1.46	-4.11	5
	Body 1755	e'	53.5500	Relative Permittivity (ε_r):	53.55	53.43	0.23	5
		e''	14.6900	Conductivity (σ):	1.43	1.49	-3.74	5
07-04-2018	Body 1900	e'	53.1000	Relative Permittivity (ε_r):	53.10	53.30	-0.38	5
		e''	14.8500	Conductivity (σ):	1.57	1.52	3.21	5
	Body 1850	e'	53.2700	Relative Permittivity (ε_r):	53.27	53.30	-0.06	5
		e''	14.7700	Conductivity (σ):	1.52	1.52	-0.04	5
	Body 1910	e'	53.0600	Relative Permittivity (ε_r):	53.06	53.30	-0.45	5
		e''	14.8600	Conductivity (σ):	1.58	1.52	3.83	5
07-12-2018	Body 1750	e'	54.8500	Relative Permittivity (ε_r):	54.85	53.44	2.64	5
		e''	14.7400	Conductivity (σ):	1.43	1.49	-3.49	5
	Body 1710	e'	54.8900	Relative Permittivity (ε_r):	54.89	53.54	2.51	5
		e''	14.7700	Conductivity (σ):	1.40	1.46	-3.91	5
	Body 1755	e'	54.8400	Relative Permittivity (ε_r):	54.84	53.43	2.64	5
		e''	14.7300	Conductivity (σ):	1.44	1.49	-3.48	5

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SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
06-26-2018	Body 835	e'	53.0800	Relative Permittivity (ε_r):	53.08	55.20	-3.84	5
		e"	21.3400	Conductivity (σ):	0.99	0.97	2.14	5
	Body 820	e'	53.2100	Relative Permittivity (ε_r):	53.21	55.28	-3.74	5
		e"	21.3900	Conductivity (σ):	0.98	0.97	0.70	5
	Body 850	e'	52.9200	Relative Permittivity (ε_r):	52.92	55.16	-4.06	5
		e"	21.2900	Conductivity (σ):	1.01	0.99	1.93	5
07-02-2018	Body 5250	e'	47.2600	Relative Permittivity (ε_r):	47.26	48.95	-3.46	5
		e"	18.5900	Conductivity (σ):	5.43	5.35	1.38	5
	Body 5260	e'	47.2600	Relative Permittivity (ε_r):	47.26	48.94	-3.43	5
		e"	18.6100	Conductivity (σ):	5.44	5.36	1.46	5
	Body 5600	e'	46.7000	Relative Permittivity (ε_r):	46.70	48.48	-3.67	5
		e"	18.8700	Conductivity (σ):	5.88	5.76	1.99	5
	Body 5750	e'	46.5000	Relative Permittivity (ε_r):	46.50	48.27	-3.68	5
		e"	19.0100	Conductivity (σ):	6.08	5.94	2.39	5
	Body 5825	e'	46.3500	Relative Permittivity (ε_r):	46.35	48.20	-3.84	5
		e"	19.0400	Conductivity (σ):	6.17	6.00	2.78	5
07-05-2018	Body 750	e'	56.5500	Relative Permittivity (ε_r):	56.55	55.55	1.81	5
		e"	23.3400	Conductivity (σ):	0.97	0.96	1.06	5
	Body 700	e'	57.0500	Relative Permittivity (ε_r):	57.05	55.74	2.35	5
		e"	23.7700	Conductivity (σ):	0.93	0.96	-3.55	5
	Body 790	e'	56.1300	Relative Permittivity (ε_r):	56.13	55.39	1.33	5
		e"	23.0000	Conductivity (σ):	1.01	0.97	4.57	5
07-06-2018	Body 2600	e'	50.8000	Relative Permittivity (ε_r):	50.80	52.51	-3.26	5
		e"	14.5600	Conductivity (σ):	2.10	2.16	-2.59	5
	Body 2500	e'	51.0900	Relative Permittivity (ε_r):	51.09	52.64	-2.94	5
		e"	14.2600	Conductivity (σ):	1.98	2.02	-1.88	5
	Body 2700	e'	50.4600	Relative Permittivity (ε_r):	50.46	52.38	-3.67	5
		e"	14.8100	Conductivity (σ):	2.22	2.30	-3.39	5
07-12-2018	Body 680	e'	58.2700	Relative Permittivity (ε_r):	58.27	55.82	4.40	5
		e"	24.1500	Conductivity (σ):	0.91	0.96	-4.65	5
	Body 715	e'	57.9400	Relative Permittivity (ε_r):	57.94	55.68	4.06	5
		e"	23.7700	Conductivity (σ):	0.95	0.96	-1.60	5
	Body 750	e'	57.6000	Relative Permittivity (ε_r):	57.60	55.55	3.70	5
		e"	23.4400	Conductivity (σ):	0.98	0.96	1.50	5

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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 2.5 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

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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	Body
D750V3	1122	2-19-2018	750	1g	8.63
				10g	5.72
D835V2	4d194	7-19-2017	835	1g	9.30
				10g	6.09
D835V2	4d174	9-21-2017	835	1g	9.41
				10g	6.12
D1750V2	1125	2-16-2018	1750	1g	36.80
				10g	19.50
D1900V2	5d190	9-20-2017	1900	1g	40.00
				10g	21.10
D2450V2	939	9-19-2017	2450	1g	50.70
				10g	23.90
D2600V2	1097	1-17-2018	2600	1g	54.40
				10g	24.20
D5GHzV2	1209	2-15-2018	5250	1g	75.70
				10g	21.00
			5600	1g	79.00
				10g	21.90
			5750	1g	75.60
				10g	20.80

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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 1 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
7-3-2018	D2450V2	939	Body	1g	5.16	51.60	50.70	1.78	1,2
				10g	2.37	23.70	23.90	-0.84	
7-5-2018	D835V2	4d194	Body	1g	1.00	9.95	9.30	6.99	3,4
				10g	0.65	6.54	6.09	7.39	
7-10-2018	D2600V2	1097	Body	1g	5.24	52.40	54.40	-3.68	
				10g	2.31	23.10	24.20	-4.55	
7-13-2018	D835V2	4d174	Body	1g	1.01	10.10	9.41	7.33	5,6
				10g	0.66	6.63	6.12	8.33	
7-17-2018	D2600V2	1097	Body	1g	5.14	51.40	54.40	-5.51	7,8
				10g	2.27	22.70	24.20	-6.20	

SAR 2 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
6-18-2018	D1750V2	1125	Body	1g	3.82	38.20	36.80	3.80	
				10g	2.02	20.20	19.50	3.59	
6-25-2018	D1750V2	1125	Body	1g	3.54	35.40	36.80	-3.80	
				10g	1.86	18.60	19.50	-4.62	
6-28-2018	D750V3	1122	Body	1g	0.87	8.66	8.63	0.35	
				10g	0.58	5.75	5.72	0.52	
7-2-2018	D1900V2	5d190	Body	1g	4.27	42.70	40.00	6.75	
				10g	2.20	22.00	21.10	4.27	
7-4-2018	D1750V2	1125	Body	1g	3.85	38.50	36.80	4.62	9,10
				10g	2.05	20.50	19.50	5.13	
7-4-2018	D1900V2	5d190	Body	1g	4.34	43.40	40.00	8.50	11,12
				10g	2.24	22.40	21.10	6.16	
7-12-2018	D1900V2	5d190	Body	1g	4.00	40.00	40.00	0.00	
				10g	2.02	20.20	21.10	-4.27	

SAR 3 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
6-26-2018	D835V2	4d194	Body	1g	0.94	9.44	9.30	1.51	
				10g	0.62	6.17	6.09	1.31	
7-2-2018	D5GHzV2 (5250 MHz)	1209	Body	1g	7.74	77.40	75.70	2.25	
				10g	2.15	21.50	21.00	2.38	
7-2-2018	D5GHzV2 (5600 MHz)	1209	Body	1g	8.33	83.30	79.00	5.44	13,14
				10g	2.28	22.80	21.90	4.11	
7-2-2018	D5GHzV2 (5750 MHz)	1209	Body	1g	7.66	76.60	75.60	1.32	
				10g	2.11	21.10	20.80	1.44	
7-5-2018	D750V3	1122	Body	1g	0.85	8.53	8.63	-1.16	15,16
				10g	0.57	5.67	5.72	-0.87	
7-6-2018	D2600V2	1097	Body	1g	5.41	54.10	54.40	-0.55	
				10g	2.37	23.70	24.20	-2.07	
7-12-2018	D750V3	1122	Body	1g	0.87	8.72	8.63	1.04	
				10g	0.58	5.80	5.72	1.40	

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9. Conducted Output Power Measurements

9.1. CDMA

1x Advanced Setup Procedures used to establish the test signals

Call box setup procedure

- Protocol Rev > 6 (IS-2000-0)
- System ID: 331; NID: 65535, Reg. Ch. #.:
- Radio Config (RC) > Fwd11,Rvs8
- Service Option (SO) Setup > SO75 (Loopback)
- Traffic Data Rate > Full
- Rvs Power Ctrl > All Up bits (Maximum TxPout)
- Reverse Power Control Mode: 00-200 to 400 bps
- Smart blanking was disabled.

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CDMA BC0 Measured Results

Band	Mode		Ch No.	Freq. (MHz)	Max. Meas. Avg Pwr (dBm)	Reduced Meas. Avg Pwr (dBm)
BC 0	1xRTT	RC1 SO55 (Loopback)	1013	824.70	23.9	20.3
			384	836.52	23.9	20.3
			777	848.31	24.2	20.7
		RC3 SO55 (Loopback)	1013	824.70	23.9	20.3
			384	836.52	23.9	20.3
			777	848.31	24.3	20.7
		RC3 SO32 (+F-SCH)	1013	824.70	23.9	20.3
			384	836.52	23.9	20.3
			777	848.31	24.3	20.8
	1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	23.9	20.4
			384	836.52	23.8	20.3
			777	848.31	23.8	20.3
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK) RTAP Rate: 153.6 kbps	1013	824.70	23.9	20.4
			384	836.52	23.8	20.3
			777	848.31	24.2	20.7
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK RETAP: 4096	1013	824.70	23.9	20.3
			384	836.52	23.9	20.3
			777	848.31	24.2	20.7

CDMA BC1 Measured Results

Band	Mode		Ch No.	Freq. (MHz)	Max. Meas. Avg Pwr (dBm)	Reduced Meas. Avg Pwr (dBm)
BC 1	1xRTT	RC1 SO55 (Loopback)	25	1851.25	24.5	10.2
			600	1880.00	24.2	10.1
			1175	1908.75	24.1	10.2
		RC3 SO55 (Loopback)	25	1851.25	24.5	10.2
			600	1880.00	24.3	10.0
			1175	1908.75	24.1	10.2
		RC3 SO32 (+F-SCH)	25	1851.25	24.5	10.2
			600	1880.00	24.3	10.0
			1175	1908.75	24.1	10.1
	1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	24.5	10.3
			600	1880.00	24.3	10.1
			1175	1908.75	24.2	10.3
	1xEVDO Rel. 0	FTAP Rate: 307.2 kbps(2 slot, QPSK) RTAP Rate: 153.6 kbps	25	1851.25	24.5	10.3
			600	1880.00	24.4	10.2
			1175	1908.75	24.1	10.3
	1xEVDO Rev. A	FETAP: 307.2k, QPSK/ ACK RETAP: 4096	25	1851.25	24.5	10.4
			600	1880.00	24.4	10.2
			1175	1908.75	24.1	10.3

CDMA BC10 Measured Results

Band	Mode		Ch No.	Freq. (MHz)	Max. Meas. Avg Pwr (dBm)	Reduced Meas. Avg Pwr (dBm)
BC 10	1xRTT	RC1 SO55 (Loopback)	476	817.90	23.5	19.6
			580	820.50	23.6	19.6
			684	823.10	23.7	19.5
		RC3 SO55 (Loopback)	476	817.90	23.4	19.6
			580	820.50	23.6	19.7
			684	823.10	23.5	19.6
		RC3 SO32 (+F-SCH)	476	817.90	23.4	19.7
			580	820.50	23.6	19.6
			684	823.10	23.5	19.6
	1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	476	817.90	23.5	19.5
			580	820.50	23.6	19.7
			684	823.10	23.5	19.5

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9.2. 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 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{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
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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 (subclause)	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	N/A
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36, 66, 70	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2, 6.6.3.3.19	41	5, 10, 15, 20	Table 6.2.4-4, Table 6.2.4-4a	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50 (NOTE1)	≤ 1 (NOTE1)
			15, 20	Table 6.2.4-18 (NOTE2)	
		65 (NOTE 3)	10,15,20	≥ 50	≤ 1 (NOTE 1)
			15,20	Table 6.2.4-18 (NOTE 2)	
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	
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	
NS_11	6.6.2.2.1 6.6.3.3.13	23	1.4, 3, 5, 10, 15, 20	Table 6.2.4-5	
NS_12	6.6.3.3.5	26	1.4, 3, 5, 10, 15	Table 6.2.4-6	
NS_13	6.6.3.3.6	26	5	Table 6.2.4-7	
NS_14	6.6.3.3.7	26	10, 15	Table 6.2.4-8	
NS_15	6.6.3.3.8	26	1.4, 3, 5, 10, 15	Table 6.2.4-9 Table 6.2.4-10	
NS_16	6.6.3.3.9	27	3, 5, 10	Table 6.2.4-11, Table 6.2.4-12, Table 6.2.4-13	
NS_17	6.6.3.3.10	28	5, 10	Table 5.6-1	N/A
NS_18	6.6.3.3.11	28	5	≥ 2	≤ 1
			10, 15, 20	≥ 1	≤ 4
NS_19	6.6.3.3.12	44	10, 15, 20	Table 6.2.4-14	
NS_20	6.2.2 6.6.2.2.1 6.6.3.3.14	23	5, 10, 15, 20	Table 6.2.4-15	
NS_21	6.6.2.2.1 6.6.3.3.15	30	5, 10	Table 6.2.4-16	
NS_22	6.6.3.3.16	42, 43	5, 10, 15, 20	Table 6.2.4-17	
NS_23	6.6.3.3.17	42, 43	5, 10, 15, 20	N/A	
NS_24	6.6.3.3.20	65 (NOTE 4)	5, 10, 15, 20	Table 6.2.4-19	
NS_25	6.6.3.3.21	65 (NOTE 4)	5, 10, 15, 20	Table 6.2.4-20	
NS_26	6.6.3.3.22	68	10, 15	Table 6.2.4-21	
NS_27	6.6.2.2.5, 6.6.3.3.23	48	5, 10, 15, 20	Table 6.2.4-22	
NS_28	6.2.2A, 6.6.3.3.24	46 (NOTE 5)	20	Table 6.2.4-23	
NS_29	6.2.2A, 6.6.2.3.1a, 6.6.3.3.25	46 (NOTE 5)	20	Table 6.2.4-24	
NS_30	6.2.2A, 6.6.3.3.26	46 (NOTE 5)	20	Table 6.2.4-25	
NS_31	6.2.2A, 6.6.3.3.27	46 (NOTE 5)	20	Table 6.2.4-26	
NS_32	-	-	-	-	-
NOTE 1: Applicable when the lower edge of the assigned E-UTRA UL channel bandwidth frequency is larger than or equal to the upper edge of PHS band (1915.7 MHz) + 4 MHz + the channel BW assigned, where channel BW is as defined in subclause 5.6. A-MPR for					

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LTE Band 2 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1860 MHz	1880 MHz	1900 MHz		1860 MHz	1880 MHz	1900 MHz
LTE Band 2	20	QPSK	1	0	0	24.2	23.8	23.2	0	10.7	11.2	10.5
			1	49	0	24.5	23.6	23.6	0	11.4	11.6	11.1
			1	99	0	24.0	23.6	23.3	0	11.2	10.8	10.5
			50	0	1	23.0	22.9	22.5	0	11.2	11.4	10.6
			50	24	1	23.0	22.8	22.5	0	11.4	11.7	11.0
			50	50	1	22.9	22.6	22.4	0	11.1	11.2	10.4
			100	0	1	22.8	22.7	22.4	0	11.1	11.3	10.4
		16QAM	1	0	1	23.2	23.1	22.2	0	11.0	11.7	10.6
			1	49	1	23.2	22.7	22.6	0	11.6	12.0	11.2
			1	99	1	22.6	22.8	22.5	0	11.4	11.4	10.4
			50	0	2	22.0	21.9	21.4	0	11.0	11.5	10.6
			50	24	2	21.9	21.7	21.4	0	11.4	11.7	10.7
			50	50	2	21.8	21.6	21.4	0	11.2	11.1	10.4
			100	0	2	21.8	21.7	21.3	0	11.1	11.3	10.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	24.4	24.2	23.4	0	10.5	11.5	10.7
			1	37	0	24.5	24.3	23.7	0	10.7	11.5	10.8
			1	74	0	23.8	23.6	23.4	0	10.7	11.1	10.6
			36	0	1	22.8	22.9	22.5	0	10.6	11.5	10.5
			36	20	1	23.0	22.8	22.5	0	10.8	11.6	10.8
			36	39	1	22.9	22.8	22.4	0	10.7	11.3	10.5
			75	0	1	22.8	22.8	22.3	0	10.7	11.5	10.5
		16QAM	1	0	1	23.4	23.3	22.7	0	10.8	11.4	10.9
			1	37	1	23.5	22.7	23.3	0	11.0	11.4	10.8
			1	74	1	23.2	23.0	22.6	0	11.1	10.9	10.6
			36	0	2	21.9	21.7	21.5	0	10.6	11.5	10.5
			36	20	2	22.0	21.7	21.5	0	10.8	11.6	10.7
			36	39	2	21.9	21.7	21.5	0	10.8	11.2	10.5
			75	0	2	21.7	21.8	21.4	0	10.8	11.5	10.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1855 MHz	1880 MHz	1905 MHz		1855 MHz	1880 MHz	1905 MHz
LTE Band 2	10	QPSK	1	0	0	24.2	24.2	23.4	0	10.5	11.3	10.3
			1	25	0	24.4	23.9	23.4	0	10.9	11.6	10.5
			1	49	0	24.0	24.3	23.6	0	10.5	11.1	10.4
			25	0	1	23.0	23.0	22.6	0	10.7	11.5	10.5
			25	12	1	23.0	22.8	22.5	0	10.8	11.6	10.5
			25	25	1	22.9	22.7	22.4	0	10.7	11.4	10.4
			50	0	1	22.8	22.7	22.4	0	10.7	11.5	10.4
		16QAM	1	0	1	23.1	23.4	23.2	0	10.7	11.2	10.2
			1	25	1	23.2	23.4	23.2	0	11.3	11.4	10.4
			1	49	1	23.0	22.8	22.7	0	10.9	10.8	10.2
			25	0	2	21.8	21.9	21.7	0	10.6	11.6	10.6
			25	12	2	21.7	21.7	21.6	0	10.9	11.6	10.6
			25	25	2	21.7	21.6	21.5	0	10.6	11.4	10.5
			50	0	2	21.8	21.6	21.4	0	10.6	11.5	10.4

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LTE Band 2 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.6	23.8	23.5	0	11.0	11.9	10.7
			1	12	0	23.9	24.0	23.7	0	10.8	11.6	10.5
			1	24	0	23.8	23.6	23.5	0	11.1	11.8	11.1
			12	0	1	22.8	22.8	22.5	0	10.9	11.7	10.6
			12	7	1	23.0	22.8	22.5	0	10.9	11.6	10.6
			12	13	1	22.8	22.8	22.4	0	10.9	11.7	10.7
			25	0	1	22.8	22.9	22.3	0	10.9	11.8	10.7
		16QAM	1	0	1	22.5	22.8	22.2	0	11.4	12.0	10.8
			1	12	1	22.9	22.5	22.1	0	11.3	11.7	10.6
			1	24	1	22.8	22.3	22.3	0	11.5	11.8	11.0
			12	0	2	21.8	21.7	21.6	0	10.9	11.8	10.6
			12	7	2	21.8	21.6	21.4	0	11.0	11.7	10.6
			12	13	2	22.0	21.5	21.4	0	11.0	11.8	10.7
			25	0	2	21.9	21.7	21.6	0	10.8	11.7	10.6
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.8	24.0	23.5	0	10.9	11.7	10.5
			1	8	0	23.8	23.9	23.7	0	10.8	11.5	10.5
			1	14	0	23.8	23.9	23.6	0	10.9	11.7	10.9
			8	0	1	22.8	22.8	22.3	0	10.8	11.6	10.6
			8	4	1	22.8	22.8	22.4	0	10.8	11.6	10.6
			8	7	1	22.9	22.7	22.3	0	10.8	11.5	10.6
			15	0	1	22.9	22.8	22.4	0	10.8	11.6	10.6
		16QAM	1	0	1	22.9	22.7	22.9	0	11.1	11.7	10.6
			1	8	1	23.0	22.5	22.9	0	11.1	11.4	10.5
			1	14	1	23.0	22.4	22.8	0	11.1	11.4	10.8
			8	0	2	21.9	21.8	21.5	0	10.8	11.8	10.5
			8	4	2	21.9	21.8	21.7	0	10.9	11.7	10.6
			8	7	2	21.8	21.8	21.8	0	10.9	11.7	10.7
			15	0	2	21.8	21.8	21.5	0	10.8	11.6	10.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.7	23.5	23.3	0	10.7	11.3	10.6
			1	3	0	24.1	23.6	23.5	0	10.8	11.5	10.8
			1	5	0	23.9	23.6	23.3	0	10.7	11.4	10.7
			3	0	0	23.8	23.6	23.4	0	10.6	11.5	10.6
			3	1	0	23.9	23.6	23.5	0	10.7	11.5	10.7
			3	3	0	23.7	23.6	23.4	0	10.7	11.5	10.7
			6	0	1	22.7	22.6	22.4	0	10.8	11.6	10.6
		16QAM	1	0	1	22.9	22.8	22.3	0	10.7	11.4	10.8
			1	3	1	22.9	22.7	22.5	0	10.8	11.6	10.9
			1	5	1	23.0	22.4	22.3	0	10.7	11.4	10.9
			3	0	1	23.1	22.7	22.5	0	10.7	11.7	10.7
			3	1	1	23.2	22.8	22.3	0	10.8	11.7	10.7
			3	3	1	23.1	22.9	22.5	0	10.8	11.7	10.8
			6	0	2	21.8	21.7	21.6	0	10.9	11.7	10.8

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LTE Band 4 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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		23.5		0		11.6	
			1	49	0		23.9		0		12.0	
			1	99	0		23.6		0		11.6	
			50	0	1		22.4		0		11.8	
			50	24	1		22.4		0		12.0	
			50	50	1		22.3		0		11.8	
			100	0	1		22.4		0		11.8	
		16QAM	1	0	1		22.3		0		12.0	
			1	49	1		22.4		0		12.4	
			1	99	1		22.2		0		12.0	
			50	0	2		21.3		0		11.9	
			50	24	2		21.3		0		12.1	
			50	50	2		21.3		0		11.8	
			100	0	2		21.3		0		11.8	
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.4	23.4	23.4	0	11.6	11.9	11.8
			1	37	0	23.2	23.8	23.3	0	11.7	12.0	11.9
			1	74	0	23.2	23.7	23.3	0	11.7	11.8	11.6
			36	0	1	22.4	22.4	22.4	0	11.7	12.0	11.8
			36	20	1	22.4	22.3	22.4	0	11.8	12.0	11.8
			36	39	1	22.2	22.3	22.2	0	11.8	11.9	11.7
			75	0	1	22.3	22.3	22.2	0	11.8	11.9	11.7
		16QAM	1	0	1	22.2	22.5	22.9	0	11.6	12.2	11.9
			1	37	1	22.4	23.1	23.4	0	11.8	12.5	12.1
			1	74	1	21.7	22.3	23.0	0	11.6	12.1	11.8
			36	0	2	21.4	21.3	21.4	0	11.8	11.9	11.8
			36	20	2	21.3	21.4	21.2	0	11.9	12.0	11.9
			36	39	2	21.2	21.3	21.2	0	11.8	11.9	11.7
			75	0	2	21.3	21.3	21.3	0	11.8	11.9	11.8
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.4	23.4	23.2	0	11.5	11.7	11.5
			1	25	0	23.4	23.5	23.4	0	11.8	12.0	11.7
			1	49	0	23.2	23.4	23.3	0	11.7	11.7	11.4
			25	0	1	22.5	22.4	22.4	0	11.6	11.9	11.6
			25	12	1	22.4	22.4	22.3	0	11.7	11.9	11.6
			25	25	1	22.2	22.2	22.1	0	11.9	12.0	11.6
			50	0	1	22.3	22.3	22.1	0	11.8	11.9	11.5
		16QAM	1	0	1	22.4	22.4	22.4	0	11.9	11.6	11.4
			1	25	1	22.6	22.8	22.6	0	12.3	12.0	11.6
			1	49	1	22.3	22.5	22.4	0	11.9	11.7	11.3
			25	0	2	21.4	21.3	21.5	0	11.7	12.0	11.7
			25	12	2	21.4	21.4	21.4	0	11.9	12.1	11.7
			25	25	2	21.3	21.3	21.3	0	11.9	12.0	11.7
			50	0	2	21.3	21.3	21.2	0	11.8	11.9	11.5

Note(s):

20 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

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LTE Band 4 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	22.9	23.1	23.0	0	11.9	12.3	11.9
			1	12	0	23.0	23.3	23.3	0	11.6	12.1	11.6
			1	24	0	23.2	23.2	23.1	0	12.0	12.3	11.8
			12	0	1	22.4	22.4	22.2	0	11.8	12.1	11.8
			12	7	1	22.4	22.4	22.3	0	11.7	12.0	11.6
			12	13	1	22.3	22.4	22.3	0	11.6	12.0	11.6
			25	0	1	22.3	22.4	22.2	0	11.8	12.1	11.8
		16QAM	1	0	1	22.0	21.8	22.0	0	12.4	12.4	12.0
			1	12	1	22.1	21.8	22.0	0	12.3	12.2	11.6
			1	24	1	21.9	21.8	21.8	0	12.5	12.4	11.9
			12	0	2	21.2	21.3	20.9	0	12.0	12.2	11.8
			12	7	2	21.2	21.4	21.1	0	12.0	12.2	11.6
			12	13	2	21.3	21.4	21.1	0	11.9	12.2	11.6
			25	0	2	21.4	21.4	21.2	0	11.9	12.1	11.7

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.3	23.2	23.0	0	12.0	12.1	11.7
			1	8	0	23.3	23.4	23.1	0	11.7	12.0	11.5
			1	14	0	23.5	23.3	23.2	0	11.9	12.1	11.6
			8	0	1	22.3	22.3	22.2	0	11.8	12.0	11.5
			8	4	1	22.3	22.4	22.1	0	11.7	12.0	11.6
			8	7	1	22.3	22.3	22.1	0	11.6	12.0	11.6
			15	0	1	22.3	22.3	22.1	0	11.6	12.0	11.6
		16QAM	1	0	1	22.0	22.2	22.1	0	12.3	12.1	11.8
			1	8	1	21.9	22.6	22.1	0	12.1	12.0	11.6
			1	14	1	21.9	22.5	22.2	0	12.2	12.0	11.7
			8	0	2	21.5	21.3	21.1	0	11.9	12.2	11.6
			8	4	2	21.5	21.3	21.1	0	11.9	12.2	11.6
			8	7	2	21.2	21.4	21.1	0	11.9	12.2	11.6
			15	0	2	21.2	21.1	21.0	0	11.8	12.1	11.5

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	23.0	23.0	22.8	0	11.8	11.9	11.5
			1	3	0	23.1	23.2	22.8	0	11.9	12.0	11.6
			1	5	0	23.3	22.9	22.8	0	11.8	11.8	11.4
			3	0	0	23.1	23.2	22.9	0	11.8	11.9	11.5
			3	1	0	23.2	23.2	23.0	0	11.9	12.0	11.5
			3	3	0	23.5	23.2	23.0	0	11.9	12.0	11.6
			6	0	1	22.3	22.3	22.1	0	11.9	11.9	11.5
		16QAM	1	0	1	22.4	21.6	21.9	0	12.1	12.0	11.5
			1	3	1	22.5	22.6	22.1	0	12.2	12.2	11.5
			1	5	1	22.3	22.4	22.0	0	12.1	12.0	11.4
			3	0	1	22.6	22.0	22.0	0	12.0	12.1	11.7
			3	1	1	22.7	22.1	22.0	0	12.0	12.1	11.7
			3	3	1	22.7	22.2	22.3	0	12.1	12.1	11.7
			6	0	2	21.4	20.9	21.3	0	11.7	12.2	11.7

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LTE Band 5 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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		24.3		0		15.4	
			1	25	0		24.2		0		15.5	
			1	49	0		24.1		0		15.0	
			25	0	1		23.1		0		15.1	
			25	12	1		23.1		0		15.1	
			25	25	1		23.0		0		15.0	
			50	0	1		23.0		0		14.9	
		16QAM	1	0	1		23.6		0		15.4	
			1	25	1		23.6		0		15.4	
			1	49	1		23.1		0		14.7	
			25	0	2		22.2		0		15.1	
			25	12	2		22.1		0		15.1	
			25	25	2		22.0		0		15.0	
			50	0	2		22.1		0		15.0	

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	24.0	24.1	24.2	0	14.9	15.0	15.1
			1	12	0	24.2	24.5	24.2	0	15.4	15.4	15.3
			1	24	0	23.9	24.1	24.1	0	14.9	15.1	15.0
			12	0	1	23.2	23.1	23.4	0	15.2	15.1	15.0
			12	7	1	23.2	23.1	23.3	0	15.2	15.0	15.0
			12	13	1	23.2	23.1	23.3	0	15.2	15.1	15.1
			25	0	1	23.2	23.1	23.3	0	15.1	15.1	15.0
		16QAM	1	0	1	22.6	22.8	22.7	0	15.1	14.8	14.4
			1	12	1	22.8	22.9	23.2	0	14.8	14.7	14.6
			1	24	1	22.5	22.4	22.6	0	14.8	14.5	14.4
			12	0	2	22.2	22.1	22.4	0	14.9	14.9	15.1
			12	7	2	22.1	22.0	22.3	0	15.1	15.1	15.1
			12	13	2	22.1	22.2	22.3	0	15.1	15.1	15.1
			25	0	2	22.0	22.2	22.2	0	15.1	15.0	15.2

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	24.3	24.2	24.2	0	15.1	15.0	15.0
			1	8	0	24.3	24.5	24.5	0	15.3	15.1	15.3
			1	14	0	24.2	24.2	24.1	0	15.1	14.9	15.2
			8	0	1	23.2	23.1	23.3	0	15.1	15.0	15.1
			8	4	1	23.1	23.2	23.5	0	15.1	15.1	15.2
			8	7	1	23.2	23.2	23.4	0	15.1	15.1	15.1
			15	0	1	23.2	23.1	23.4	0	15.1	15.0	15.0
		16QAM	1	0	1	22.7	23.2	23.3	0	15.4	15.0	15.0
			1	8	1	22.8	23.5	23.6	0	15.4	15.2	15.2
			1	14	1	22.9	23.2	23.3	0	15.4	15.0	15.0
			8	0	2	22.4	22.5	22.2	0	15.2	15.0	15.0
			8	4	2	22.4	22.3	22.2	0	15.3	14.8	14.9
			8	7	2	22.3	22.3	22.2	0	15.3	15.2	14.9
			15	0	2	22.2	22.1	22.5	0	15.2	15.0	14.9

Note(s):

10 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

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LTE Band 5 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. 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	24.1	24.1	24.1	0	15.0	15.1	15.4
			1	3	0	24.3	24.1	24.2	0	15.3	15.3	15.5
			1	5	0	24.1	24.2	24.1	0	15.1	15.0	15.5
			3	0	0	24.1	24.2	24.3	0	15.1	15.1	15.4
			3	1	0	24.2	24.2	24.2	0	15.3	15.2	15.4
			3	3	0	24.2	24.3	24.1	0	15.2	15.2	15.5
			6	0	1	23.1	23.2	23.2	0	15.1	15.2	15.4
		16QAM	1	0	1	23.1	23.3	22.9	0	15.3	15.0	15.3
			1	3	1	23.1	23.2	23.4	0	15.3	15.1	15.3
			1	5	1	23.1	23.2	23.0	0	15.2	15.2	15.1
			3	0	1	23.1	23.4	23.5	0	14.9	15.2	15.4
			3	1	1	23.0	23.7	23.4	0	14.9	15.1	15.5
			3	3	1	23.2	23.3	23.4	0	14.8	15.0	15.5
			6	0	2	22.5	22.2	22.1	0	14.9	15.3	15.4

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LTE Band 12 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						704 MHz	707.5 MHz	711 MHz		704 MHz	707.5 MHz	711 MHz
LTE Band 12	10	QPSK	1	0	0		24.0		0		16.3	
			1	25	0		23.9		0		16.3	
			1	49	0		23.6		0		16.0	
			25	0	1		22.8		0		16.2	
			25	12	1		22.7		0		16.1	
			25	25	1		22.6		0		16.0	
			50	0	1		22.7		0		16.0	
		16QAM	1	0	1		22.9		0		16.2	
			1	25	1		22.8		0		16.6	
			1	49	1		22.6		0		16.0	
			25	0	2		22.0		0		16.1	
			25	12	2		21.9		0		16.0	
			25	25	2		21.8		0		16.0	
			50	0	2		21.7		0		16.1	

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						701.5 MHz	707.5 MHz	713.5 MHz		701.5 MHz	707.5 MHz	713.5 MHz
LTE Band 12	5	QPSK	1	0	0	23.8	24.1	23.5	0	16.2	16.1	16.0
			1	12	0	24.0	24.2	24.2	0	16.3	16.1	16.0
			1	24	0	23.8	23.4	23.4	0	15.8	16.1	15.9
			12	0	1	22.8	22.7	22.7	0	16.3	16.2	16.0
			12	7	1	22.8	22.8	22.7	0	16.4	16.3	16.1
			12	13	1	22.8	22.7	22.6	0	16.2	16.2	16.0
			25	0	1	22.8	22.7	22.5	0	16.3	16.1	16.0
		16QAM	1	0	1	22.5	22.4	22.0	0	16.2	15.8	15.8
			1	12	1	22.5	22.4	22.2	0	15.9	16.3	15.8
			1	24	1	22.5	22.1	22.2	0	15.9	15.7	15.6
			12	0	2	21.9	21.8	21.6	0	16.3	16.2	16.0
			12	7	2	21.9	21.8	21.6	0	16.3	16.1	15.9
			12	13	2	21.9	21.7	21.6	0	16.2	16.1	15.9
			25	0	2	22.0	21.9	21.6	0	16.5	16.2	15.9

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						700.5 MHz	707.5 MHz	714.5 MHz		700.5 MHz	707.5 MHz	714.5 MHz
LTE Band 12	3	QPSK	1	0	0	24.0	24.0	24.0	0	16.4	16.2	16.0
			1	8	0	24.0	24.2	23.9	0	16.4	16.2	16.2
			1	14	0	24.0	23.8	23.8	0	16.3	16.1	16.0
			8	0	1	22.9	22.7	22.8	0	16.3	16.3	16.0
			8	4	1	22.9	22.8	22.5	0	16.3	16.3	16.0
			8	7	1	22.8	22.8	22.6	0	16.3	16.1	16.0
			15	0	1	22.8	22.8	22.7	0	16.2	16.2	16.0
		16QAM	1	0	1	22.6	22.7	23.0	0	16.6	16.0	15.9
			1	8	1	23.1	23.1	22.6	0	16.6	16.4	15.9
			1	14	1	22.6	22.8	22.5	0	16.2	16.1	15.9
			8	0	2	22.0	21.8	21.7	0	16.4	16.0	15.9
			8	4	2	22.1	21.6	21.5	0	16.3	16.0	15.9
			8	7	2	21.9	21.6	21.5	0	16.2	15.9	16.0
			15	0	2	21.9	21.9	21.7	0	16.3	16.2	15.9

Note(s):

10 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

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LTE Band 12 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						699.7 MHz	707.5 MHz	715.3 MHz		699.7 MHz	707.5 MHz	715.3 MHz
LTE Band 12	1.4	QPSK	1	0	0	23.8	23.6	23.6	0	16.5	16.2	15.9
			1	3	0	24.1	23.9	23.7	0	16.4	16.3	15.9
			1	5	0	23.9	23.8	23.5	0	16.0	16.0	15.8
			3	0	0	24.0	23.8	23.7	0	16.4	16.1	15.8
			3	1	0	23.9	23.9	23.7	0	16.4	16.3	15.9
			3	3	0	24.2	23.9	23.7	0	16.3	16.2	15.8
			6	0	1	22.9	22.7	22.4	0	16.3	16.1	15.9
		16QAM	1	0	1	22.7	23.1	22.8	0	16.4	16.4	15.8
			1	3	1	23.0	22.2	22.7	0	16.3	16.1	15.9
			1	5	1	23.0	23.0	22.5	0	16.3	16.1	15.6
			3	0	1	22.9	22.4	22.5	0	16.8	16.2	15.7
			3	1	1	22.6	22.6	22.5	0	16.7	16.2	15.9
			3	3	1	23.2	22.8	22.5	0	16.7	16.2	15.7
			6	0	2	21.8	21.6	21.7	0	16.4	16.0	16.0

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LTE Band 25 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1860 MHz	1882.5 MHz	1905 MHz		1860 MHz	1882.5 MHz	1905 MHz
LTE Band 25	20	QPSK	1	0	0	23.6	23.2	23.0	0	11.2	11.2	10.6
			1	49	0	23.6	23.2	23.2	0	11.5	11.7	11.2
			1	99	0	23.3	22.7	22.9	0	11.2	10.9	10.7
			50	0	1	22.6	22.4	22.1	0	11.3	11.5	10.7
			50	24	1	22.4	22.4	22.1	0	11.5	11.7	11.1
			50	50	1	22.3	22.2	22.0	0	11.3	11.2	10.8
			100	0	1	22.3	22.3	22.0	0	11.3	11.3	10.7
		16QAM	1	0	1	22.4	22.0	21.7	0	11.5	11.5	10.9
			1	49	1	22.4	22.4	22.1	0	11.9	12.0	11.1
			1	99	1	22.3	21.7	22.0	0	11.5	11.3	11.0
			50	0	2	21.2	21.2	20.8	0	11.2	11.4	10.5
			50	24	2	21.4	21.1	20.8	0	11.4	11.5	10.8
			50	50	2	21.4	21.2	20.9	0	11.2	11.0	10.6
			100	0	2	21.3	21.3	20.8	0	11.1	11.2	10.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1857.5 MHz	1882.5 MHz	1907.5 MHz		1857.5 MHz	1882.5 MHz	1907.5 MHz
LTE Band 25	15	QPSK	1	0	0	23.5	23.6	22.9	0	11.6	11.5	11.0
			1	37	0	23.6	23.5	23.0	0	11.6	11.5	11.0
			1	74	0	23.2	23.3	23.0	0	11.5	11.1	11.1
			36	0	1	22.4	22.4	22.1	0	11.5	11.6	10.9
			36	20	1	22.3	22.3	22.1	0	11.6	11.6	11.1
			36	39	1	22.4	22.3	22.1	0	11.5	11.4	11.1
			75	0	1	22.4	22.3	22.1	0	11.5	11.4	11.0
		16QAM	1	0	1	22.4	22.6	22.7	0	11.8	11.3	11.2
			1	37	1	22.7	22.6	23.0	0	11.8	11.3	11.3
			1	74	1	22.6	22.3	22.3	0	11.6	11.0	11.3
			36	0	2	21.3	21.3	21.2	0	11.5	11.5	10.7
			36	20	2	21.4	21.2	21.0	0	11.5	11.4	10.9
			36	39	2	21.2	21.2	21.0	0	11.4	11.2	10.9
			75	0	2	21.3	21.3	21.0	0	11.4	11.3	10.9
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1855 MHz	1882.5 MHz	1910 MHz		1855 MHz	1882.5 MHz	1910 MHz
LTE Band 25	10	QPSK	1	0	0	23.6	23.5	23.2	0	11.5	11.4	10.7
			1	25	0	23.5	23.4	23.2	0	11.7	11.6	11.1
			1	49	0	23.4	23.3	22.7	0	11.4	11.2	10.9
			25	0	1	22.5	22.4	22.2	0	11.7	11.6	11.0
			25	12	1	22.4	22.4	22.1	0	11.7	11.6	11.1
			25	25	1	22.3	22.3	22.2	0	11.6	11.5	11.3
			50	0	1	22.4	22.4	22.2	0	11.7	11.5	11.1
		16QAM	1	0	1	22.5	22.6	22.1	0	11.8	11.2	10.7
			1	25	1	22.2	22.6	22.3	0	12.0	11.4	11.0
			1	49	1	22.1	22.3	21.9	0	11.7	10.9	10.8
			25	0	2	21.5	21.5	21.3	0	11.6	11.5	10.9
			25	12	2	21.4	21.3	21.3	0	11.7	11.5	11.1
			25	25	2	21.4	21.3	21.3	0	11.4	11.3	11.2
			50	0	2	21.3	21.4	21.0	0	11.6	11.4	11.0

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LTE Band 25 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1852.5 MHz	1882.5 MHz	1912.5 MHz		1852.5 MHz	1882.5 MHz	1912.5 MHz
LTE Band 25	5	QPSK	1	0	0	23.1	23.2	22.8	0	12.0	12.0	11.5
			1	12	0	23.5	23.3	23.0	0	11.9	11.6	11.5
			1	24	0	23.2	23.1	23.0	0	12.0	11.8	11.5
			12	0	1	22.4	22.3	22.1	0	11.9	11.7	11.3
			12	7	1	22.4	22.3	22.1	0	11.9	11.6	11.5
			12	13	1	22.3	22.3	22.1	0	11.8	11.6	11.4
			25	0	1	22.5	22.3	22.1	0	11.8	11.7	11.4
		16QAM	1	0	1	22.4	21.7	21.7	0	12.1	12.0	11.3
			1	12	1	22.0	21.8	21.7	0	12.1	11.6	11.5
			1	24	1	21.8	21.7	21.9	0	12.1	11.8	11.3
			12	0	2	21.2	21.2	21.2	0	11.9	11.7	11.2
			12	7	2	21.2	21.3	21.2	0	11.9	11.6	11.4
			12	13	2	21.1	21.3	21.0	0	11.8	11.6	11.3
			25	0	2	21.4	21.5	21.1	0	11.8	11.5	11.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1851.5 MHz	1882.5 MHz	1913.5 MHz		1851.5 MHz	1882.5 MHz	1913.5 MHz
LTE Band 25	3	QPSK	1	0	0	23.6	23.4	23.1	0	11.9	11.8	11.7
			1	8	0	23.5	23.2	23.3	0	12.0	11.6	11.5
			1	14	0	23.3	23.3	23.0	0	12.1	11.7	11.3
			8	0	1	22.5	22.3	22.2	0	11.9	11.6	11.5
			8	4	1	22.4	22.3	22.2	0	11.9	11.7	11.5
			8	7	1	22.4	22.3	22.2	0	11.9	11.7	11.4
			15	0	1	22.4	22.3	22.2	0	11.8	11.6	11.4
		16QAM	1	0	1	22.8	22.2	22.0	0	11.8	11.6	11.6
			1	8	1	22.8	22.5	22.0	0	11.8	11.5	11.3
			1	14	1	22.4	22.4	22.3	0	11.8	11.4	11.2
			8	0	2	21.5	21.3	21.3	0	12.0	11.6	11.4
			8	4	2	21.5	21.2	21.0	0	12.0	11.6	11.4
			8	7	2	21.5	21.4	20.9	0	12.0	11.6	11.3
			15	0	2	21.4	21.3	21.1	0	11.9	11.6	11.2
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						1850.7 MHz	1882.5 MHz	1914.3 MHz		1850.7 MHz	1882.5 MHz	1914.3 MHz
LTE Band 25	1.4	QPSK	1	0	0	23.2	23.0	22.9	0	11.8	11.6	11.5
			1	3	0	23.5	23.3	23.0	0	12.0	11.8	11.6
			1	5	0	23.3	23.2	22.9	0	11.7	11.6	11.3
			3	0	0	23.4	23.2	23.0	0	11.9	11.7	11.5
			3	1	0	23.5	23.2	23.1	0	12.0	11.7	11.5
			3	3	0	23.4	23.3	23.0	0	12.0	11.7	11.5
			6	0	1	22.5	22.2	21.9	0	11.9	11.7	11.4
		16QAM	1	0	1	22.5	21.8	22.1	0	11.8	11.8	11.4
			1	3	1	22.5	21.7	22.2	0	12.0	12.0	11.5
			1	5	1	22.4	22.0	22.0	0	11.8	11.8	11.2
			3	0	1	22.8	22.2	22.1	0	12.1	11.7	11.4
			3	1	1	22.7	22.2	22.0	0	12.1	11.8	11.4
			3	3	1	22.7	22.3	22.0	0	12.1	11.8	11.3
			6	0	2	21.6	21.0	21.1	0	12.1	11.4	11.4

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LTE Band 26 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						821.5 MHz	831.5 MHz	841.5 MHz		821.5 MHz	831.5 MHz	841.5 MHz
LTE Band 26	15	QPSK	1	0	0		24.4		0		10.9	
			1	37	0		24.1		0		11.1	
			1	74	0		24.0		0		10.8	
			36	0	1		23.0		0		10.8	
			36	20	1		23.0		0		11.0	
			36	39	1		22.8		0		10.9	
			75	0	1		22.9		0		10.8	
		16QAM	1	0	1		22.7		0		10.8	
			1	37	1		23.1		0		11.0	
			1	74	1		22.9		0		10.7	
			36	0	2		22.0		0		10.8	
			36	20	2		22.0		0		11.0	
			36	39	2		21.9		0		10.9	
			75	0	2		22.0		0		10.8	

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						819 MHz	831.5 MHz	844 MHz		819 MHz	831.5 MHz	844 MHz
LTE Band 26	10	QPSK	1	0	0	23.9	24.2	23.9	0	10.5	10.5	10.5
			1	25	0	23.9	24.1	24.0	0	11.3	11.1	11.3
			1	49	0	24.0	24.0	24.1	0	10.2	10.6	10.5
			25	0	1	22.8	22.9	22.8	0	10.9	10.8	11.0
			25	12	1	22.9	22.9	22.9	0	11.2	11.1	11.3
			25	25	1	22.9	22.9	23.0	0	10.9	10.9	11.3
			50	0	1	22.8	22.9	22.9	0	10.9	10.9	11.1
		16QAM	1	0	1	23.2	22.9	22.9	0	10.7	10.4	10.6
			1	25	1	22.5	23.4	23.2	0	11.3	11.1	11.4
			1	49	1	22.8	23.0	23.1	0	10.3	10.6	10.9
			25	0	2	21.9	22.0	22.0	0	10.9	10.9	11.0
			25	12	2	21.9	22.0	22.1	0	11.2	11.1	11.4
			25	25	2	21.9	21.9	22.2	0	11.0	10.9	11.4
			50	0	2	21.8	21.9	21.9	0	11.0	10.9	11.1

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						816.5 MHz	831.5 MHz	846.5 MHz		816.5 MHz	831.5 MHz	846.5 MHz
LTE Band 26	5	QPSK	1	0	0	23.6	23.7	23.9	0	11.0	11.0	11.5
			1	12	0	23.7	24.0	24.3	0	11.2	11.2	11.5
			1	24	0	24.0	23.7	24.2	0	11.2	11.0	11.2
			12	0	1	22.7	23.0	23.1	0	11.2	11.1	11.5
			12	7	1	22.7	22.8	23.0	0	11.2	11.1	11.4
			12	13	1	22.7	22.9	22.9	0	11.3	11.1	11.3
			25	0	1	22.7	22.9	23.1	0	11.1	11.1	11.4
		16QAM	1	0	1	22.5	22.4	22.2	0	11.1	11.5	11.5
			1	12	1	22.6	22.7	22.8	0	11.2	11.4	11.3
			1	24	1	21.9	22.2	22.2	0	11.2	11.4	11.3
			12	0	2	21.6	21.8	22.3	0	11.2	11.2	11.3
			12	7	2	21.6	21.7	22.1	0	11.3	11.2	11.5
			12	13	2	21.8	21.7	22.1	0	11.3	11.2	11.4
			25	0	2	21.7	22.0	22.1	0	11.0	11.1	11.4

Note(s):

15 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

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LTE Band 26 Measured Results (continued)

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						815.5 MHz	831.5 MHz	847.5 MHz		815.5 MHz	831.5 MHz	847.5 MHz
LTE Band 26	3	QPSK	1	0	0	23.7	23.8	24.1	0	11.1	10.9	11.3
			1	8	0	23.9	23.9	24.2	0	11.2	11.2	11.3
			1	14	0	23.7	23.7	24.1	0	11.1	11.0	11.2
			8	0	1	22.7	22.8	23.2	0	11.0	11.0	11.3
			8	4	1	22.7	22.8	22.9	0	11.0	11.0	11.3
			8	7	1	22.8	22.8	22.9	0	11.0	11.2	11.3
			15	0	1	22.7	22.8	23.0	0	11.0	11.1	11.3
		16QAM	1	0	1	22.9	22.3	23.2	0	11.3	10.9	11.4
			1	8	1	22.6	23.0	23.6	0	11.4	11.1	11.4
			1	14	1	22.9	22.4	23.1	0	11.3	10.9	11.3
			8	0	2	21.5	21.9	22.1	0	11.1	11.1	11.4
			8	4	2	21.5	22.0	21.8	0	11.1	11.1	11.4
			8	7	2	21.7	21.8	22.1	0	11.1	11.2	11.4
			15	0	2	21.6	21.9	22.1	0	11.1	11.1	11.3
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)			MPR	Reduced Meas. Avg Pwr (dBm)		
						814.7 MHz	831.5 MHz	848.3 MHz		814.7 MHz	831.5 MHz	848.3 MHz
LTE Band 26	1.4	QPSK	1	0	0	23.6	23.6	24.0	0	11.0	11.0	11.3
			1	3	0	23.8	24.0	23.9	0	11.1	11.2	11.3
			1	5	0	23.7	23.6	23.8	0	11.0	11.2	11.3
			3	0	0	23.7	23.9	24.0	0	10.9	11.1	11.3
			3	1	0	23.9	24.0	24.0	0	11.0	11.2	11.3
			3	3	0	23.9	24.2	24.0	0	11.1	11.2	11.3
			6	0	1	22.8	22.7	22.9	0	11.0	11.1	11.3
		16QAM	1	0	1	22.8	22.1	23.1	0	11.1	11.1	11.4
			1	3	1	22.8	23.3	23.0	0	11.2	11.2	11.4
			1	5	1	22.6	23.0	22.6	0	11.1	11.2	11.4
			3	0	1	23.2	22.8	23.1	0	11.0	11.2	11.5
			3	1	1	23.3	22.8	23.0	0	11.1	11.4	11.5
			3	3	1	22.9	23.0	22.8	0	11.1	11.4	11.5
			6	0	2	21.8	21.5	22.3	0	11.1	11.3	11.2

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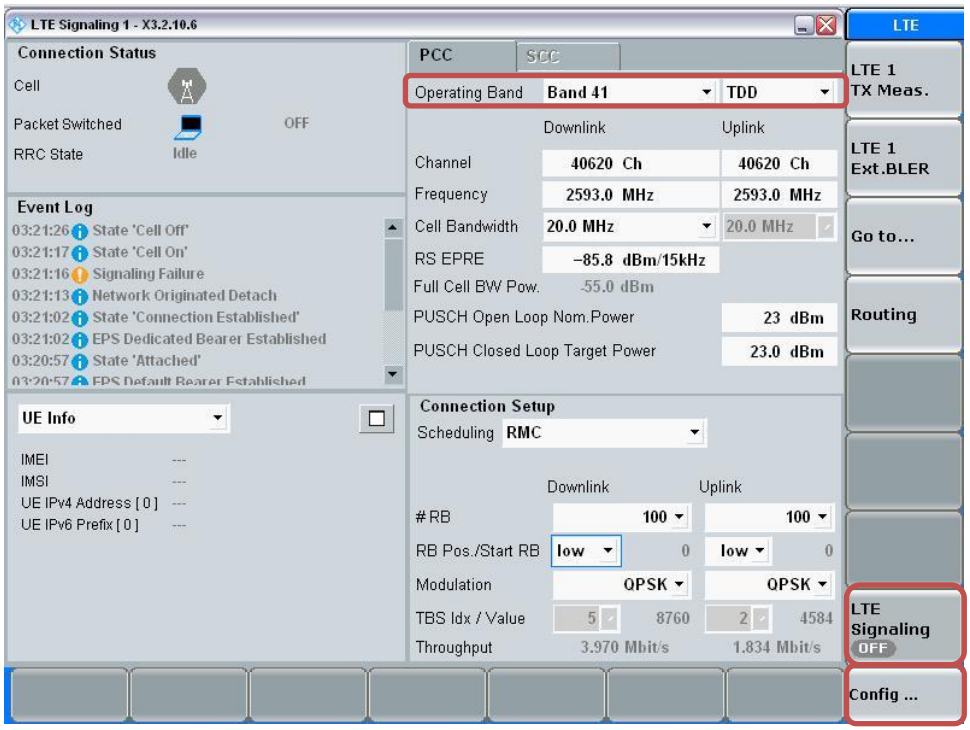
LTE Band TDD Measured Results

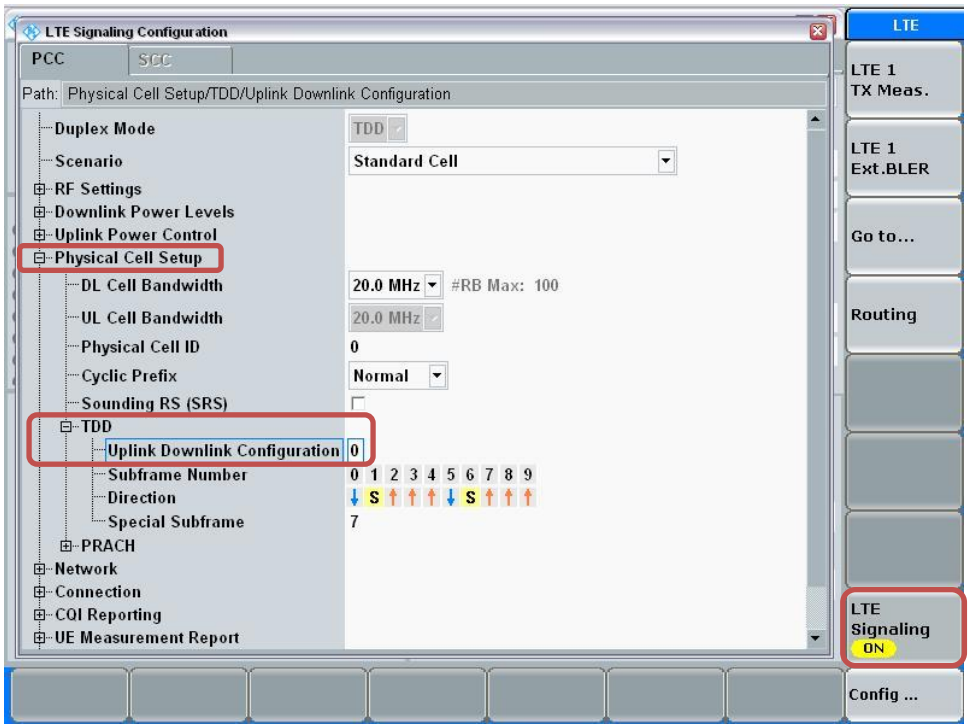
Procedure used to establish SAR test signal for LTE TDD Band

Set to CMW-500 with following parameters:

- Turn the LTE Signaling off using “ON | OFF” key
- Operating Band: Select Band 41 and TDD
- Go to “Config….”



- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
  (Uplink Downlink Configuration “0” for Power class 3, Uplink Downlink Configuration “1” for Power class 2.)
- Turn the cell on using “ON | OFF” key



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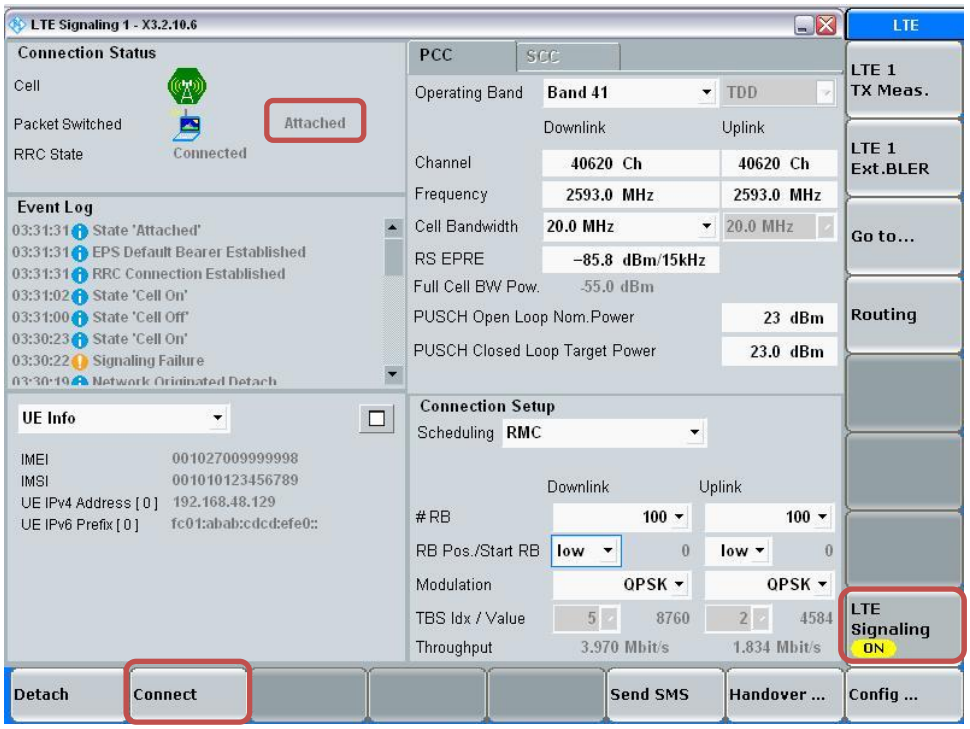
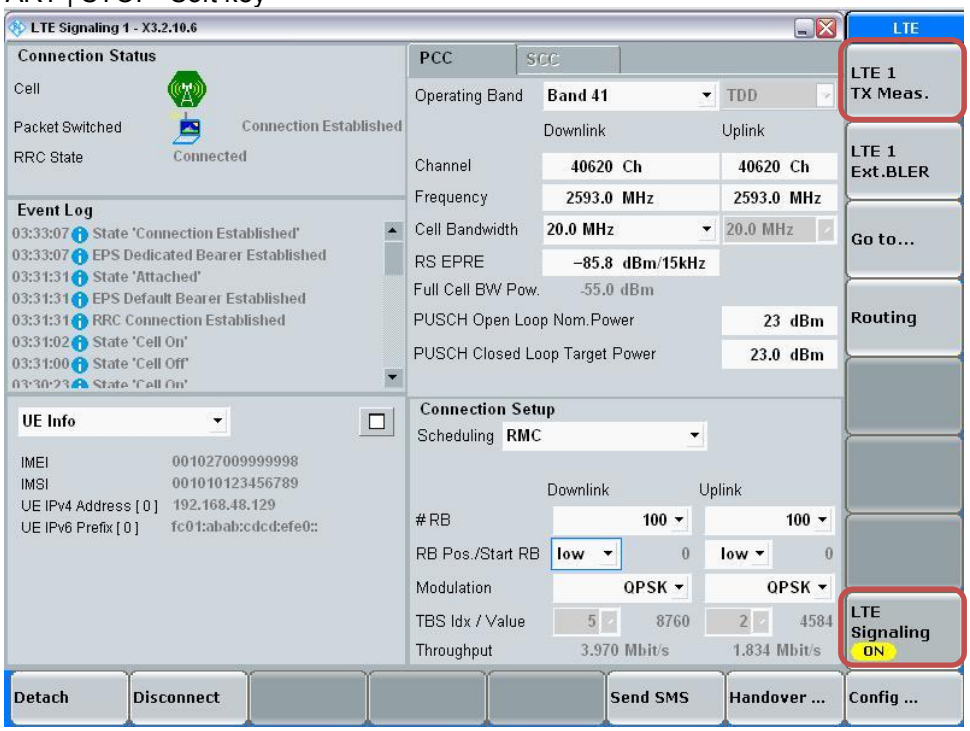
Connect to EUT

- Turn the cell on using “ON | OFF” key
- After EUT is Attached
- Select “Connect”



Max Power Setting

- Select “LTE 1 TX Meas.”
- Press “RESTART | STOP” Soft key



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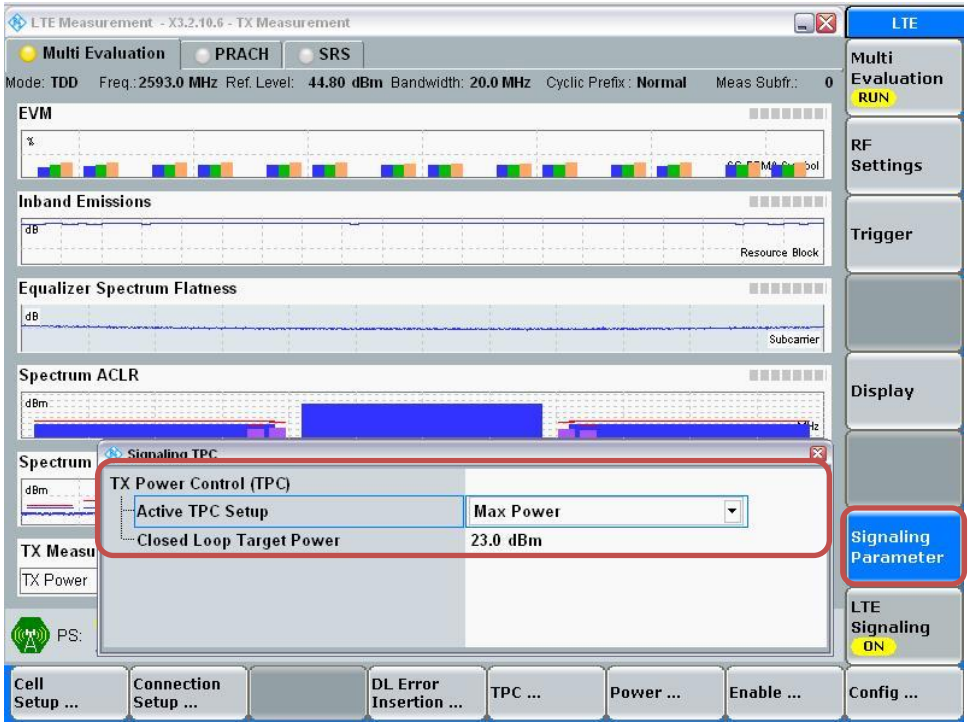
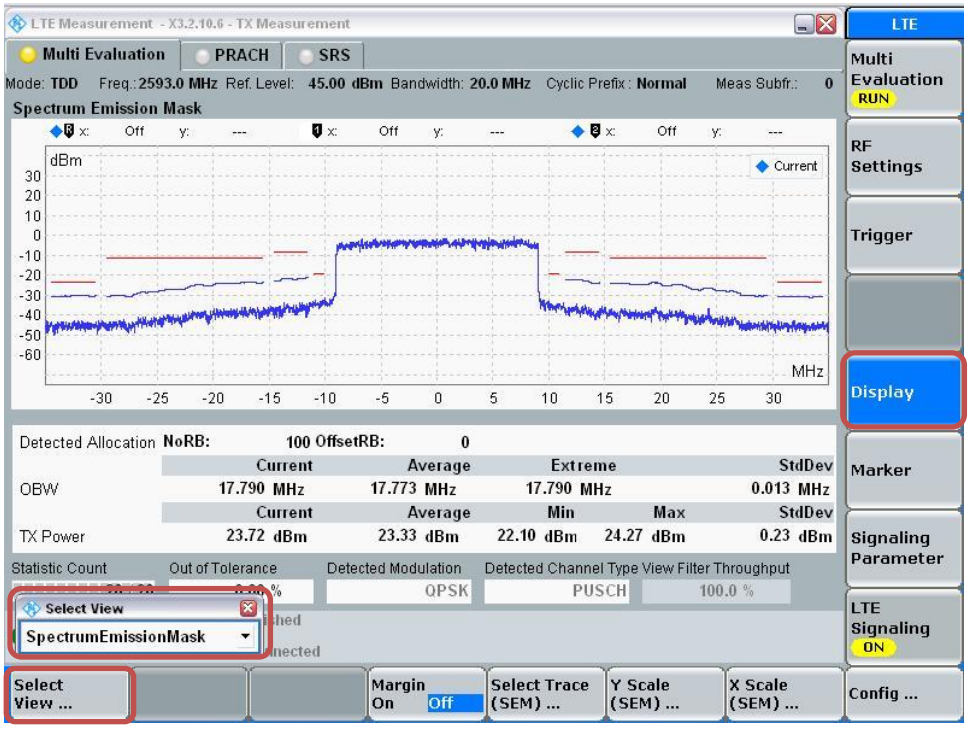
- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



View TX Power

- Go to “Display”
- Select “Select View…”
- Select “Spectrum Emission Mask”



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LTE Band 41 Power class 3 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	20	QPSK	1	0	0	24.2	24.2	23.9	23.9	24.3	0	12.1	12.1	12.0	12.4	12.2
			1	49	0	24.4	24.6	24.0	23.8	24.3	0	12.9	12.5	12.5	12.8	12.7
			1	99	0	23.9	24.2	23.6	23.5	24.0	0	12.8	12.0	12.4	12.5	12.3
			50	0	1	23.1	23.1	22.6	22.9	22.9	0	12.5	12.2	12.2	12.4	12.2
			50	24	1	23.2	23.0	22.7	22.8	22.8	0	12.6	12.4	12.4	12.7	12.4
			50	50	1	23.3	23.4	22.6	22.7	22.7	0	12.7	12.2	12.3	12.3	12.4
			100	0	1	23.2	23.0	22.6	22.8	22.8	0	12.7	12.1	12.2	12.4	12.3
		16QAM	1	0	1	22.7	23.0	22.2	21.8	22.9	0	12.1	12.3	11.7	12.0	12.0
			1	49	1	22.7	23.0	22.3	22.4	23.0	0	12.5	12.7	12.4	12.4	12.7
			1	99	1	22.4	22.9	22.2	21.9	22.6	0	12.3	12.3	12.0	12.1	12.2
			50	0	2	22.1	22.2	21.6	22.0	22.0	0	12.2	12.4	11.9	12.3	12.0
			50	24	2	22.3	22.1	21.7	21.9	21.9	0	12.4	12.4	12.2	12.5	12.4
			50	50	2	22.3	22.2	21.6	21.8	22.0	0	12.4	12.3	12.0	12.2	12.2
			100	0	2	22.3	22.0	21.7	21.8	21.9	0	12.4	12.2	12.0	12.3	12.1

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	15	QPSK	1	0	0	24.0	24.1	23.6	23.8	24.0	0	12.5	12.6	12.5	12.8	12.5
			1	37	0	24.1	24.5	23.8	23.7	24.0	0	12.9	12.5	12.5	12.7	12.7
			1	74	0	24.2	24.1	23.6	23.7	23.8	0	13.0	12.5	12.7	12.8	12.7
			36	0	1	23.1	23.0	22.5	22.8	22.8	0	12.7	12.4	12.4	12.6	12.5
			36	20	1	23.1	23.1	22.7	22.8	22.8	0	12.6	12.4	12.3	12.8	12.4
			36	39	1	23.2	23.1	22.7	22.6	22.8	0	12.9	12.4	12.6	12.6	12.5
			75	0	1	23.1	23.0	22.6	22.8	22.8	0	12.8	12.4	12.5	12.7	12.5
		16QAM	1	0	1	22.6	23.4	22.8	22.4	23.2	0	12.6	12.7	12.2	12.7	12.3
			1	37	1	22.8	23.7	22.9	22.3	23.6	0	12.7	12.6	12.3	12.7	12.6
			1	74	1	22.7	23.3	22.9	22.3	23.0	0	12.7	12.6	12.3	12.6	12.5
			36	0	2	22.1	21.9	21.6	22.0	21.7	0	12.4	12.6	12.2	12.5	12.3
			36	20	2	22.2	22.1	21.8	21.9	21.8	0	12.5	12.6	12.3	12.6	12.4
			36	39	2	22.3	22.1	21.7	21.8	21.7	0	12.6	12.5	12.3	12.5	12.4
			75	0	2	22.3	22.0	21.7	21.8	21.8	0	12.5	12.5	12.3	12.6	12.3

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	10	QPSK	1	0	0	24.1	24.0	23.6	23.7	24.0	0	12.7	12.4	12.4	12.5	12.4
			1	25	0	24.3	24.2	23.7	23.9	23.8	0	12.9	12.6	12.6	12.8	12.8
			1	49	0	24.2	24.0	23.6	23.6	23.9	0	12.8	12.3	12.5	12.5	12.2
			25	0	1	23.2	23.0	22.6	22.8	22.9	0	12.7	12.4	12.5	12.8	12.6
			25	12	1	23.2	23.1	22.7	22.8	22.9	0	12.7	12.4	12.5	12.8	12.5
			25	25	1	23.3	23.1	22.6	22.9	22.8	0	13.0	12.4	12.7	12.7	12.7
			50	0	1	23.2	23.0	22.7	22.7	22.8	0	12.8	12.4	12.6	12.7	12.6
		16QAM	1	0	1	22.4	23.4	23.1	22.2	23.9	0	12.4	12.6	12.0	12.5	12.3
			1	25	1	22.8	23.5	23.2	22.3	23.9	0	12.7	12.8	12.4	12.7	12.8
			1	49	1	22.5	23.5	22.9	22.1	23.9	0	12.5	12.5	12.1	12.3	12.5
			25	0	2	22.3	22.1	21.8	21.7	21.9	0	12.4	12.6	12.2	12.7	12.4
			25	12	2	22.2	22.2	21.9	21.7	21.9	0	12.5	12.6	12.4	12.7	12.5
			25	25	2	22.3	22.2	21.8	21.7	21.8	0	12.6	12.5	12.4	12.6	12.5
			50	0	2	22.2	22.1	21.6	21.8	21.9	0	12.5	12.5	12.3	12.6	12.4

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	5	QPSK	1	0	0	23.9	23.8	23.3	23.5	23.6	0	12.9	13.0	12.7	12.7	12.7
			1	12	0	24.1	24.0	23.8	24.3	24.0	0	12.8	12.7	12.5	12.7	12.6
			1	24	0	23.9	23.8	23.6	23.6	23.7	0	12.9	13.0	12.8	12.7	12.8
			12	0	1	23.1	23.0	22.5	22.8	22.8	0	12.8	12.9	12.6	12.7	12.6
			12	7	1	23.1	22.9	22.6	22.8	22.8	0	12.7	12.7	12.5	12.7	12.5
			12	13	1	23.2	23.0	22.6	22.8	22.8	0	12.8	12.7	12.4	12.6	12.6
			25	0	1	23.1	23.1	22.6	22.8	22.8	0	12.8	12.9	12.6	12.6	12.7
		16QAM	1	0	1	22.5	22.6	22.7	22.2	22.7	0	12.7	12.7	12.3	12.7	12.5
			1	12	1	23.4	22.9	22.9	22.7	22.6	0	12.8	12.6	12.4	12.7	12.6
			1	24	1	22.8	22.4	22.8	22.4	22.6	0	12.9	12.7	12.5	12.8	12.6
			12	0	2	22.0	22.1	21.6	21.7	21.7	0	12.6	12.7	12.3	12.6	12.4
			12	7	2	22.0	22.1	21.8	21.7	21.9	0	12.6	12.7	12.4	12.6	12.5
			12	13	2	22.2	22.0	21.8	21.9	22.0	0	12.7	12.6	12.3	12.5	12.6
			25	0	2	22.3	21.9	21.8	21.9	21.8	0	12.5	12.6	12.4	12.6	12.4

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LTE Band 41 HPUE Power class 2 Measured Results

Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	20	QPSK	1	0	0	25.7	25.8	24.9	25.7	25.8	0	12.3	12.3	12.2	12.5	12.4
			1	49	0	26.3	26.1	25.4	25.7	26.1	0	13.0	12.8	12.7	12.9	13.0
			1	99	0	25.9	25.8	25.2	25.7	25.7	0	12.9	12.3	12.5	12.6	12.6
			50	0	1	24.8	24.7	24.2	24.5	24.7	0	12.7	12.4	12.4	12.6	12.4
			50	24	1	24.9	24.6	24.3	24.4	24.6	0	13.0	12.6	12.6	12.9	12.6
			50	50	1	24.9	24.6	24.2	24.4	24.5	0	12.9	12.3	12.6	12.6	12.6
			100	0	1	24.8	24.6	24.3	24.5	24.6	0	12.8	12.3	12.5	12.7	12.5
		16QAM	1	0	1	23.8	25.1	24.1	24.0	24.9	0	12.8	12.5	12.2	12.8	12.3
			1	49	1	24.1	24.9	24.0	24.1	24.9	0	13.3	13.0	12.9	13.2	13.0
			1	99	1	24.0	24.6	23.8	23.7	24.6	0	13.1	12.5	12.6	12.9	12.4
			50	0	2	23.8	23.8	23.2	23.5	23.7	0	12.4	12.6	12.1	12.6	12.2
			50	24	2	23.9	23.8	23.4	23.5	23.6	0	12.7	12.7	12.5	12.8	12.6
			50	50	2	24.0	23.8	23.2	23.4	23.6	0	12.6	12.5	12.3	12.5	12.4
			100	0	2	23.8	23.7	23.3	23.4	23.5	0	12.5	12.5	12.2	12.6	12.3
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	15	QPSK	1	0	0	25.6	25.9	25.1	25.4	25.8	0	12.6	12.7	12.6	13.0	12.8
			1	37	0	25.8	26.1	25.3	25.5	26.0	0	13.0	12.7	12.6	12.9	12.9
			1	74	0	25.7	25.7	25.2	25.2	25.5	0	13.2	12.7	12.8	13.0	13.0
			36	0	1	24.7	24.5	24.1	24.5	24.6	0	12.8	12.6	12.6	12.8	12.8
			36	20	1	24.7	24.7	24.3	24.5	24.6	0	12.8	12.5	12.5	12.9	12.6
			36	39	1	24.8	24.7	24.3	24.4	24.5	0	13.0	12.5	12.7	12.7	12.7
			75	0	1	24.7	24.5	24.1	24.3	24.4	0	13.0	12.5	12.7	12.9	12.7
		16QAM	1	0	1	24.1	24.6	24.6	23.9	24.8	0	13.1	13.2	12.7	13.3	13.0
			1	37	1	24.5	24.7	24.8	24.0	24.7	0	13.1	13.2	12.8	13.2	13.3
			1	74	1	24.2	24.7	24.6	23.9	24.2	0	13.2	13.2	12.8	13.1	13.1
			36	0	2	23.8	23.4	23.0	23.4	23.3	0	12.6	12.7	12.4	12.8	12.6
			36	20	2	23.9	23.6	23.1	23.4	23.4	0	12.7	12.7	12.4	12.9	12.6
			36	39	2	23.9	23.7	23.1	23.3	23.3	0	12.8	12.7	12.5	12.7	12.6
			75	0	2	23.9	23.7	23.3	23.4	23.4	0	12.7	12.7	12.5	12.8	12.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	10	QPSK	1	0	0	25.5	25.5	25.0	25.2	25.6	0	12.8	12.5	12.4	12.6	12.6
			1	25	0	25.8	25.6	25.0	25.3	25.5	0	13.1	12.8	12.7	12.9	13.0
			1	49	0	25.7	25.5	25.1	25.2	25.4	0	13.0	12.5	12.5	12.6	12.4
			25	0	1	24.6	24.5	24.0	24.3	24.5	0	12.9	12.6	12.6	12.9	12.7
			25	12	1	24.7	24.6	24.2	24.3	24.5	0	12.8	12.6	12.6	12.9	12.6
			25	25	1	24.7	24.7	24.2	24.3	24.4	0	13.1	12.5	12.8	12.8	12.8
			50	0	1	24.6	24.5	24.2	24.3	24.4	0	12.9	12.5	12.7	12.9	12.7
		16QAM	1	0	1	23.8	25.3	24.4	23.6	25.4	0	12.9	13.0	12.4	13.0	12.7
			1	25	1	24.0	25.5	24.3	23.8	25.4	0	13.3	13.3	12.9	13.3	13.3
			1	49	1	24.0	25.3	24.5	23.7	25.2	0	13.1	13.0	12.6	12.9	13.0
			25	0	2	23.6	23.5	23.2	23.2	23.5	0	12.6	12.7	12.3	12.9	12.5
			25	12	2	23.6	23.8	23.3	23.3	23.5	0	12.7	12.7	12.5	12.8	12.6
			25	25	2	23.7	23.7	23.3	23.1	23.5	0	12.8	12.7	12.6	12.8	12.6
			50	0	2	23.7	23.6	23.2	23.3	23.4	0	12.6	12.7	12.4	12.8	12.5
Band	BW (MHz)	Mode	RB Allocation	RB offset	MPR	Max. Meas. Avg Pwr (dBm)					MPR	Reduced Meas. Avg Pwr (dBm)				
						2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz
LTE Band 41	5	QPSK	1	0	0	25.4	25.3	24.7	25.1	25.2	0	13.0	13.1	12.8	12.8	12.9
			1	12	0	26.0	25.4	25.4	25.8	25.6	0	13.0	12.9	12.6	12.8	12.8
			1	24	0	25.5	25.0	24.9	25.1	25.3	0	13.2	13.2	12.9	12.8	13.0
			12	0	1	24.6	24.5	24.0	24.2	24.4	0	13.0	13.0	12.7	12.8	12.8
			12	7	1	24.6	24.3	24.2	24.3	24.4	0	12.9	12.8	12.6	12.8	12.6
			12	13	1	24.5	24.4	24.1	24.3	24.4	0	12.9	12.8	12.5	12.8	12.8
			25	0	1	24.5	24.5	24.1	24.2	24.4	0	13.0	13.0	12.7	12.8	12.8
		16QAM	1	0	1	23.9	24.3	23.9	23.6	24.2	0	13.0	13.1	12.9	13.0	12.9
			1	12	1	24.0	24.3	24.0	23.7	24.4	0	13.1	13.0	13.0	13.0	13.0
			1	24	1	23.9	24.0	24.0	23.6	24.0	0	13.2	13.1	13.1	13.0	13.0
			12	0	2	23.6	23.4	23.2	23.2	23.4	0	12.7	12.8	12.6	12.7	12.6
			12	7	2	23.6	23.5	23.3	23.2	23.4	0	12.7	12.8	12.6	12.7	12.7
			12	13	2	23.6	23.3	23.3	23.2	23.5	0	12.8	12.8	12.6	12.6	12.7
			25	0	2	23.6	23.5	23.0	23.3	23.3	0	12.7	12.8	12.5	12.7	12.6

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9.3. Wi-Fi 2.4 GHz (DTS Band)

Measured Results

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
					Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
2.4	802.11b	1 Mbps	1	2412	20.1	21.0	Yes	13.9	14	Yes
			6	2437	20.8	21.0		13.9	14	
			11	2462	18.9	19.0		14.0	14	
	802.11g	6 Mbps	1	2412	Not Require	14.0	No	13.7	14	No
			6	2437		19.0		13.3	14	
			11	2462		12.0		12.0	12	
	802.11n (HT20)	6.5 Mbps	1	2412	Not Require	14.0	No	13.7	14	No
			6	2437		18.0		13.5	14	
			11	2462		12.0		11.9	12	

Note(s):

1. 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.

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

Measured Results

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
					Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
5.3 (U-NII 2A)	802.11a	6 Mbps	52	5260	15.4	17.0	Yes	Not Required	10.0	No
			56	5280	16.2					
			60	5300	15.8					
			64	5320	15.8					
	802.11n (HT20)	6.5 Mbps	52	5260	Not Required	16.0	No	Not Required	10.0	No
			56	5280						
			60	5300						
			64	5320						
	802.11n (HT40)	13.5 Mbps	54	5270	Not Required	12.0	No	9.2	10.0	Yes
			62	5310				9.1		
5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	14.2	15.0	Yes	Not Required	10.0	No
			120	5600	14.2					
			140	5700	14.6					
	802.11n (HT20)	6.5 Mbps	100	5500	14.2	15.0	No	Not Required	10.0	No
			120	5600	14.2					
			140	5700	14.6					
	802.11n (HT40)	13.5 Mbps	102	5510	Not Required	11.0	No	9.3	10.0	Yes
			118	5590				9.1		
			134	5670				9.1		
5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	16.8	17.0	Yes	Not Required	10.0	No
			157	5785	16.8					
			165	5825	16.0					
	802.11n (HT20)	6.5 Mbps	149	5745	Not Required	16.0	No	Not Required	10.0	No
			157	5785						
			165	5825						
	802.11n (HT40)	13.5 Mbps	151	5755	Not Required	12.0	No	9.9	10.0	Yes
			159	5795				9.2		

Note(s):

1. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. 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.
3. 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.

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9.5. Bluetooth

Average Power Measured Results

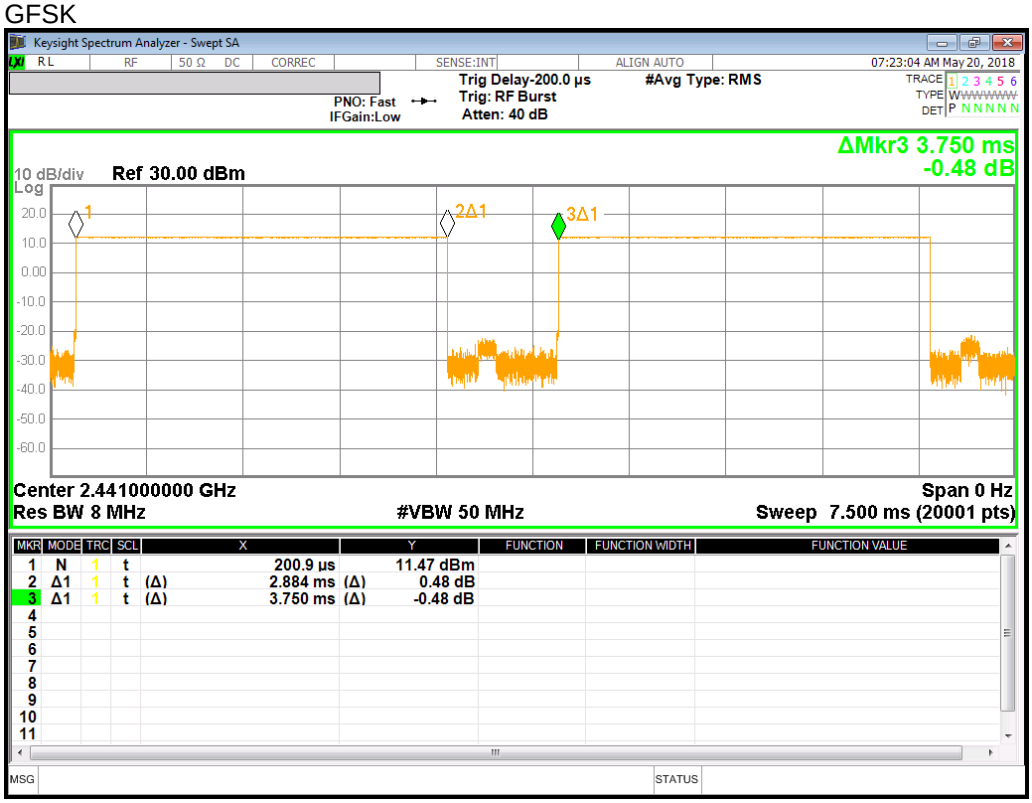
Band (GHz)	Mode	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)
2.4	GFSK	0	2402	8.2
		39	2441	9.3
		78	2480	9.0
	EDR, π/4 DQPSK	0	2402	7.5
		39	2441	8.5
		78	2480	8.2
	EDR, 8-DPSK	0	2402	7.5
		39	2441	8.9
		78	2480	8.2
	LE, GFSK	0	2402	5.3
		19	2440	6.3
		39	2480	6.0

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.884	3.750	76.9%	1.30

Duty Cycle plots

GFSK



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10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

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

Reported SAR(W/kg) for Wi-Fi and Bluetooth= Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 941225 D01 SAR test for 3G devices:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

- Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel.
- When the reported SAR is > 0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
- Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are > 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
- Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
- Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
- For LTE bands that do not support at least three non-overlapping channels in certain channel bandwidths, test the available non-overlapping channels instead. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing; therefore, the requirement for H, M and L channels may not fully apply.

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KDB 248227 D01 SAR meas for 802.11:

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

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*.

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10.1. CDMA BC0

RF Exposure Conditions	Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Standalone	1xEVDO (Rel. 0)	Off	19	Rear	384	836.5	25.0	23.8	0.460	0.602	
			15	Edge 1	384	836.5	25.0	23.8	0.396	0.518	
			5	Edge 2	384	836.5	25.0	23.8	0.566	0.741	
			10	Corner A	384	836.5	25.0	23.8	0.077	0.100	
	1xEVDO (Rel. 0)	On	0	Rear	1013	824.7	21.0	20.4	1.040	1.194	1
					384	836.5	21.0	20.3	0.988	1.153	
					777	848.3	21.0	20.7	1.040	1.117	
				Edge 1	384	836.5	21.0	20.3	0.404	0.471	
				Edge 2	384	836.5	21.0	20.3	0.453	0.529	
				Corner A	384	836.5	21.0	20.3	0.242	0.282	

10.2. CDMA BC1

RF Exposure Conditions	Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Standalone	1xEVDO (Rel. 0)	Off	19	Rear	25	1851.3	25.0	24.5	0.834	0.931	
					600	1880.0	25.0	24.4	0.831	0.956	
					1175	1908.8	25.0	24.1	0.811	0.989	
			15	Edge 1	25	1851.3	25.0	24.5	0.996	1.112	
					600	1880.0	25.0	24.4	1.030	1.185	2
					1175	1908.8	25.0	24.1	0.969	1.181	
			5	Edge 2	25	1851.3	25.0	24.5	0.999	1.116	
					600	1880.0	25.0	24.4	0.988	1.137	
					1175	1908.8	25.0	24.1	0.917	1.118	
			10	Corner A	25	1851.3	25.0	24.5	0.805	0.899	
					600	1880.0	25.0	24.4	0.843	0.970	
					1175	1908.8	25.0	24.1	0.768	0.936	
	1xEVDO (Rel. 0)	On	0	Rear	25	1851.3	11.0	10.3	0.506	0.589	
					600	1880.0	11.0	10.2	0.736	0.891	
					1175	1908.8	11.0	10.3	0.538	0.631	
				Edge 1	600	1880.0	11.0	10.2	0.343	0.415	
				Edge 2	600	1880.0	11.0	10.2	0.095	0.114	
				Corner A	600	1880.0	11.0	10.2	0.153	0.185	

10.3. CDMA BC10

RF Exposure Conditions	Mode	Pwr Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
							Tune-up limit	Meas.	Meas.	Scaled	
Standalone	1xRTT (RC3 SO32)	Off	19	Rear	580	820.5	25.0	23.6	0.366	0.510	
			15	Edge 1	580	820.5	25.0	23.6	0.308	0.429	
			5	Edge 2	580	820.5	25.0	23.6	0.434	0.605	
			10	Corner A	580	820.5	25.0	23.6	0.061	0.084	
	1xRTT (RC3 SO32)	On	0	Rear	476	817.9	20.5	19.7	0.998	1.192	3
					580	820.5	20.5	19.6	0.933	1.145	
					684	823.1	20.5	19.6	0.963	1.190	
				Edge 1	580	820.5	20.5	19.6	0.391	0.480	
				Edge 2	580	820.5	20.5	19.6	0.471	0.578	
				Corner A	580	820.5	20.5	19.6	0.209	0.257	

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10.4. LTE Band 2 (20MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	18700	1860.0	1	49	24.5	24.5	0.848	0.848	
							50	24	23.5	23.0	0.590	0.665	
					18900	1880.0	1	49	24.5	23.6	0.873	1.062	
					19100	1900.0	1	49	24.5	23.6	0.960	1.180	4
			15	Edge 1	18700	1860.0	1	49	24.5	24.5	0.990	0.990	
							50	24	23.5	23.0	0.674	0.760	
					18900	1880.0	1	49	24.5	23.6	0.900	1.095	
					19100	1900.0	1	49	24.5	23.6	0.948	1.165	
			5	Edge 2	18700	1860.0	1	49	24.5	24.5	0.996	0.996	
							50	24	23.5	23.0	0.650	0.733	
					18900	1880.0	1	49	24.5	23.6	0.936	1.138	
					19100	1900.0	1	49	24.5	23.6	0.957	1.176	
			10	Corner A	18700	1860.0	1	49	24.5	24.5	0.823	0.823	
							50	24	23.5	23.0	0.520	0.586	
					18900	1880.0	1	49	24.5	23.6	0.744	0.905	
					19100	1900.0	1	49	24.5	23.6	0.788	0.969	
	QPSK	On	0	Rear	18700	1860.0	1	49	12.0	11.4	0.644	0.746	
							50	24	12.0	11.4	0.670	0.762	
					18900	1880.0	1	49	12.0	11.6	0.792	0.875	
							50	24	12.0	11.7	0.780	0.845	
							100	0	12.0	11.3	0.689	0.817	
					19100	1900.0	1	49	12.0	11.1	0.573	0.707	
							50	24	12.0	11.0	0.575	0.724	
				Edge 1	18900	1880.0	1	49	12.0	11.6	0.424	0.468	
							50	24	12.0	11.7	0.420	0.455	
				Edge 2	18900	1880.0	1	49	12.0	11.6	0.127	0.140	
							50	24	12.0	11.7	0.127	0.138	
				Corner A	18900	1880.0	1	49	12.0	11.6	0.192	0.212	
							50	24	12.0	11.7	0.192	0.208	

10.5. LTE Band 4 (20MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	20175	1732.5	1	49	24.5	23.9	0.580	0.662	
							50	24	23.5	22.4	0.463	0.593	
			15	Edge 1	20175	1732.5	1	49	24.5	23.9	0.581	0.663	
							50	24	23.5	22.4	0.487	0.623	
			5	Edge 2	20175	1732.5	1	49	24.5	23.9	0.551	0.629	
							50	24	23.5	22.4	0.445	0.570	
			10	Corner A	20175	1732.5	1	49	24.5	23.9	0.501	0.572	
							50	24	23.5	22.4	0.409	0.524	
	QPSK	On	0	Rear	20175	1732.5	1	49	13.0	12.0	0.608	0.766	5
							50	24	13.0	12.0	0.575	0.732	
							100	0	13.0	11.8	0.511	0.672	
				Edge 1	20175	1732.5	1	49	13.0	12.0	0.289	0.364	
							50	24	13.0	12.0	0.282	0.359	
				Edge 2	20175	1732.5	1	49	13.0	12.0	0.098	0.124	
							50	24	13.0	12.0	0.099	0.126	
				Corner A	20175	1732.5	1	49	13.0	12.0	0.137	0.173	
							50	24	13.0	12.0	0.132	0.168	

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10.6. LTE Band 5 (10MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	20525	836.5	1	0	25.2	24.3	0.432	0.528	
							25	0	24.2	23.1	0.344	0.439	
			15	Edge 1	20525	836.5	1	0	25.2	24.3	0.379	0.464	
							25	0	24.2	23.1	0.273	0.349	
			5	Edge 2	20525	836.5	1	0	25.2	24.3	0.466	0.570	6
							25	0	24.2	23.1	0.342	0.437	
			10	Corner A	20525	836.5	1	0	25.2	24.3	0.101	0.124	
							25	0	24.2	23.1	0.074	0.094	
	QPSK	On	0	Rear	20525	836.5	1	25	16.0	15.5	0.297	0.334	
							25	12	16.0	15.1	0.287	0.350	
				Edge 1	20525	836.5	1	25	16.0	15.5	0.115	0.129	
							25	12	16.0	15.1	0.112	0.137	
				Edge 2	20525	836.5	1	25	16.0	15.5	0.125	0.140	
							25	12	16.0	15.1	0.124	0.151	
				Corner A	20525	836.5	1	25	16.0	15.5	0.071	0.080	
							25	12	16.0	15.1	0.067	0.082	

10.7. LTE Band 12 (10MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	23095	707.5	1	0	25.0	24.0	0.188	0.237	
							25	0	24.0	22.8	0.152	0.202	
			15	Edge 1	23095	707.5	1	0	25.0	24.0	0.187	0.236	
							25	0	24.0	22.8	0.144	0.191	
			5	Edge 2	23095	707.5	1	0	25.0	24.0	0.170	0.215	
							25	0	24.0	22.8	0.122	0.162	
			10	Corner A	23095	707.5	1	0	25.0	24.0	0.047	0.059	
							25	0	24.0	22.8	0.035	0.046	
	QPSK	On	0	Rear	23095	707.5	1	0	17.0	16.3	0.349	0.409	
							25	0	17.0	16.2	0.345	0.415	7
				Edge 1	23095	707.5	1	0	17.0	16.3	0.208	0.244	
							25	0	17.0	16.2	0.208	0.250	
				Edge 2	23095	707.5	1	0	17.0	16.3	0.165	0.193	
							25	0	17.0	16.2	0.164	0.197	
				Corner A	23095	707.5	1	0	17.0	16.3	0.079	0.093	
							25	0	17.0	16.2	0.080	0.096	

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10.8. LTE Band 25 (20MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	26140	1860.0	1	0	24.0	23.6	0.852	0.926	
							50	0	23.0	22.6	0.680	0.751	
					26365	1882.5	1	0	24.0	23.2	0.818	0.985	
					26590	1905.0	1	0	24.0	23.0	0.823	1.032	
			15	Edge 1	26140	1860.0	1	0	24.0	23.6	0.757	0.823	
							50	0	23.0	22.6	0.642	0.709	
					26365	1882.5	1	0	24.0	23.2	0.822	0.990	
					26590	1905.0	1	0	24.0	23.0	0.762	0.955	
			5	Edge 2	26140	1860.0	1	0	24.0	23.6	0.785	0.853	
							50	0	23.0	22.6	0.631	0.697	
					26365	1882.5	1	0	24.0	23.2	0.775	0.933	
					26590	1905.0	1	0	24.0	23.0	0.788	0.988	
			10	Corner A	26140	1860.0	1	0	24.0	23.6	0.743	0.807	
							50	0	23.0	22.6	0.671	0.741	
					26365	1882.5	1	0	24.0	23.2	0.812	0.978	
					26590	1905.0	1	0	24.0	23.0	0.867	1.087	
	QPSK	On	0	Rear	26140	1860.0	1	49	13.0	11.5	0.612	0.855	
							50	24	13.0	11.5	0.632	0.890	
					26365	1882.5	1	49	13.0	11.7	0.764	1.031	
							50	24	13.0	11.7	0.746	1.013	
							100	0	13.0	11.3	0.668	0.996	
					26590	1905.0	1	49	13.0	11.2	0.776	1.174	8
							50	24	13.0	11.1	0.715	1.113	
				Edge 1	26365	1882.5	1	49	13.0	11.7	0.420	0.567	
							50	24	13.0	11.7	0.406	0.551	
				Edge 2	26365	1882.5	1	49	13.0	11.7	0.128	0.173	
							50	24	13.0	11.7	0.128	0.174	
				Corner A	26365	1882.5	1	49	13.0	11.7	0.204	0.275	
							50	24	13.0	11.7	0.205	0.278	

10.9. LTE Band 26 (15MHz Bandwidth)

RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
Standalone	QPSK	Off	19	Rear	26865	831.5	1	0	25.0	24.4	0.388	0.450	
							36	0	24.0	23.0	0.314	0.398	
			15	Edge 1	26865	831.5	1	0	25.0	24.4	0.362	0.420	
							36	0	24.0	23.0	0.268	0.340	
			5	Edge 2	26865	831.5	1	0	25.0	24.4	0.441	0.511	9
							36	0	24.0	23.0	0.333	0.423	
			10	Corner A	26865	831.5	1	0	25.0	24.4	0.074	0.085	
							36	0	24.0	23.0	0.056	0.070	
	QPSK	On	0	Rear	26865	831.5	1	37	12.0	11.1	0.125	0.155	
							36	20	12.0	11.0	0.147	0.184	
				Edge 1	26865	831.5	1	37	12.0	11.1	0.041	0.051	
							36	20	12.0	11.0	0.054	0.067	
				Edge 2	26865	831.5	1	37	12.0	11.1	0.054	0.067	
							36	20	12.0	11.0	0.068	0.086	
				Corner A	26865	831.5	1	37	12.0	11.1	0.030	0.037	
							36	20	12.0	11.0	0.034	0.042	

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10.10. LTE Band 41 (20MHz Bandwidth)

RF Exposure Conditions	Power Class	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Power Class 3	QPSK	Off	14	Rear	40185	2549.5	1	49	25.0	24.6	0.530	0.587	
								50	50	24.0	23.4	0.404	0.468	
				10	Edge 1	39750	2506.0	1	49	25.0	24.4	0.548	0.628	
						40185	2549.5	1	49	25.0	24.6	0.615	0.681	
								50	50	24.0	23.4	0.476	0.552	
						40620	2593.0	1	49	25.0	24.0	0.684	0.865	10
						41055	2636.5	1	49	25.0	23.8	0.645	0.850	
						41490	2680.0	1	49	25.0	24.3	0.735	0.856	
				0	Edge 2	40185	2549.5	1	49	25.0	24.6	0.290	0.321	
								50	50	24.0	23.4	0.228	0.264	
				0	Edge 4	40185	2549.5	1	49	25.0	24.6	0.186	0.206	
								50	50	24.0	23.4	0.145	0.168	
		QPSK	On	0	Rear	39750	2506.0	1	49	14.0	12.9	0.443	0.571	
								50	50	14.0	12.7	0.390	0.526	
					Edge 1	39750	2506.0	1	49	14.0	12.9	0.190	0.245	
								50	50	14.0	12.7	0.196	0.264	
	Power Class 2	QPSK	Off	10	Edge 1	40620	2593.0	1	49	26.5	25.4	0.657	0.854	
			On	0	Rear	39750	2506.0	1	49	14.0	13.0	0.443	0.554	

LTE Band 41 Power Class 2 consideration

Max power condition (Proximity sensor Off)

	LTE Band 41 - Power class 3	LTE Band 41 - Power class 2
Measured 1-g SAR (W/kg)	0.684	0.657
Measured output power (dBm)	24.0	25.4
Measured output power (mW)	251.2	343.6
Duty Cycle (%)	63.3	43.3
Frame averaged output power (mW)	159.0	148.8
Measured 1-g SAR VS. Frame averaged output power	0.00430	0.00442
Deviation from expected linearity (%)		**2.67**

Reduced power condition (Proximity sensor On)

	LTE Band 41 - Power class 3	LTE Band 41 - Power class 2
Measured 1-g SAR (W/kg)	0.443	0.277
Measured output power (dBm)	12.9	13.0
Measured output power (mW)	19.5	20.1
Duty Cycle (%)	63.3	43.3
Frame averaged output power (mW)	12.3	8.7
Measured 1-g SAR VS. Frame averaged output power	0.03589	0.03184
Deviation from expected linearity (%)		**-11.29**

Note(s):

According to TCB workshop (May.2017), Separate SAR testing for LTE HPUE (Power class 2) is not required when meas SAR vs. output power (time average) can be linearly scaled with < 10% discrepancy between power classes and all *reported* SAR are < 1.4 W/kg.

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10.11. Wi-Fi (DTS Band)

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
2.4GHz	802.11b 1 Mbps	Standalone	Off	11	Rear	6	2437.0	0.646	99.7%	21.0	20.8	0.570	0.599	2	
				8	Edge 1	6	2437.0	0.223	99.7%	21.0	20.8	0.194	0.204	4	
				6	Edge 4	1	2412.0	0.800	99.7%	21.0	20.1	0.685	0.855	3	
						6	2437.0	0.983	99.7%	21.0	20.8	0.811	0.852		
				6	Corner B	6	2437.0	0.354	99.7%	21.0	20.8				
			On	0	Rear	1	2412.0	0.854	99.7%	14.0	13.9	0.854	0.871	3	11
						11	2462.0	0.857	99.7%	14.0	14.0	0.824	0.832		
					Edge 1	11	2462.0	0.160	99.7%	14.0	14.0	0.148	0.149	4	
					Edge 4	11	2462.0	0.500	99.7%	14.0	14.0	0.499	0.504	2	
					Corner B	11	2462.0	0.208	99.7%	14.0	14.0				

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. SAR testing is not required for OFDM mode(s) 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.

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10.12. Wi-Fi (U-NII Bands)

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
5.3 GHz UNII 2A	802.11a 6 Mbps	Standalone	Off	11	Rear	56	5280.0	0.990	98.2%	17.0	16.2	0.437	0.532	2	
				8	Edge 1	56	5280.0	1.449	98.2%	17.0	16.2	0.747	0.910		12
						64	5320.0	1.241	98.2%	17.0	15.8	0.618	0.837	3	
				6	Edge 4	56	5280.0	0.740	98.2%	17.0	16.2				
				6	Corner B	56	5280.0	0.932	98.2%	17.0	16.2				
	802.11n 13.5Mbps (HT40)		On	0	Rear	54	5270.0	1.400	96.1%	10.0	9.2	0.674	0.839		
						62	5310.0	1.428	96.1%	10.0	9.1	0.681	0.866	3	
					Edge 1	54	5270.0	0.731	96.1%	10.0	9.2	0.503	0.626	2	
					Edge 4	54	5270.0	0.388	96.1%	10.0	9.2				
					Corner B	54	5270.0	0.584	96.1%	10.0	9.2				

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
5.5 GHz UNII 2C	802.11a 6 Mbps	Standalone	Off	11	Rear	140	5700.0	0.559	98.2%	15.0	14.6	0.250	0.282	4	
				8	Edge 1	140	5700.0	0.596	98.2%	15.0	14.6	0.311	0.351	4	
				6	Edge 4	140	5700.0	0.656	98.2%	15.0	14.6	0.282	0.318	1	
				6	Corner B	140	5700.0	0.645	98.2%	15.0	14.6				
	802.11n 13.5Mbps (HT40)		On	0	Rear	102	5510.0	2.061	96.1%	10.0	9.3	0.837	1.023		
						134	5670.0	1.648	96.1%	10.0	9.1	0.842	1.073	3	13
					Edge 1	102	5510.0	0.666	96.1%	10.0	9.3	0.345	0.422	2	
					Edge 4	102	5510.0	0.516	96.1%	10.0	9.3				
					Corner B	102	5510.0	0.602	96.1%	10.0	9.3				

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
										Tune-up limit	Meas.	Meas.	Scaled		
5.8 GHz UNII 3	802.11a 6 Mbps	Standalone	Off	11	Rear	157	5785.0	1.003	98.2%	17.0	16.8	0.528	0.558	4	
				8	Edge 1	157	5785.0	0.809	98.2%	17.0	16.8	0.413	0.436	4	
				6	Edge 4	157	5785.0	1.329	98.2%	17.0	16.8	0.562	0.594		
				6	Corner B	157	5785.0	1.318	98.2%	17.0	16.8	0.647	0.683	2	
	802.11n 13.5Mbps (HT40)		On	0	Rear	151	5755.0	1.992	96.1%	10.0	9.9	0.908	0.960		14
						159	5795.0	1.509	96.1%	10.0	9.2	0.710	0.898	3	
					Edge 1	151	5755.0	0.694	96.1%	10.0	9.9	0.382	0.404	4	
					Edge 4	151	5755.0	0.581	96.1%	10.0	9.9				
					Corner B	151	5755.0	0.799	96.1%	10.0	9.9	0.495	0.523	2	

Note(s):

1. Highest *reported* SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest *reported* SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest *reported* SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was *reported*.
3. Testing for a second channel was required because the *reported* SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.

10.13. Bluetooth

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
2.4GHz	GFSK	Standalone	N/A	0	Rear	39	2441.0	76.9%	10.0	9.3	0.212	0.326	15
				0	Edge 1	39	2441.0	76.9%	10.0	9.3	0.032	0.049	
				0	Edge 4	39	2441.0	76.9%	10.0	9.3	0.122	0.187	

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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 <0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), 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 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Peak spatial-average (1g of tissue)

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
750	LTE Band 12	Standalone	Rear	No	0.349	N/A	N/A
835	CDMA BC0	Standalone	Rear	Yes	1.040	1.040	1.00
	CDMA BC10	Standalone	Rear	No	0.998	N/A	N/A
	LTE Band 5	Standalone	Edge 2	No	0.466	N/A	N/A
	LTE Band 26	Standalone	Edge 2	No	0.441	N/A	N/A
1750	LTE Band 4	Standalone	Rear	No	0.608	N/A	N/A
1900	CDMA BC1	Standalone	Edge 1	Yes	1.030	1.070	1.04
	LTE Band 2	Standalone	Edge 2	No	0.996	N/A	N/A
	LTE Band 25	Standalone	Corner A	No	0.867	N/A	N/A
2450	Wi-Fi 802.11b/g/n	Standalone	Rear	Yes	0.854	0.857	1.00
	Bluetooth	Standalone	Rear	No	0.212	N/A	N/A
2600	LTE Band 41	Standalone	Edge 1	No	0.735	N/A	N/A
5300	Wi-Fi 802.11a/n	Standalone	Edge 1	No	0.747	N/A	N/A
5500	Wi-Fi 802.11a/n	Standalone	Rear	Yes	0.842	0.829	1.02
5800	Wi-Fi 802.11a/n	Standalone	Rear	Yes	0.908	0.876	1.04

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.

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12. Simultaneous Transmission SAR Analysis

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

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

Where:

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

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

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of $[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]$

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

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

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations		
	1	CDMA	+	DTS
	2	CDMA	+	U-NII
	3	CDMA	+	BT
	4	LTE	+	DTS
	5	LTE	+	U-NII
	6	LTE	+	BT

Notes:

1. DTS and UNII supports Hotspot.
2. DTS and UNII supports Wi-Fi Direct.
3. CDMA and LTE supports Hotspot and VoIP.
4. DTS Radio cannot transmit simultaneously w ith Bluetooth Radio.
5. U-NII Radio cannot transmit simultaneously w ith Bluetooth Radio.
6. U-NII Radio cannot transmit simultaneously w ith DTS Radio.

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Estimated SAR for Simultaneous Transmission SAR Analysis

Considerations for SAR estimation

1. When standalone SAR test exclusion applies, standalone SAR must also be estimated to determine simultaneous transmission SAR test exclusion.
2. Dedicated Host Approach criteria for SAR test exclusion is likewise applied to SAR estimation, with certain distinctions between test exclusion and SAR estimation:
   - When the separation distance from the antenna to an adjacent edge is ≤ 5 mm, a distance of 5 mm is applied for SAR estimation; this is the same between test exclusion and SAR estimation calculations.
   - When the separation distance from the antenna to an adjacent edge is > 5 mm but ≤ 50 mm, the actual antenna-to-edge separation distance is applied for SAR estimation.
   - When the minimum test separation distance is > 50 mm, the estimated SAR value is 0.4 W/kg
3. Please refer to Estimated SAR Tables to see which test positions are inherently compliant as they consist of only estimated SAR values for all applicable transmitters and consequently will always have sum of SAR values < 1.2 W/kg. Simultaneous transmission SAR analysis was therefore not performed for these test positions.

Estimated SAR for WWAN

Antenna	Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Estimated 1-g SAR Value (W/kg)					
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off																
Cellular	CDMA BC0	848.31	25.00	316	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	CDMA BC1	1908.75	25.00	316	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	CDMA BC10	823.1	25.00	316	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 2	1900	24.50	282	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 4	1745	24.50	282	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 5	844	25.20	331	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 12	711	25.00	316	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 25	1905	24.00	251	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 26	841.5	25.00	316	0	2	2	185	82		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	
Cellular	LTE Band 41	2680	25.00	316	0	2	48	185	59		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	
Power Back-off, Proximity Sensor On																
Cellular	CDMA BC0	848.31	21.00	126	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	CDMA BC1	1908.75	11.00	13	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	CDMA BC10	823.1	20.50	112	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 2	1900	12.00	16	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 4	1745	13.00	20	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 5	844	16.00	40	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 12	711	17.00	50	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 25	1905	13.00	20	0	2	2				-MEASURE-	-MEASURE-	-MEASURE-			
Cellular	LTE Band 26	841.5	12.00	16	0	2	2				0.391	0.391	0.391			
Cellular	LTE Band 41	2680	14.00	25	0	2					-MEASURE-	-MEASURE-				

Estimated SAR for WLAN

Tx Interface	Frequency (MHz)	Output Power		Separation Distances (mm)						Estimated 1-g SAR Value (W/kg)					
		dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front
Full Power, Proximity Sensor Off															
Wi-Fi 2.4 GHz	2462	21.00	126	0	2	87	185	2		-MEASURE-	-MEASURE-	0.400	0.400	-MEASURE-	
Wi-Fi 5.3 GHz	5320	17.00	50	0	2	87	185	2		-MEASURE-	-MEASURE-	0.400	0.400	-MEASURE-	
Wi-Fi 5.5 GHz	5700	15.00	32	0	2	87	185	2		-MEASURE-	-MEASURE-	0.400	0.400	-MEASURE-	
Wi-Fi 5.8 GHz	5825	17.00	50	0	2	87	185	2		-MEASURE-	-MEASURE-	0.400	0.400	-MEASURE-	
Bluetooth	2480	10.00	10	0	2	87	185	2		-MEASURE-	-MEASURE-	0.400	0.400	-MEASURE-	
Power Back-off, Proximity Sensor On															
Wi-Fi 2.4 GHz	2462	14	25	0	2			2		-MEASURE-	-MEASURE-			-MEASURE-	
Wi-Fi 5.3 GHz	5320	10	10	0	2			2		-MEASURE-	-MEASURE-			-MEASURE-	
Wi-Fi 5.5 GHz	5700	10	10	0	2			2		-MEASURE-	-MEASURE-			-MEASURE-	
Wi-Fi 5.8 GHz	5825	10	10	0	2			2		-MEASURE-	-MEASURE-			-MEASURE-	

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

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	1.194	0.871	1.073	0.326	2.065	2.267	1.520
Edge 1	0.518	0.204	0.910	0.049	0.722	1.428	0.567
Edge 2	0.741	0.400	0.400	0.400	1.141	1.141	1.141
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.282	0.400	0.400	0.400	0.682	0.682	0.682
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	1.194	0.871			① + ②	2.065	85.7	0.03	No	1
	1.194		1.073		① + ③	2.267	85.4	0.04	No	2

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

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.989	0.871	1.073	0.326	1.860	2.062	1.315
Edge 1	1.185	0.204	0.910	0.049	1.389	2.095	1.234
Edge 2	1.137	0.400	0.400	0.400	1.537	1.537	1.537
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.970	0.400	0.400	0.400	1.370	1.370	1.370
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	0.989	0.871			① + ②	1.860	90.5	0.03	No	3
	0.989		1.073		① + ③	2.062	90.0	0.03	No	4
Edge 1	1.185		0.910		① + ③	2.095	76.8	0.04	No	5

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12.3. Sum of the SAR for CDMA BC10 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	1.192	0.871	1.073	0.326	2.063	2.265	1.518
Edge 1	0.480	0.204	0.910	0.049	0.684	1.390	0.529
Edge 2	0.605	0.400	0.400	0.400	1.005	1.005	1.005
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.257	0.400	0.400	0.400	0.657	0.657	0.657
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	1.192	0.871			① + ②	2.063	85.6	0.03	No	6
	1.192		1.073		① + ③	2.265	85.5	0.04	No	7

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

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	1.180	0.871	1.073	0.326	2.051	2.253	1.506
Edge 1	1.165	0.204	0.910	0.049	1.369	2.075	1.214
Edge 2	1.176	0.400	0.400	0.400	1.576	1.576	1.576
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.969	0.400	0.400	0.400	1.369	1.369	1.369
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	1.180	0.871			① + ②	2.051	96.3	0.03	No	8
	1.180		1.073		① + ③	2.253	96.0	0.04	No	9
Edge 1	1.165		0.910		① + ③	2.075	76.9	0.04	No	10

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

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.766	0.871	1.073	0.326	1.637	1.839	1.092
Edge 1	0.663	0.204	0.910	0.049	0.867	1.573	0.712
Edge 2	0.629	0.400	0.400	0.400	1.029	1.029	1.029
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.572	0.400	0.400	0.400	0.972	0.972	0.972
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	0.766	0.871			① + ②	1.637	86.9	0.02	No	11
	0.766		1.073		① + ③	1.839	86.6	0.03	No	12

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

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.528	0.871	1.073	0.326	1.399	1.601	0.854
Edge 1	0.464	0.204	0.910	0.049	0.668	1.374	0.513
Edge 2	0.570	0.400	0.400	0.400	0.970	0.970	0.970
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.124	0.400	0.400	0.400	0.524	0.524	0.524
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	0.528		1.073		① + ③	1.601	82.8	0.02	No	13

12.7. Sum of the SAR for LTE Band 12 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.415	0.871	1.073	0.326	1.286	1.488	0.741
Edge 1	0.250	0.204	0.910	0.049	0.454	1.160	0.299
Edge 2	0.197	0.400	0.400	0.400	0.597	0.597	0.597
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.096	0.400	0.400	0.400	0.496	0.496	0.496
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

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12.8. Sum of the SAR for LTE Band 25 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	1.174	0.871	1.073	0.326	2.045	2.247	1.500
Edge 1	0.990	0.204	0.910	0.049	1.194	1.900	1.039
Edge 2	0.988	0.400	0.400	0.400	1.388	1.388	1.388
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	1.087	0.400	0.400	0.400	1.487	1.487	1.487
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	1.174	0.871			① + ②	2.045	85.7	0.03	No	14
	1.174		1.073		① + ③	2.247	85.3	0.04	No	15
Edge 1	0.990		0.910		① + ③	1.900	75.3	0.03	No	16

12.9. Sum of the SAR for LTE Band 26 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.450	0.871	1.073	0.326	1.321	1.523	0.776
Edge 1	0.420	0.204	0.910	0.049	0.624	1.330	0.469
Edge 2	0.511	0.400	0.400	0.400	0.911	0.911	0.911
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.400	0.855	0.594	0.187	1.255	0.994	0.587
Corner A	0.085	0.400	0.400	0.400	0.485	0.485	0.485
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

12.10. Sum of the SAR for LTE Band 41 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		
	WWAN ①	DTS ②	U-NII ③	BT ④	WWAN + DTS ① + ②	WWAN + U-NII ① + ③	WWAN + BT ① + ④
Rear	0.587	0.871	1.073	0.326	1.458	1.660	0.913
Edge 1	0.865	0.204	0.910	0.049	1.069	1.775	0.914
Edge 2	0.321	0.400	0.400	0.400	0.721	0.721	0.721
Edge 3	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Edge 4	0.206	0.855	0.594	0.187	1.061	0.800	0.393
Corner A	0.400	0.400	0.400	0.400	0.800	0.800	0.800
Corner B	0.400	0.871	0.683		1.271	1.083	0.400

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)				∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	① WWAN	② DTS	③ U-NII	④ BT						
Rear	0.587		1.073		① + ③	1.660	66.7	0.03	No	17
Edge 1	0.865		0.910		① + ③	1.775	78.8	0.03	No	18

Conclusion:

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

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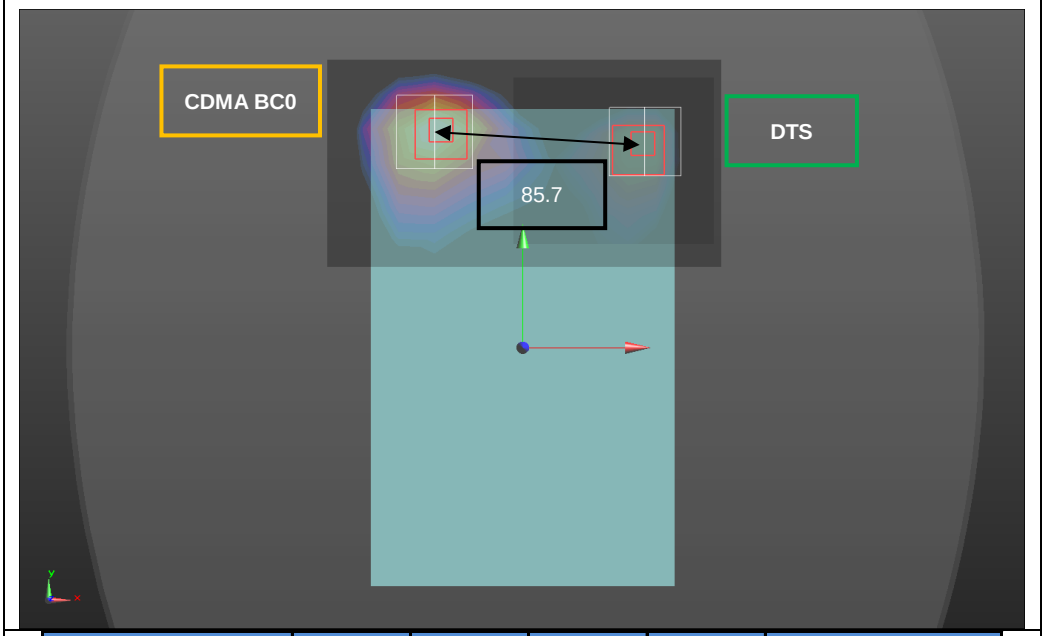
Figure (1)

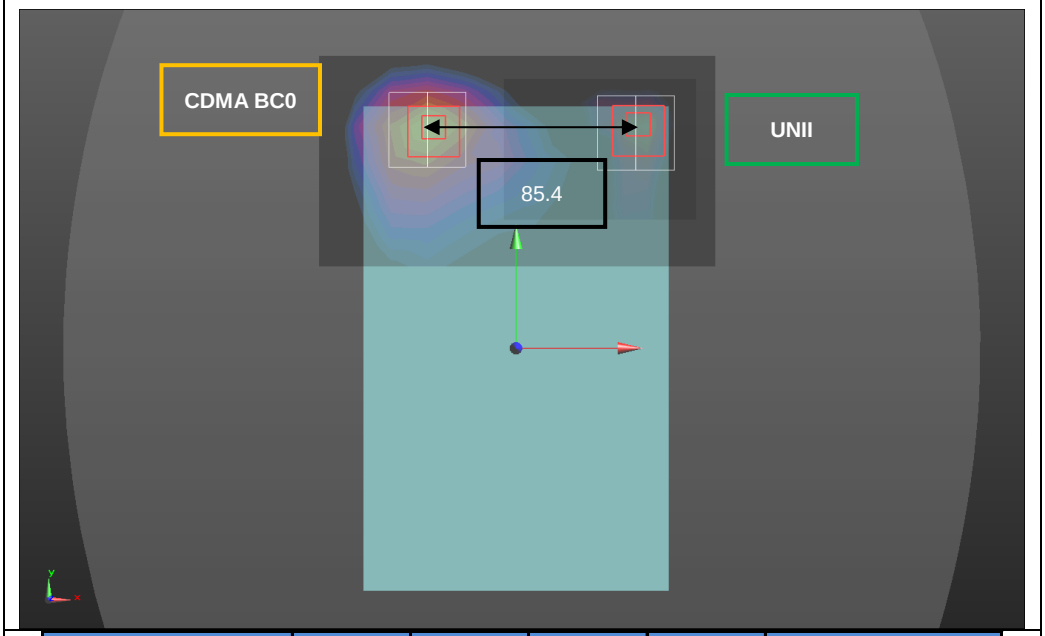


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC0	①	1.194	-0.0354	0.0951	-0.0029	① + ②	85.7
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (2)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC0	①	1.194	-0.0354	0.0951	-0.0029	① + ②	85.4
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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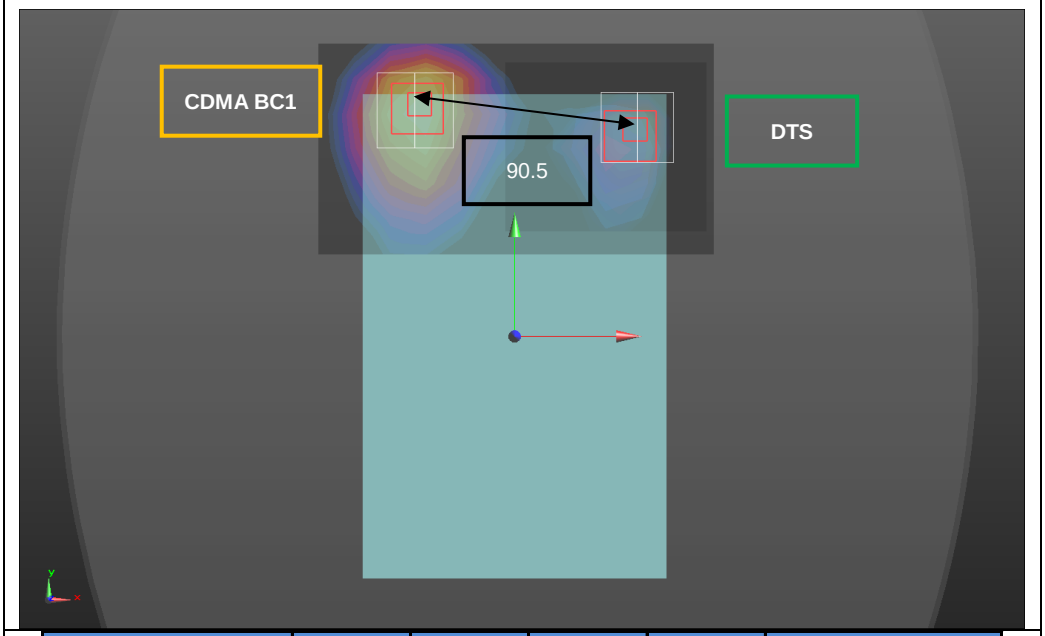
Figure (3)

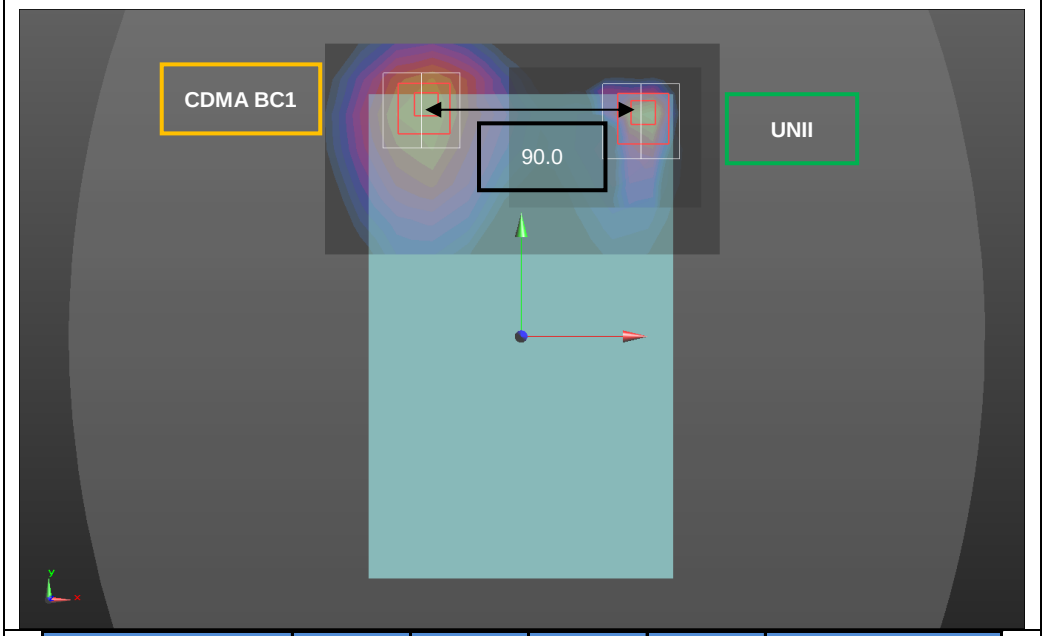


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC1	①	0.989	-0.0399	0.1013	-0.0025	① + ②	90.5
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (4)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC1	①	0.989	-0.0399	0.1013	-0.0025	① + ②	90.0
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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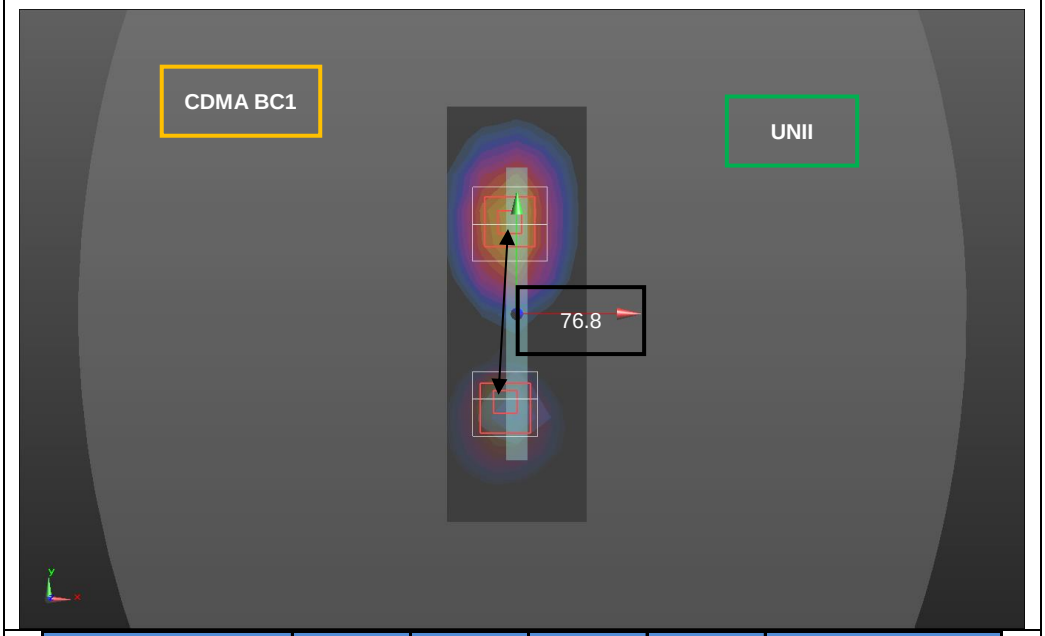
Figure (5)

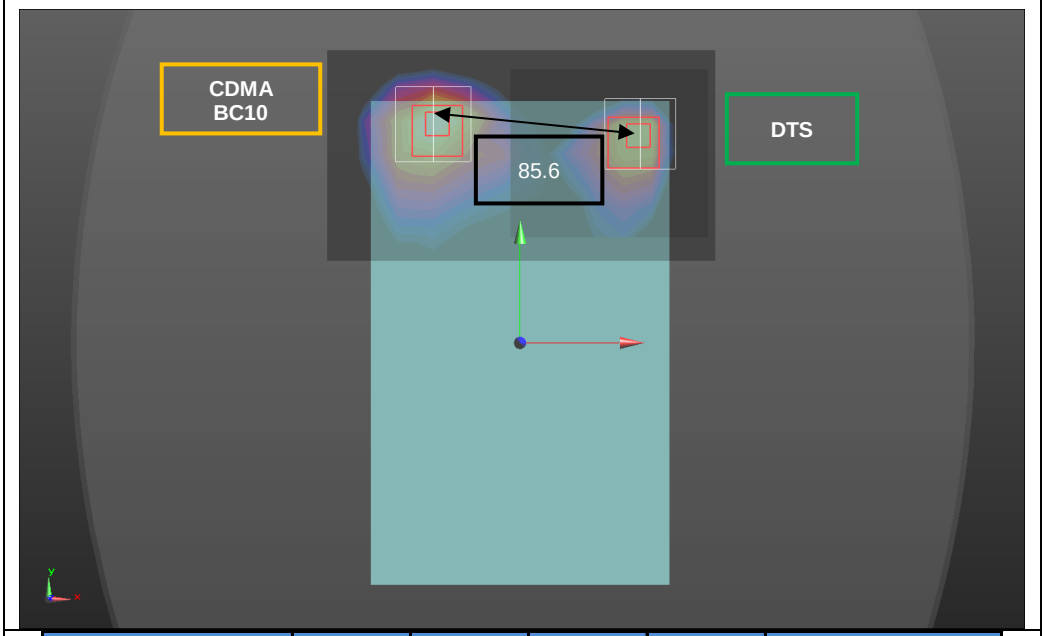


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC1	①	1.185	-0.003	0.039	-0.0028	① + ②	76.8
UNII	②	0.910	-0.0054	-0.0378	-0.0025		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (6)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC10	①	1.192	-0.0354	0.0935	-0.0028	① + ②	85.6
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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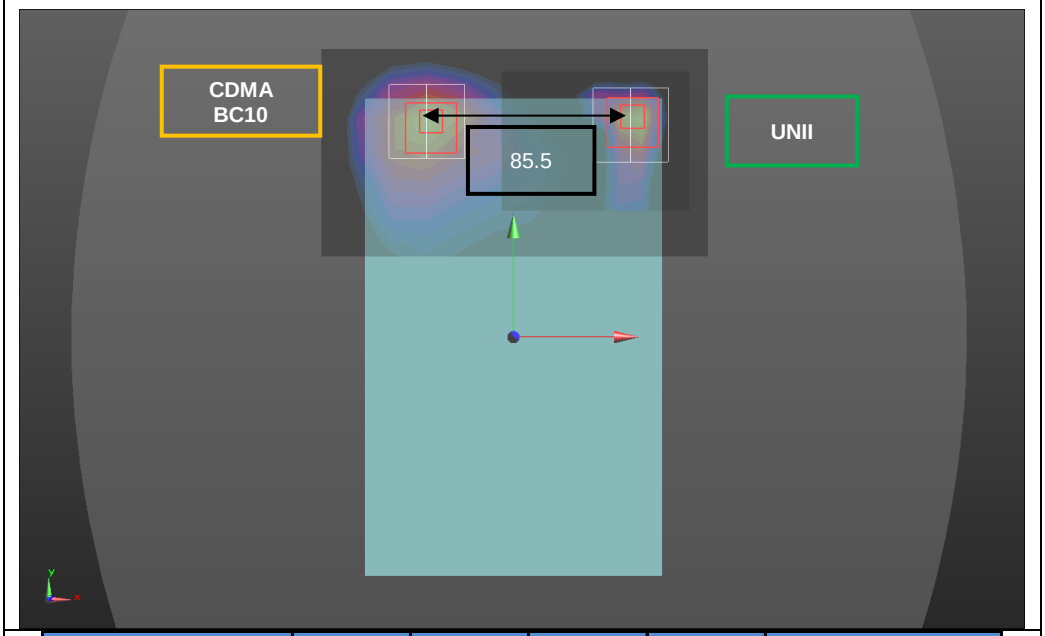
Figure (7)

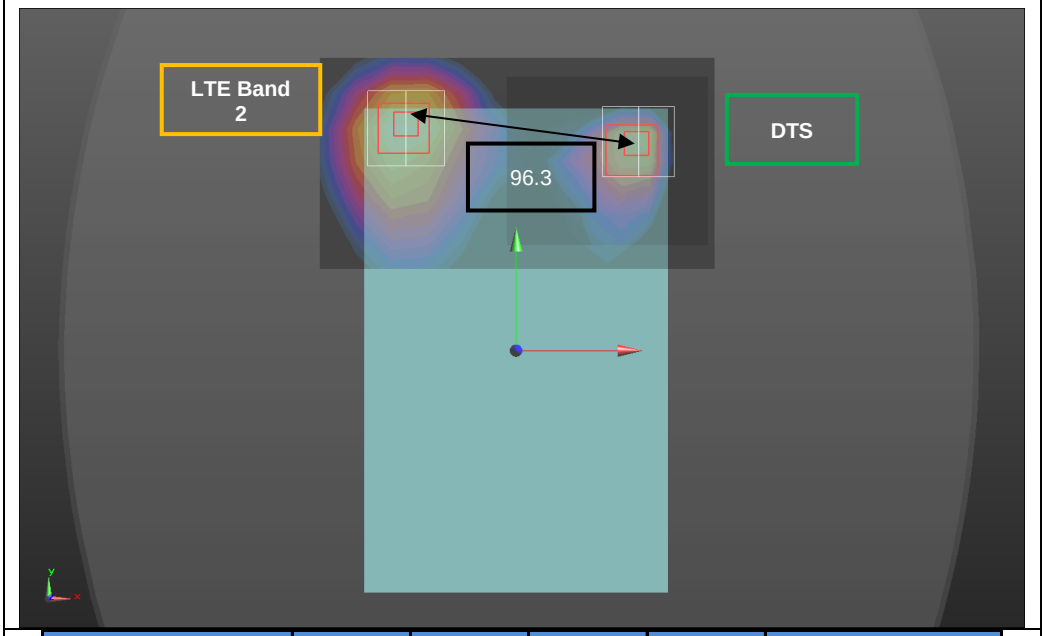


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
CDMA BC10	①	1.192	-0.0354	0.0935	-0.0028	① + ②	85.5
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (8)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	1.18	-0.046	0.0966	-0.0023	① + ②	96.3
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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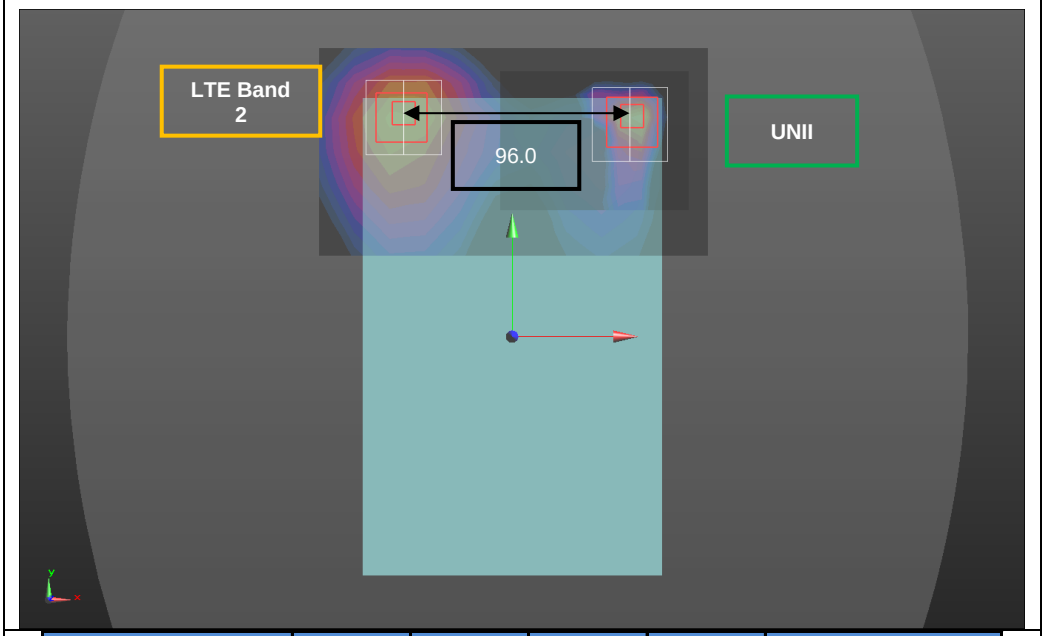
Figure (9)

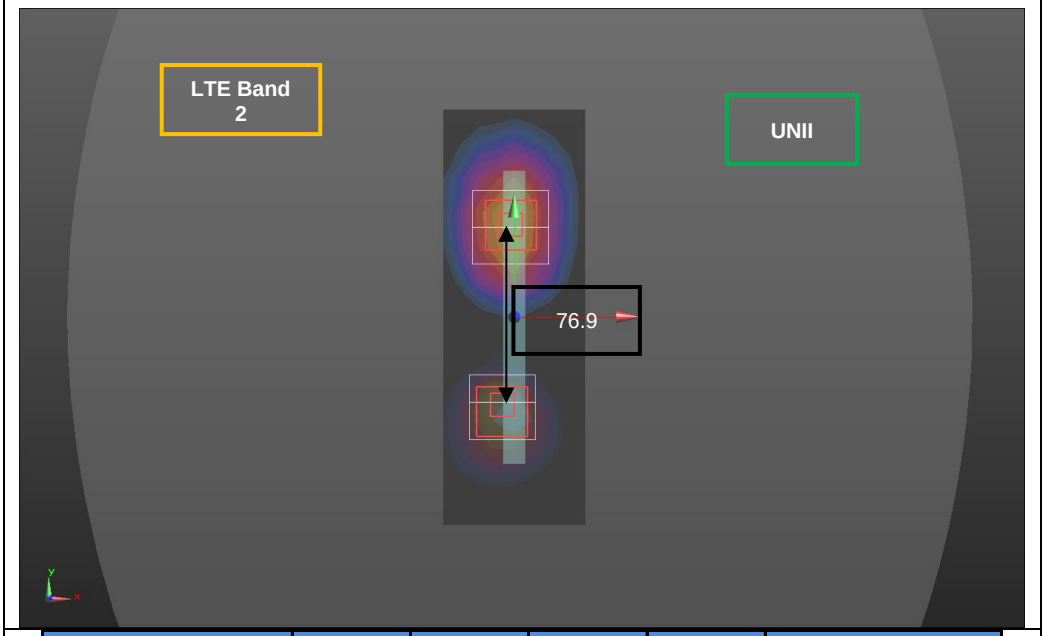


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	1.18	-0.046	0.0966	-0.0023	① + ②	96.0
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (10)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	1.165	-0.0015	0.039	-0.0025	① + ②	76.9
UNII	②	0.910	-0.0054	-0.0378	-0.0025		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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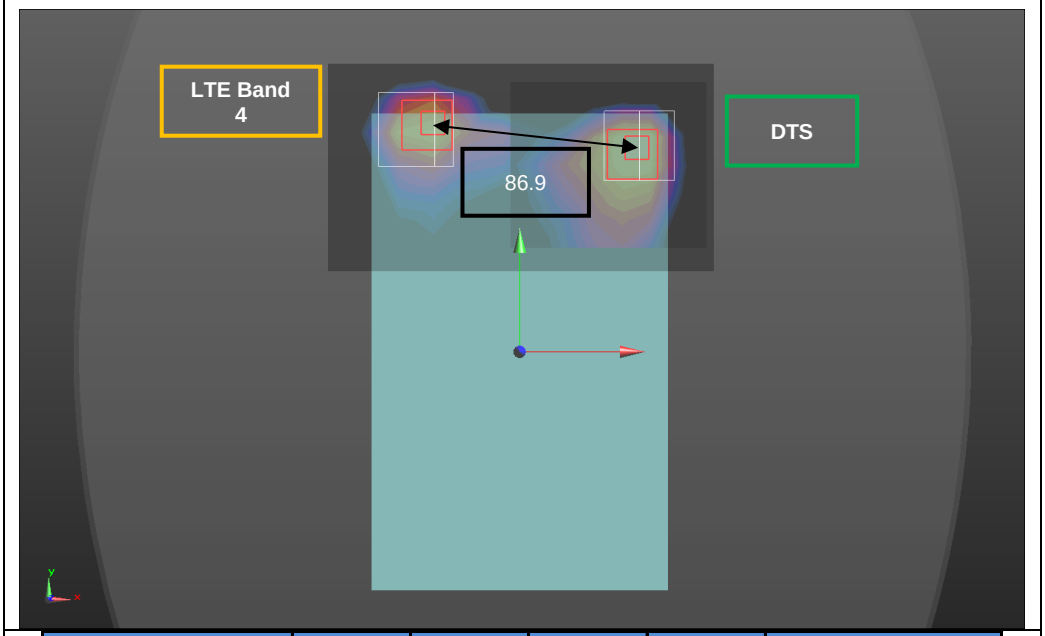
Figure (11)

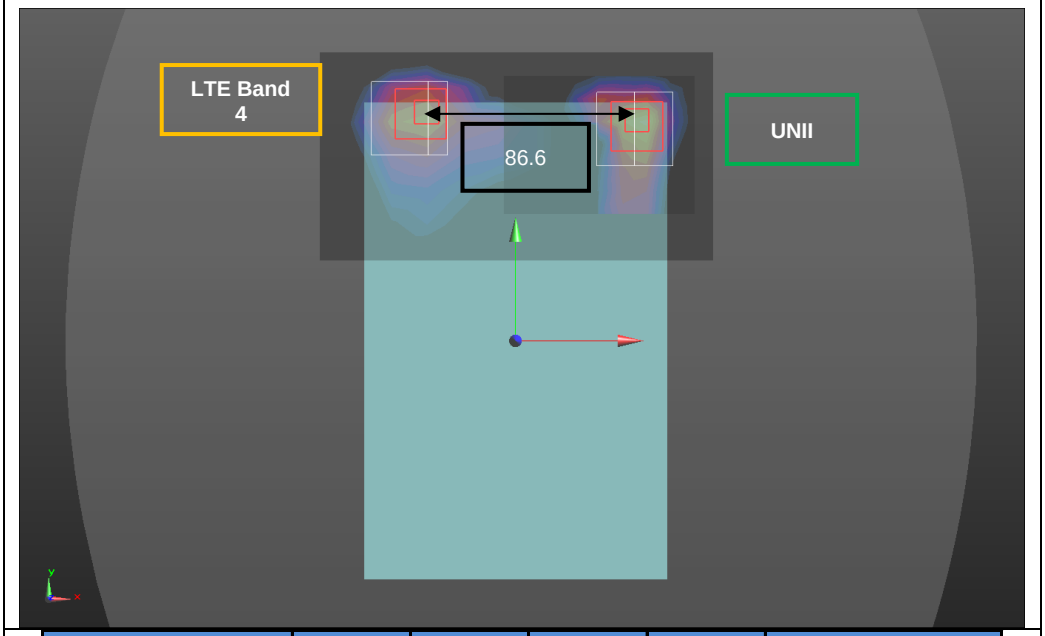


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 4	①	0.766	-0.0365	0.0981	-0.0044	① + ②	86.9
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (12)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 4	①	0.766	-0.0365	0.0981	-0.0044	① + ②	86.6
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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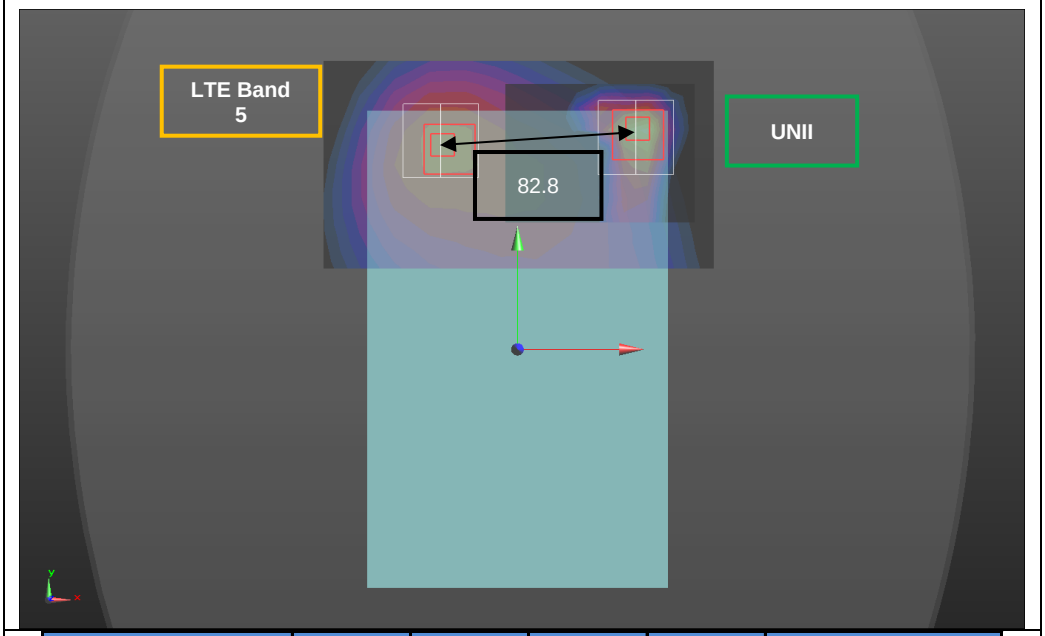
Figure (13)

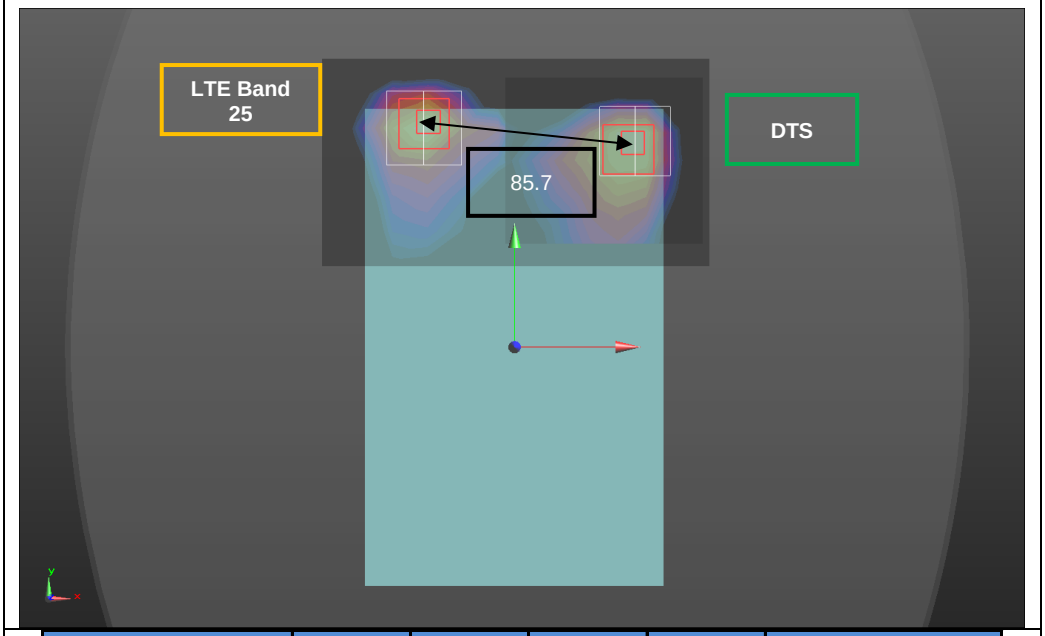


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.528	-0.0325	0.0905	-0.0019	① + ②	82.8
UNII	②	1.073	0.0500	0.0976	-0.0015		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

Figure (14)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 25	①	1.174	-0.0353	0.0982	-0.0025	① + ②	85.7
DTS	②	0.871	0.0502	0.0924	-0.0014		

The Peak Location Separation Distance is computed by using the formula below:

SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)

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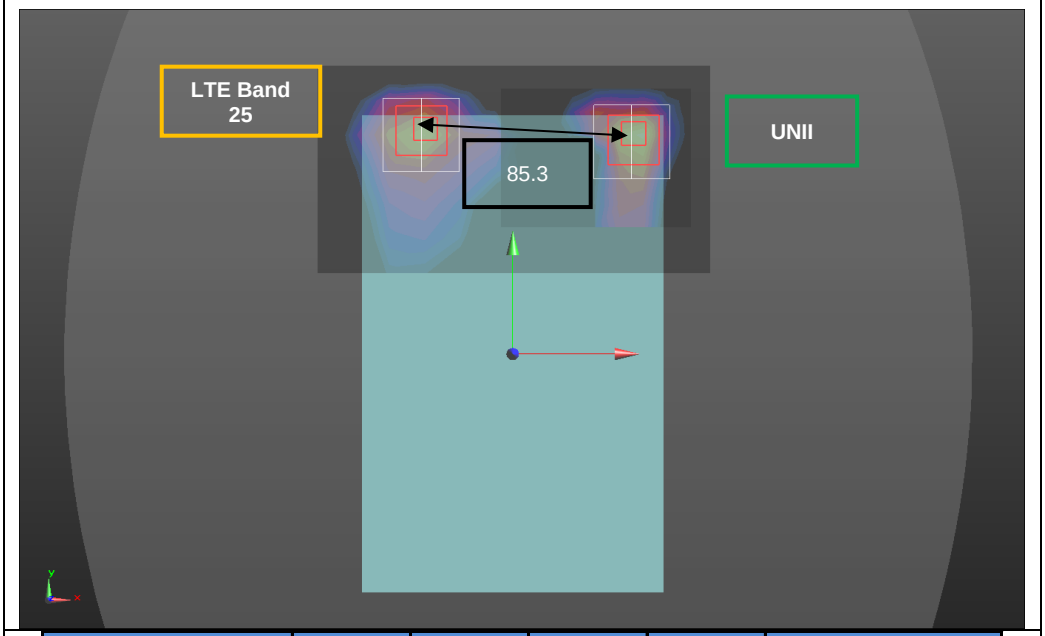
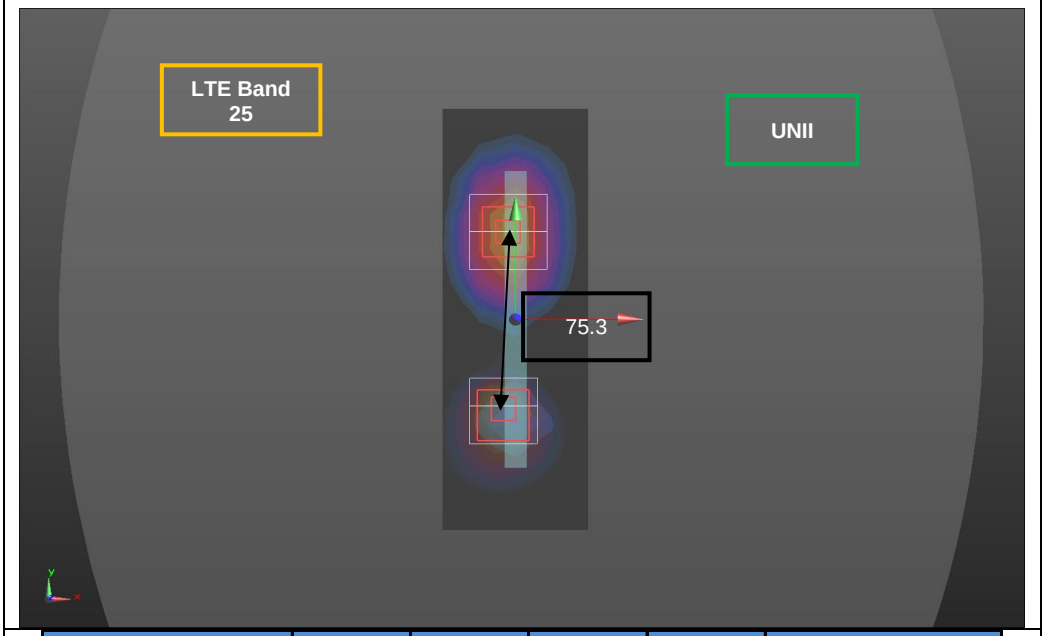
Figure (15)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 25	①	1.174	-0.0353	0.0982	-0.0025	① + ②	85.3
UNII	②	1.073	0.0500	0.0976	-0.0015		

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

Figure (16)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 25	①	0.99	-0.003	0.0375	-0.0029	① + ②	75.3
UNII	②	0.910	-0.0054	-0.0378	-0.0025		

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

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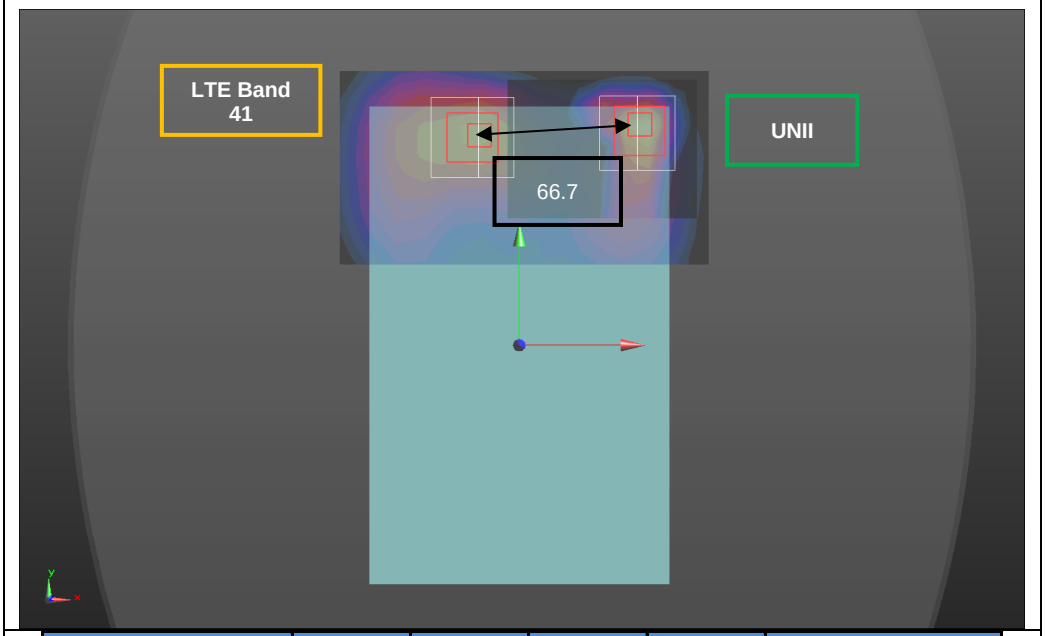
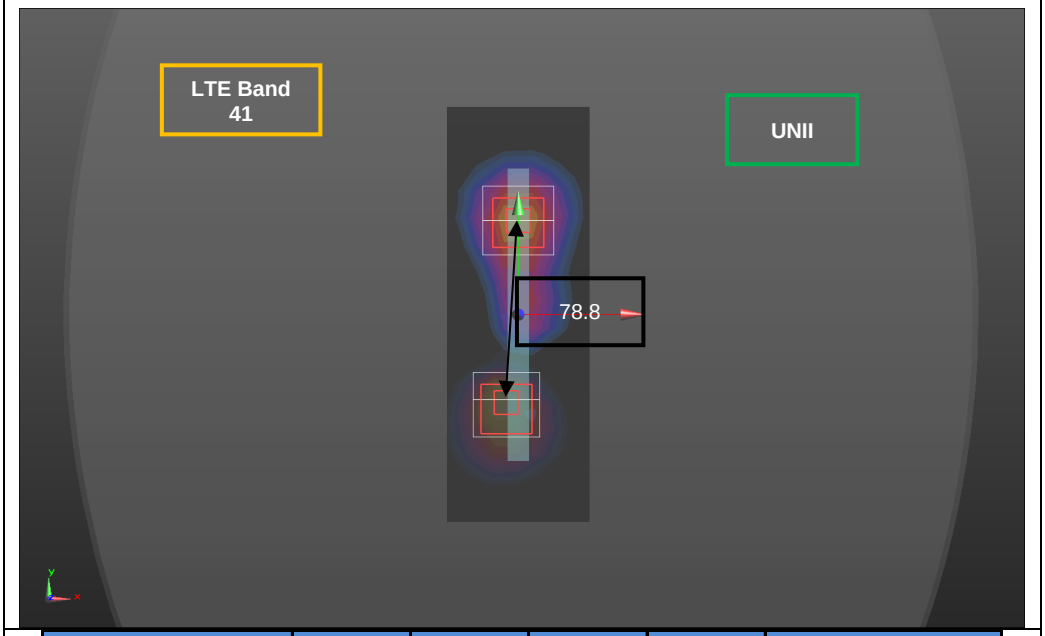
Figure (17)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 41	①	0.587	-0.0162	0.0896	-0.0015	① + ②	66.7
UNII	②	1.073	0.0500	0.0976	-0.0015		

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

Figure (18)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 25	①	0.865	0	0.0408	-0.0019	① + ②	78.8
UNII	②	0.910	-0.0054	-0.0378	-0.0025		

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

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Appendixes

Refer to separated files for the following appendixes.

4788534503-S1V2 FCC Report SAR_App A_Photos & Ant. Locations

4788534503-S1V2 FCC Report SAR_App B_Highest SAR Test Plots

4788534503-S1V2 FCC Report SAR_App C_System Check Plots

4788534503-S1V2 FCC Report SAR_App D_SAR Tissue Ingredients

4788534503-S1V2 FCC Report SAR_App E_Probe Cal. Certificates

4788534503-S1V2 FCC Report SAR_App F_Dipole Cal. Certificates

END OF REPORT

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