FCC 47 CFR Parts 1 & 2
Published RF Exposure KDB Procedures
IEEE Std 1528-2003 and IEEE 1528a-2005

SAR EVALUATION REPORT

For

Tablet with cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/CDMA1xRTT/1x Advanced/ EV-DO Rev 0, A, B / LTE radio, IEEE 802.11a/b/g/n radio (MIMO 2X2) and Bluetooth radio

Model: A1475
FCC ID: BCGA1475

Report Number: 13U15555-14A
Issue Date: 9/22/2013

Prepared for

APPLE INC.
1 INFINITE LOOP, MS 26A
CUPERTINO, CA 95014-2084

Prepared by

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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	9/18/2013	Initial Issue	--
A	9/22/2013	Made the following changed base on the reviewer's comments : 1. Sec. 7.1: Revised Note. 2. Sec. 7.5: Updated LTE transmitter and antenna implementation description and Power reduction. 3. Sec. 8: Corrected typos. 4. Sec. 9.2: Revise table and note.	Chakrit Thammanavarat

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1. Attestation of Test Results

Applicant	Apple Inc.			
DUT description	Tablet with cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/CDMA1xRTT/1x Advanced/ EV-DO Rev 0, A, B / LTE radio, IEEE 802.11a/b/g/n radio (MIMO 2X2) and Bluetooth radio			
Model	A1475			
Test device is	An identical prototype			
Device category	Portable			
Exposure category	General Population/Uncontrolled Exposure			
Date tested	08/07/2013 – 09/04/2013			
The highest reported SAR values	RF exposure condition	Licensed	DTS	UNII
	Body	1.190 W/kg	1.190 W/kg (2.4GHz) 1.090 W/kg (5.8GHz)	1.180 W/kg
	Simultaneous Transmission	1.325 W/kg	1.456 W/kg	1.546 W/kg
Applicable Standards	FCC 47 CFR Parts 1 & 2 IEEE Std 1528-2003 and IEEE Std 1528a-2005 FCC Published RF exposure KDB procedures, and TCB workshop updates			
Test Results	Pass			

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released By:

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Prepared By:

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2. Test Methodology

The tests documented in this report were performed in accordance with FCC 47 CFR Parts 1 & 2, IEEE STD 1528-2003, IEEE Std 1528a-2005, the following FCC Published RF exposure KDB procedures and TCB workshop updates:

- KDB 447498 D01 General RF Exposure Guidance v05r01
- KDB 616217 D04 SAR for laptop and tablets v01r01
- KDB 941225 D01 SAR test for 3G devices v02
- KDB 941225 D02 HSPA and 1x Advanced v02r02
- KDB 941225 D03 SAR Test Reduction GSM GPRS EDGE v01
- KDB 941225 D04 SAR for GSM E GPRS Dual Xfer Mode v01
- KDB 941225 D05 SAR for LTE Devices v02r02
- KDB 248227 D01 SAR meas for 802 11abg v01r02
- KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r01
- KDB 865664 D02 SAR Reporting v01r01
- KDB 690783 D01 SAR Listings on Grants v01r02

3. Facilities and Accreditation

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

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4. Calibration and Uncertainty

4.1. Measuring Instrument Calibration

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.

Tissue Dielectric Properties

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071B	MY42100131	2/21/2014
Dielectronic Probe kit	SPEAG	DAK-3.5	1087	10/16/2013
Dielectronic Probe kit	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	Control Company	4242	122529163	9/19/2013

System Performance Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Synthesized Signal Generator	HP	8665B	3546A00784	3/26/2014
Power Meter	HP	438A	3513U04320	9/24/2013
Power Sensor	HP	8481A	2237A31744	9/24/2013
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1795093	N/A
Directional coupler	Werlatone	C8060-102	2711	N/A
DC Power Supply	AMETEK	XHR60-18	1308A01935	N/A
Synthesized Signal Generator	HP	8665B	3744A01155	3/6/2014
Power Meter	HP	438A	2822A05684	10/7/2013
Power Sensor	HP	8481A	2702A66876	9/24/2013
Power Sensor	HP	8482A	2349A08568	9/26/2013
Amplifier	MITEQ	AMF-4D-00400600-50-30P	1622052	N/A
Directional coupler	Werlatone	C8060-102	2149	N/A
DC Power Supply	EKNWOOD	PA36-3A	7060074	N/A
Thermometer	TRACEABLE	4242	122529162	9/19/2013
E-Field Probe	SPEAG	EX3DV4	3749	1/15/2014
E-Field Probe	SPEAG	EX3DV4	3751	12/15/2013
E-Field Probe	SPEAG	EX3DV4	3772	2/20/2014
E-Field Probe	SPEAG	EX3DV4	3901	2/13/2014
E-Field Probe	SPEAG	EX3DV4	3885	10/9/2013
Data Acquisition Electronics	SPEAG	DAE3	427	1/9/2014
Data Acquisition Electronics	SPEAG	DAE4	500	5/28/2014
Data Acquisition Electronics	SPEAG	DAE4	1239	4/19/2014
Data Acquisition Electronics	SPEAG	DAE4	1357	2/5/2014
Data Acquisition Electronics	SPEAG	DAE4	1352	10/8/2013
System Validation Dipole	SPEAG	750V3	1071	10/5/2013
System Validation Dipole	SPEAG	750V3	1024	5/28/2014
System Validation Dipole	SPEAG	D835V2	4d117	5/28/2014
System Validation Dipole	SPEAG	D835V2	4d142	10/4/2013
System Validation Dipole	SPEAG	D1750V2	1077	10/3/2013
System Validation Dipole	SPEAG	D1900V2	5d140	4/18/2014
System Validation Dipole	SPEAG	D1900V2	5d163	10/4/2013
System Validation Dipole	SPEAG	D2450V2	748	2/11/2014
System Validation Dipole	SPEAG	D5GHzV2	1003	9/18/2013
System Validation Dipole	SPEAG	D5GHzV2	1138	10/9/2013

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Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	Agilent	8960	MY48360200	3/20/2014
Base Station Simulator	R & S	CMU200	118342	5/19/2014
Base Station Simulator	R & S	CMU200	117455	5/20/2014
Base Station Simulator	R & S	CMU200	112018	5/21/2015
Base Station Simulator	R & S	CMU200	118715	5/20/2014
Base Station Simulator	R & S	CMW500	132909	2/19/2014
Base Station Simulator	R & S	CMW500	107510	8/10/2014
Base Station Simulator	R & S	CMW500	103766	8/19/2014
Base Station Simulator	R & S	CMW500	107513	7/26/2014
Power Meter	R & S	NRP	101053	5/23/2014
Power Meter	R & S	NRP2	100673	5/27/2015
Power Sensor	R & S	NRP - Z21	100533	5/27/2015
Power Sensor	R & S	NRP - Z23	100168	5/23/2015

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4.2. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r01 Section 2.8.1., when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg, the extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2003 is not required in SAR reports submitted for equipment approval.

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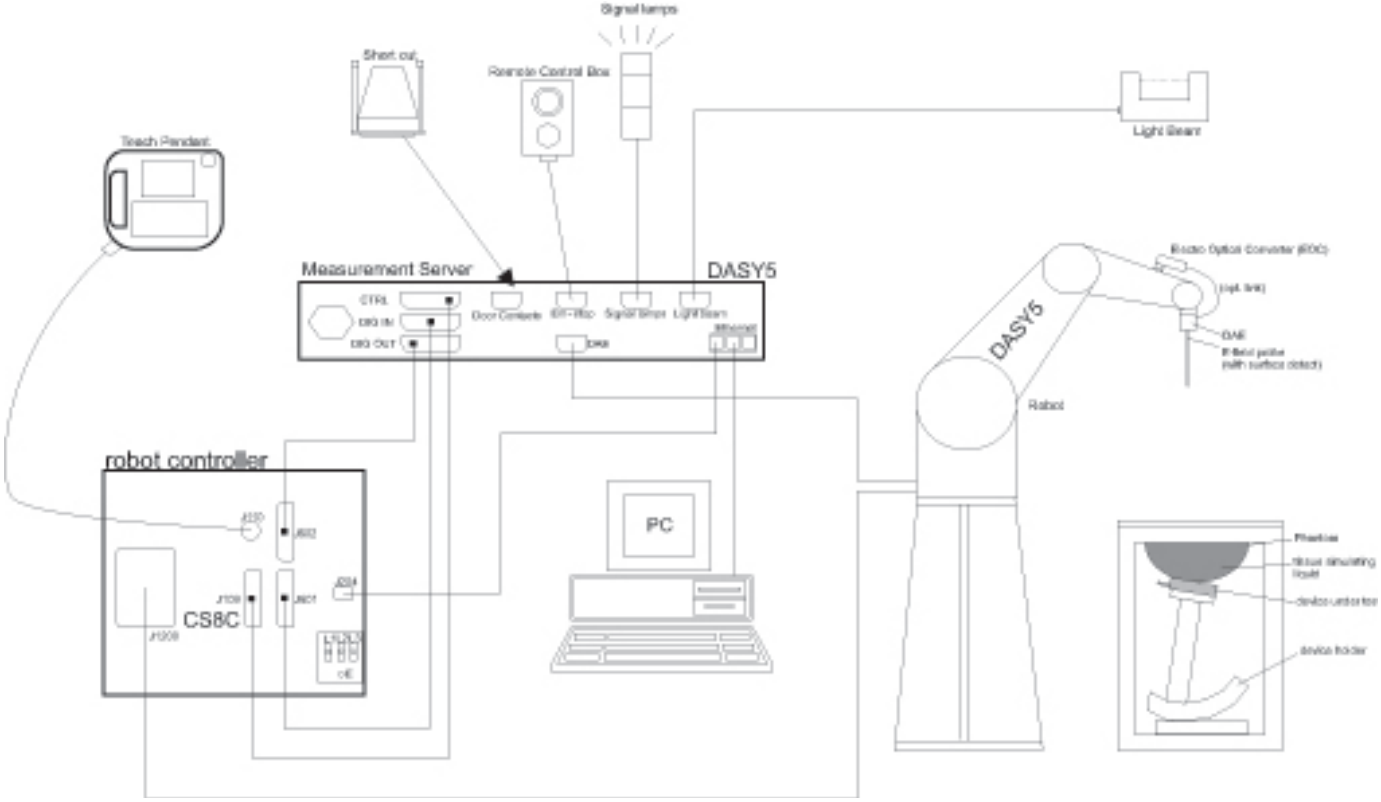
5. Measurement System Description and Setup

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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6. SAR Measurement Procedure

6.1. Normal SAR Measurement Procedure

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 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 v01r01

	≤ 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 v01r01

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

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6.2. Volume Scan Procedures

Step 1: Repeat Step 1-4 in Section 6.1

Step 2: Volume Scan
Volume Scans are used to assess peak SAR and averaged SAR measurements in largely extended 3-dimensional volumes within any phantom. This measurement does not need any previous area scan. The grid can be anchored to a user specific point or to the current probe location.

Step 3: Power drift measurement
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

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7. Device Under Test

7.1. General Information

Model: A1475 is a tablet with cellular GSM/GPRS/EGPRS/WCDMA/HSPA+/DC-HSDPA/CDMA1xRTT/1x Advanced/ EV-DO Rev 0, A, B / LTE radio, IEEE 802.11a/b/g/n radio (MIMO 2X2) and Bluetooth radio.	
AirPlay	AirPlay mode enabled devices transfer data directly between each other ☒ AirPlay (WiFi 2.4 GHz) ☒ AirPlay (WiFi 5 GHz)
RF Exposure Condition(s)	Body Exposure with all surfaces and edges. Refer to Section 9 for details.
Device dimension	Overall (Length x Width): 240mm x 169.47mm Overall Diagonal: 285.0mm Display Diagonal: 246.4mm

Notes:

There are two vendors of the WiFi/Bluetooth radio modules to support the production volumes of the device. The two variants are referenced in this report as:

BOM #1 = WiFi/BT module vendor 1

BOM #2 = WiFi/BT module vendor 2

The WiFi/Bluetooth radio modules have the same mechanical outline (e.g., the same package dimension and pin-out layout), use the same on-board antenna matching circuit, have an identical antenna structure, and are built and tested to conform to the same specifications and to operate within the same tolerances.

Complete SAR evaluation is performed on the device with one WiFi/Bluetooth radio module and then, the test is repeated on the device with the other WiFi/Bluetooth module at the highest peak SAR value.

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7.2. Wireless Technologies

Wireless Technology and Frequency Bands	GSM: 850 / 1900 W-CDMA Band: 2 / 4 / 5 CDMA BC 0 / 1 / 10 / 15 LTE Band 2 / 4 / 5 / 7 / 13 / 17 / 25 / 26 WiFi: 2.4 / 5 GHz Bluetooth: 2.4 GHz. NOTE: LTE Band 7 is supported but it is disabled in the US version of this product
Mode	GSM - ☒ GPRS (GMSK) - ☒ EGPRS (8PSK) W-CDMA - ☒ HSDPA (Rel. 7, CAT 14) - ☒ HSUPA (Rel. 6, CAT 6) - ☒ DC-HSDPA (Rel. 8, CAT 24) - ☒ HSPA+ (Rel. 6, CAT 6) CDMA2000 - ☒ 1xRTT (Data) - ☒ 1xEVDO Rel. 0 - ☒ 1xEVDO Rev. A - ☒ 1xAdvanced - ☒ 1xEVDO Rev. B (BC0 only) LTE - ☒ QPSK - ☒ 16QAM WiFi 2.4GHz (802.11b/g/n) - ☒ 802.11b - ☒ 802.11g - ☒ 802.11n (20MHz) - ☐ 802.11n (40MHz) WiFi 5GHz - ☒ 802.11a - ☒ 802.11n (20MHz) - ☒ 802.11n (40MHz) Bluetooth Ver. 4.0 (LE)
Duty Cycle	GSM Voice: 12.5%; GPRS 1 Slot: 12.5%; 2 Slots: 25% W-CDMA: 100% CDMA: 100% LTE: 100% WiFi 802.11a/b/g/n: 100% Bluetooth: 77.52%
GPRS Multi-Slot Class	☐ Class 8 - One Up ☒ Class 10 - Two Up ☐ Class 12 - Four Up

7.3. Hotspot (Wireless Router) Function

The device is capable of personal hotspot mode. The hotspot mode can be enabled by the users by the following this sequence of soft-keys; Settings > General > Network > Enable Personal Hotspot.

WiFi Hotspot mode permits the device to share its cellular data connection with other 2.4 GHz WiFi-enabled devices (channels 1 - 11). WiFi Hotspot mode is not supported in 5.0 GHz WiFi band.

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7.4. Simultaneous Transmission Condition

RF Exposure Condition	Capable Transmit Configurations
Body (WWAN + WiFi)	GSM + WiFi / Bluetooth 1. GSM 850/1900 + Bluetooth (WiFi1) 2. GSM 850/1900 + 2.4GHz (WiFi1) 3. GSM 850/1900 + 2.4GHz (WiFi2) 4. GSM850/1900 + 5GHz (WiFi1) + Bluetooth (WiFi1) 5. GSM850/1900 + 5GHz (WiFi2) + Bluetooth (WiFi1) 6. GSM850/1900 + DTS 2.4GHz (WiFi1+ WiFi2) 7. GSM850/1900 + DTS 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) 8. GSM850/1900 + UNII 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) CDMA + WiFi / Bluetooth 9. CDMA BC0/1/10/15 + Bluetooth (WiFi1) 10. CDMA BC0/1/10/15 + 2.4GHz (WiFi1) 11. CDMA BC0/1/10/15 + 2.4GHz (WiFi2) 12. CDMA BC0/1/10/15 + 5GHz (WiFi1) + Bluetooth (WiFi1) 13. CDMA BC0/1/10/15 + 5GHz (WiFi2) + Bluetooth (WiFi1) 14. CDMA BC0/1/10/15 + DTS 2.4GHz (WiFi1+ WiFi2) 15. CDMA BC0/1/10/15 + DTS 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) 16. CDMA BC0/1/10/15 + UNII 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) W-CDMA + WiFi / Bluetooth 17. W-CDMA Band 2/4/5 + Bluetooth (WiFi1) 18. W-CDMA Band 2/4/5 + 2.4GHz (WiFi1) 19. W-CDMA Band 2/4/5 + 2.4GHz (WiFi2) 20. W-CDMA Band 2/4/5 + 5GHz (WiFi1) + Bluetooth (WiFi1) 21. W-CDMA Band 2/4/5 + 5GHz (WiFi2) + Bluetooth (WiFi1) 22. W-CDMA Band 2/4/5 + DTS 2.4GHz (WiFi1+ WiFi2) 23. W-CDMA Band 2/4/5 + DTS 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) 24. W-CDMA Band 2/4/5 + UNII 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) LTE + WiFi / Bluetooth 25. LTE Band 2/4/5/7/13/17/25/26 + Bluetooth (WiFi1) 26. LTE Band 2/4/5/7/13/17/25/26 + 2.4GHz (WiFi1) 27. LTE Band 2/4/5/7/13/17/25/26 + 2.4GHz (WiFi2) 28. LTE Band 2/4/5/7/13/17/25/26 + 5GHz (WiFi1) + Bluetooth (WiFi1) 29. LTE Band 2/4/5/7/13/17/25/26 + 5GHz (WiFi2) + Bluetooth (WiFi1) 30. LTE Band 2/4/5/7/13/17/25/26 + DTS 2.4GHz (WiFi1+ WiFi2) 31. LTE Band 2/4/5/7/13/17/25/26 + DTS 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1) 32. LTE Band 2/4/5/7/13/17/25/26+ UNII 5GHz (WiFi1+ WiFi2) + Bluetooth (WiFi1)
Body (WiFi)	SISO (1TX) 33. 5GHz (WiFi1) + Bluetooth (WiFi1) 34. 5GHz (WiFi2) + Bluetooth (WiFi1) MIMO (2TX) 35. DTS 5GHz (WiFi1+WiFi2) + Bluetooth (WiFi1) 36. UNII 5GHz (WiFi1+WiFi2) + Bluetooth (WiFi1)
Refer to Appendix for WiFi 1 and WiFi 2 antenna locations 2.4 GHz cannot transmit simultaneously with Bluetooth, WiFi1 shares antenna with Bluetooth	

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7.5. 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 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/782	23230/ 782		
	High				23255/ 784.5		
	Band 17	Frequency range: 704 – 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23755/ 706.5		
	Mid			23790/ 710	23790/ 710		
	High				23825/ 713.5		

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General LTE SAR Test and Reporting Considerations (continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

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: 818.8 – 823.8 MHz (Channels straddle part 24 and part 90 not supported)					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low					26753/ 820.3	
Mid				26763/ 821.3	26763/ 821.3	
High					26773/ 822.3	

LTE transmitter and antenna implementation	A single antenna is used for LTE and other wireless modes (GPRS/EGPRS/UMTS) for both Transmit and Receive. A Secondary antenna is used for LTE and other wireless modes (GPRS/EGPRS/UMTS) for Receive Only. This device does not support DTM.
Maximum power reduction (MPR)	**Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3**

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

MPR Built-in by design
A-MPR (additional MPR) was disabled during SAR testing

Power reduction	Yes
Spectrum plots for RB configurations	When a properly configured basestation simulator is not used for the SAR and power measurements, spectrum plots for each RB allocation and offset configuration should be included in the SAR report to demonstrate that the tested RB allocations have been correctly established at the maximum output power conditions.

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7.6. Power Reduction by Proximity Sensing

A proximity sensor for power reduction is implemented in this device to address RF exposure compliance when the cellular antenna is positioned close to the user's body. The sensor's mechanical structure is designed to fit within the enclosure design used in this device and also extended around the edge and top of the antenna element in order to optimize sensitivity in these orientations. This design combines the antenna and proximity sensor into a single FPC (Flexible Printed Circuit).

7.6.1. Proximity Sensor Detection Area

The proximity sensor is combined with the primary antenna in a single FPC (Flexible Printed Circuit), therefore, the proximity sensor occupies the same area as the primary antenna.

A two-step power back-off mechanism is implemented in this device. For design and testing purposes Top-Edge and Rear Surface are chosen as the dimensions of interest.

The proximity sensor is triggered at the following conservative distances when:

- the Top-edge of the device is 20 mm for the first-stage trigger, and 16mm for the second-stage trigger, from the phantom.
- the Rear Surface of the device is 20 mm for the first-stage trigger, and 16mm for the second-stage trigger, from the phantom.

The expected capacitance trigger values are programmed in each device for each power back-off stage. Capacitance trigger value for first stage (t1) is C1, and for second stage (t2) is C2. C1 is always smaller than C2.

When a certain object or human body approaches the DUT, if the measured capacitance is lower than C1, proximity sensor is not triggered. If the measured capacitance is higher than C1, but lower than C2, first power back-off (P1) is triggered. If the measured capacitance is higher than C2, second power back-off (P2) is triggered.

SAR evaluation is performed with power back-off disabled (at full power) at the conservative distance of the second stage. Therefore, additional SAR testing for different stages of power back-off will not be performed.

SAR evaluation of the DUT on the Front Surface with separation distance of 0 mm to the flat phantom is NOT performed because there is no use case for this configuration.

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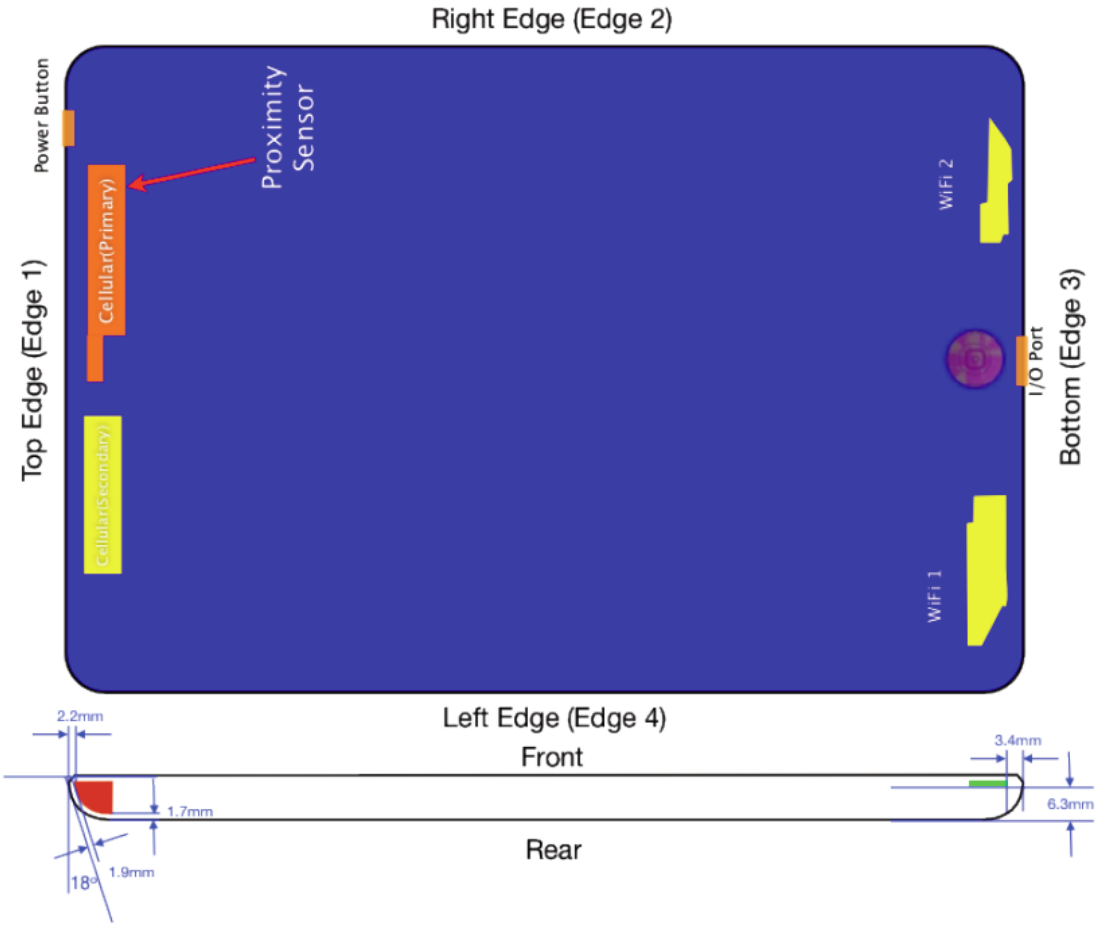

Separation Distances (mm)	Cellular (Primary)	Cellular (Secondary)	WiFi 1/ Bluetooth	WiFi 2
Cellular (Primary)		21.8	221.1	215.4
Cellular (Secondary)			215.4	223.3
WiFi 1/ Bluetooth				87.3
WiFi 2				
Top Edge (Edge 1)	2.4	2.4	227.6	227.6
Right Edge (Edge 2)	24.8	109.1	137.7	12.0
Bottom Edge (Edge 3)	227.8	227.8	3.4	3.4
Left Edge (Edge 4)	98.6	25.6	11.0	135.4
Rear Surface	1.4	1.4	6.3	6.3

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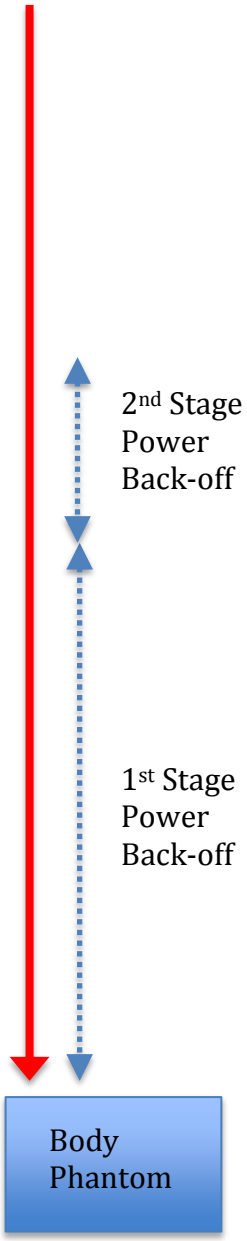
As per the KDB 616217 D04 SAR for laptop and tablets v01r0, section 6.2, the following procedure is used to determine the triggering distances.

First, the DUT is moved towards the flat phantom.

Proximity Sensor Status Table when DUT is moving towards the phantom

Distance to the DUT (mm)	Proximity Sensor Status – Rear Surface	Proximity Sensor Status – Top-Edge
30	OFF	OFF
27	OFF	OFF
25	OFF	OFF
24	OFF	OFF
23	OFF	OFF
22	OFF	OFF
21	OFF	OFF
20	ON (C1, t1, P1)	ON (C1, t1, P1)
19	ON (C1, t1, P1)	ON (C1, t1, P1)
18	ON (C1, t1, P1)	ON (C1, t1, P1)
17	ON (C1, t1, P1)	ON (C1, t1, P1)
16	ON (C2, t2, P2)	ON (C2, t2, P2)
15	ON (C2, t2, P2)	ON (C2, t2, P2)
14	ON (C2, t2, P2)	ON (C2, t2, P2)
13	ON (C2, t2, P2)	ON (C2, t2, P2)
12	ON (C2, t2, P2)	ON (C2, t2, P2)
11	ON (C2, t2, P2)	ON (C2, t2, P2)
10	ON (C2, t2, P2)	ON (C2, t2, P2)
9	ON (C2, t2, P2)	ON (C2, t2, P2)
6	ON (C2, t2, P2)	ON (C2, t2, P2)
3	ON (C2, t2, P2)	ON (C2, t2, P2)
0	ON (C2, t2, P2)	ON (C2, t2, P2)



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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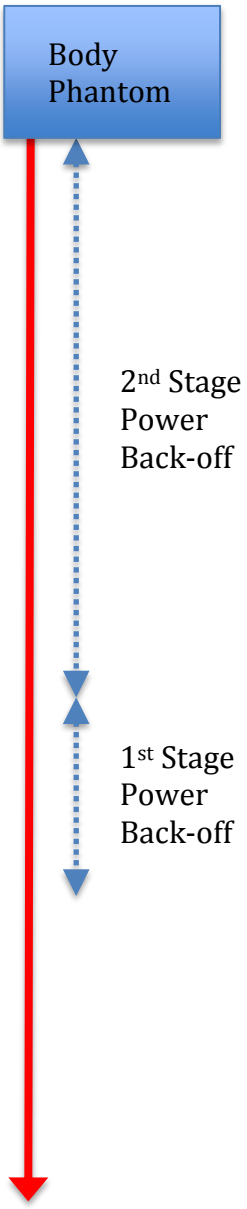
Now, the DUT is moved away from flat phantom

Proximity Sensor Status Table when DUT is moving away from the phantom

Distance to DUT (mm)	Proximity Sensor Status – Rear Surface	Proximity Sensor Status – Top-Edge
0	ON (C2, t2, P2)	ON (C2, t2, P2)
3	ON (C2, t2, P2)	ON (C2, t2, P2)
6	ON (C2, t2, P2)	ON (C2, t2, P2)
9	ON (C2, t2, P2)	ON (C2, t2, P2)
10	ON (C2, t2, P2)	ON (C2, t2, P2)
11	ON (C2, t2, P2)	ON (C2, t2, P2)
12	ON (C2, t2, P2)	ON (C2, t2, P2)
13	ON (C2, t2, P2)	ON (C2, t2, P2)
14	ON (C2, t2, P2)	ON (C2, t2, P2)
15	ON (C2, t2, P2)	ON (C2, t2, P2)
16	ON (C2, t2, P2)	ON (C2, t2, P2)
17	ON (C1, t1, P1)	ON (C1, t1, P1)
18	ON (C1, t1, P1)	ON (C1, t1, P1)
19	ON (C1, t1, P1)	ON (C1, t1, P1)
20	ON (C1, t1, P1)	ON (C1, t1, P1)
21	OFF	OFF
22	OFF	OFF
23	OFF	OFF
24	OFF	OFF
25	OFF	OFF
27	OFF	OFF
30	OFF	OFF



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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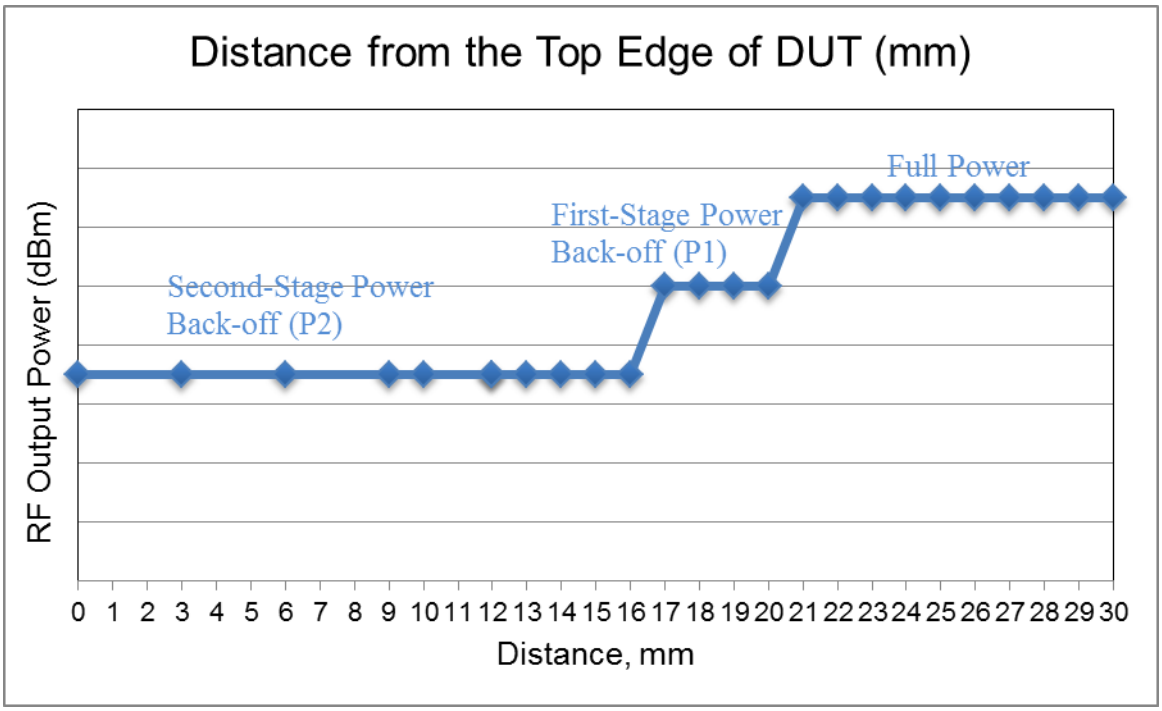

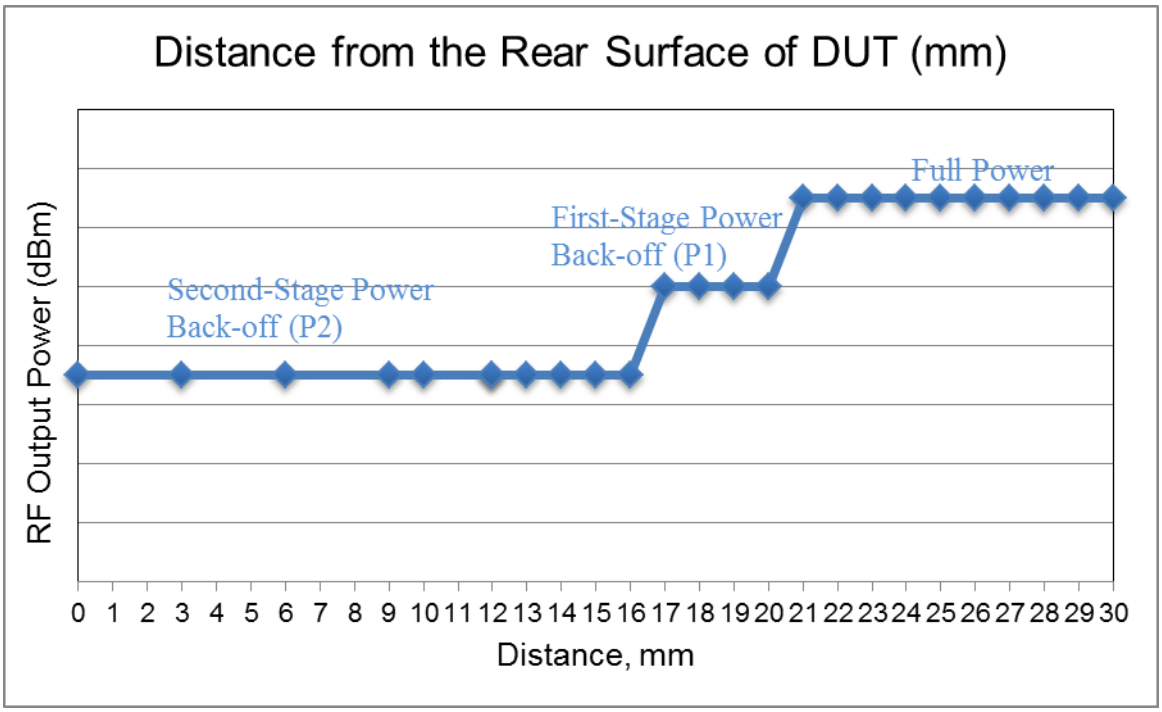

Since, the antenna and proximity sensor are not spatially offset in this implementation, the procedure in KDB 616217 D04 SAR for laptop and tablets v01r0 doesn't apply to device.

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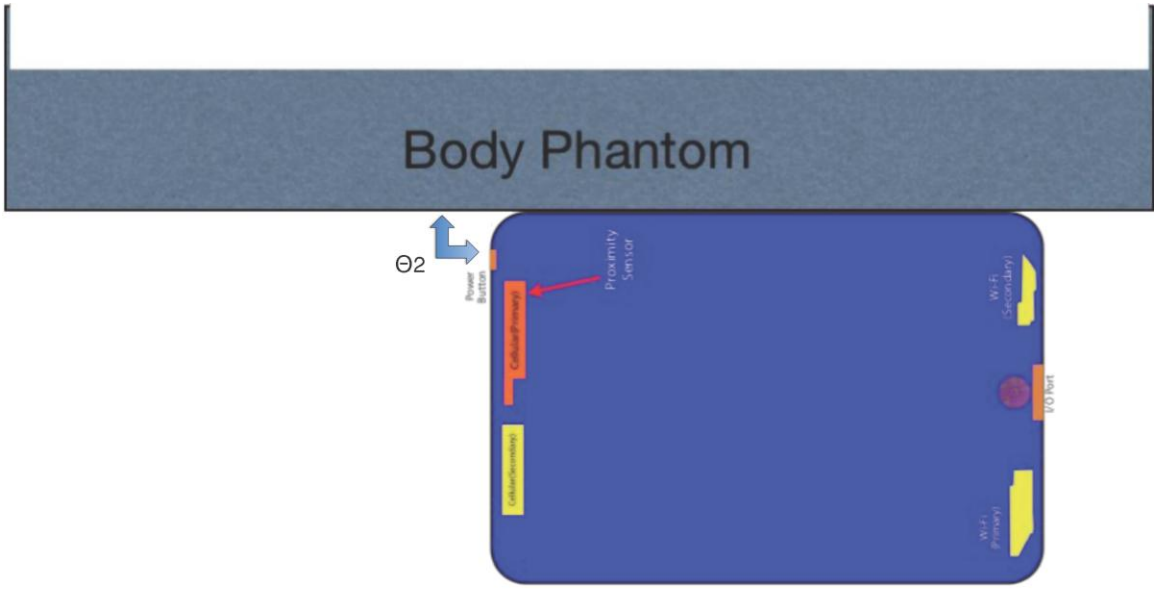
7.6.2. Coverage at the Corner of the DUT

The proximity sensor coverage at the Top Edge/Right Corner of the device is determined by changing the angle of the device relative to the phantom, and observing the angle at which the proximity sensor is triggered.

In this case, the proximity sensor remains triggered at the first-stage when the Right Edge of the device is touching the flat phantom, i.e., Top Edge/Right Corner of the device is 90° (θ2) from the phantom. The conservative angle at which the first-stage of proximity sensor is triggered is 45° (θ1).



DUT angle at which first–stage is activated

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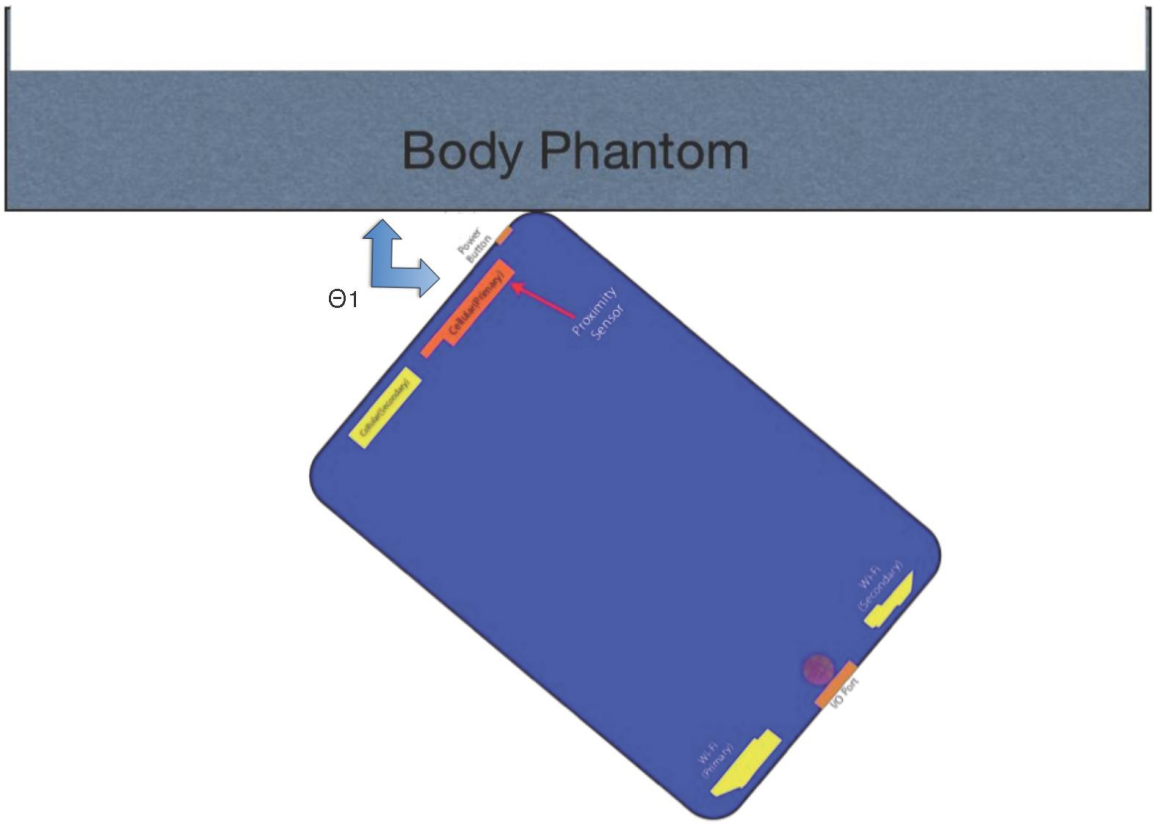

DUT angle at which second–stage is activated

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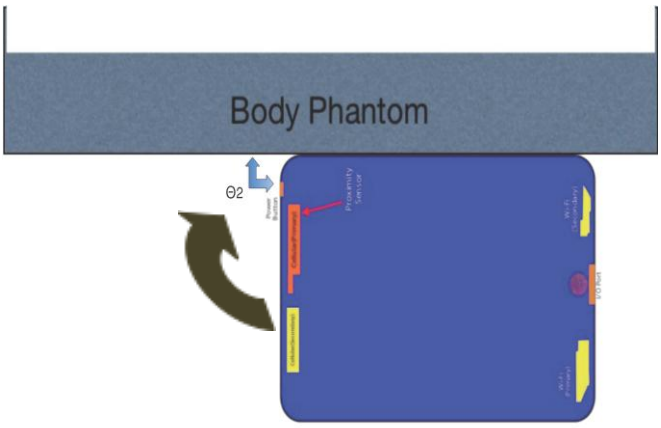
Proximity Sensor Status Table when DUT is moving towards the phantom

Angle to the DUT (Degrees)	Proximity Sensor Status – Top-Edge/Right Corner
90	ON (C1, t1, P1)
85	ON (C1, t1, P1)
80	ON (C1, t1, P1)
75	ON (C1, t1, P1)
70	ON (C1, t1, P1)
65	ON (C1, t1, P1)
60	ON (C1, t1, P1)
55	ON (C1, t1, P1)
50	ON (C1, t1, P1)
47	ON (C1, t1, P1)
46	ON (C1, t1, P1)
45	ON (C2, t2, P2)
44	ON (C2, t2, P2)
43	ON (C2, t2, P2)
40	ON (C2, t2, P2)
35	ON (C2, t2, P2)
30	ON (C2, t2, P2)
25	ON (C2, t2, P2)
20	ON (C2, t2, P2)
15	ON (C2, t2, P2)
10	ON (C2, t2, P2)
5	ON (C2, t2, P2)
0	ON (C2, t2, P2)



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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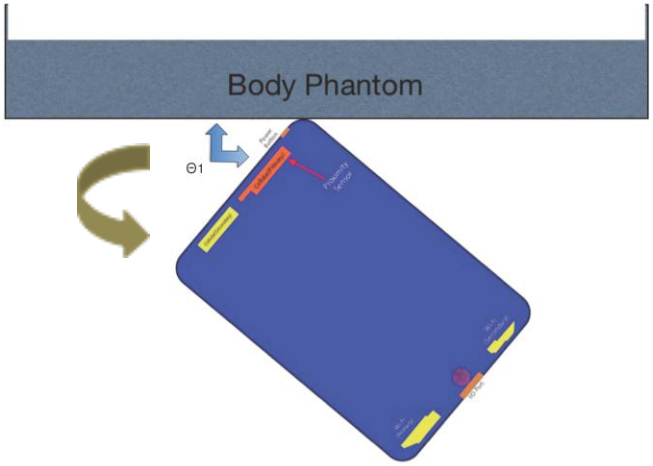
Proximity Sensor Status Table when DUT is moving away from the phantom

Angle to the DUT (Degrees)	Proximity Sensor Status – Top-Edge/Right Corner
0	ON (C2, t2, P2)
5	ON (C2, t2, P2)
10	ON (C2, t2, P2)
15	ON (C2, t2, P2)
20	ON (C2, t2, P2)
25	ON (C2, t2, P2)
30	ON (C2, t2, P2)
35	ON (C2, t2, P2)
40	ON (C2, t2, P2)
43	ON (C2, t2, P2)
44	ON (C2, t2, P2)
45	ON (C2, t2, P2)
46	ON (C1, t1, P1)
47	ON (C1, t1, P1)
50	ON (C1, t1, P1)
55	ON (C1, t1, P1)
60	ON (C1, t1, P1)
65	ON (C1, t1, P1)
70	ON (C1, t1, P1)
75	ON (C1, t1, P1)
80	ON (C1, t1, P1)
85	ON (C1, t1, P1)
90	ON (C1, t1, P1)



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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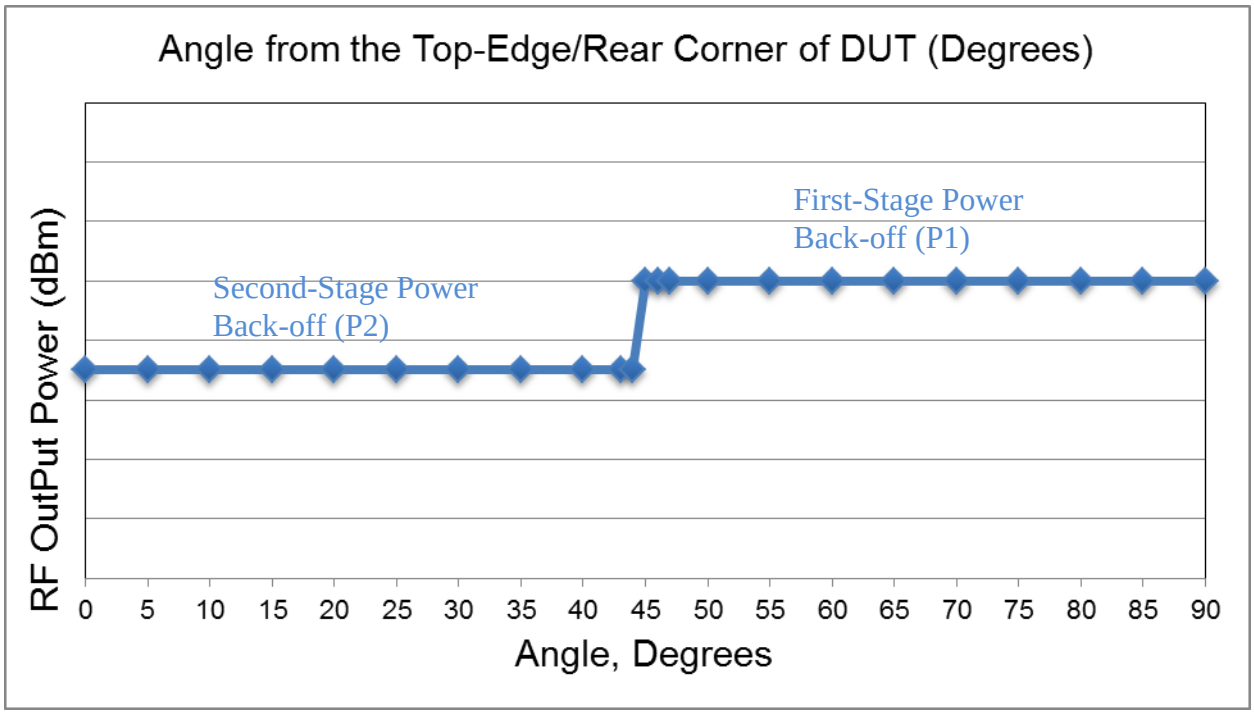
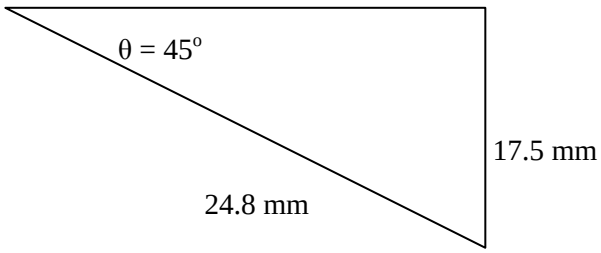


The proximity sensor coverage at the Top Edge/Right Corner of the device is determined by changing the angle of the device relative to the phantom, and observing the angle at which the proximity sensor is triggered.

In this case, the conservative angles at which the proximity sensor is triggered are: 90° (θ_2) for the first-stage, and 45° (θ_1) for the second-stage, from the phantom. Therefore, the proximity sensor remains triggered at the first-stage when the Right Edge of the device is touching the flat phantom.



SAR evaluation for Top Edge/Right Corner Tilt is not performed because, the antenna-to-flat phantom distance, in this case, is 17.5 mm, which is more than the 16 mm for the Rear Surface (at which SAR evaluation will be performed at full power).

With the Top Edge of the device against the phantom, when the front of the device (LCD side) is tilted toward the phantom, the proximity sensor will remain triggered all the time.

The proximity sensor is not triggered when approaching from any other corner. Therefore, the proximity sensor coverage is only evaluated when approaching from the Top/Right Corner.

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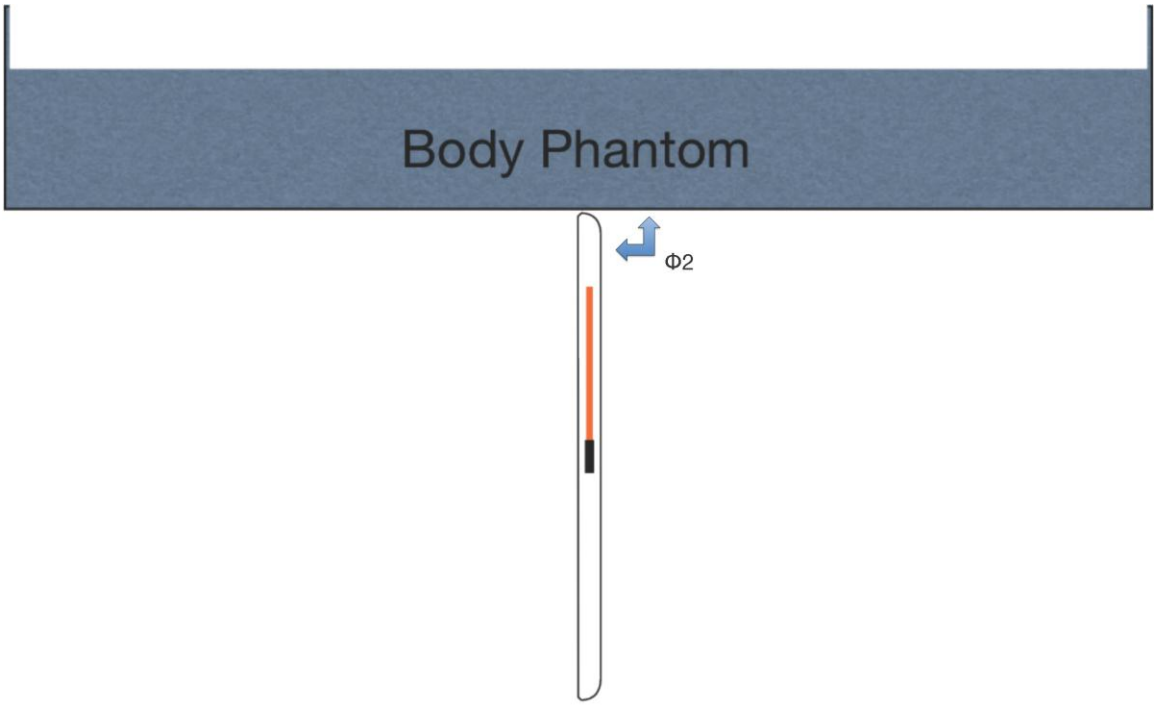
7.6.3. Coverage at the Edge of the DUT

The proximity sensor coverage at the Right Edge of the device is determined by changing the angle of the device relative to the phantom and observing the angle at which the proximity sensor is triggered.

In this case, the proximity sensor remains triggered at the first-stage when the Right Edge of the device is touching the flat phantom, i.e., Right Edge of the device is 90° (Φ_2**)** from the phantom. The conservative angle at which the first-stage of proximity sensor is triggered is 41° (Φ_1**).**



DUT angle at which first-stage is activated

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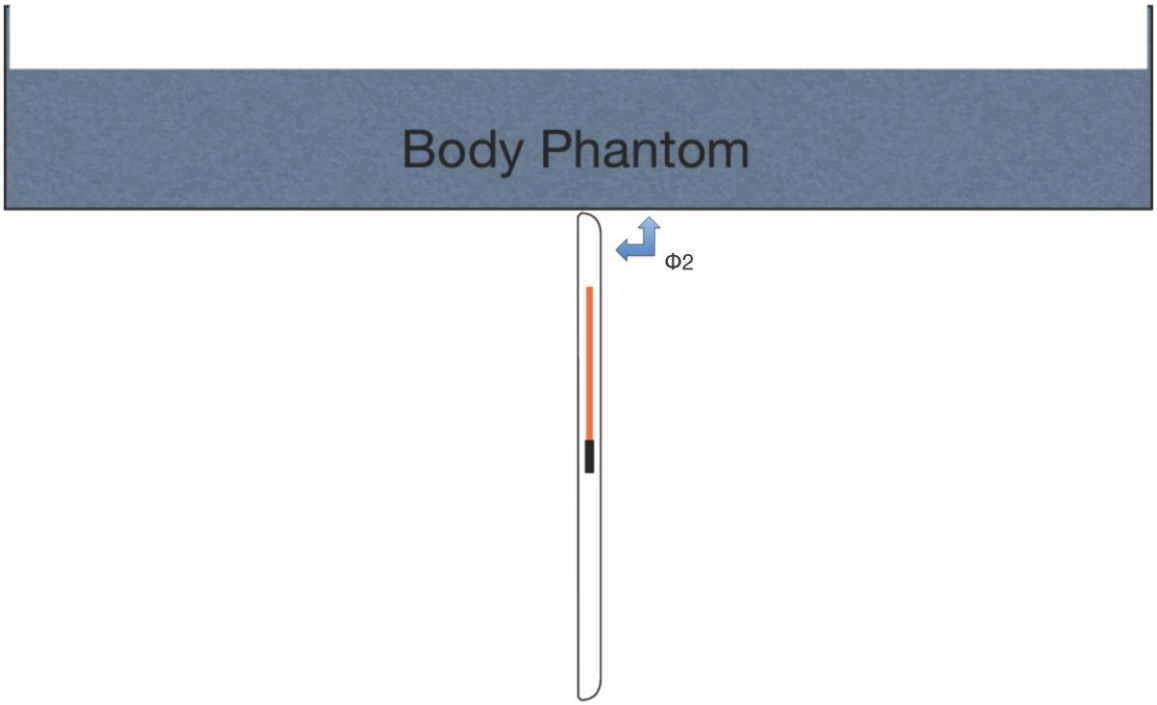

DUT angle at which second-stage is activated

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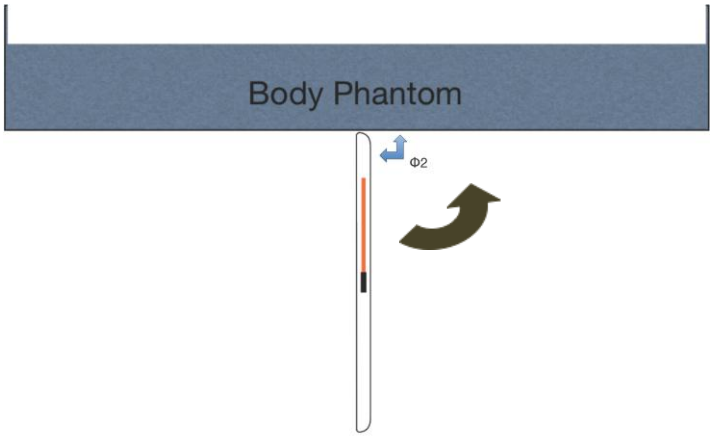
Proximity Sensor Status Table when DUT is moving towards the phantom

Angle to the DUT (Degrees)	Proximity Sensor Status – Rear Surface/Right Corner
90	ON (C1, t1, P1)
85	ON (C1, t1, P1)
80	ON (C1, t1, P1)
75	ON (C1, t1, P1)
70	ON (C1, t1, P1)
65	ON (C1, t1, P1)
60	ON (C1, t1, P1)
55	ON (C1, t1, P1)
50	ON (C1, t1, P1)
45	ON (C1, t1, P1)
43	ON (C1, t1, P1)
42	ON (C1, t1, P1)
41	ON (C2, t2, P2)
40	ON (C2, t2, P2))
39	ON (C2, t2, P2)
35	ON (C2, t2, P2)
30	ON (C2, t2, P2)
25	ON (C2, t2, P2)
20	ON (C2, t2, P2)
15	ON (C2, t2, P2)
10	ON (C2, t2, P2))
5	ON (C2, t2, P2)
0	ON (C2, t2, P2)



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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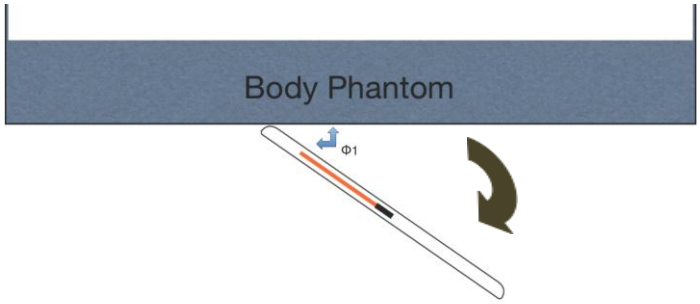
Proximity Sensor Status Table when DUT is moving away from the phantom

Angle to the DUT (Degrees)	Proximity Sensor Status – Top-Edge
0	ON (C2, t2, P2)
5	ON (C2, t2, P2)
10	ON (C2, t2, P2)
15	ON (C2, t2, P2)
20	ON (C2, t2, P2)
25	ON (C2, t2, P2)
30	ON (C2, t2, P2)
35	ON (C2, t2, P2)
39	ON (C2, t2, P2)
40	ON (C2, t2, P2)
41	ON (C2, t2, P2)
42	ON (C1, t1, P1)
43	ON (C1, t1, P1)
45	ON (C1, t1, P1)
50	ON (C1, t1, P1)
55	ON (C1, t1, P1)
60	ON (C1, t1, P1)
65	ON (C1, t1, P1)
70	ON (C1, t1, P1)
75	ON (C1, t1, P1)
80	ON (C1, t1, P1)
85	ON (C1, t1, P1)
90	ON (C1, t1, P1)



Notes:

C1: Capacitance value triggered First Stage (t1) power back-off
C2: Capacitance value triggered Second Stage (t2) power back-off
t1: 1st Stage triggered
t2: 2nd Stage triggered
P1: Power back-off at 1st Stage
P2: Power back-off at 2nd Stage
The distance at which the proximity sensor triggers is same for all cellular test frequencies.

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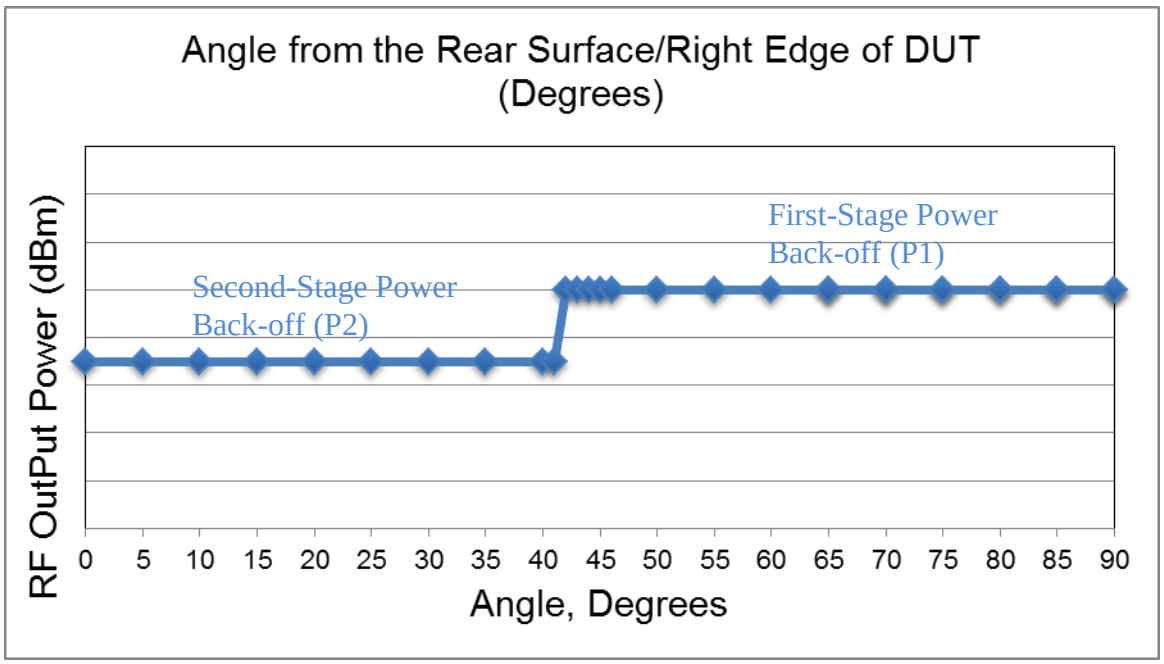
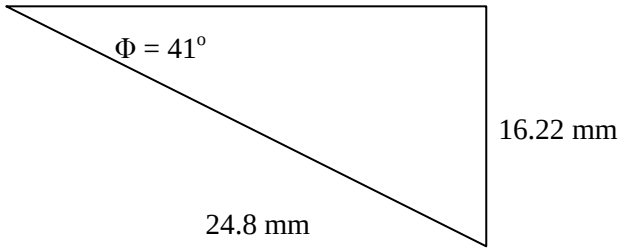


The proximity sensor coverage at the Rear Surface/Right Edge of the device is determined by changing the angle of the device relative to the phantom and observing the angle at which the proximity sensor is triggered.

In this case, the conservative angles at which the proximity sensor is triggered are: 90° (Φ_2) for the first-stage, and 41° (Φ_1) for the second-stage, from the phantom. Therefore, the proximity sensor remains triggered at the first-stage when the Right Edge of the device is touching the flat phantom.



SAR evaluation for Rear Surface/Right Edge Tilt is not performed because, the antenna-to-flat phantom distance, in this case, is 16.22 mm, which is more than the 16 mm for the Rear Surface (at which SAR evaluation will be performed at full power).

The proximity sensor is not triggered, when approaching from the Left Edge and the Bottom Edge. Therefore, the proximity sensor coverage is not evaluated on these orientations.

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7.6.4. SAR test configurations

For body exposure condition, the DUT is evaluated in the following configurations:

- Rear Surface of the DUT with separation distance of 0 mm to the flat phantom. The proximity sensor is active and triggered in this configuration, therefore, the conducted power is backed-off. SAR testing is conducted at second-stage power (P2).

- Top Edge of the DUT with separation distance of 0 mm to the flat phantom. The proximity sensor is active and triggered in this configuration, therefore, the conducted power is backed-off. SAR testing is conducted at second-stage power (P2).

- Bottom Edge of the DUT with separation distance of 0 mm to the flat phantom. The proximity sensor is active, but not triggered in this configuration. Therefore, the conducted power is NOT backed-off. SAR testing is not performed.

- Left Edge of the DUT with separation distance of 0 mm to the flat phantom. The proximity sensor is active, but not triggered in this configuration. Therefore, the conducted power is NOT backed-off. SAR testing is not performed.

- Right Edge of the DUT with separation distance of 0 mm to the flat phantom. The proximity sensor is active and triggered at the first-stage power back-off level (P1) in this configuration but SAR testing is conducted at full power.

- Rear Surface of the DUT with conservative distance of 16 mm to the flat phantom. The proximity sensor is disabled, by special development software, in this configuration. Therefore, the conducted power has NOT backed-off. SAR testing is at full power.

- Top Edge of the DUT with conservative distance of 16 mm to the flat phantom. The proximity sensor is disabled, by special development software, in this configuration. Therefore, the conducted power has NOT backed-off. SAR testing is performed at full power.

- Top Edge of the DUT with separation distance of 0 mm and 45° angle to the flat body phantom. SAR evaluation for Top Edge/Right Corner Tilt is not performed because, the antenna-to-flat phantom distance, in this case, is 17.5 mm, which is more than the 16 mm for the Rear Surface (at which SAR evaluation will be performed at full power).

- Rear-Surface of the DUT with separation distance of 0 mm and 41° angle to the flat body phantom. In this configuration. SAR evaluation for Rear Surface/Right Edge Tilt is not performed because, the antenna-to-flat phantom distance, in this case, is 16.22 mm, which is more than the 16 mm for the Rear Surface (at which SAR evaluation will be performed at full power).

SAR evaluation of the DUT on the Front Surface with separation distance of 0 mm to the flat phantom is NOT performed because there is no use case for this configuration.

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7.6.5. Special Development Software

During the Top Edge (16 mm), Rear Surface (16mm), Right Edge (0mm), 45° angle from the Top Edge (0mm), and 41° angle from the Rear Surface (0mm) SAR evaluation, the power reduction due to proximity sensor was disabled using a series of test commands which are only available in development software. The proximity sensor or the power reduction cannot be intentionally or unintentionally turned-off by the user. The software provided on production units will not allow the proximity sensor or the power cap to be disabled.

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7.7. Power Reduction per Air-interface

As the proximity sensor trigger distances are the identical for both the Rear Surface and Edge 1, the following graphs showing the relation between power levels and DUT to flat phantom distances apply to both the Rear Surface and Edge 1.

Additionally, since First Stage Back-off power levels are identical to Full Power levels, the First Stage Back-off label was removed in the graphs for clarity.

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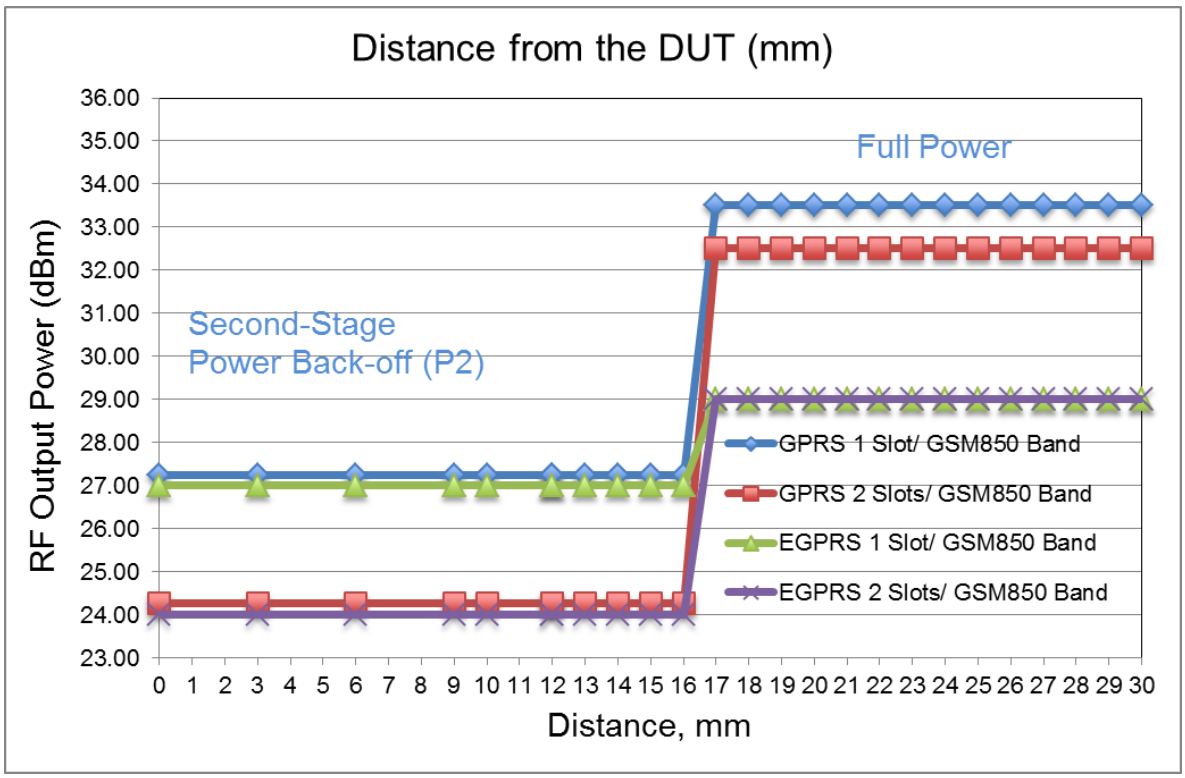
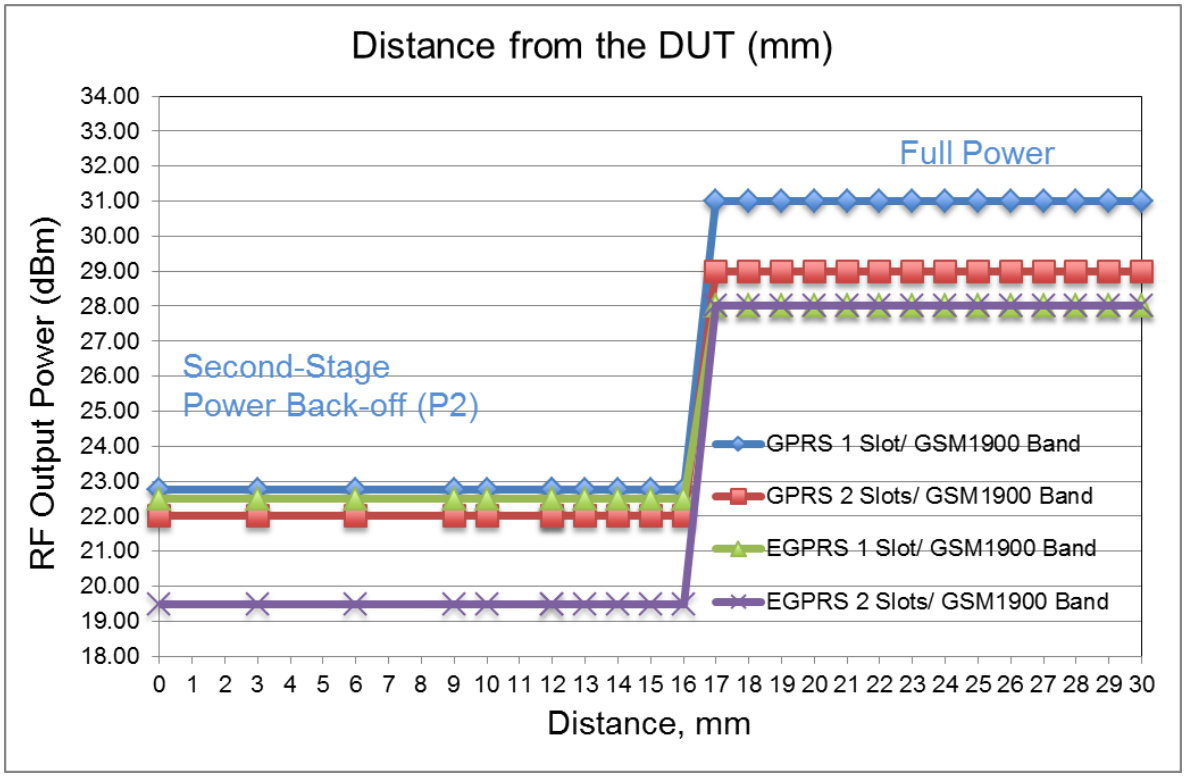
7.7.1. GSM Bands

GSM850



GSM1900



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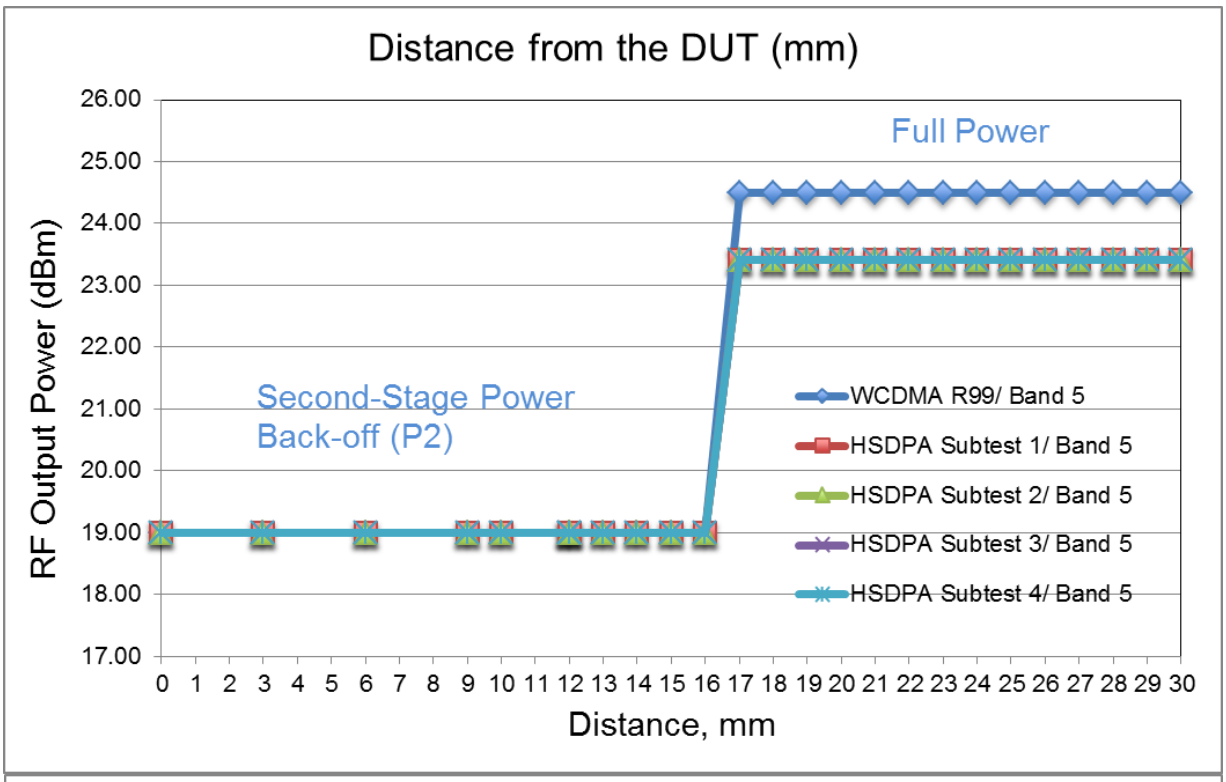
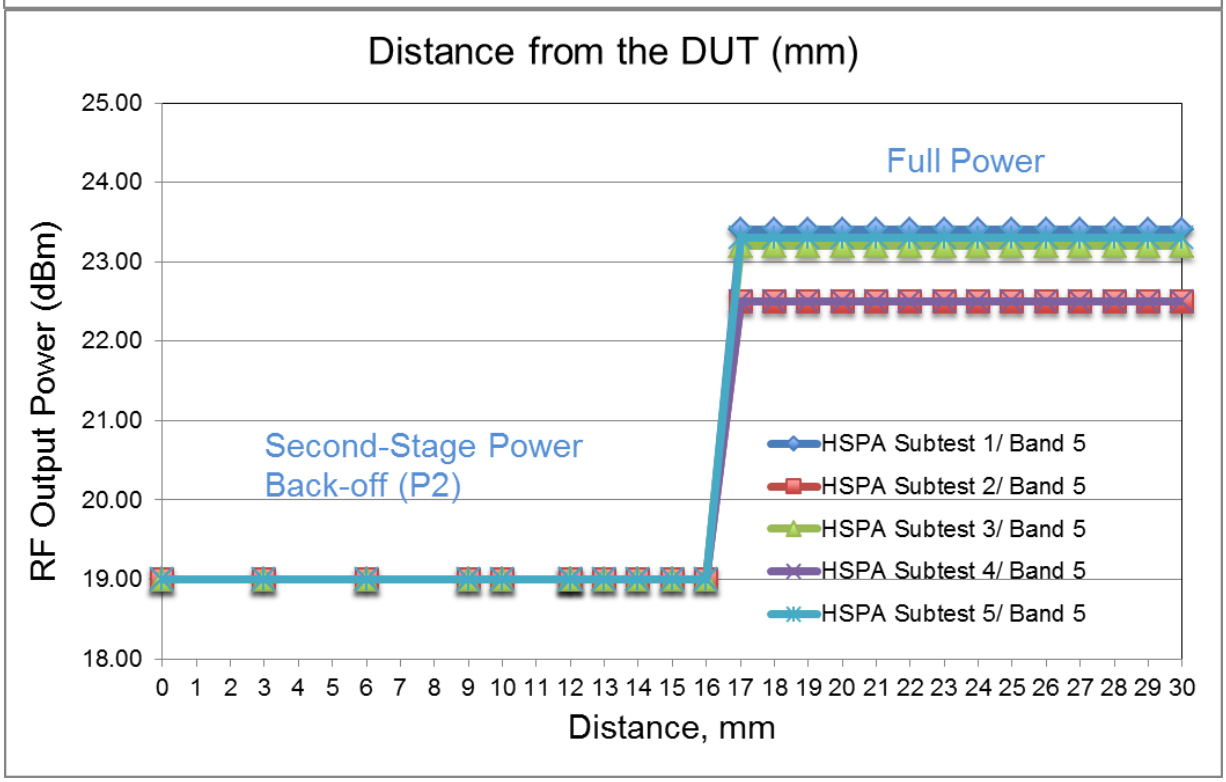
7.7.2. WCDMA Bands

W-CDMA Band 5





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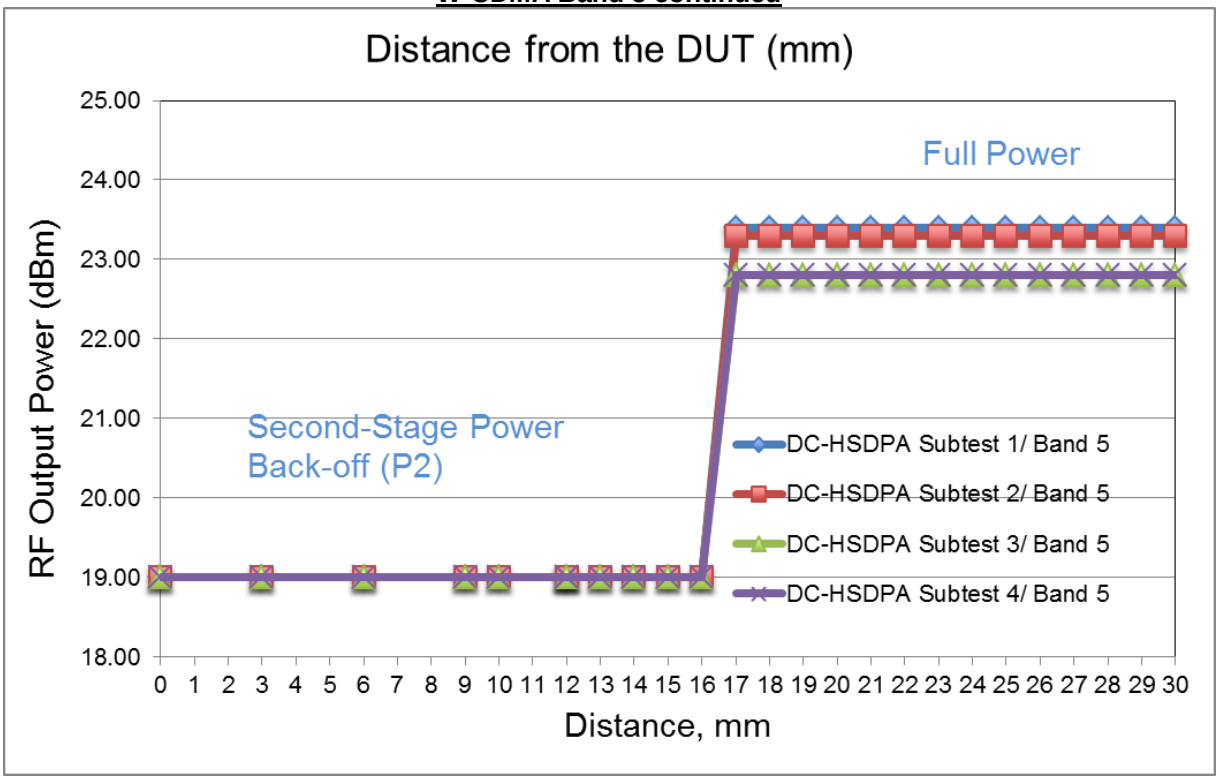
W-CDMA Band 5 continued



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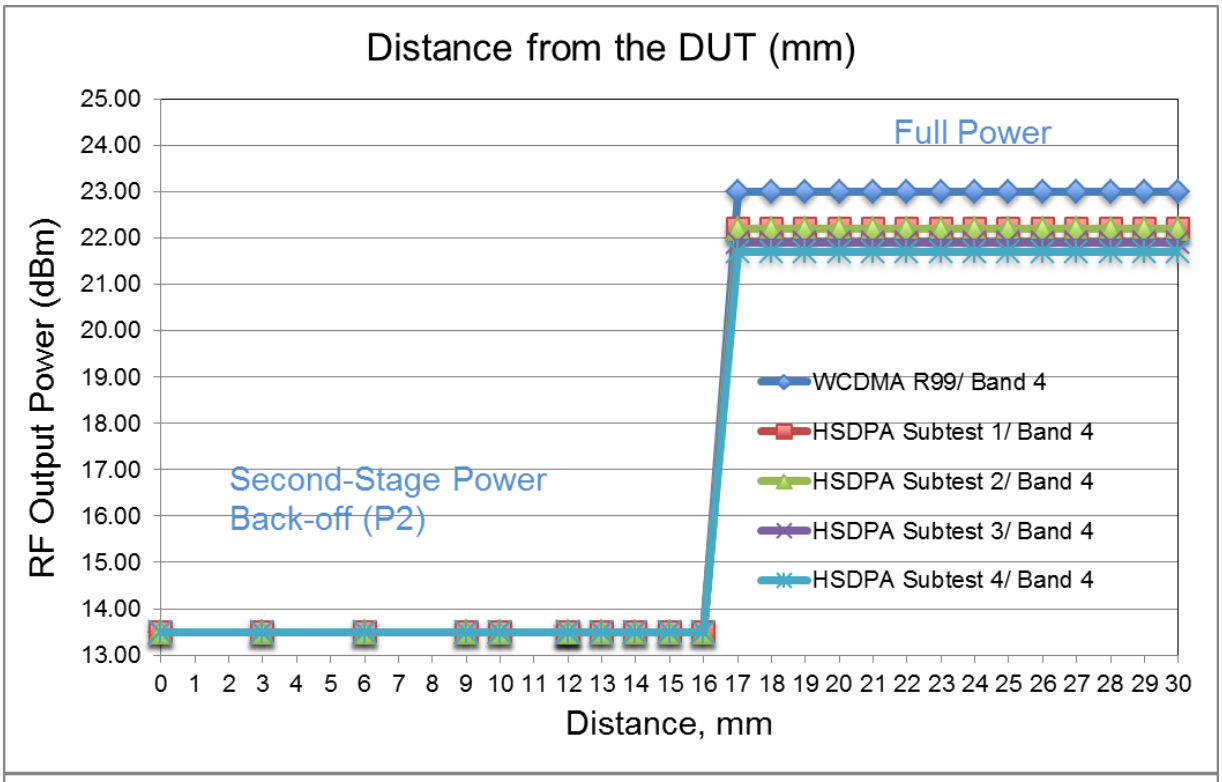
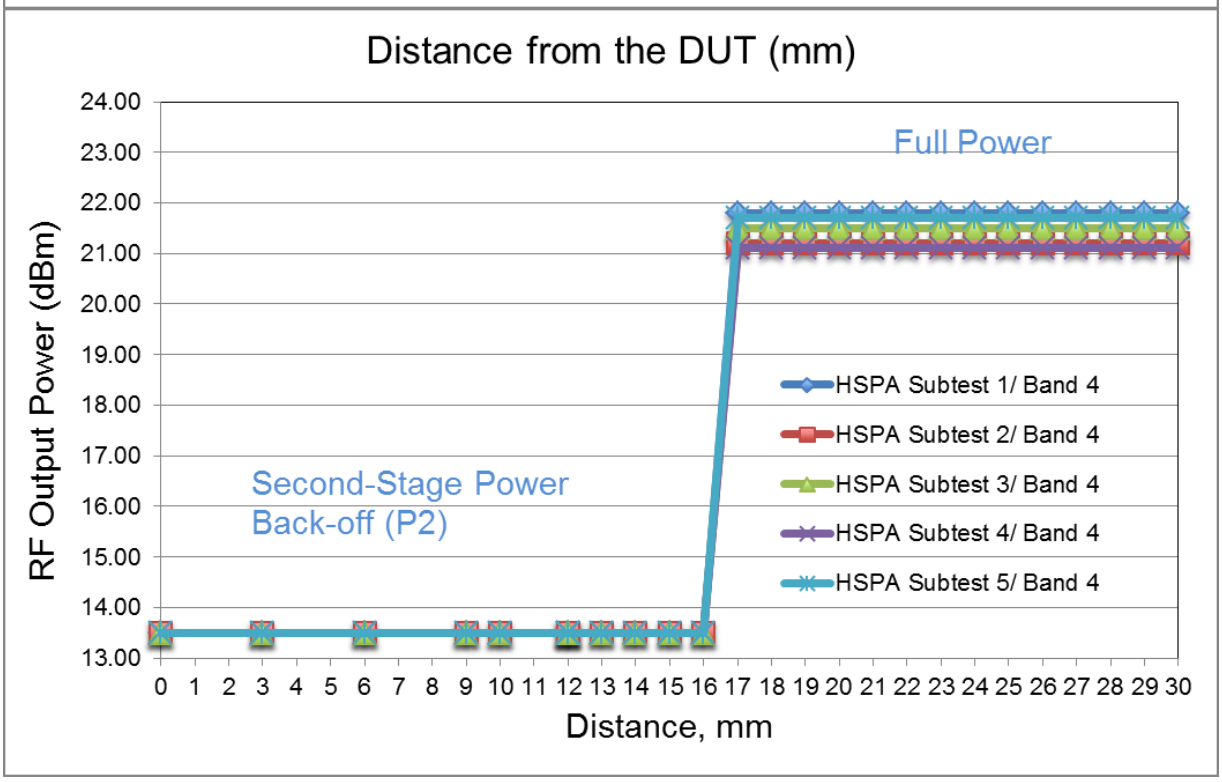
W-CDMA Band 4





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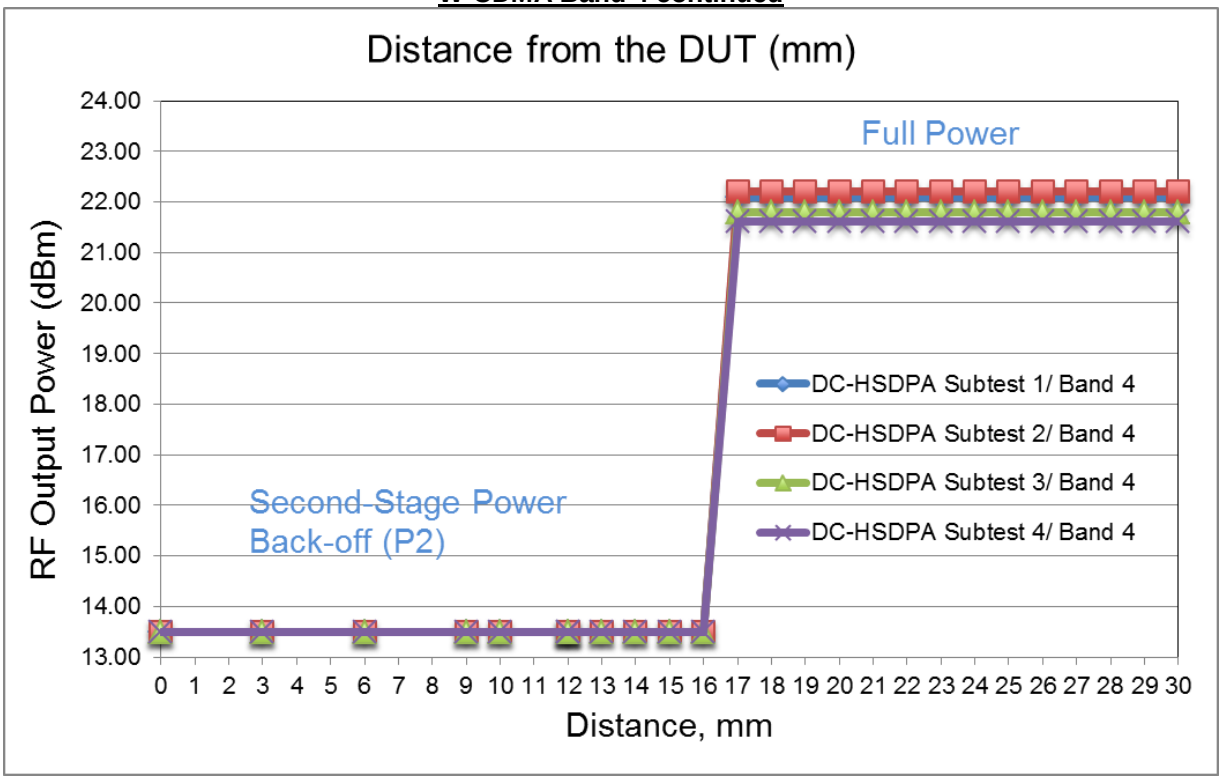
W-CDMA Band 4 continued



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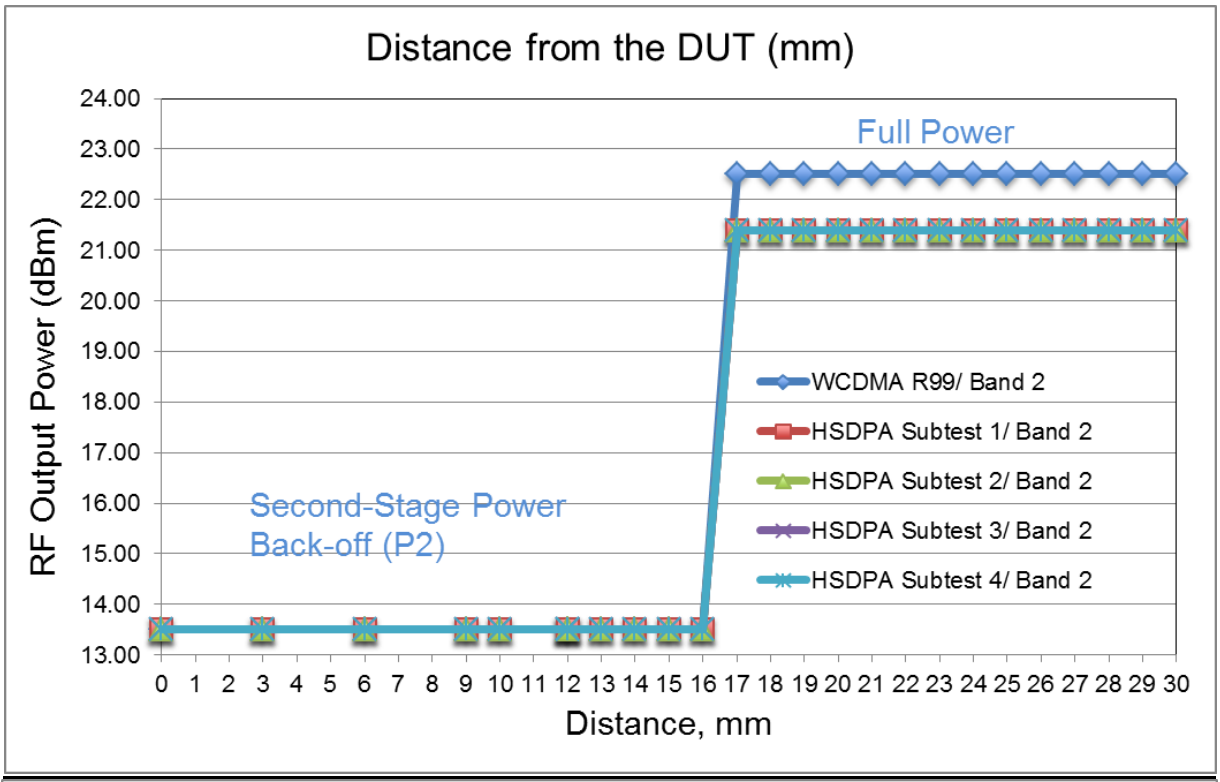
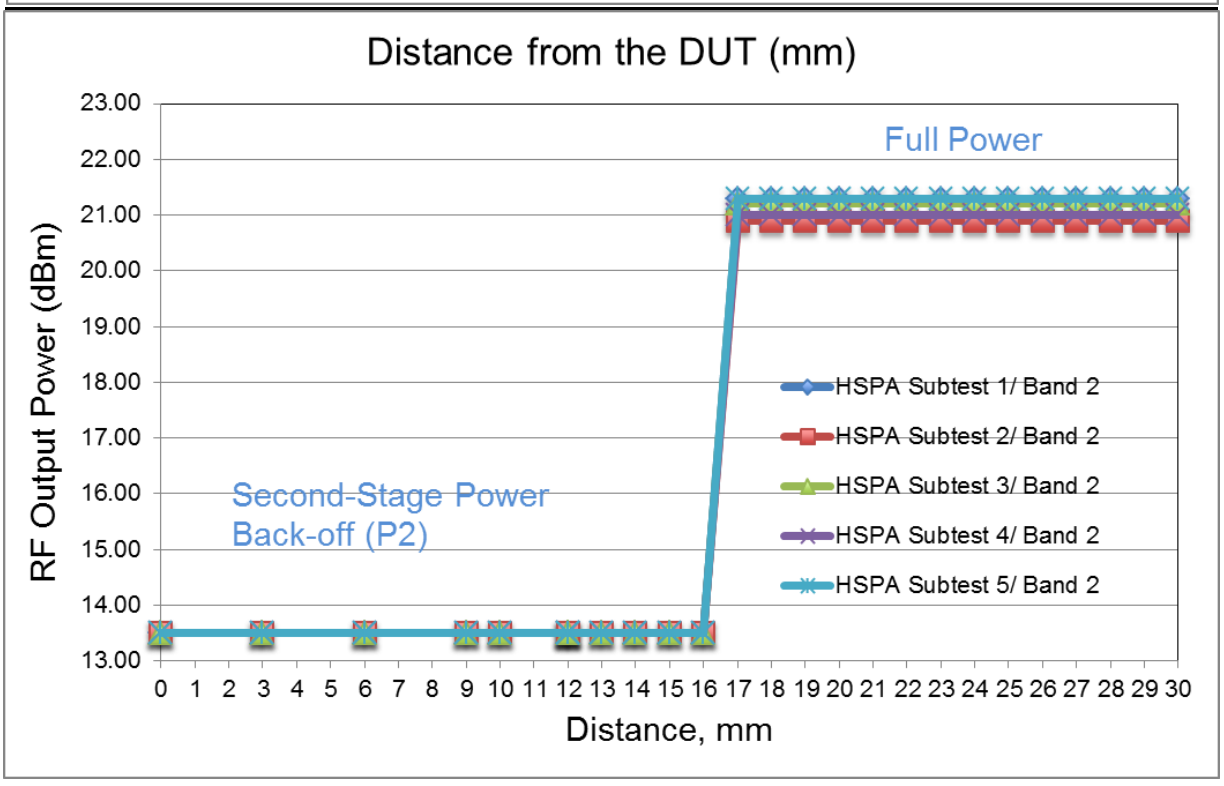
W-CDMA Band 2





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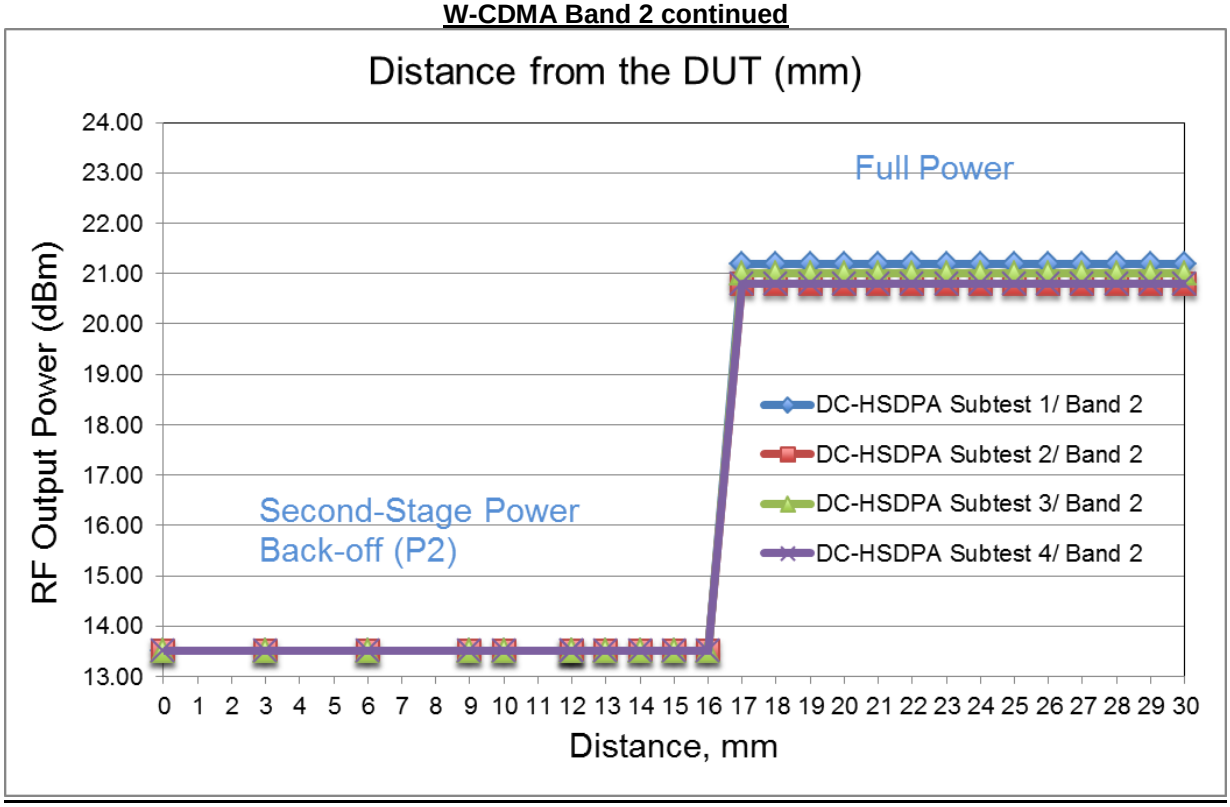
W-CDMA Band 2 continued



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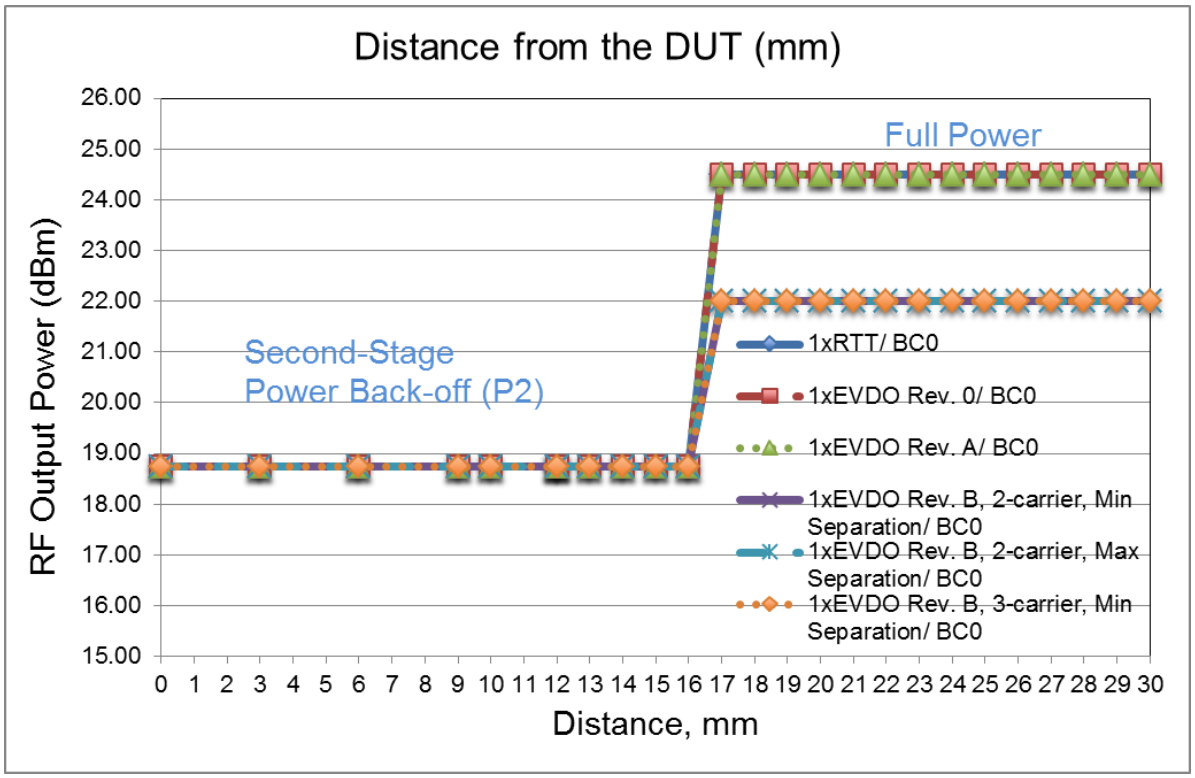
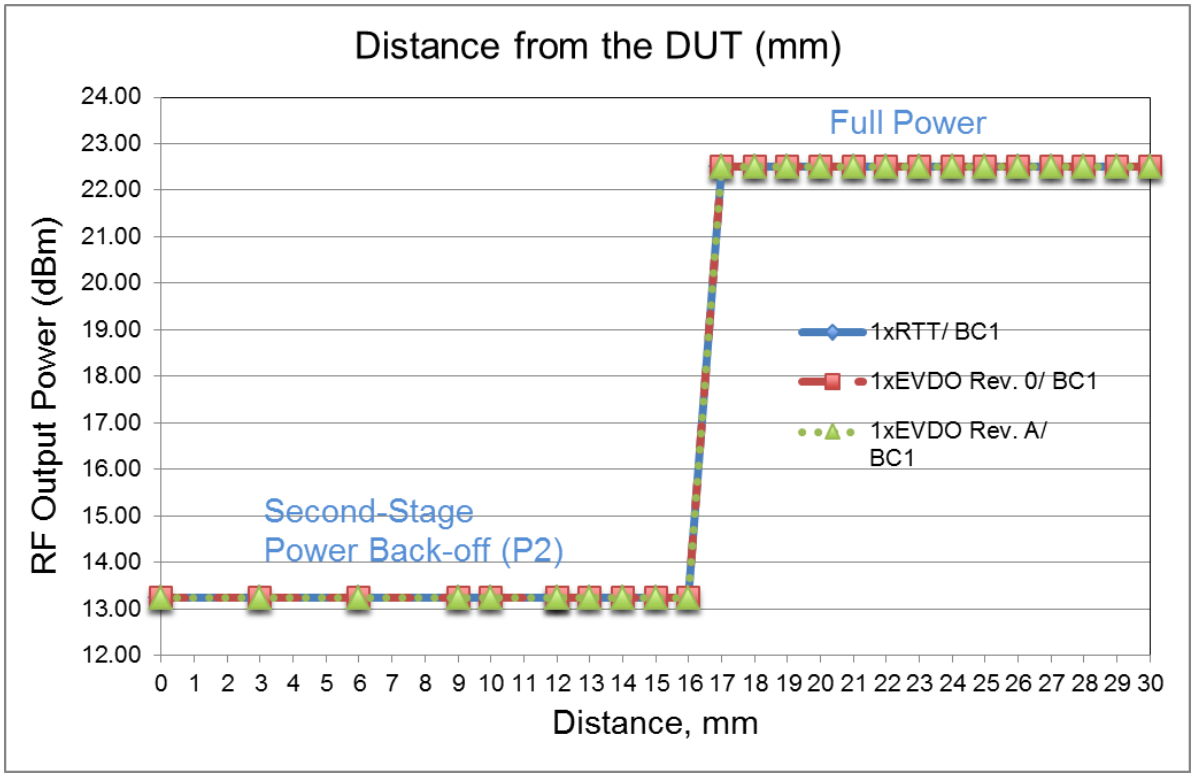
7.7.3. CDMA Bands

CDMA BC0



CDMA BC1



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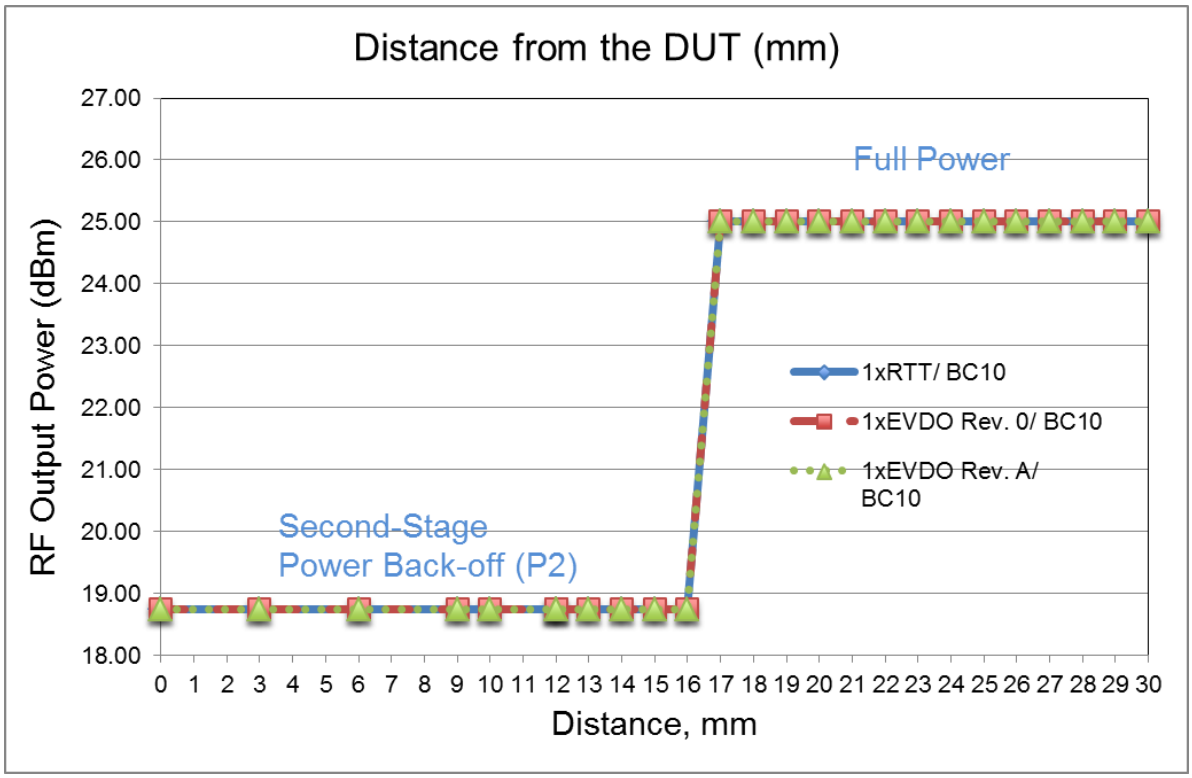
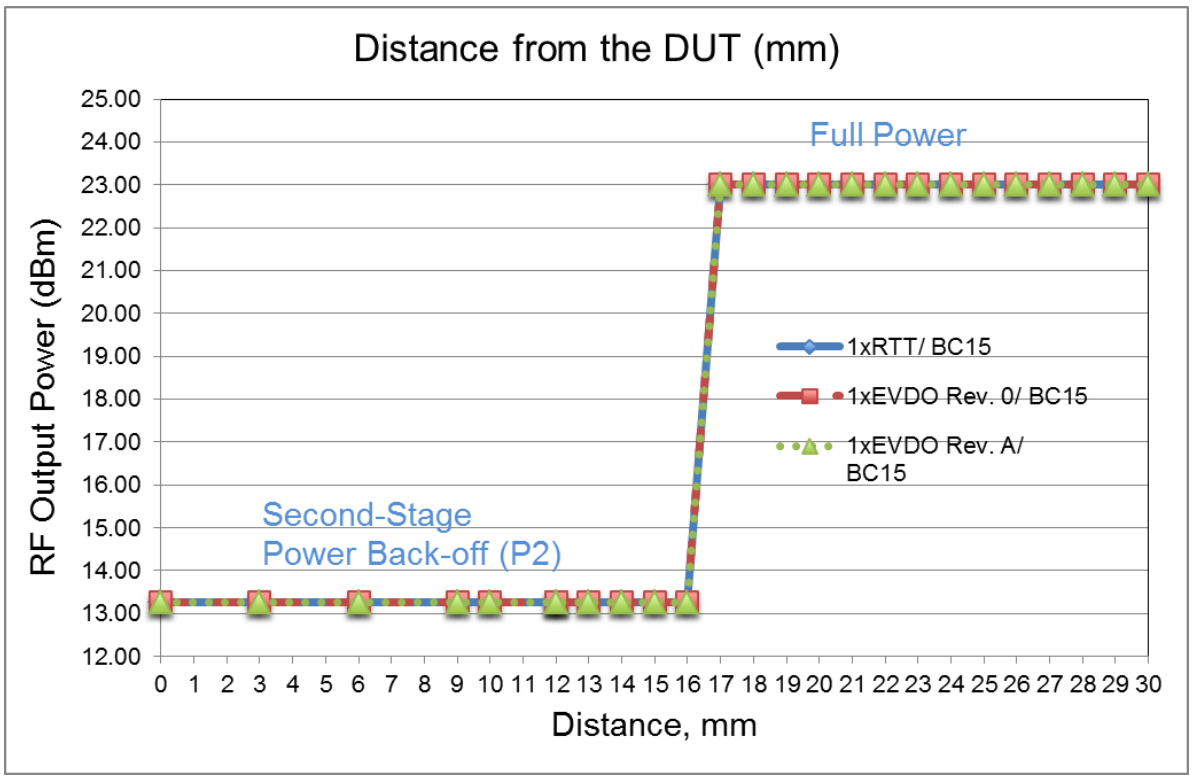
CDMA BC10



CDMA BC15



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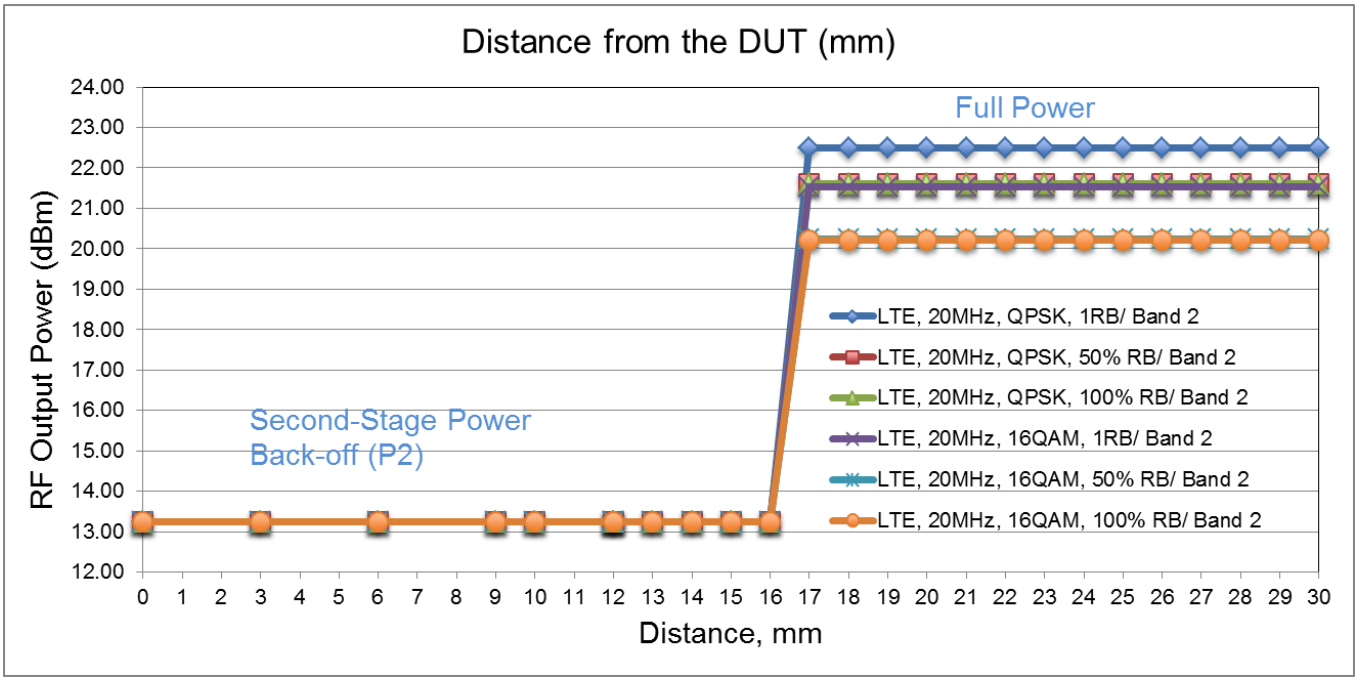
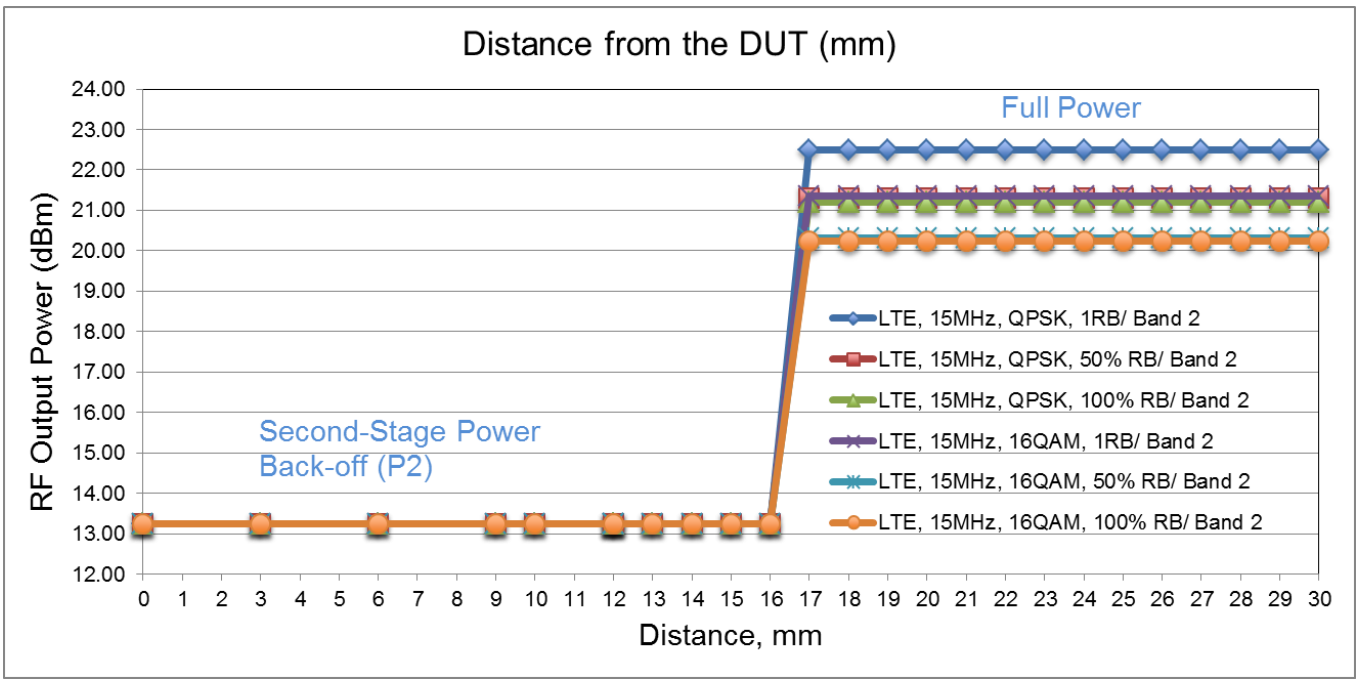
7.7.4. LTE Bands

LTE Band 2





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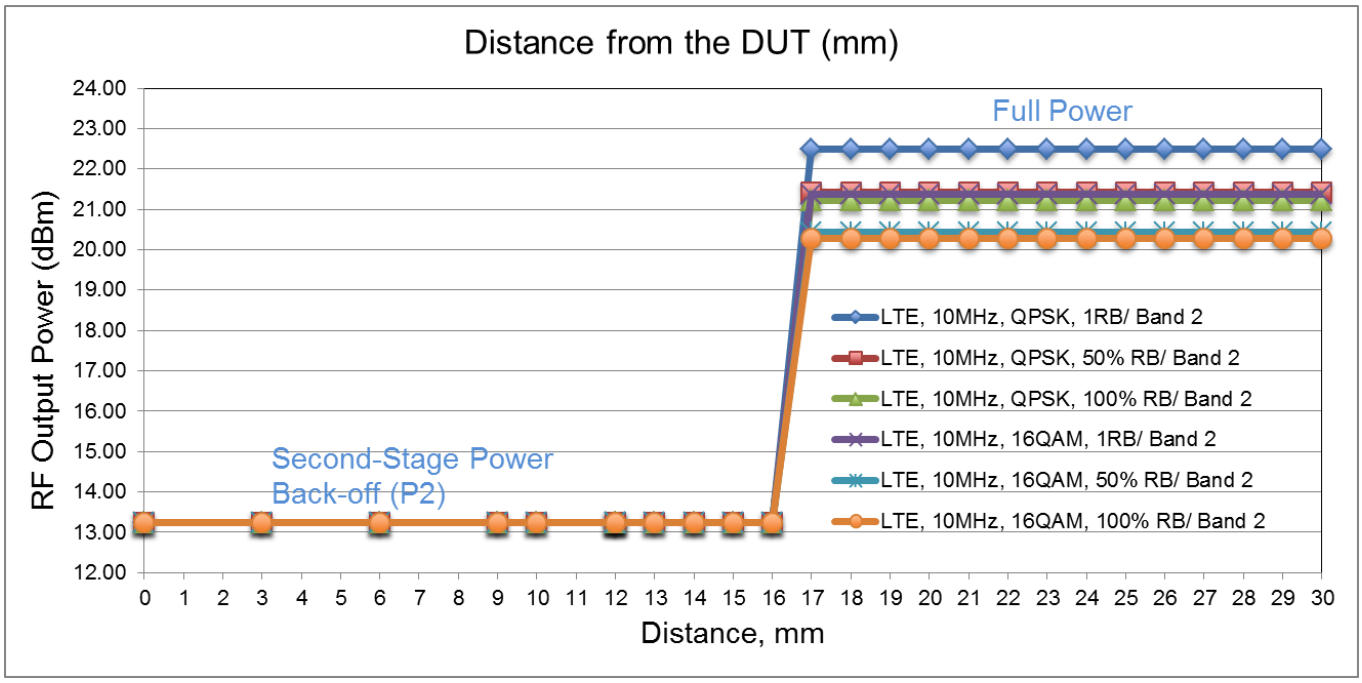
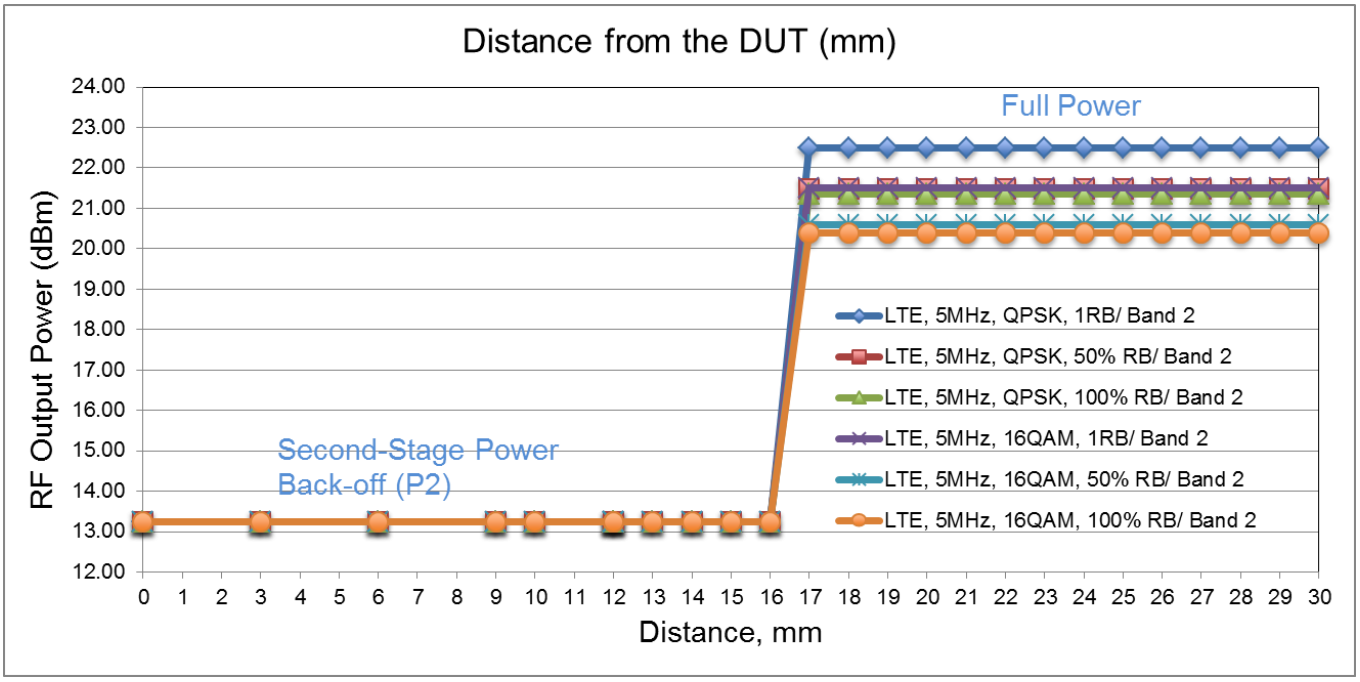
LTE Band 2 continued





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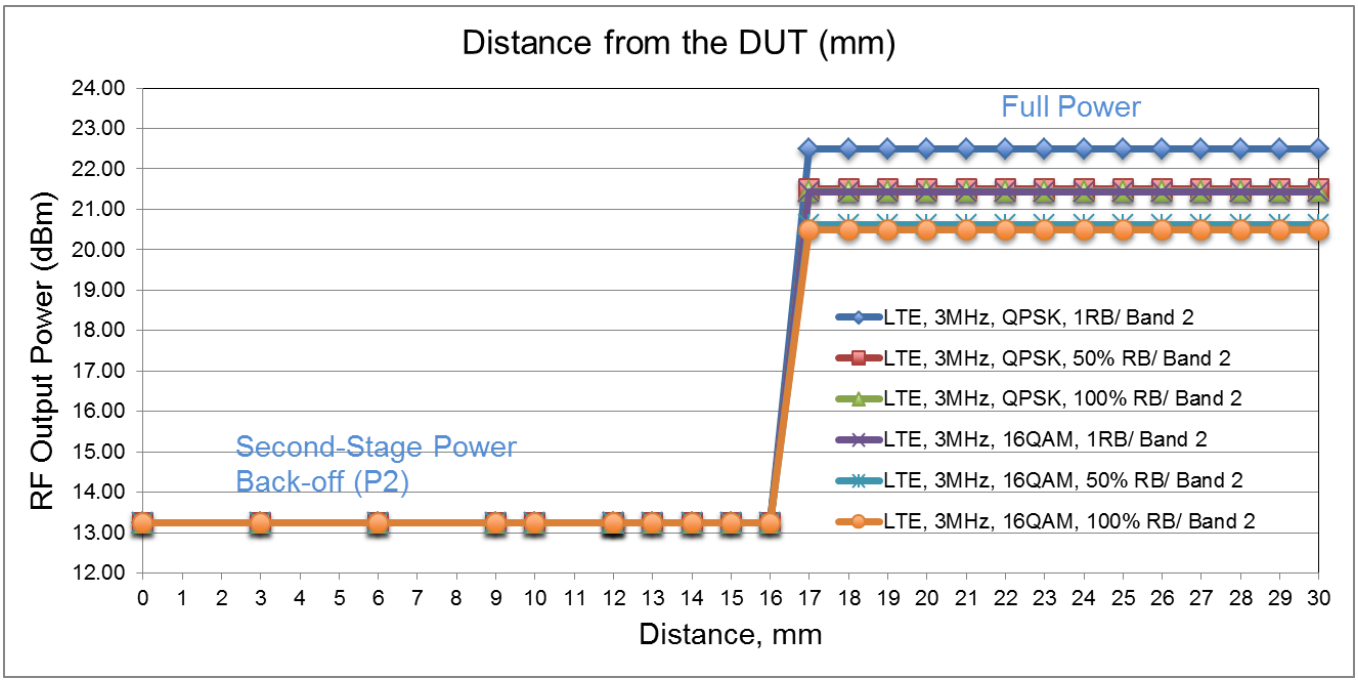

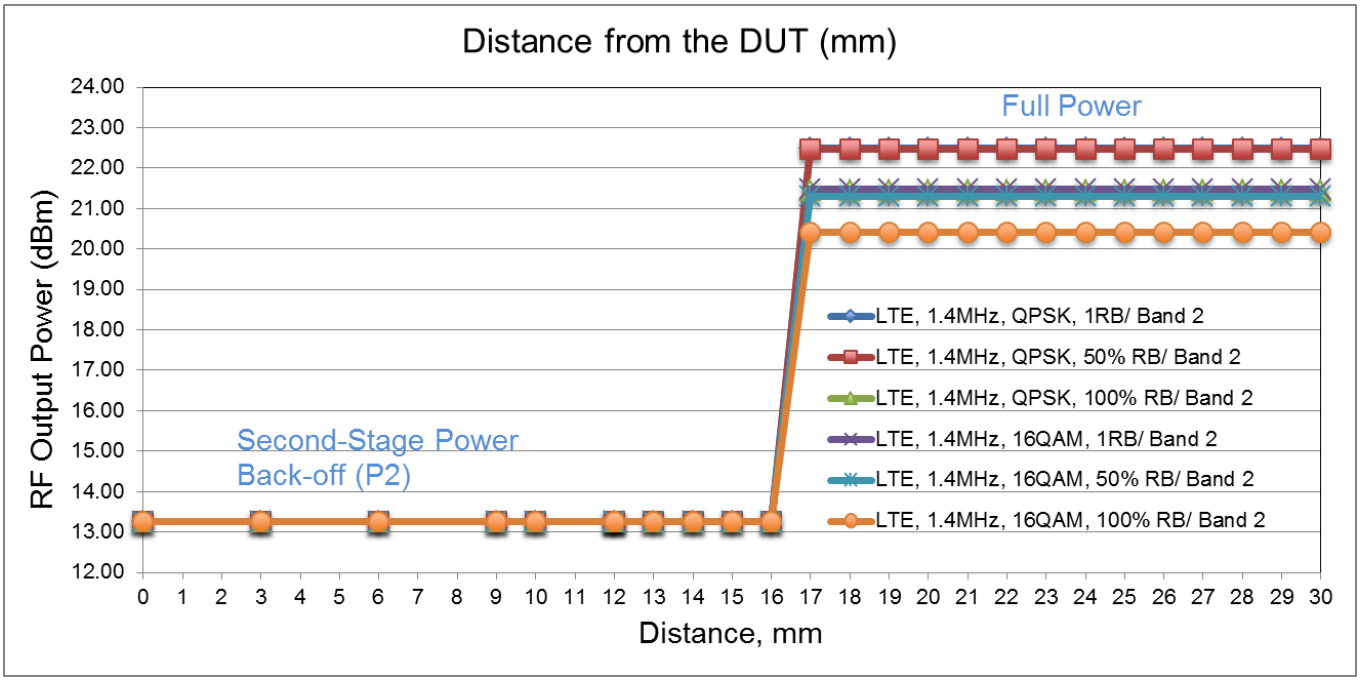

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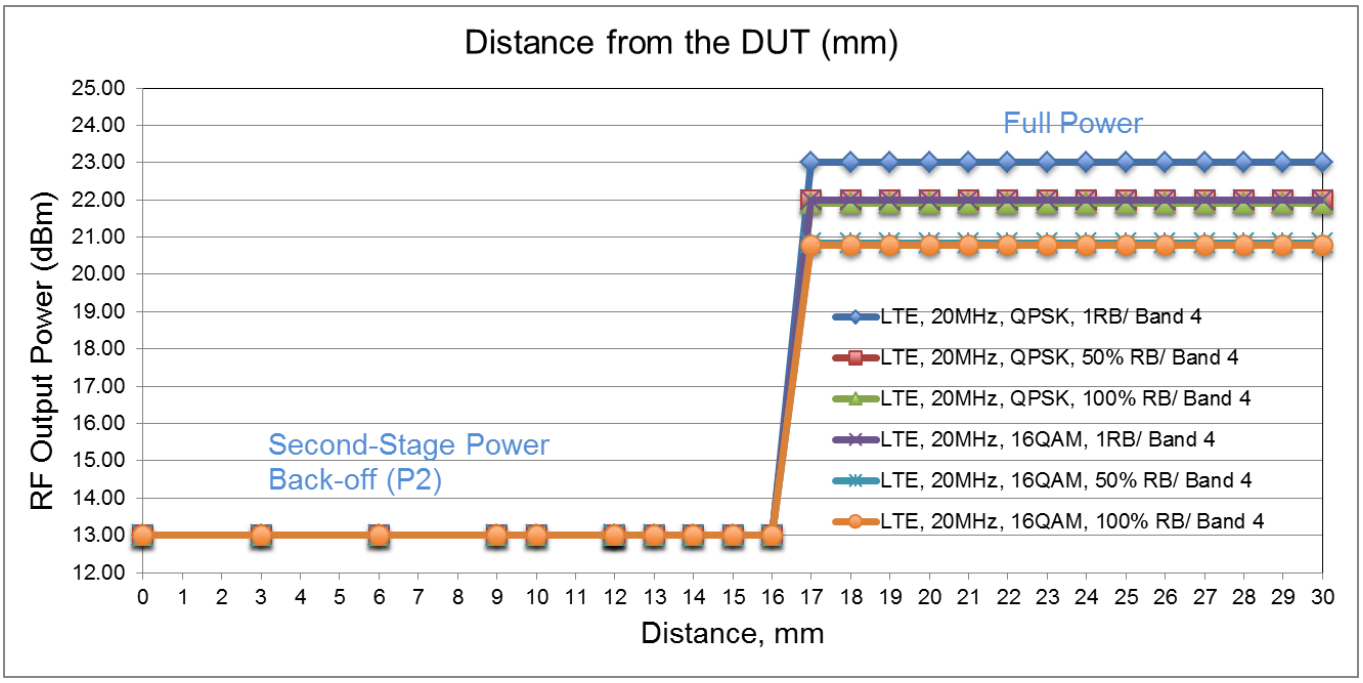
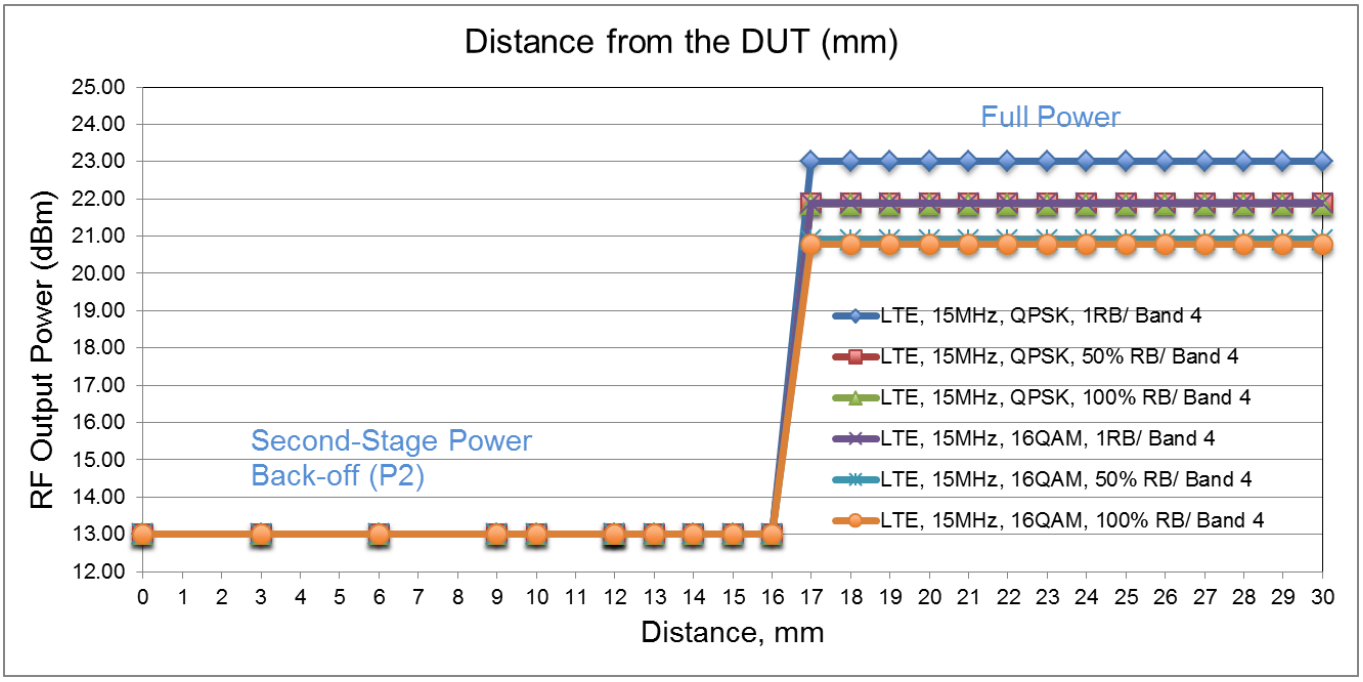
LTE Band 4





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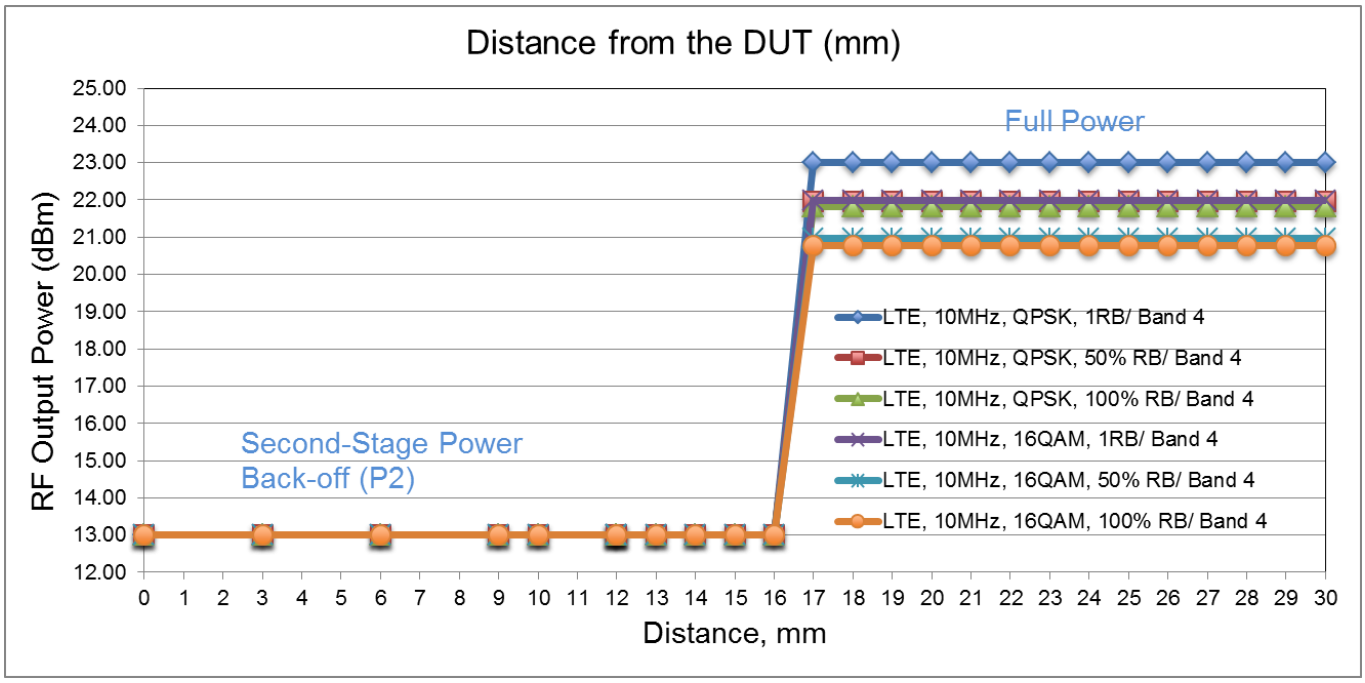

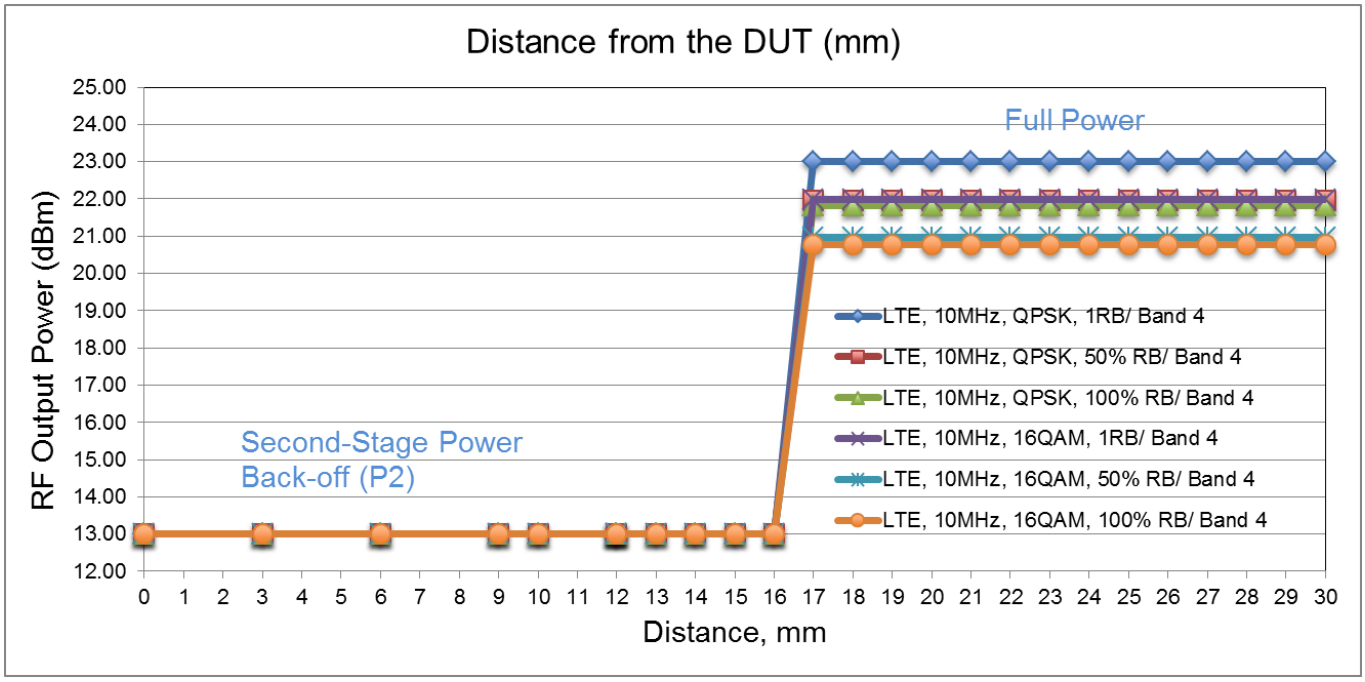

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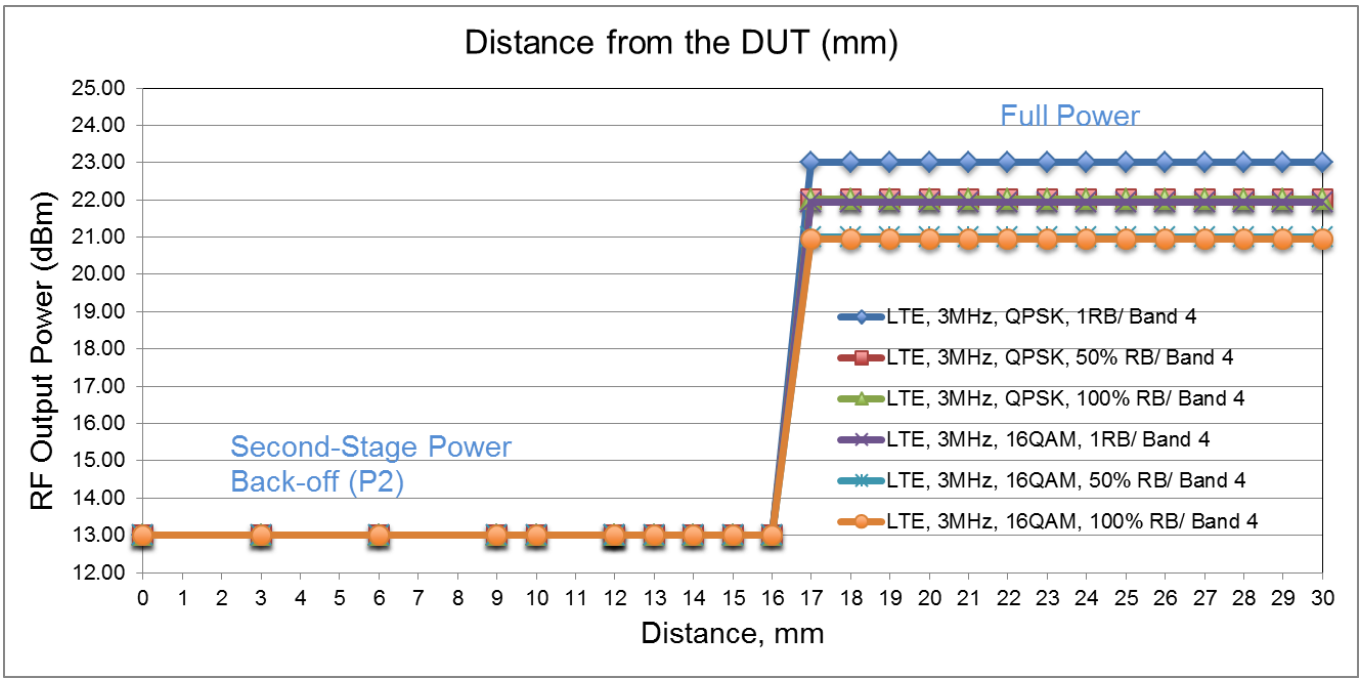

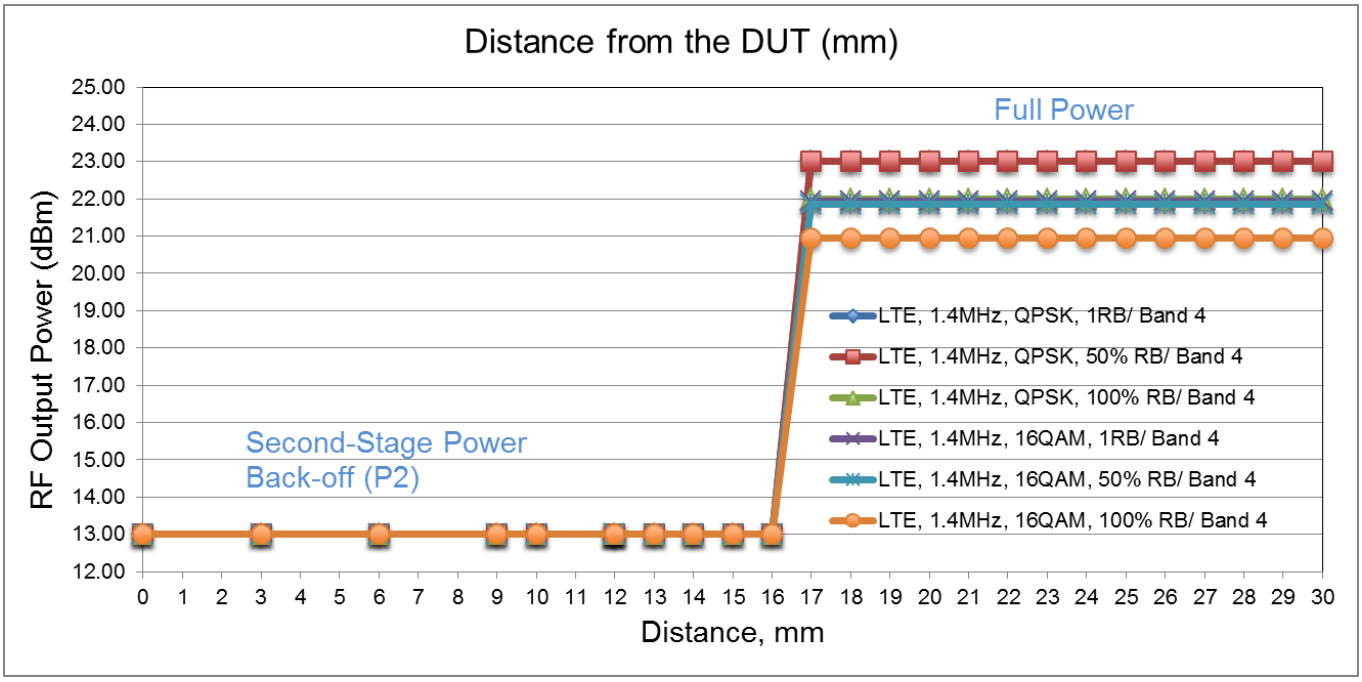

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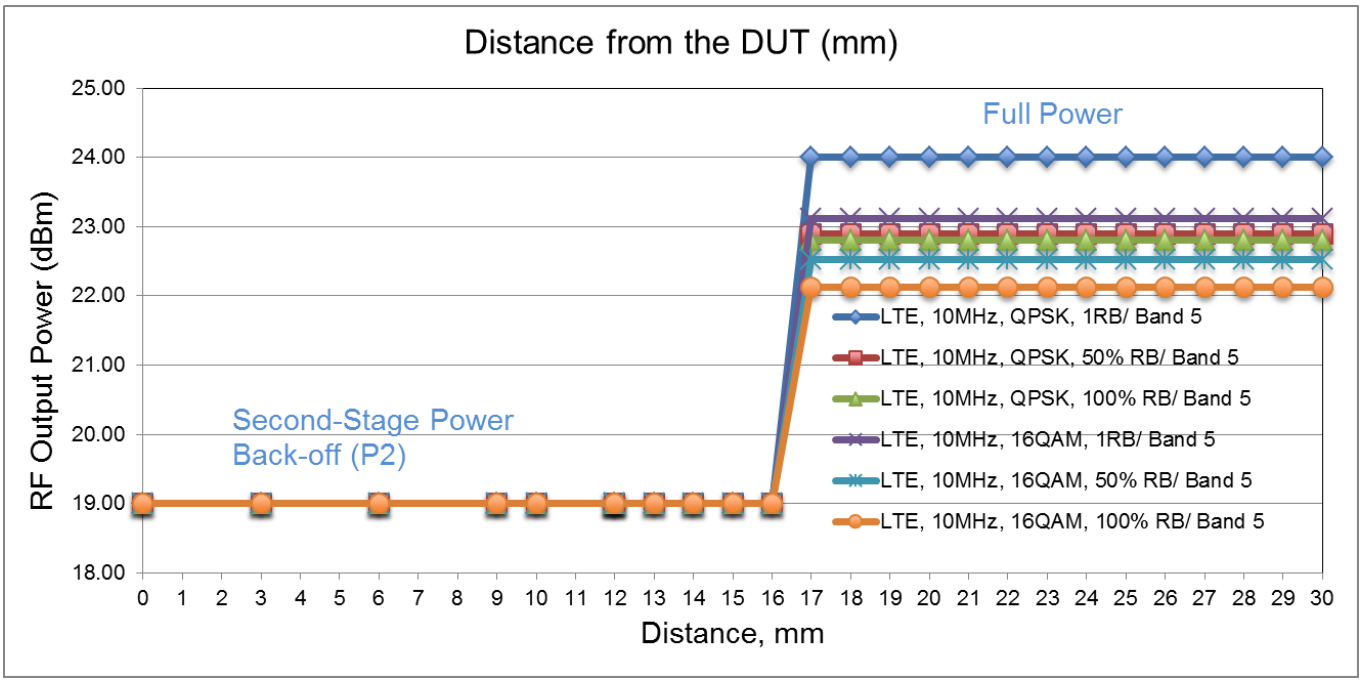
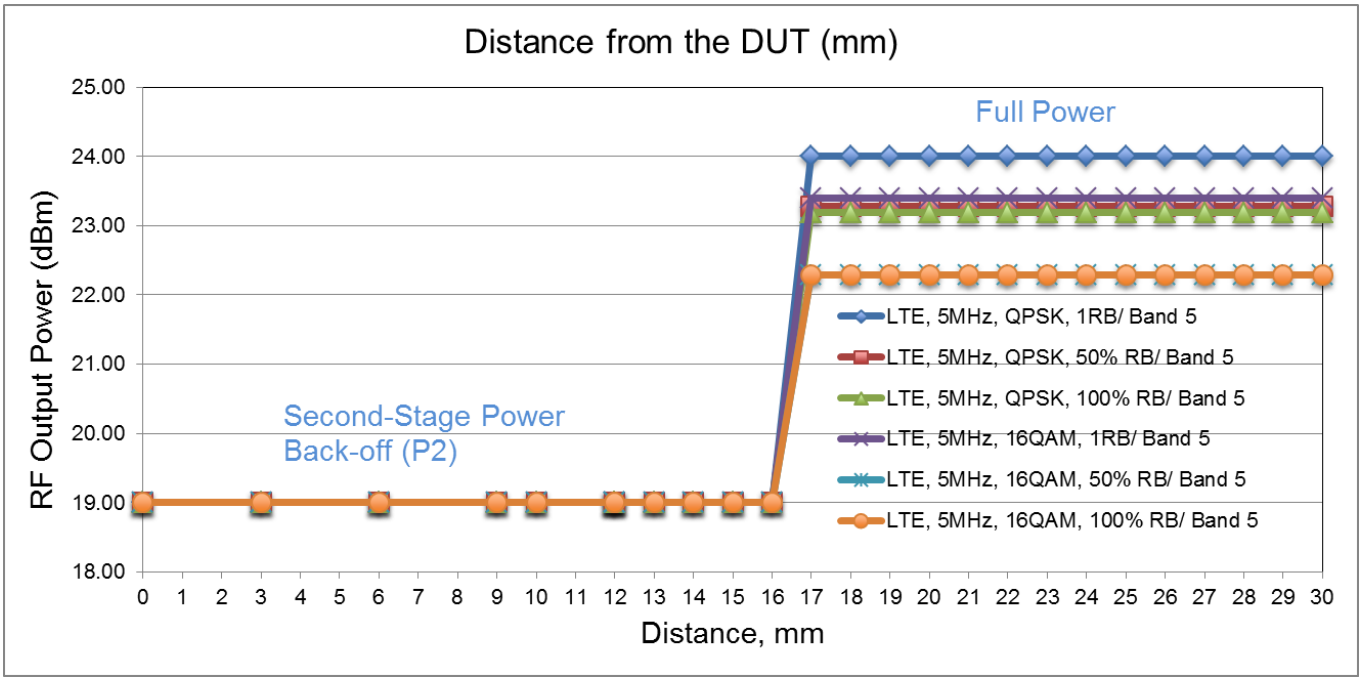
LTE Band 5





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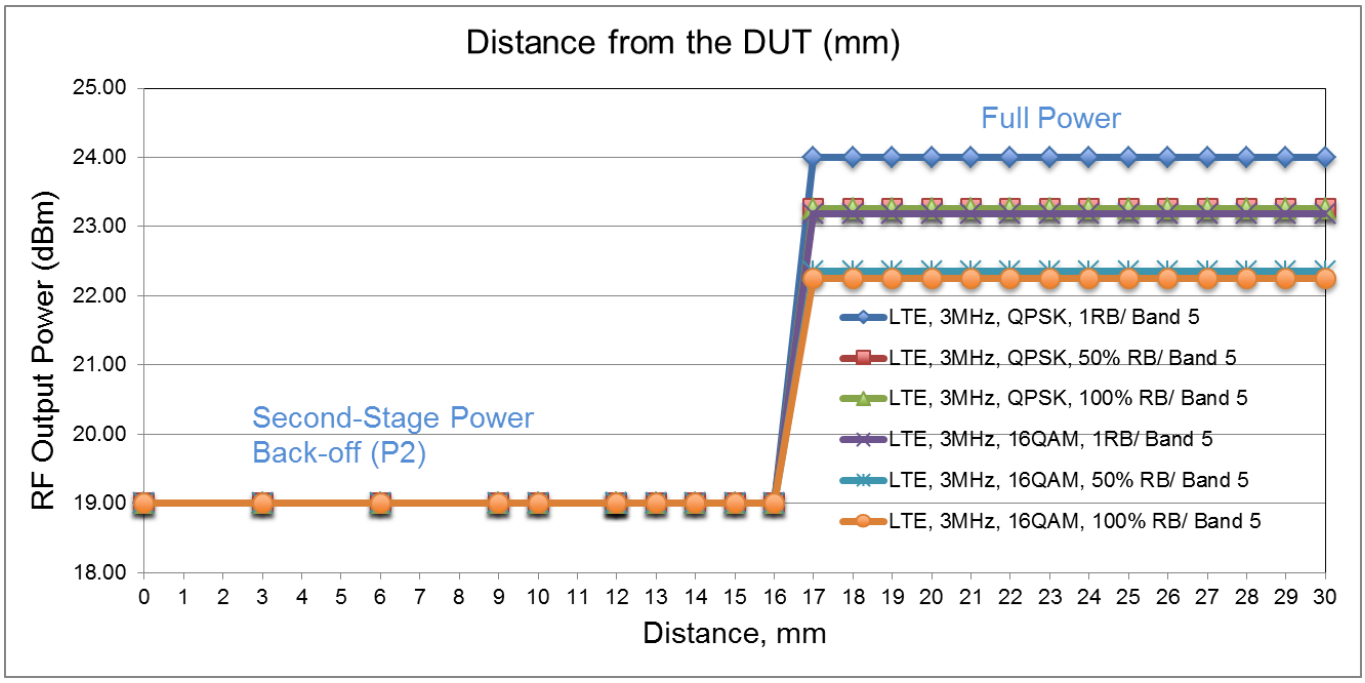

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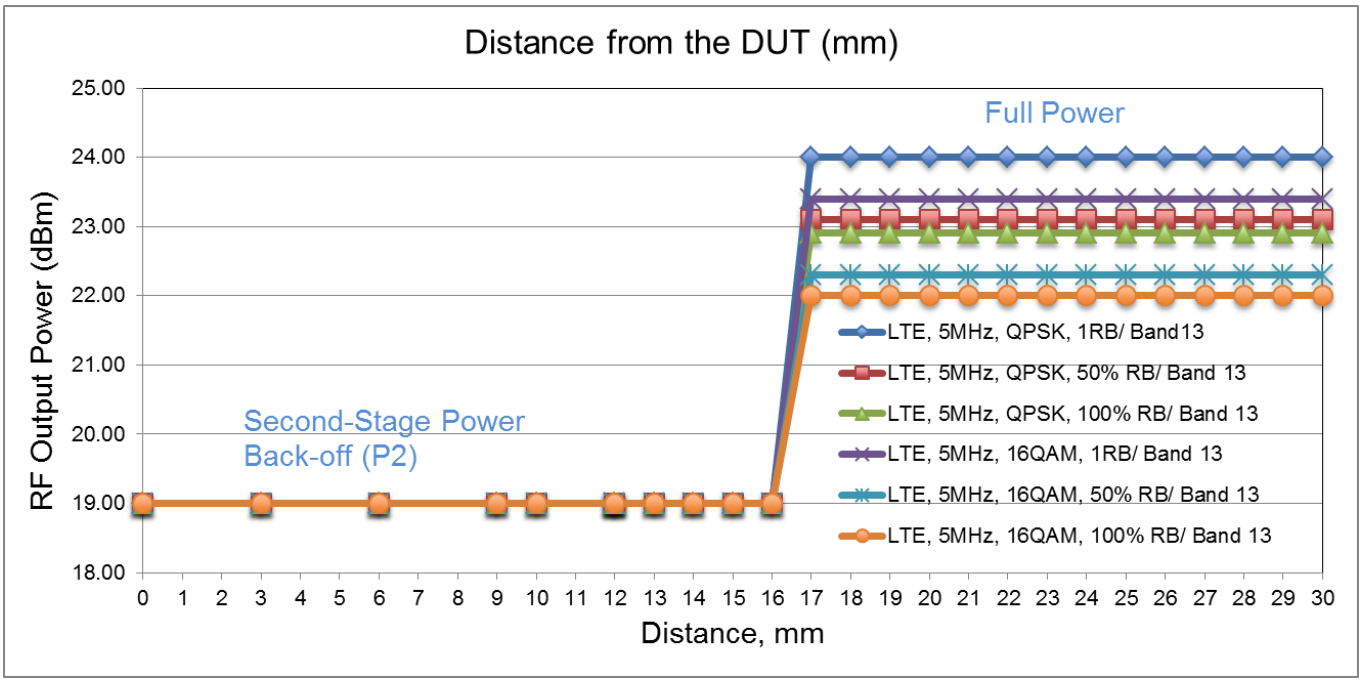
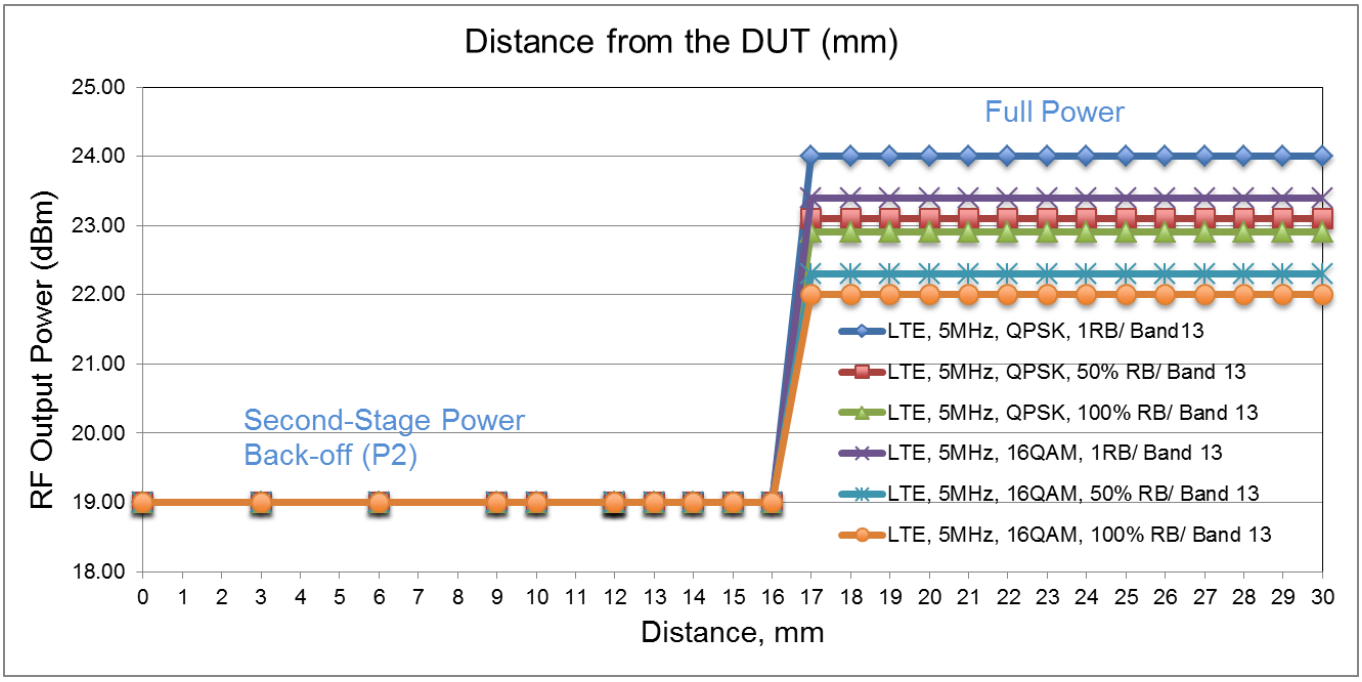
LTE Band 13





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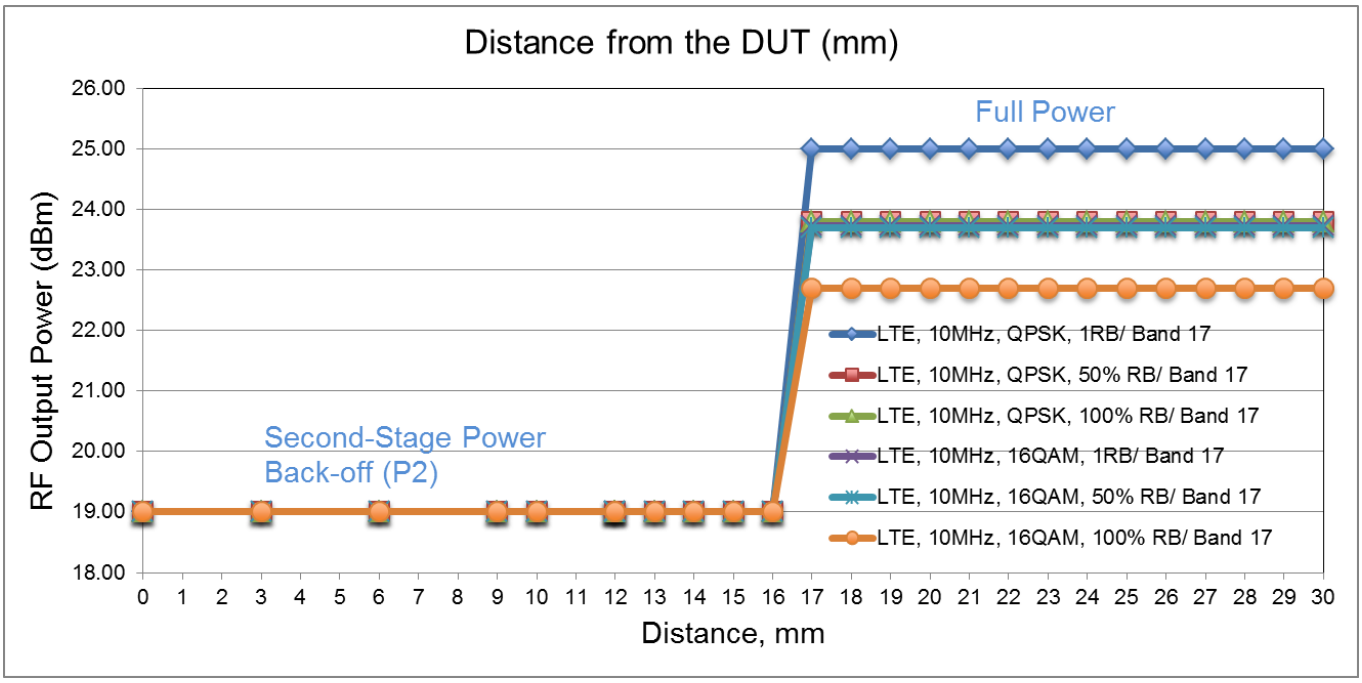
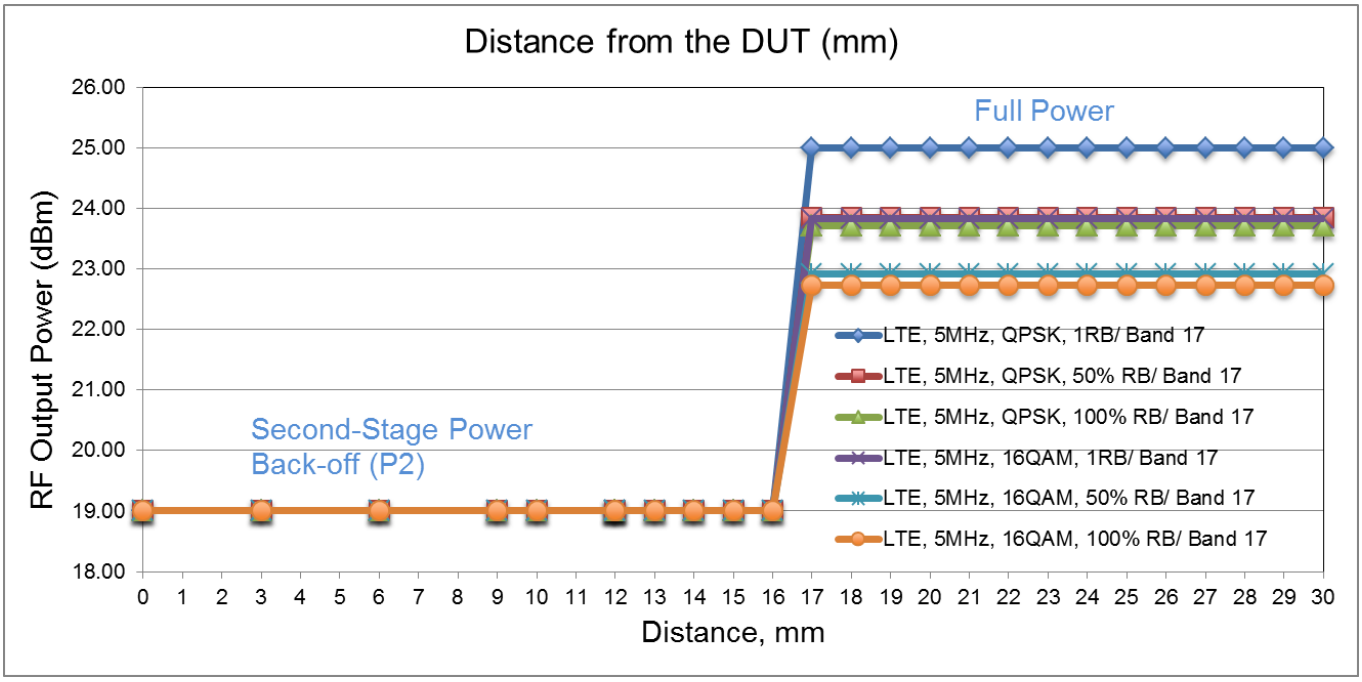
LTE Band 17





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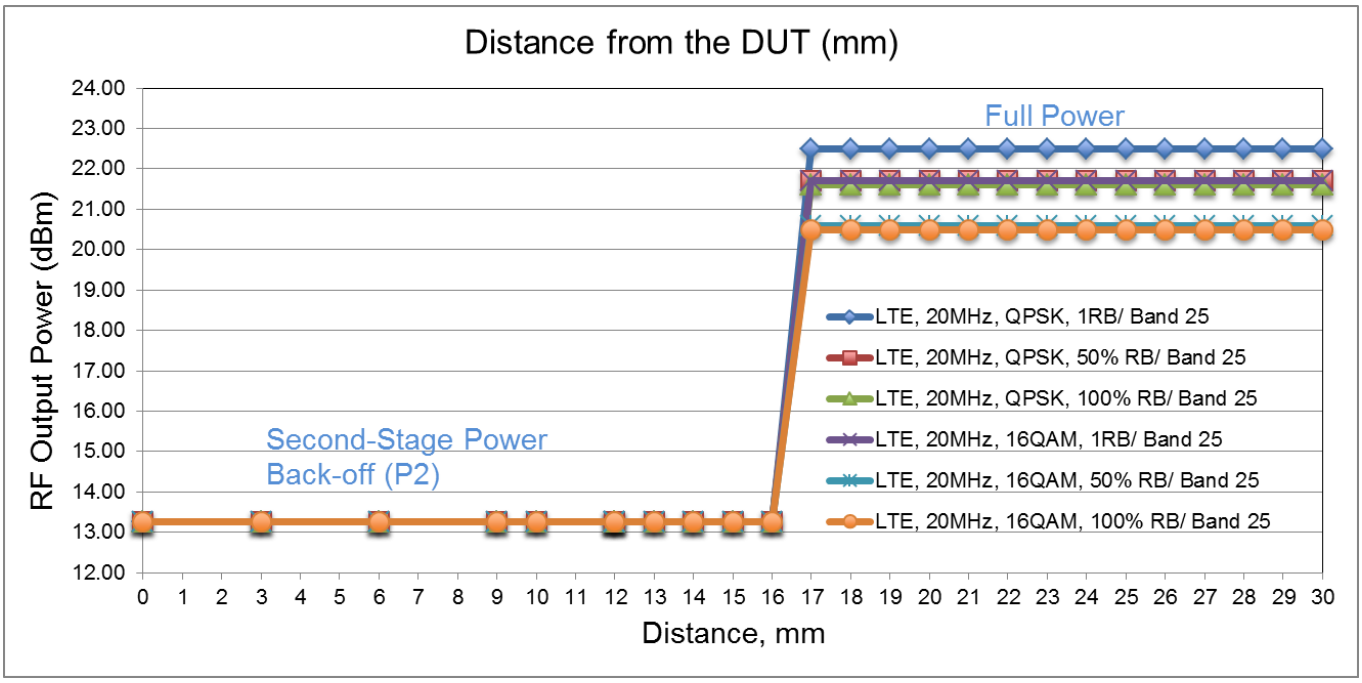

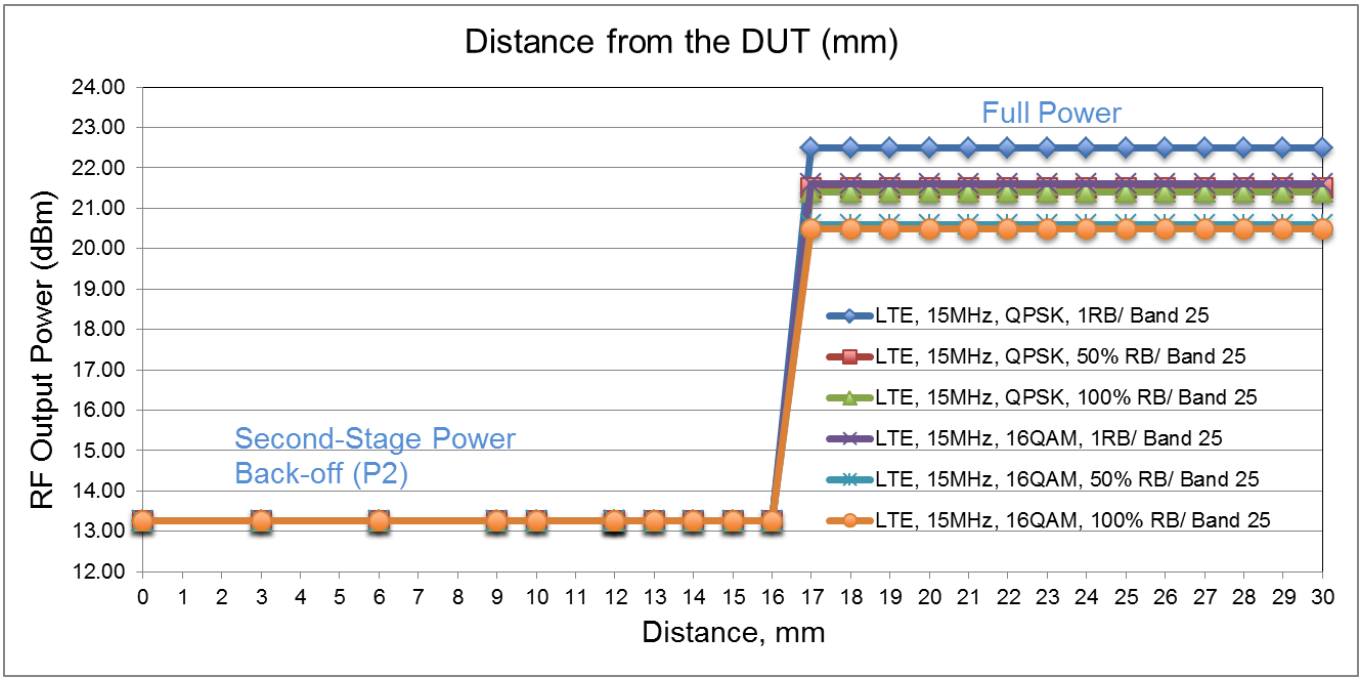

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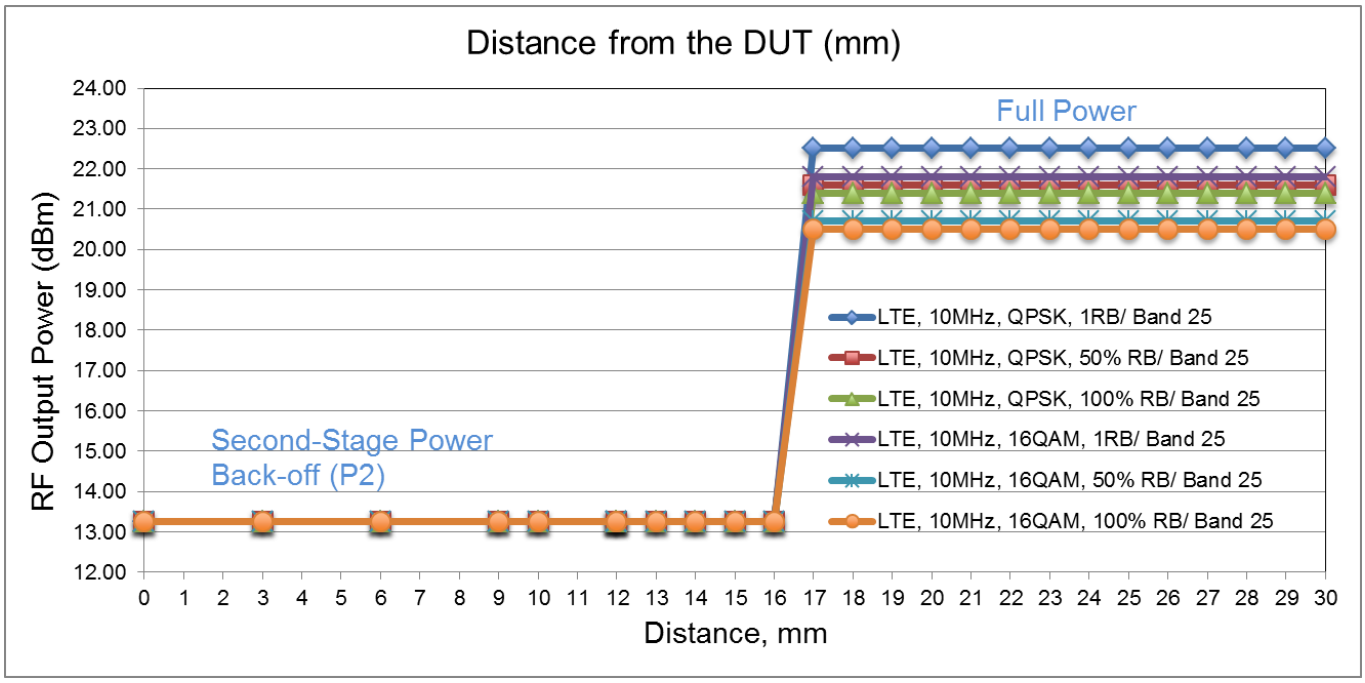
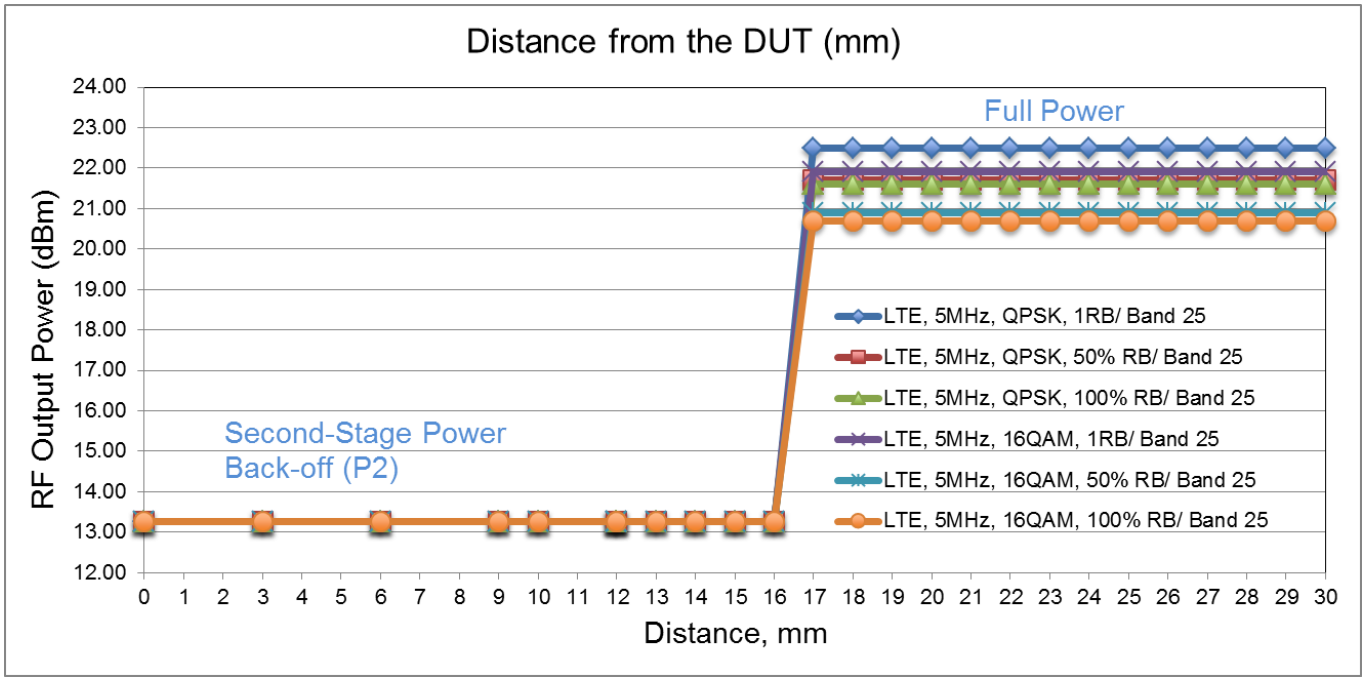
LTE Band 25 continued





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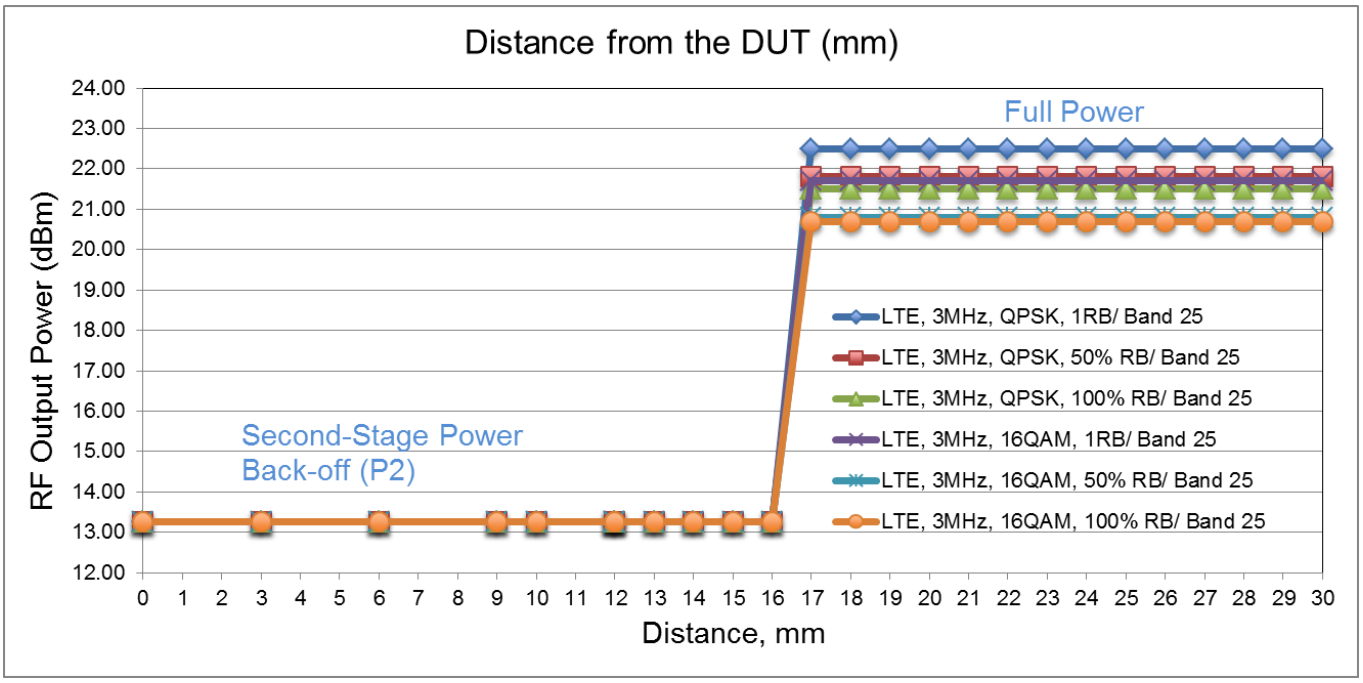

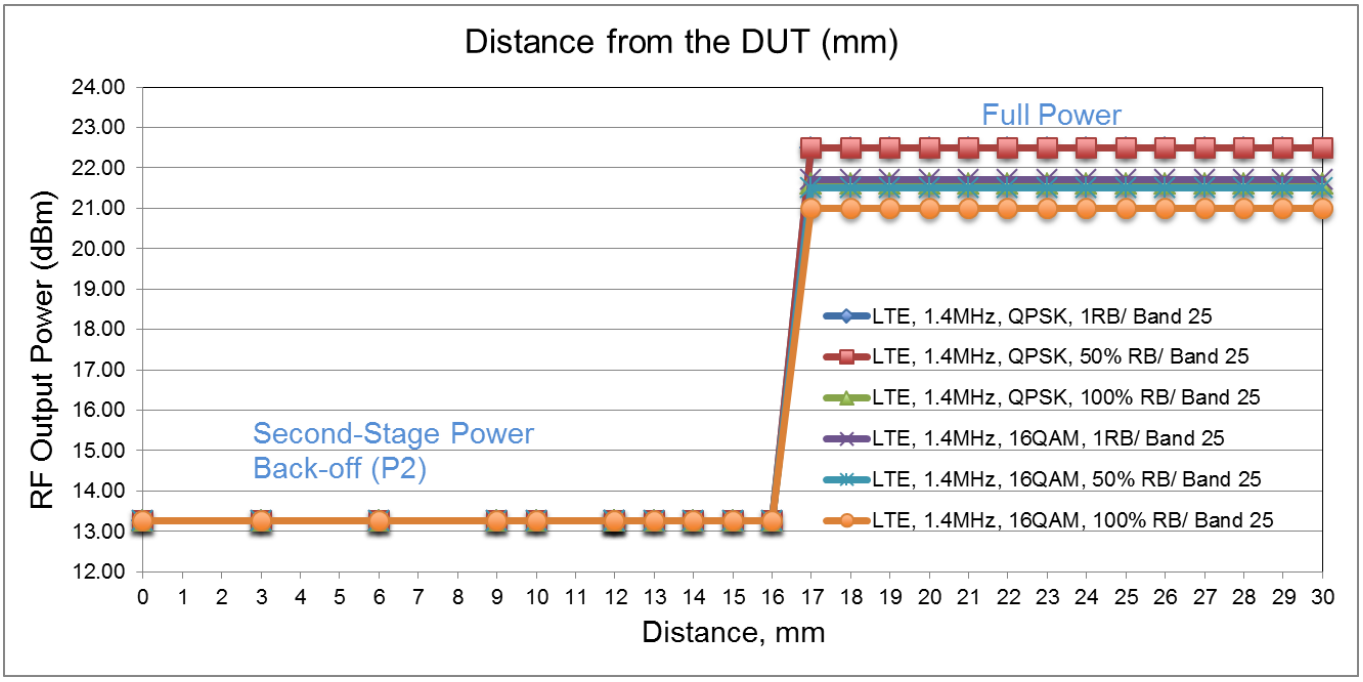

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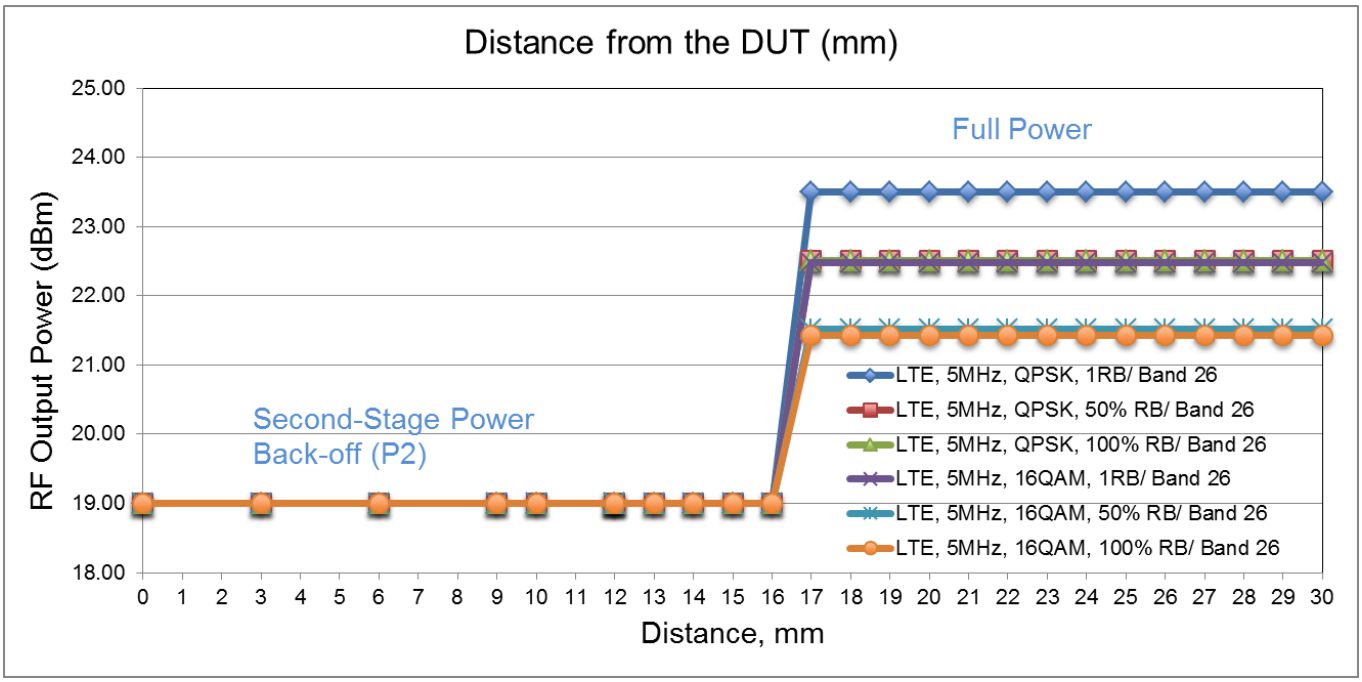
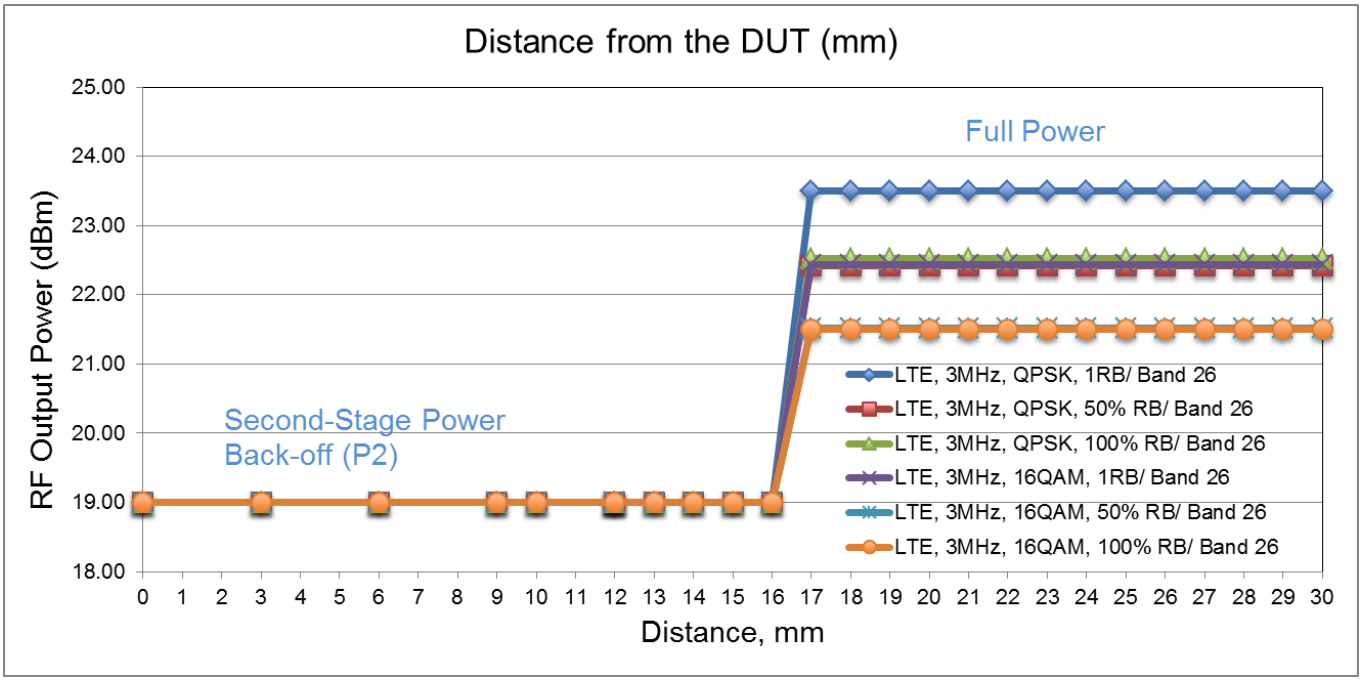
LTE Band 26





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8. RF Output Power Measurement

8.1. GSM

GPRS (GMSK) - Coding Scheme: CS1								
Band	Ch No.	Freq. (MHz)	Full Power		First Stage Power Back-Off		Second Stage Power Back-Off	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
			Burst Power (dBm)					
850	128	824.2	33.40	**32.50**	33.40	32.50	27.25	**24.50**
	190	836.6	33.35	**32.50**	33.35	32.50	27.25	**24.50**
	251	848.8	33.40	**32.50**	33.40	32.50	27.25	**24.50**
			Frame Power (dBm)					
850	128	824.2	24.4	**26.5**	24.4	26.5	18.2	**18.5**
	190	836.6	24.3	**26.5**	24.3	26.5	18.2	**18.5**
	251	848.8	24.4	**26.5**	24.4	26.5	18.2	**18.5**
EGPRS (8PSK) - Coding Scheme: MCS5								
Band	Ch No.	Freq. (MHz)	Full Power		First Stage Power Back-Off		Second Stage Power Back-Off	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
			Burst Power (dBm)					
850	128	824.2	29.00	29.00	29.00	29.00	27.00	24.00
	190	836.6	29.00	29.00	29.00	29.00	27.00	24.00
	251	848.8	29.00	29.00	29.00	29.00	27.00	24.00
			Frame Power (dBm)					
850	128	824.2	20.0	23.0	20.0	23.0	18.0	18.0
	190	836.6	20.0	23.0	20.0	23.0	18.0	18.0
	251	848.8	20.0	23.0	20.0	23.0	18.0	18.0

Notes:

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

- GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

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GPRS (GMSK) - Coding Scheme: CS1								
Band	Ch No.	Freq. (MHz)	Full Power		First Stage Power Back-Off		Second Stage Power Back-Off	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
			Burst Power (dBm)					
1900	512	1850.2	30.99	**28.90**	30.99	28.90	22.40	**19.60**
	661	1880	31.00	**28.90**	31.00	28.90	22.40	**19.75**
	810	1909.8	31.00	**28.80**	31.00	28.80	22.50	**19.70**
			Frame Power (dBm)					
1900	512	1850.2	22.0	**22.9**	22.0	22.9	13.4	**13.6**
	661	1880	22.0	**22.9**	22.0	22.9	13.4	**13.7**
	810	1909.8	22.0	**22.8**	22.0	22.8	13.5	**13.7**
EGPRS (8PSK) - Coding Scheme: MCS5								
Band	Ch No.	Freq. (MHz)	Full Power		First Stage Power Back-Off		Second Stage Power Back-Off	
			1 slot	2 slots	1 slot	2 slots	1 slot	2 slots
			Burst Power (dBm)					
1900	512	1850.2	27.92	27.84	27.92	27.84	22.40	19.30
	661	1880	27.90	27.83	27.90	27.83	22.40	19.40
	810	1909.8	28.00	27.86	28.00	27.86	22.40	19.50
			Frame Power (dBm)					
1900	512	1850.2	18.9	21.8	18.9	21.8	13.4	13.3
	661	1880	18.9	21.8	18.9	21.8	13.4	13.4
	810	1909.8	19.0	21.8	19.0	21.8	13.4	13.5

Notes:

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

- GMSK (GPRS) mode with 2 time slots, based on the output power measurements above
- SAR is not required for EGPRS (8PSK) mode because its output power is less than that of GPRS Mode

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8.2. W-CDMA

Release 99

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

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	βc/βd	8/15

Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
W-CDMA Band 2	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	22.50	22.50	13.38
		9400	1880.0	22.50	22.50	13.30
		9538	1907.6	22.38	22.38	13.50
W-CDMA Band 4	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	23.00	23.00	13.50
		1413	1732.6	23.00	23.00	13.50
		1513	1752.6	22.90	22.90	13.50
W-CDMA Band 5	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.50	24.50	19.00
		4183	836.6	24.50	24.50	19.00
		4233	846.6	24.50	24.50	19.00

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HSDPA

The following 4 Sub-tests were completed according to Release 7 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	1	1.5	1.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

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Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
W-CDMA Band 2	Subtest 1	9262	1852.4	21.3	21.3	13.5
		9400	1880.0	21.4	21.4	13.5
		9538	1907.6	21.4	21.4	13.5
	Subtest 2	9262	1852.4	21.2	21.2	13.5
		9400	1880.0	21.4	21.4	13.5
		9538	1907.6	21.3	21.3	13.5
	Subtest 3	9262	1852.4	21.2	21.2	13.4
		9400	1880.0	21.4	21.4	13.3
		9538	1907.6	21.3	21.3	13.5
	Subtest 4	9262	1852.4	21.3	21.3	13.5
		9400	1880.0	21.4	21.4	13.5
		9538	1907.6	21.3	21.3	13.5
W-CDMA Band 4	Subtest 1	1312	1712.4	22.0	22.0	13.5
		1413	1732.6	22.2	22.2	13.5
		1513	1752.6	22.1	22.1	13.4
	Subtest 2	1312	1712.4	22.1	22.1	13.3
		1413	1732.6	22.2	22.2	13.5
		1513	1752.6	22.2	22.2	13.5
	Subtest 3	1312	1712.4	21.7	21.7	13.4
		1413	1732.6	21.8	21.8	13.3
		1513	1752.6	21.9	21.9	13.5
	Subtest 4	1312	1712.4	21.7	21.7	13.5
		1413	1732.6	21.7	21.7	13.5
		1513	1752.6	21.7	21.7	13.5
W-CDMA Band 5	Subtest 1	4132	826.4	23.3	23.3	19.0
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.3	23.3	19.0
	Subtest 2	4132	826.4	23.3	23.3	19.0
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.2	23.2	19.0
	Subtest 3	4132	826.4	23.2	23.2	19.0
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.3	23.3	19.0
	Subtest 4	4132	826.4	23.4	23.4	19.0
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.2	23.2	19.0

Maximum output power levels that are possible for all subtests reported.

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HSPA (HSDPA & HSUPA)

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

	Mode	HSPA	HSPA	HSPA	HSPA	HSPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	15/15
	βec	209/225	12/15	30/15	2/15	24/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	βhs	22/15	12/15	30/15	4/15	30/15
	βed	1309/225	94/75	47/15 47/15	56/75	134/15
	CM (dB)	1.0	3.0	2.0	3.0	1.0
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

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Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
W-CDMA Band 2	Subtest 1	9262	1852.4	21.2	21.2	13.3
		9400	1880.0	21.2	21.2	13.3
		9538	1907.6	21.3	21.3	13.4
	Subtest 2	9262	1852.4	20.9	20.9	13.2
		9400	1880.0	20.9	20.9	13.3
		9538	1907.6	20.9	20.9	13.4
	Subtest 3	9262	1852.4	21.2	21.2	13.3
		9400	1880.0	21.1	21.1	13.4
		9538	1907.6	21.1	21.1	13.4
	Subtest 4	9262	1852.4	21.0	21.0	13.4
		9400	1880.0	20.9	20.9	13.3
		9538	1907.6	20.9	20.9	13.4
	Subtest 5	9262	1852.4	21.2	21.2	13.4
		9400	1880.0	21.3	21.3	13.3
		9538	1907.6	21.3	21.3	13.5
W-CDMA Band 4	Subtest 1	1312	1712.4	21.8	21.8	13.5
		1413	1732.6	21.7	21.7	13.4
		1513	1752.6	21.7	21.7	13.5
	Subtest 2	1312	1712.4	21.2	21.2	13.4
		1413	1732.6	21.1	21.1	13.2
		1513	1752.6	21.0	21.0	13.5
	Subtest 3	1312	1712.4	21.5	21.5	13.4
		1413	1732.6	21.4	21.4	13.4
		1513	1752.6	21.4	21.4	13.5
	Subtest 4	1312	1712.4	21.1	21.1	13.4
		1413	1732.6	21.0	21.0	13.4
		1513	1752.6	21.1	21.1	13.4
	Subtest 5	1312	1712.4	21.7	21.7	13.4
		1413	1732.6	21.5	21.5	13.4
		1513	1752.6	21.6	21.6	13.5
W-CDMA Band 5	Subtest 1	4132	826.4	23.3	23.3	18.9
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.3	23.3	18.8
	Subtest 2	4132	826.4	22.5	22.5	19.0
		4183	836.6	22.5	22.5	18.9
		4233	846.6	22.5	22.5	19.0
	Subtest 3	4132	826.4	23.2	23.2	18.8
		4183	836.6	23.2	23.2	19.0
		4233	846.6	23.2	23.2	19.0
	Subtest 4	4132	826.4	22.5	22.5	18.9
		4183	836.6	22.5	22.5	19.0
		4233	846.6	22.4	22.4	18.9
	Subtest 5	4132	826.4	23.3	23.3	19.0
		4183	836.6	23.3	23.3	18.8
		4233	846.6	23.3	23.3	19.0

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DC-HSDPA

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

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

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

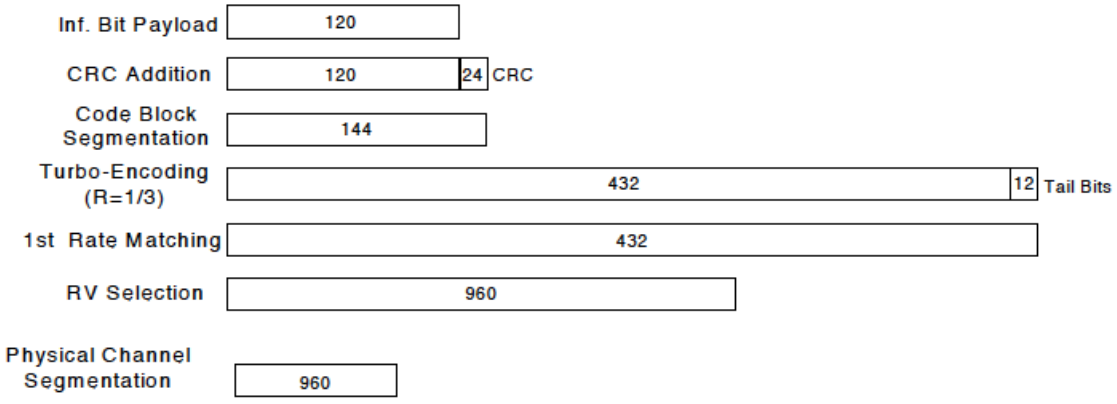

Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

Up commands are set continuously to set the UE to Max power.

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Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
W-CDMA Band 2	Subtest 1	9262	1852.4	21.1	21.1	13.5
		9400	1880.0	21.1	21.1	13.5
		9538	1907.6	21.2	21.2	13.5
	Subtest 2	9262	1852.4	20.7	20.7	13.5
		9400	1880.0	20.8	20.8	13.5
		9538	1907.6	20.7	20.7	13.5
	Subtest 3	9262	1852.4	20.9	20.9	13.4
		9400	1880.0	21.0	21.0	13.3
		9538	1907.6	20.9	20.9	13.5
	Subtest 4	9262	1852.4	20.7	20.7	13.5
		9400	1880.0	20.7	20.7	13.5
		9538	1907.6	20.8	20.8	13.5
W-CDMA Band 4	Subtest 1	1312	1712.4	22.1	22.1	13.5
		1413	1732.6	22.1	22.1	13.5
		1513	1752.6	22.1	22.1	13.4
	Subtest 2	1312	1712.4	22.2	22.2	13.3
		1413	1732.6	22.1	22.1	13.5
		1513	1752.6	22.1	22.1	13.5
	Subtest 3	1312	1712.4	21.8	21.8	13.4
		1413	1732.6	21.6	21.6	13.3
		1513	1752.6	21.5	21.5	13.5
	Subtest 4	1312	1712.4	21.6	21.6	13.5
		1413	1732.6	21.6	21.6	13.5
		1513	1752.6	21.5	21.5	13.5
W-CDMA Band 5	Subtest 1	4132	826.4	23.3	23.3	19.0
		4183	836.6	23.4	23.4	19.0
		4233	846.6	23.3	23.3	19.0
	Subtest 2	4132	826.4	23.3	23.3	19.0
		4183	836.6	23.3	23.3	19.0
		4233	846.6	23.3	23.3	19.0
	Subtest 3	4132	826.4	22.8	22.8	19.0
		4183	836.6	22.8	22.8	19.0
		4233	846.6	22.8	22.8	19.0
	Subtest 4	4132	826.4	22.8	22.8	19.0
		4183	836.6	22.8	22.8	19.0
		4233	846.6	22.7	22.7	19.0

HSPA+

Since 16QAM is not used for uplink, the uplink Category and release is same as HSUPA, i.e., CAT 6 Rel 6. Therefore, the RF conducted power is not measured.

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8.3. CDMA

1xRTT Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
BC 0	RC1 SO55 (Loopback)	1013	824.70	24.5	24.5	18.65
		384	836.52	24.5	24.5	18.60
		777	848.31	24.5	24.5	18.50
	RC3 SO55 (Loopback)	1013	824.70	24.5	24.5	18.65
		384	836.52	24.5	24.5	18.60
		777	848.31	24.5	24.5	18.50
	RC3 SO32 (+F-SCH)	1013	824.70	24.5	24.5	18.65
		384	836.52	24.5	24.5	18.73
		777	848.31	24.5	24.5	18.50
BC 1	RC1 SO55 (Loopback)	25	1851.25	22.5	22.5	13.00
		600	1880.00	22.5	22.5	13.00
		1175	1908.75	22.5	22.5	13.00
	RC3 SO55 (Loopback)	25	1851.25	22.5	22.5	13.00
		600	1880.00	22.5	22.5	13.00
		1175	1908.75	22.5	22.5	13.00
	RC3 SO32 (+F-SCH)	25	1851.25	22.5	22.5	13.00
		600	1880.00	22.5	22.5	13.00
		1175	1908.75	22.5	22.5	13.00
BC 10	RC1 SO55 (Loopback)	476	817.9	25.0	25.0	18.75
		580	820.5	25.0	25.0	18.75
		684	823.1	25.0	25.0	18.75
	RC3 SO55 (Loopback)	476	817.9	25.0	25.0	18.75
		580	820.5	25.0	25.0	18.75
		684	823.1	25.0	25.0	18.75
	RC3 SO32 (+F-SCH)	476	817.9	25.0	25.0	18.75
		580	820.5	25.0	25.0	18.75
		684	823.1	25.0	25.0	18.75
BC 15	RC1 SO55 (Loopback)	25	1711.25	23.0	23.0	13.08
		450	1732.50	23.0	23.0	13.25
		875	1753.75	23.0	23.0	13.15
	RC3 SO55 (Loopback)	25	1711.25	23.0	23.0	13.08
		450	1732.50	23.0	23.0	13.25
		875	1753.75	23.0	23.0	13.15
	RC3 SO32 (+F-SCH)	25	1711.25	23.0	23.0	13.08
		450	1732.50	23.0	23.0	13.25
		875	1753.75	23.0	23.0	13.15

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1x Advanced

Call box setup procedure

- Protocol Rev > 6 (IS-2000-0)
- System ID: 331; NID: 65535, Reg. Ch. #387
- 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.

Measured Results

Band	Mode	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
BC 0	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	24.4	24.4	18.60
		384	836.52	24.4	24.4	18.70
		777	848.31	24.4	24.4	18.60
BC 1	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	22.5	22.5	13.00
		600	1880.00	22.5	22.5	13.00
		1175	1908.75	22.4	22.4	13.00
BC 10	Fwd11/Rvs8 SO75 (Loopback)	476	817.9	24.9	24.9	18.70
		580	820.5	24.9	24.9	18.75
		684	823.1	24.9	24.9	18.70
BC 15	Fwd11/Rvs8 SO75 (Loopback)	25	1711.25	23.0	23.0	13.20
		450	1732.50	23.0	23.0	13.25
		875	1753.75	23.0	23.0	13.20

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1xEv-Do Rel. 0 Measured Results

Band	FTAP Rate	RTAP Rate	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
					Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
BC 0	307.2 kbps (2 slot, QPSK)	153.6 kbps	1013	824.70	24.5	24.5	18.70
			384	836.52	24.5	24.5	18.57
			777	848.31	24.5	24.5	18.60
BC1	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	22.4	22.4	13.21
			600	1880.00	22.5	22.5	13.24
			1175	1908.75	22.4	22.4	13.20
BC10	307.2 kbps (2 slot, QPSK)	153.6 kbps	476	817.9	23.9	23.9	18.75
			580	820.5	23.9	23.9	18.75
			684	823.1	23.9	23.9	18.54
BC15	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1711.25	23.0	23.0	13.08
			450	1732.50	23.0	23.0	13.25
			875	1753.75	23.0	23.0	13.15

1xEv-Do Rev. A Measured Results

Band	FETAP Traffic Format	RETAP Data Payload Size	UL Ch No.	Freq. (MHz)	Avg Pwr (dBm)		
					Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
BC 0	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	1013	824.70	24.5	24.5	18.59
			384	836.52	24.5	24.5	18.50
			777	848.31	24.5	24.5	18.50
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	22.4	22.4	13.15
			600	1880.00	22.4	22.4	13.19
			1175	1908.75	22.4	22.4	13.23
BC10	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	476	817.9	23.8	23.8	18.71
			580	820.5	23.7	23.7	18.60
			684	823.1	23.7	23.7	18.57
BC15	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	22.9	22.9	13.12
			450	1732.50	22.8	22.8	13.10
			875	1753.75	22.9	22.9	13.17

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1xEv-Do Rev. B

Call box setup procedure

1xEV-DO Release B

- CMW 500 Signal Generator > 1xEV-DO Taskbar Enable
- CMW 500 1xEV-DO Signaling Configuration Window >
- 1xEV-DO Signaling On Window:
  Under Access Network Control:
  Band Class: BC0: US Cellular
  RF Channel: 31
  1xEV-DO Power: -70 dBm
  Release B

- 1xEV-DO Signaling Configuration Window

  Under RF Frequency Band / Channel: Enter Ch. Frequency
  - Under Carrier Configuration: RF Frequency
    For Two Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	31	0
Carrier [1]	1013	982

  - Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
	CA/S1	✓	✓

    For Three Carriers: Low Channel (1013)

	RF Channel	RF Channel Offset
Carrier [0]	72	0
Carrier [1]	31	-41
Carrier [2]	1013	941

  - Under Carrier Configuration: RF Pilot

	Carrier Sector	Active on AN	Assigned to AT
Pilot [0]	C0/S0	✓	✓
Pilot [1]	C1/S1	✓	✓
Pilot [2]	C2/S2	✓	✓

- Rvs Power Ctrl > All Up bits (to get the maximum power)

Measured Results

Band	Test Set #	Channel	f (MHz)	Avg Pwr (dBm)		
				Full Power	First Stage Power Back-Off	Second Stage Power Back-Off
BC0	Two Carrier Mini Separation	1013+31	824.70+825.93	20.9	20.9	18.75
		384+425	836.52+837.75	20.8	20.8	18.75
		736+777	847.08+848.31	20.8	20.8	18.75
	Two Carrier Max Separation	1013+156	824.70+829.68	20.9	20.9	18.75
		384+550	836.52+841.50	20.8	20.8	18.75
		611+777	843.33+848.31	20.8	20.8	18.75
	Three Carrier Max Separation	1013+31+72	824.70+825.93+827.16	20.9	20.9	18.75
		384+425+466	836.52+837.75+838.98	20.8	20.8	18.75
		695+736+777	845.85+847.08+848.31	20.9	20.9	18.75

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8.4. LTE

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

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

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

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

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

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

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

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

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8.4.1. LTE Band 2

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
20	18700	1860.0	QPSK	1	0	0	22.5	22.5	13.04
				1	49	0	22.5	22.5	13.10
				1	99	0	22.5	22.5	13.10
				50	0	1	21.6	21.6	13.14
				50	24	1	21.6	21.6	13.15
				50	49	1	21.5	21.5	13.12
				100	0	1	21.5	21.5	13.10
			16QAM	1	0	1	21.5	21.5	13.00
				1	49	1	21.5	21.5	13.00
				1	99	1	21.5	21.5	13.00
				50	0	2	20.4	20.4	12.90
				50	24	2	20.3	20.3	12.90
				50	49	2	20.5	20.5	12.90
				100	0	2	20.4	20.4	12.80
	18900	1880.0	QPSK	1	0	0	22.5	22.5	13.14
				1	49	0	22.5	22.5	13.04
				1	99	0	22.5	22.5	13.12
				50	0	1	21.5	21.5	13.16
				50	24	1	21.5	21.5	13.10
				50	49	1	21.6	21.6	13.12
				100	0	1	21.6	21.6	13.24
			16QAM	1	0	1	21.5	21.5	13.10
				1	49	1	21.5	21.5	13.10
				1	99	1	21.4	21.4	13.00
				50	0	2	20.5	20.5	12.80
				50	24	2	20.5	20.5	12.80
				50	49	2	20.3	20.3	12.90
				100	0	2	20.4	20.4	12.80
	19100	1900.0	QPSK	1	0	0	22.5	22.5	13.08
				1	49	0	22.5	22.5	13.04
				1	99	0	22.5	22.5	13.02
				50	0	1	21.6	21.6	13.08
				50	24	1	21.4	21.4	13.08
				50	49	1	21.5	21.5	13.00
				100	0	1	21.6	21.6	12.93
			16QAM	1	0	1	21.5	21.5	13.10
				1	49	1	21.4	21.4	13.10
				1	99	1	21.4	21.4	13.10
				50	0	2	20.5	20.5	12.80
				50	24	2	20.4	20.4	12.90
				50	49	2	20.3	20.3	12.90
				100	0	2	20.3	20.3	12.90

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LTE Band 2 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
15	18675	1857.5	QPSK	1	0	0	22.3	22.3	13.00
				1	37	0	22.2	22.2	13.10
				1	74	0	22.1	22.1	13.00
				36	0	1	21.2	21.2	12.90
				36	16	1	21.2	21.2	13.10
				36	35	1	21.2	21.2	12.90
				75	0	1	21.2	21.2	12.90
			16QAM	1	0	1	21.3	21.3	12.90
				1	37	1	21.2	21.2	12.90
				1	74	1	21.0	21.0	13.00
				36	0	2	20.3	20.3	12.90
				36	16	2	20.2	20.2	12.90
				36	35	2	20.2	20.2	12.90
				75	0	2	20.2	20.2	12.90
	18900	1880.0	QPSK	1	0	0	22.2	22.2	13.14
				1	37	0	22.3	22.3	13.10
				1	74	0	22.2	22.2	13.10
				36	0	1	21.1	21.1	13.10
				36	16	1	21.1	21.1	12.89
				36	35	1	21.2	21.2	12.98
				75	0	1	21.1	21.1	13.04
			16QAM	1	0	1	21.2	21.2	13.01
				1	37	1	21.3	21.3	13.02
				1	74	1	21.2	21.2	13.05
				36	0	2	20.2	20.2	13.03
				36	16	2	20.2	20.2	12.98
				36	35	2	20.1	20.1	13.00
				75	0	2	20.2	20.2	12.80
	19125	1902.5	QPSK	1	0	0	22.2	22.2	13.00
				1	37	0	22.2	22.2	13.02
				1	74	0	22.5	22.5	13.02
				36	0	1	21.1	21.1	13.08
				36	16	1	21.1	21.1	13.08
				36	35	1	21.3	21.3	13.00
				75	0	1	21.2	21.2	12.96
			16QAM	1	0	1	21.1	21.1	12.96
				1	37	1	21.2	21.2	12.89
				1	74	1	21.2	21.2	12.94
				36	0	2	20.2	20.2	12.80
				36	16	2	20.2	20.2	12.90
				36	35	2	20.3	20.3	12.90
				75	0	2	20.2	20.2	12.90

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LTE Band 2 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	18650	1855.0	QPSK	1	0	0	22.4	22.4	13.20
				1	24	0	22.4	22.4	13.20
				1	49	0	22.2	22.2	13.20
				25	0	1	21.3	21.3	13.14
				25	12	1	21.3	21.3	13.04
				25	24	1	21.2	21.2	13.12
				50	0	1	21.2	21.2	13.16
			16QAM	1	0	1	21.3	21.3	13.00
				1	24	1	21.3	21.3	13.00
				1	49	1	21.1	21.1	13.00
				25	0	2	20.4	20.4	13.04
				25	12	2	20.4	20.4	12.84
				25	24	2	20.3	20.3	12.84
				50	0	2	20.3	20.3	12.84
	18900	1880.0	QPSK	1	0	0	22.1	22.1	13.12
				1	24	0	22.4	22.4	13.21
				1	49	0	22.3	22.3	13.15
				25	0	1	21.3	21.3	13.16
				25	12	1	21.2	21.2	13.10
				25	24	1	21.1	21.1	13.12
				50	0	1	21.2	21.2	13.24
			16QAM	1	0	1	21.1	21.1	13.10
				1	24	1	21.2	21.2	13.10
				1	49	1	21.2	21.2	13.00
				25	0	2	20.3	20.3	13.02
				25	12	2	20.3	20.3	13.01
				25	24	2	20.2	20.2	13.01
				50	0	2	20.2	20.2	12.92
	19150	1905.0	QPSK	1	0	0	22.2	22.2	13.15
				1	24	0	22.2	22.2	13.16
				1	49	0	22.4	22.4	13.21
				25	0	1	21.2	21.2	13.11
				25	12	1	21.2	21.2	13.14
				25	24	1	21.4	21.4	13.10
				50	0	1	21.2	21.2	13.12
			16QAM	1	0	1	21.2	21.2	13.02
				1	24	1	21.2	21.2	13.10
				1	49	1	21.4	21.4	13.10
				25	0	2	20.2	20.2	13.02
				25	12	2	20.3	20.3	12.90
				25	24	2	20.4	20.4	12.90
				50	0	2	20.2	20.2	12.92

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LTE Band 2 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	18625	1855.0	QPSK	1	0	0	22.5	22.5	13.10
				1	12	0	22.4	22.4	13.11
				1	24	0	22.5	22.5	13.10
				12	0	1	21.5	21.5	13.14
				12	6	1	21.4	21.4	13.11
				12	11	1	21.4	21.4	13.12
				25	0	1	21.3	21.3	13.10
			16QAM	1	0	1	21.5	21.5	13.04
				1	12	1	21.4	21.4	12.96
				1	24	1	21.5	21.5	13.00
				12	0	2	20.5	20.5	12.90
				12	6	2	20.5	20.5	12.90
				12	11	2	20.5	20.5	12.90
				25	0	2	20.4	20.4	12.93
	18900	1880.0	QPSK	1	0	0	22.3	22.3	13.00
				1	12	0	22.3	22.3	13.10
				1	24	0	22.4	22.4	13.11
				12	0	1	21.3	21.3	13.11
				12	6	1	21.3	21.3	12.94
				12	11	1	21.3	21.3	12.93
				25	0	1	21.2	21.2	13.14
			16QAM	1	0	1	21.3	21.3	12.98
				1	12	1	21.3	21.3	12.95
				1	24	1	21.4	21.4	12.96
				12	0	2	20.4	20.4	13.00
				12	6	2	20.4	20.4	12.80
				12	11	2	20.5	20.5	12.90
				25	0	2	20.2	20.2	12.80
	19175	1907.5	QPSK	1	0	0	22.4	22.4	13.10
				1	12	0	22.4	22.4	13.10
				1	24	0	22.5	22.5	13.10
				12	0	1	21.3	21.3	13.10
				12	6	1	21.4	21.4	13.08
				12	11	1	21.5	21.5	12.96
				25	0	1	21.3	21.3	12.93
			16QAM	1	0	1	21.3	21.3	12.96
				1	12	1	21.4	21.4	12.98
				1	24	1	21.5	21.5	13.00
				12	0	2	20.5	20.5	12.92
				12	6	2	20.6	20.6	12.90
				12	11	2	20.3	20.3	12.90
				25	0	2	22.3	22.3	12.90

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LTE Band 2 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
3	18615	1851.5	QPSK	1	0	0	22.3	22.3	13.00
				1	7	0	22.4	22.4	13.11
				1	14	0	22.4	22.4	13.10
				8	0	1	21.4	21.4	13.14
				8	4	1	21.3	21.3	13.14
				8	7	1	21.4	21.4	13.12
				15	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.4	21.4	13.00
				1	7	1	21.3	21.3	13.00
				1	14	1	21.4	21.4	13.00
				8	0	2	20.5	20.5	13.00
				8	4	2	20.5	20.5	13.11
				8	7	2	20.5	20.5	12.93
				15	0	2	20.5	20.5	13.10
	18900	1880.0	QPSK	1	0	0	22.3	22.3	13.11
				1	7	0	22.4	22.4	13.12
				1	14	0	22.3	22.3	13.10
				8	0	1	21.3	21.3	13.10
				8	4	1	21.3	21.3	13.10
				8	7	1	21.3	21.3	13.12
				15	0	1	21.3	21.3	13.00
			16QAM	1	0	1	21.2	21.2	13.10
				1	7	1	21.2	21.2	13.10
				1	14	1	21.2	21.2	13.00
				8	0	2	20.3	20.3	13.11
				8	4	2	20.4	20.4	13.14
				8	7	2	20.4	20.4	13.14
				15	0	2	20.3	20.3	13.13
	19185	1908.5	QPSK	1	0	0	22.3	22.3	13.00
				1	7	0	22.4	22.4	13.12
				1	14	0	22.5	22.5	13.10
				8	0	1	21.4	21.4	13.14
				8	4	1	21.5	21.5	13.08
				8	7	1	21.5	21.5	13.00
				15	0	1	21.5	21.5	13.04
			16QAM	1	0	1	21.3	21.3	12.98
				1	7	1	21.4	21.4	12.87
				1	14	1	21.4	21.4	12.92
				8	0	2	20.5	20.5	12.93
				8	4	2	20.5	20.5	12.90
				8	7	2	20.6	20.6	12.90
				15	0	2	20.5	20.5	12.90

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LTE Band 2 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
1.4	18607	1850.7	QPSK	1	0	0	22.3	22.3	13.10
				1	2	0	22.3	22.3	13.10
				1	5	0	22.4	22.4	13.10
				3	0	0	22.4	22.4	13.14
				3	1	0	22.3	22.3	13.14
				3	2	0	22.4	22.4	13.12
				6	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.3	21.3	13.00
				1	2	1	21.4	21.4	13.14
				1	5	1	21.4	21.4	13.00
				3	0	1	21.2	21.2	12.89
				3	1	1	21.3	21.3	12.84
				3	2	1	21.2	21.2	12.90
				6	0	2	20.4	20.4	12.80
	18900	1880.0	QPSK	1	0	0	22.4	22.4	13.14
				1	2	0	22.3	22.3	13.04
				1	5	0	22.3	22.3	13.12
				3	0	0	22.3	22.3	13.10
				3	1	0	22.2	22.2	13.10
				3	2	0	22.3	22.3	13.12
				6	0	1	21.3	21.3	13.00
			16QAM	1	0	1	21.2	21.2	13.10
				1	2	1	21.2	21.2	13.12
				1	5	1	21.3	21.3	13.00
				3	0	1	21.1	21.1	13.11
				3	1	1	21.1	21.1	12.90
				3	2	1	21.1	21.1	12.90
				6	0	2	20.4	20.4	12.80
	19193	1909.3	QPSK	1	0	0	22.5	22.5	13.10
				1	2	0	22.4	22.4	13.20
				1	5	0	22.5	22.5	13.10
				3	0	0	22.5	22.5	13.00
				3	1	0	22.4	22.4	13.08
				3	2	0	22.4	22.4	13.00
				6	0	1	21.4	21.4	12.93
			16QAM	1	0	1	21.5	21.5	13.21
				1	2	1	21.3	21.3	13.11
				1	5	1	21.4	21.4	13.10
				3	0	1	21.3	21.3	13.13
				3	1	1	21.3	21.3	13.00
				3	2	1	21.3	21.3	12.96
				6	0	2	20.4	20.4	12.99

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8.4.2. LTE Band 4

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
20	20050	1720.0	QPSK	1	0	0	23.0	23.0	12.80
				1	49	0	23.0	23.0	12.80
				1	99	0	23.0	23.0	12.80
				50	0	1	21.8	21.8	12.80
				50	24	1	21.8	21.8	12.80
				50	49	1	21.9	21.9	12.80
				100	0	1	21.9	21.9	12.80
			16QAM	1	0	1	22.0	22.0	12.80
				1	49	1	21.8	21.8	12.80
				1	99	1	22.0	22.0	12.80
				50	0	2	21.0	21.0	12.80
				50	24	2	20.9	20.9	12.80
				50	49	2	20.9	20.9	12.80
				100	0	2	20.8	20.8	12.80
	20175	1732.5	QPSK	1	0	0	23.0	23.0	13.20
				1	49	0	23.0	23.0	13.20
				1	99	0	23.0	23.0	13.20
				50	0	1	21.9	21.9	13.20
				50	24	1	21.9	21.9	13.20
				50	49	1	21.9	21.9	13.20
				100	0	1	21.9	21.9	12.80
			16QAM	1	0	1	21.9	21.9	13.10
				1	49	1	21.8	21.8	13.10
				1	99	1	21.9	21.9	12.90
				50	0	2	21.0	21.0	12.90
				50	24	2	20.8	20.8	12.80
				50	49	2	20.9	20.9	12.80
				100	0	2	20.8	20.8	12.80
	20300	1745.0	QPSK	1	0	0	23.0	23.0	12.80
				1	49	0	23.0	23.0	12.80
				1	99	0	23.0	23.0	12.80
				50	0	1	22.0	22.0	12.80
				50	24	1	21.9	21.9	12.80
				50	49	1	21.9	21.9	12.80
				100	0	1	21.9	21.9	12.80
			16QAM	1	0	1	21.9	21.9	12.80
				1	49	1	21.9	21.9	12.80
				1	99	1	21.9	21.9	12.80
				50	0	2	20.8	20.8	12.80
				50	24	2	20.8	20.8	12.80
				50	49	2	20.9	20.9	12.80
				100	0	2	20.8	20.8	12.80

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LTE Band 4 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
15	20025	1717.5	QPSK	1	0	0	23.0	23.0	13.00
				1	37	0	23.0	23.0	13.00
				1	74	0	23.0	23.0	13.00
				36	0	1	22.0	22.0	13.00
				36	16	1	22.0	22.0	13.00
				36	35	1	21.9	21.9	13.00
				75	0	1	21.9	21.9	13.00
			16QAM	1	0	1	22.0	22.0	13.00
				1	37	1	21.8	21.8	13.00
				1	74	1	22.0	22.0	12.92
				36	0	2	21.0	21.0	12.96
				36	16	2	20.9	20.9	13.00
				36	35	2	20.9	20.9	12.90
				75	0	2	20.9	20.9	12.80
	20175	1732.5	QPSK	1	0	0	23.0	23.0	12.98
				1	37	0	23.0	23.0	12.96
				1	74	0	23.0	23.0	13.14
				36	0	1	22.0	22.0	13.10
				36	16	1	22.0	22.0	13.11
				36	35	1	22.0	22.0	13.10
				75	0	1	22.0	22.0	13.00
			16QAM	1	0	1	21.9	21.9	13.10
				1	37	1	21.9	21.9	13.10
				1	74	1	21.9	21.9	12.90
				36	0	2	21.0	21.0	12.80
				36	16	2	20.8	20.8	12.80
				36	35	2	20.8	20.8	12.70
				75	0	2	20.8	20.8	12.70
	20325	1747.5	QPSK	1	0	0	23.0	23.0	13.00
				1	37	0	23.0	23.0	13.05
				1	74	0	23.0	23.0	13.01
				36	0	1	22.0	22.0	13.04
				36	16	1	22.0	22.0	13.00
				36	35	1	21.8	21.8	12.92
				75	0	1	20.6	20.6	12.93
			16QAM	1	0	1	21.9	21.9	12.94
				1	37	1	21.9	21.9	12.92
				1	74	1	21.9	21.9	12.93
				36	0	2	20.8	20.8	12.80
				36	16	2	20.8	20.8	12.90
				36	35	2	20.9	20.9	12.90
				75	0	2	20.8	20.8	12.90

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LTE Band 4 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	20000	1715.0	QPSK	1	0	0	22.9	22.9	12.94
				1	24	0	22.9	22.9	13.00
				1	49	0	23.0	23.0	13.00
				25	0	1	21.8	21.8	13.00
				25	12	1	21.8	21.8	13.00
				25	24	1	21.7	21.7	13.01
				50	0	1	21.8	21.8	13.00
			16QAM	1	0	1	22.0	22.0	12.92
				1	24	1	22.0	22.0	12.80
				1	49	1	22.0	22.0	12.90
				25	0	2	21.0	21.0	12.90
				25	12	2	21.0	21.0	12.80
				25	24	2	20.9	20.9	12.90
				50	0	2	20.8	20.8	12.80
	20175	1732.5	QPSK	1	0	0	23.0	23.0	13.00
				1	24	0	23.0	23.0	13.00
				1	49	0	23.0	23.0	13.14
				25	0	1	22.0	22.0	13.10
				25	12	1	22.0	22.0	13.11
				25	24	1	21.9	21.9	13.20
				50	0	1	21.9	21.9	13.10
			16QAM	1	0	1	22.0	22.0	13.10
				1	24	1	22.0	22.0	13.10
				1	49	1	22.0	22.0	12.90
				25	0	2	21.0	21.0	12.90
				25	12	2	21.0	21.0	12.90
				25	24	2	21.0	21.0	12.80
				50	0	2	21.0	21.0	12.80
	20350	1750.0	QPSK	1	0	0	23.0	23.0	13.20
				1	24	0	23.0	23.0	13.09
				1	49	0	23.0	23.0	13.07
				25	0	1	22.0	22.0	13.12
				25	12	1	22.0	22.0	13.00
				25	24	1	22.0	22.0	13.00
				50	0	1	22.0	22.0	13.02
			16QAM	1	0	1	22.0	22.0	12.90
				1	24	1	22.0	22.0	13.00
				1	49	1	21.9	21.9	13.00
				25	0	2	21.0	21.0	12.80
				25	12	2	21.0	21.0	12.90
				25	24	2	20.9	20.9	12.90
				50	0	2	20.9	20.9	12.90

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LTE Band 4 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	19975	1712.5	QPSK	1	0	0	22.8	22.8	13.00
				1	12	0	22.8	22.8	13.00
				1	24	0	22.8	22.8	13.10
				12	0	1	21.7	21.7	13.00
				12	6	1	21.8	21.8	13.00
				12	11	1	21.8	21.8	13.10
				25	0	1	21.8	21.8	13.00
			16QAM	1	0	1	21.8	21.8	12.90
				1	12	1	21.8	21.8	13.00
				1	24	1	21.9	21.9	12.90
				12	0	2	20.8	20.8	12.80
				12	6	2	20.8	20.8	13.00
				12	11	2	20.9	20.9	12.90
				25	0	2	20.7	20.7	12.80
	20175	1732.5	QPSK	1	0	0	22.9	22.9	13.00
				1	12	0	22.9	22.9	13.14
				1	24	0	23.0	23.0	13.14
				12	0	1	22.0	22.0	13.10
				12	6	1	22.0	22.0	13.11
				12	11	1	22.0	22.0	13.10
				25	0	1	22.0	22.0	13.00
			16QAM	1	0	1	22.0	22.0	13.10
				1	12	1	22.0	22.0	13.10
				1	24	1	22.0	22.0	12.90
				12	0	2	21.0	21.0	12.90
				12	6	2	21.1	21.1	12.70
				12	11	2	21.1	21.1	12.80
				25	0	2	20.9	20.9	12.70
	20375	1752.5	QPSK	1	0	0	22.8	22.8	13.06
				1	12	0	22.9	22.9	13.09
				1	24	0	22.9	22.9	13.07
				12	0	1	21.8	21.8	13.00
				12	6	1	21.8	21.8	13.00
				12	11	1	21.8	21.8	13.10
				25	0	1	21.8	21.8	13.02
			16QAM	1	0	1	21.8	21.8	13.00
				1	12	1	21.9	21.9	13.00
				1	24	1	21.9	21.9	13.00
				12	0	2	20.9	20.9	12.80
				12	6	2	20.89	20.89	12.80
				12	11	2	20.84	20.84	12.90
				25	0	2	20.71	20.71	12.90

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LTE Band 4 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
3	19965	1711.5	QPSK	1	0	0	22.8	22.8	13.00
				1	7	0	22.7	22.7	13.00
				1	14	0	22.8	22.8	13.00
				8	0	1	21.7	21.7	13.00
				8	4	1	21.8	21.8	13.00
				8	7	1	21.8	21.8	12.90
				15	0	1	21.8	21.8	13.00
			16QAM	1	0	1	21.7	21.7	13.00
				1	7	1	21.8	21.8	13.00
				1	14	1	21.8	21.8	13.00
				8	0	2	20.7	20.7	13.00
				8	4	2	20.8	20.8	13.00
				8	7	2	20.8	20.8	12.90
				15	0	2	20.8	20.8	12.80
	20175	1732.5	QPSK	1	0	0	22.9	22.9	13.00
				1	7	0	22.8	22.8	13.14
				1	14	0	22.9	22.9	13.14
				8	0	1	22.0	22.0	13.00
				8	4	1	22.0	22.0	13.00
				8	7	1	22.0	22.0	12.90
				15	0	1	22.0	22.0	12.90
			16QAM	1	0	1	21.9	21.9	13.10
				1	7	1	21.9	21.9	13.10
				1	14	1	21.9	21.9	12.90
				8	0	2	21.0	21.0	12.90
				8	4	2	21.0	21.0	12.80
				8	7	2	21.0	21.0	13.00
				15	0	2	21.0	21.0	12.80
	20385	1753.5	QPSK	1	0	0	22.8	22.8	13.00
				1	7	0	22.9	22.9	13.00
				1	14	0	22.9	22.9	13.00
				8	0	1	21.8	21.8	13.00
				8	4	1	21.8	21.8	12.90
				8	7	1	21.9	21.9	13.10
				15	0	1	21.8	21.8	13.02
			16QAM	1	0	1	21.8	21.8	13.00
				1	7	1	21.8	21.8	13.00
				1	14	1	21.8	21.8	13.00
				8	0	2	20.8	20.8	12.80
				8	4	2	20.8	20.8	12.80
				8	7	2	20.9	20.9	12.90
				15	0	2	20.8	20.8	12.70

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LTE Band 4 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
1.4	19957	1710.7	QPSK	1	0	0	22.8	22.8	13.00
				1	2	0	22.7	22.7	13.00
				1	5	0	22.8	22.8	12.90
				3	0	0	22.7	22.7	13.00
				3	1	0	22.7	22.7	13.00
				3	2	0	22.7	22.7	13.00
				6	0	1	21.8	21.8	12.70
			16QAM	1	0	1	21.7	21.7	13.00
				1	2	1	21.6	21.6	13.00
				1	5	1	21.7	21.7	13.00
				3	0	1	21.6	21.6	13.00
				3	1	1	21.5	21.5	13.00
				3	2	1	21.5	21.5	12.90
				6	0	2	20.7	20.7	12.80
	20175	1732.5	QPSK	1	0	0	23.0	23.0	13.00
				1	2	0	22.9	22.9	13.90
				1	5	0	22.9	22.9	12.90
				3	0	0	22.9	22.9	12.90
				3	1	0	23.0	23.0	13.00
				3	2	0	23.0	23.0	13.00
				6	0	1	22.0	22.0	13.10
			16QAM	1	0	1	21.9	21.9	13.10
				1	2	1	21.9	21.9	13.10
				1	5	1	21.9	21.9	12.90
				3	0	1	21.8	21.8	12.90
				3	1	1	21.9	21.9	12.70
				3	2	1	21.9	21.9	12.80
				6	0	2	21.0	21.0	12.89
	20393	1754.3	QPSK	1	0	0	22.9	22.9	13.00
				1	2	0	22.8	22.8	13.00
				1	5	0	22.9	22.9	13.00
				3	0	0	22.8	22.8	13.12
				3	1	0	22.8	22.8	13.10
				3	2	0	22.9	22.9	13.10
				6	0	1	21.9	21.9	13.02
			16QAM	1	0	1	21.8	21.8	13.00
				1	2	1	21.8	21.8	13.00
				1	5	1	21.9	21.9	13.00
				3	0	1	21.7	21.7	12.80
				3	1	1	21.7	21.7	12.90
				3	2	1	21.7	21.7	12.70
				6	0	2	20.8	20.8	12.90

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8.4.3. LTE Band 5

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	20450	829.0	QPSK	1	0	0	23.9	23.9	18.60
				1	24	0	23.9	23.9	18.60
				1	49	0	23.9	23.9	18.60
				25	0	1	23.2	23.2	18.50
				25	12	1	23.4	23.4	18.50
				25	24	1	23.3	23.3	18.50
				50	0	1	23.0	23.0	18.50
			16QAM	1	0	1	22.9	22.9	18.60
				1	24	1	22.9	22.9	18.60
				1	49	1	23.0	23.0	18.60
				25	0	2	22.4	22.4	18.50
				25	12	2	22.1	22.1	18.50
				25	24	2	22.2	22.2	18.50
				50	0	2	22.1	22.1	18.50
	20525	836.5	QPSK	1	0	0	23.9	23.9	18.75
				1	24	0	23.9	23.9	18.75
				1	49	0	23.9	23.9	18.75
				25	0	1	23.4	23.4	18.75
				25	12	1	23.4	23.4	18.75
				25	24	1	23.4	23.4	18.75
				50	0	1	23.3	23.3	18.75
			16QAM	1	0	1	23.0	23.0	18.75
				1	24	1	22.8	22.8	18.75
				1	49	1	23.1	23.1	18.75
				25	0	2	22.2	22.2	18.75
				25	12	2	22.2	22.2	18.75
				25	24	2	22.5	22.5	18.75
				50	0	2	22.1	22.1	18.75
	20600	844.0	QPSK	1	0	0	24.0	24.0	18.70
				1	24	0	23.8	23.8	18.70
				1	49	0	23.8	23.8	18.70
				25	0	1	22.9	22.9	18.70
				25	12	1	23.1	23.1	18.70
				25	24	1	23.1	23.1	18.70
				50	0	1	23.1	23.1	18.70
			16QAM	1	0	1	22.8	22.8	18.70
				1	24	1	22.7	22.7	18.70
				1	49	1	22.7	22.7	18.70
				25	0	2	22.2	22.2	18.70
				25	12	2	22.1	22.1	18.70
				25	24	2	22.08	22.08	18.70
				50	0	2	22.13	22.13	18.70

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LTE Band 5 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	20425	826.5	QPSK	1	0	0	23.8	23.8	18.70
				1	12	0	24.0	24.0	18.70
				1	24	0	23.9	23.9	18.55
				12	0	1	23.1	23.1	18.70
				12	6	1	23.0	23.0	18.70
				12	11	1	23.1	23.1	18.70
				25	0	1	23.1	23.1	18.70
			16QAM	1	0	1	22.7	22.7	18.70
				1	12	1	22.9	22.9	18.70
				1	24	1	22.8	22.8	18.70
				12	0	2	22.2	22.2	18.65
				12	6	2	22.2	22.2	18.68
				12	11	2	22.1	22.1	18.70
				25	0	2	22.2	22.2	18.60
	20525	836.5	QPSK	1	0	0	24.0	24.0	18.75
				1	12	0	24.0	24.0	18.70
				1	24	0	24.0	24.0	18.70
				12	0	1	23.2	23.2	18.70
				12	6	1	23.3	23.3	18.68
				12	11	1	23.1	23.1	18.70
				25	0	1	23.2	23.2	18.75
			16QAM	1	0	1	23.0	23.0	18.78
				1	12	1	22.8	22.8	18.75
				1	24	1	22.9	22.9	18.00
				12	0	2	22.3	22.3	18.80
				12	6	2	22.3	22.3	18.70
				12	11	2	22.2	22.2	18.60
				25	0	2	22.3	22.3	18.65
	20625	846.5	QPSK	1	0	0	24.0	24.0	18.80
				1	12	0	23.9	23.9	18.80
				1	24	0	23.9	23.9	18.70
				12	0	1	23.1	23.1	18.70
				12	6	1	23.0	23.0	18.70
				12	11	1	23.1	23.1	18.80
				25	0	1	23.0	23.0	18.60
			16QAM	1	0	1	23.4	23.4	18.70
				1	12	1	23.3	23.3	18.75
				1	24	1	23.4	23.4	18.69
				12	0	2	22.1	22.1	18.70
				12	6	2	22.1	22.1	18.65
				12	11	2	22.2	22.2	18.80
				25	0	2	22.0	22.0	18.80

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LTE Band 5 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
3	20415	825.5	QPSK	1	0	0	23.9	23.9	18.75
				1	7	0	24.0	24.0	18.75
				1	14	0	24.0	24.0	18.80
				8	0	1	23.3	23.3	18.70
				8	4	1	23.2	23.2	18.75
				8	7	1	23.2	23.2	18.60
				15	0	1	23.2	23.2	18.75
			16QAM	1	0	1	23.2	23.2	18.70
				1	7	1	23.0	23.0	18.70
				1	14	1	22.9	22.9	18.70
				8	0	2	22.3	22.3	18.70
				8	4	2	22.3	22.3	18.70
				8	7	2	22.3	22.3	18.70
				15	0	2	22.3	22.3	18.70
	20525	836.5	QPSK	1	0	0	24.0	24.0	18.75
				1	7	0	24.0	24.0	18.80
				1	14	0	24.0	24.0	18.70
				8	0	1	23.3	23.3	18.70
				8	4	1	23.2	23.2	18.68
				8	7	1	23.1	23.1	18.70
				15	0	1	23.3	23.3	18.75
			16QAM	1	0	1	22.6	22.6	18.78
				1	7	1	22.9	22.9	18.75
				1	14	1	22.9	22.9	18.70
				8	0	2	22.4	22.4	18.68
				8	4	2	22.3	22.3	18.70
				8	7	2	22.2	22.2	18.70
				15	0	2	22.2	22.2	18.65
	20635	847.5	QPSK	1	0	0	23.9	23.9	18.70
				1	7	0	23.9	23.9	18.70
				1	14	0	24.0	24.0	18.70
				8	0	1	23.0	23.0	18.60
				8	4	1	23.0	23.0	18.60
				8	7	1	23.1	23.1	18.60
				15	0	1	23.1	23.1	18.60
			16QAM	1	0	1	22.8	22.8	18.70
				1	7	1	22.7	22.7	18.70
				1	14	1	22.8	22.8	18.70
				8	0	2	22.1	22.1	18.60
				8	4	2	22.2	22.2	18.60
				8	7	2	22.1	22.1	18.60
				15	0	2	22.1	22.1	18.63

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LTE Band 5 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
1.4	20407	824.7	QPSK	1	0	0	24.0	24.0	18.70
				1	2	0	23.9	23.9	18.70
				1	5	0	24.0	24.0	18.70
				3	0	0	23.9	23.9	18.70
				3	1	0	23.9	23.9	18.70
				3	2	0	24.0	24.0	18.70
				6	0	1	23.4	23.4	18.70
			16QAM	1	0	1	23.1	23.1	18.60
				1	2	1	23.1	23.1	18.60
				1	5	1	23.2	23.2	18.60
				3	0	1	23.2	23.2	18.50
				3	1	1	23.1	23.1	18.50
				3	2	1	23.3	23.3	18.50
				6	0	2	22.4	22.4	18.60
	20525	836.5	QPSK	1	0	0	24.0	24.0	18.75
				1	2	0	24.0	24.0	18.75
				1	5	0	24.0	24.0	18.75
				3	0	0	24.0	24.0	18.75
				3	1	0	24.0	24.0	18.75
				3	2	0	24.0	24.0	18.75
				6	0	1	23.2	23.2	18.75
			16QAM	1	0	1	23.1	23.1	18.60
				1	2	1	23.1	23.1	18.60
				1	5	1	23.1	23.1	18.50
				3	0	1	23.2	23.2	18.60
				3	1	1	23.2	23.2	18.50
				3	2	1	23.3	23.3	18.60
				6	0	2	22.3	22.3	18.60
	20643	848.3	QPSK	1	0	0	23.9	23.9	18.70
				1	2	0	23.8	23.8	18.70
				1	5	0	23.9	23.9	18.80
				3	0	0	23.8	23.8	18.80
				3	1	0	23.8	23.8	18.70
				3	2	0	23.8	23.8	18.50
				6	0	1	23.0	23.0	18.50
			16QAM	1	0	1	23.1	23.1	18.60
				1	2	1	23.0	23.0	18.75
				1	5	1	23.0	23.0	18.80
				3	0	1	23.1	23.1	18.70
				3	1	1	23.1	23.1	18.65
				3	2	1	23.1	23.1	18.68
				6	0	2	22.2	22.2	18.63

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8.4.4. LTE Band 13

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	23230	782.0	QPSK	1	0	0	23.8	23.8	19.00
				1	24	0	23.8	23.8	19.00
				1	49	0	23.8	23.8	19.00
				25	0	1	22.7	22.7	19.00
				25	12	1	22.7	22.7	19.00
				25	24	1	22.7	22.7	19.00
				50	0	1	22.7	22.7	19.00
			16QAM	1	0	1	23.8	23.8	19.00
				1	24	1	23.8	23.8	19.00
				1	49	1	23.8	23.8	19.00
				25	0	2	22.7	22.7	18.80
				25	12	2	22.7	22.7	18.90
				25	24	2	22.7	22.7	18.90
				50	0	2	22.7	22.7	18.90

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	23230	782.0	QPSK	1	0	0	23.8	23.8	19.00
				1	12	0	23.8	23.8	19.00
				1	24	0	23.8	23.8	19.00
				12	0	1	22.7	22.7	18.80
				12	6	1	22.7	22.7	18.90
				12	11	1	22.7	22.7	18.90
				25	0	1	22.7	22.7	18.90
			16QAM	1	0	1	23.8	23.8	19.00
				1	12	1	23.8	23.8	19.00
				1	24	1	23.8	23.8	19.00
				12	0	2	22.7	22.7	18.80
				12	6	2	22.7	22.7	18.90
				12	11	2	22.7	22.7	18.90
				25	0	2	22.7	22.7	18.90

Note(s):

10/5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB941225 D05 SAR for LTE Devices v02r02

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8.4.5. LTE Band 17

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	23790	710.0	QPSK	1	0	0	24.9	24.9	18.60
				1	24	0	24.9	24.9	18.60
				1	49	0	24.9	24.9	18.60
				25	0	1	23.8	23.8	18.70
				25	12	1	23.8	23.8	18.70
				25	24	1	23.8	23.8	18.70
				50	0	1	23.7	23.7	18.75
			16QAM	1	0	1	23.9	23.9	18.60
				1	24	1	24.0	24.0	18.60
				1	49	1	23.9	23.9	18.60
				25	0	2	22.9	22.9	18.70
				25	12	2	22.9	22.9	18.70
				25	24	2	22.9	22.9	18.70
				50	0	2	22.8	22.8	18.60

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	23790	710.0	QPSK	1	0	0	24.9	24.9	18.60
				1	12	0	24.8	24.8	18.60
				1	24	0	24.9	24.9	18.60
				12	0	1	23.7	23.7	18.60
				12	6	1	23.7	23.7	18.60
				12	11	1	23.7	23.7	18.60
				25	0	1	23.7	23.7	18.60
			16QAM	1	0	1	23.8	23.8	18.60
				1	12	1	23.7	23.7	18.60
				1	24	1	23.8	23.8	18.60
				12	0	2	22.9	22.9	18.61
				12	6	2	22.9	22.9	18.60
				12	11	2	22.8	22.8	18.60
				25	0	2	22.7	22.7	18.60

Note(s):

10/5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB941225 D05 SAR for LTE Devices v02r02

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8.4.6. LTE Band 25

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
20	26140	1860.0	QPSK	1	0	0	22.5	22.5	13.05
				1	49	0	22.5	22.5	13.05
				1	99	0	22.5	22.5	13.05
				50	0	1	21.7	21.7	13.10
				50	24	1	21.7	21.7	13.10
				50	49	1	21.7	21.7	13.10
				100	0	1	21.5	21.5	13.10
			16QAM	1	0	1	21.6	21.6	13.15
				1	49	1	21.3	21.3	13.12
				1	99	1	21.4	21.4	13.00
				50	0	2	20.4	20.4	12.94
				50	24	2	20.4	20.4	12.94
				50	49	2	20.2	20.2	12.78
				100	0	2	20.3	20.3	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	49	0	22.5	22.5	13.11
				1	99	0	22.5	22.5	13.11
				50	0	1	21.6	21.6	13.09
				50	24	1	21.6	21.6	13.10
				50	49	1	21.6	21.6	13.01
				100	0	1	21.5	21.5	13.11
			16QAM	1	0	1	21.4	21.4	13.04
				1	49	1	21.7	21.7	13.03
				1	99	1	21.5	21.5	13.02
				50	0	2	20.5	20.5	12.96
				50	24	2	20.4	20.4	12.78
				50	49	2	20.4	20.4	12.84
				100	0	2	20.4	20.4	12.86
	26590	1905.0	QPSK	1	0	0	22.5	22.5	13.14
				1	49	0	22.5	22.5	13.14
				1	99	0	22.5	22.5	13.18
				50	0	1	21.6	21.6	13.08
				50	24	1	21.6	21.6	13.07
				50	49	1	21.6	21.6	13.12
				100	0	1	21.5	21.5	13.10
			16QAM	1	0	1	21.4	21.4	13.08
				1	49	1	21.6	21.6	13.12
				1	99	1	21.5	21.5	13.19
				50	0	2	20.4	20.4	12.96
				50	24	2	20.4	20.4	12.94
				50	49	2	20.6	20.6	12.94
				100	0	2	20.5	20.5	12.93

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LTE Band 25 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
15	26115	1857.5	QPSK	1	0	0	22.5	22.5	13.05
				1	37	0	22.5	22.5	13.05
				1	74	0	22.3	22.3	13.05
				36	0	1	21.5	21.5	13.10
				36	16	1	21.4	21.4	13.10
				36	35	1	21.3	21.3	13.10
				75	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.6	21.6	13.15
				1	37	1	21.5	21.5	13.12
				1	74	1	21.3	21.3	13.00
				36	0	2	20.6	20.6	12.94
				36	16	2	20.4	20.4	12.94
				36	35	2	20.4	20.4	12.78
				75	0	2	20.5	20.5	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	37	0	22.4	22.4	13.11
				1	74	0	22.5	22.5	13.11
				36	0	1	21.4	21.4	13.09
				36	16	1	21.4	21.4	13.10
				36	35	1	21.5	21.5	13.01
				75	0	1	21.4	21.4	13.11
			16QAM	1	0	1	21.5	21.5	13.04
				1	37	1	21.5	21.5	13.03
				1	74	1	21.6	21.6	13.02
				36	0	2	20.5	20.5	12.96
				36	16	2	20.4	20.4	12.78
				36	35	2	20.4	20.4	12.84
				75	0	2	20.5	20.5	12.86
	26615	1907.5	QPSK	1	0	0	22.4	22.4	13.14
				1	37	0	22.5	22.5	13.14
				1	74	0	22.4	22.4	13.18
				36	0	1	21.4	21.4	13.08
				36	16	1	21.5	21.5	13.07
				36	35	1	21.5	21.5	13.12
				75	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.4	21.4	13.08
				1	37	1	21.6	21.6	13.12
				1	74	1	21.4	21.4	13.19
				36	0	2	20.4	20.4	12.96
				36	16	2	20.6	20.6	12.94
				36	35	2	20.6	20.6	12.94
				75	0	2	20.5	20.5	12.93

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LTE Band 25 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
10	26090	1855.0	QPSK	1	0	0	22.5	22.5	13.05
				1	24	0	22.5	22.5	13.05
				1	49	0	22.4	22.4	13.05
				25	0	1	21.5	21.5	13.10
				25	12	1	21.5	21.5	13.10
				25	24	1	21.4	21.4	13.10
				50	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.7	21.7	13.15
				1	24	1	21.6	21.6	13.12
				1	49	1	21.4	21.4	13.00
				25	0	2	20.7	20.7	12.94
				25	12	2	20.6	20.6	12.94
				25	24	2	20.5	20.5	12.78
				50	0	2	20.5	20.5	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	24	0	22.5	22.5	13.11
				1	49	0	22.4	22.4	13.11
				25	0	1	21.5	21.5	13.09
				25	12	1	21.4	21.4	13.10
				25	24	1	21.3	21.3	13.01
				50	0	1	21.4	21.4	13.11
			16QAM	1	0	1	21.8	21.8	13.04
				1	24	1	21.5	21.5	13.03
				1	49	1	21.6	21.6	13.02
				25	0	2	20.6	20.6	12.96
				25	12	2	20.5	20.5	12.78
				25	24	2	20.4	20.4	12.84
				50	0	2	20.4	20.4	12.86
	26640	1910.0	QPSK	1	0	0	22.5	22.5	13.14
				1	24	0	22.5	22.5	13.14
				1	49	0	22.4	22.4	13.18
				25	0	1	21.5	21.5	13.08
				25	12	1	21.6	21.6	13.07
				25	24	1	21.5	21.5	13.12
				50	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.6	21.6	13.08
				1	24	1	21.7	21.7	13.12
				1	49	1	21.4	21.4	13.19
				25	0	2	20.6	20.6	12.96
				25	12	2	20.7	20.7	12.94
				25	24	2	20.6	20.6	12.94
				50	0	2	20.5	20.5	12.93

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LTE Band 25 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	26065	1852.5	QPSK	1	0	0	22.5	22.5	13.05
				1	12	0	22.5	22.5	13.05
				1	24	0	22.5	22.5	13.05
				12	0	1	21.6	21.6	13.10
				12	6	1	21.6	21.6	13.10
				12	11	1	21.7	21.7	13.10
				25	0	1	21.6	21.6	13.10
			16QAM	1	0	1	21.9	21.9	13.15
				1	12	1	21.7	21.7	13.12
				1	24	1	21.9	21.9	13.00
				12	0	2	20.8	20.8	12.94
				12	6	2	20.8	20.8	12.94
				12	11	2	20.9	20.9	12.78
				25	0	2	20.7	20.7	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	12	0	22.5	22.5	13.11
				1	24	0	22.5	22.5	13.11
				12	0	1	21.4	21.4	13.09
				12	6	1	21.4	21.4	13.10
				12	11	1	21.5	21.5	13.01
				25	0	1	21.4	21.4	13.11
			16QAM	1	0	1	21.9	21.9	13.04
				1	12	1	21.5	21.5	13.03
				1	24	1	21.8	21.8	13.02
				12	0	2	20.6	20.6	12.96
				12	6	2	20.6	20.6	12.78
				12	11	2	20.6	20.6	12.84
				25	0	2	20.5	20.5	12.86
	26665	1912.5	QPSK	1	0	0	22.5	22.5	13.14
				1	12	0	22.5	22.5	13.14
				1	24	0	22.4	22.4	13.18
				12	0	1	21.6	21.6	13.08
				12	6	1	21.6	21.6	13.07
				12	11	1	21.6	21.6	13.12
				25	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.9	21.9	13.08
				1	12	1	21.7	21.7	13.12
				1	24	1	21.5	21.5	13.19
				12	0	2	20.9	20.9	12.96
				12	6	2	20.8	20.8	12.94
				12	11	2	20.6	20.6	12.94
				25	0	2	20.6	20.6	12.93

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LTE Band 25 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
3	26055	1851.5	QPSK	1	0	0	22.5	22.5	13.05
				1	7	0	22.5	22.5	13.05
				1	14	0	22.5	22.5	13.05
				8	0	1	21.7	21.7	13.10
				8	4	1	21.6	21.6	13.10
				8	7	1	21.8	21.8	13.10
				15	0	1	21.5	21.5	13.10
			16QAM	1	0	1	21.7	21.7	13.15
				1	7	1	21.9	21.9	13.12
				1	14	1	21.7	21.7	13.00
				8	0	2	20.7	20.7	12.94
				8	4	2	20.8	20.8	12.94
				8	7	2	20.8	20.8	12.78
				15	0	2	20.7	20.7	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	7	0	22.5	22.5	13.11
				1	14	0	22.5	22.5	13.11
				8	0	1	21.5	21.5	13.09
				8	4	1	21.5	21.5	13.10
				8	7	1	21.4	21.4	13.01
				15	0	1	21.4	21.4	13.11
			16QAM	1	0	1	21.5	21.5	13.04
				1	7	1	21.5	21.5	13.03
				1	14	1	21.5	21.5	13.02
				8	0	2	20.8	20.8	12.96
				8	4	2	20.8	20.8	12.78
				8	7	2	20.8	20.8	12.84
				15	0	2	20.7	20.7	12.86
	26675	1913.5	QPSK	1	0	0	22.5	22.5	13.14
				1	7	0	22.5	22.5	13.14
				1	14	0	22.4	22.4	13.18
				8	0	1	21.6	21.6	13.08
				8	4	1	21.4	21.4	13.07
				8	7	1	21.4	21.4	13.12
				15	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.6	21.6	13.08
				1	7	1	21.6	21.6	13.12
				1	14	1	21.4	21.4	13.19
				8	0	2	20.6	20.6	12.96
				8	4	2	20.6	20.6	12.94
				8	7	2	20.5	20.5	12.94
				15	0	2	20.6	20.6	12.93

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LTE Band 25 Measured Results (continued)

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
1.4	26047	1850.7	QPSK	1	0	0	22.5	22.5	13.05
				1	2	0	22.5	22.5	13.05
				1	5	0	22.5	22.5	13.05
				3	0	0	22.4	22.4	13.10
				3	1	0	22.5	22.5	13.10
				3	2	0	22.4	22.4	13.10
				6	0	1	21.6	21.6	13.10
			16QAM	1	0	1	21.6	21.6	13.15
				1	2	1	21.7	21.7	13.12
				1	5	1	21.7	21.7	13.00
				3	0	1	21.4	21.4	12.94
				3	1	1	21.4	21.4	12.94
				3	2	1	21.4	21.4	12.78
				6	0	2	21.0	21.0	12.94
	26365	1882.5	QPSK	1	0	0	22.5	22.5	13.10
				1	2	0	22.5	22.5	13.11
				1	5	0	22.4	22.4	13.11
				3	0	0	22.4	22.4	13.09
				3	1	0	22.3	22.3	13.10
				3	2	0	22.4	22.4	13.01
				6	0	1	21.5	21.5	13.11
			16QAM	1	0	1	21.6	21.6	13.04
				1	2	1	21.5	21.5	13.03
				1	5	1	21.5	21.5	13.02
				3	0	1	21.5	21.5	12.96
				3	1	1	21.3	21.3	12.78
				3	2	1	21.3	21.3	12.84
				6	0	2	20.6	20.6	12.86
	16683	1914.3	QPSK	1	0	0	22.5	22.5	13.14
				1	2	0	22.4	22.4	13.14
				1	5	0	22.4	22.4	13.18
				3	0	0	22.3	22.3	13.08
				3	1	0	22.4	22.4	13.07
				3	2	0	22.3	22.3	13.12
				6	0	1	21.4	21.4	13.10
			16QAM	1	0	1	21.5	21.5	13.08
				1	2	1	21.5	21.5	13.12
				1	5	1	21.4	21.4	13.19
				3	0	1	21.3	21.3	12.96
				3	1	1	21.2	21.2	12.94
				3	2	1	21.2	21.2	12.94
				6	0	2	20.5	20.5	12.93

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8.4.7. LTE Band 26

Measured Results

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
5	26763	821.3	QPSK	1	0	0	23.5	23.5	18.75
				1	12	0	23.5	23.5	18.75
				1	24	0	23.5	23.5	18.75
				12	0	1	23.5	23.5	18.75
				12	6	1	23.5	23.5	18.75
				12	11	1	23.5	23.5	18.75
				25	0	1	23.5	23.5	18.75
			16QAM	1	0	1	22.5	22.5	18.70
				1	12	1	22.3	22.3	18.60
				1	24	1	22.4	22.4	18.75
				12	0	2	21.5	21.5	18.74
				12	6	2	21.5	21.5	18.72
				12	11	2	21.5	21.5	18.75
				25	0	2	21.4	21.4	18.71

BW (MHz)	Ch	Freq. (MHz)	Mode	UL RB Allocation	UL RB Start	MPR	Avg Pwr (dBm)		
							Full Power	First Stage Pwr. Back-Off	Second Stage Pwr. Back-Off
3	26763	821.3	QPSK	1	0	0	23.4	23.4	18.75
				1	7	0	23.3	23.3	18.75
				1	14	0	23.4	23.4	18.75
				8	0	1	22.4	22.4	18.75
				8	4	1	22.4	22.4	18.75
				8	7	1	22.3	22.3	18.75
				15	0	1	22.5	22.5	18.75
			16QAM	1	0	1	22.3	22.3	18.70
				1	7	1	22.2	22.2	18.60
				1	14	1	22.3	22.3	18.75
				8	0	2	21.5	21.5	18.74
				8	4	2	21.5	21.5	18.72
				8	7	2	21.4	21.4	18.75
				15	0	2	21.5	21.5	18.71

Note(s):

10/5 MHz Bandwidths does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB941225 D05 SAR for LTE Devices v02r02

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8.5. WiFi (2.4 GHz Band)

Required Test Channels per KDB 248227 D01

Mode	Band	GHz	Channel	"Default Test Channels"	
				802.11b	802.11g
802.11b/g	2.4 GHz	**2.412**	1#	√	∇
		2.437	6	√	∇
		2.462	11#	√	∇

Notes:
√ = "default test channels"
∇ = possible 802.11g channels with maximum average output ¼ dB ≥ the "default test channels"
= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					WiFi 1	WiFi 2	
2.4 (DTS)	**802.11b**	**1 Tx**	**1**	**2412**	**16.0**	**16.0**	**Yes**
			6	**2437**	**16.0**	**16.0**	
			11	**2462**	**16.0**	**16.0**	
			12	**2467**	**15.0**	**15.0**	
			13	**2472**	**14.0**	**14.0**	
	802.11g	**1 Tx**	**1**	**2412**	**15.9**	**15.8**	**No**
			2	**2417**	**15.9**	**15.8**	
			6	**2437**	**16.0**	**16.0**	
			10	**2457**	**16.0**	**15.9**	
			11	**2462**	**14.9**	**15.0**	
			12	**2467**	**10.5**	**10.5**	
			13	**2472**	**3.0**	**3.0**	
	802.11g CDD	**2 Tx**	**1**	**2412**	**13.9**	**14.0**	**Yes**
			2	**2417**	**16.0**	**16.0**	
			6	**2437**	**16.0**	**16.0**	
			10	**2457**	**16.0**	**16.0**	
			11	**2462**	**13.5**	**13.5**	
			12	**2467**	**9.0**	**9.0**	
			13	**2472**	**1.5**	**1.5**	
	802.11n HT20	1 Tx	1	2412	15.8	15.9	No
			2	2422	15.9	15.8	
			6	2437	15.8	16.0	
			10	2457	15.9	16.0	
			11	2462	14.9	15.0	
			12	2467	10.5	10.5	
			13	2472	3.0	3.0	

Note(s):

1. Per KDB 248227 D01, SAR is not required for 802.11g/HT20 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.
2. Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels.

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Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					WiFi 1	WiFi 2	
2.4 (DTS)	802.11n HT20 MCS 0 CDD	2 Tx	1	2412	13.8	13.9	No
			2	2417	15.9	15.8	
			6	2437	16.0	15.9	
			10	2457	16.0	16.0	
			11	2462	13.3	13.4	
			12	2467	9.0	9.0	
			13	2472	1.5	1.5	
	802.11n HT20 MCS 0 STBC	2 Tx	1	2412	13.8	13.9	No
			2	2417	15.8	15.9	
			6	2437	15.9	16.0	
			10	2457	15.8	16.0	
			11	2462	13.5	13.3	
			12	2467	9.0	9.0	
			13	2472	1.5	1.5	
	802.11n HT20 MCS 0 STBC	2 Tx	1	2412	13.8	13.9	No
			2	2417	16.0	15.9	
			6	2437	15.8	16.0	
			10	2457	15.9	15.8	
			11	2462	13.5	13.4	
			12	2467	9.0	9.0	
			13	2472	1.5	1.5	

Note(s):

1. Per KDB 248227 D01, SAR is not required for 802.11g/HT20 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11b channels.
2. Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels.

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8.6. WiFi (5 GHz Bands)

Required Test Channels per KDB 248227 D01

Mode		Band	GHz	Channel	"Default Test Channels"	
					802.11a	
802.11a	UNII (15.407)	5.2 GHz	5.180	36	√	
			5.200	40		*
			2.220	44		*
			5.240	48	√	
		5.3 GHz	5.260	52	√	
			5.280	56		*
			5.300	60		*
			5.320	64	√	
		5.5 GHz	5.500	100		
			5.520	104	√	
			5.540	108		*
			5.560	112		*
			5.580	116	√	
			5.600	120		*
			5.620	124	√	
			5.640	128		*
			5.660	132		*
			5.680	136	√	
			5.700	140		*
	DTS (15.247)	5.8 GHz	5.745	149	√	
			5.765	153		*
			5.785	157	√	
			5.805	161		*
			5.825	165	√	

√ = "default test channels"

* = possible 802.11a channels with maximum average output > the "default test channels"

= when output power is reduced for channel 1 and /or 11 to meet restricted band requirements the highest output channels closest to each of these channels should be tested.

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WiFi 5 GHz Bands Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					WiFi 1	WiFi 2	
5.2 (UNII)	**802.11a**	**1 Tx**	**36**	**5180**	**14.0**	**14.0**	**Yes**
			40	**5200**	**14.0**	**14.0**	
			44	**5220**	**14.0**	**14.0**	
			48	**5240**	**14.0**	**14.0**	
	802.11a CDD	**2 Tx**	**36**	**5180**	**10.5**	**10.5**	**Yes**
			40	**5200**	**10.5**	**10.5**	
			44	**5220**	**10.5**	**10.5**	
			48	**5240**	**10.5**	**10.5**	
	802.11n HT20	1 Tx	36	5180	13.9	13.9	No
			40	5200	13.8	14.0	
			48	5240	14.0	13.9	
	802.11n HT40	**1 Tx**	38	5180	13.0	13.0	No
			46	**5230**	**16.0**	**16.0**	**Yes**
	802.11n HT20 CDD	2 Tx	36	5180	10.3	10.3	No
			40	5200	10.4	10.3	
			48	5240	10.4	10.5	
	802.11n HT20 STBC	2 Tx	36	5180	10.8	10.8	No
			40	5200	10.9	10.8	
			48	5240	10.9	10.8	
	802.11n HT20 SDM	2 Tx	36	5180	10.8	10.8	No
			40	5200	10.9	10.9	
			48	5240	10.9	10.8	
	802.11n HT40 CDD	2 Tx	38	5190	11.4	11.4	No
			46	5230	12.9	13.0	
	802.11n HT40 STBC	**2 Tx**	**38**	**5190**	**11.5**	**11.5**	**Yes**
			46	**5230**	**13.5**	**13.5**	
	802.11n HT40 SDM	2 Tx	38	5190	11.5	11.5	No
			46	5230	13.5	13.5	
5.3 (UNII)	**802.11a**	**1 Tx**	**52**	**5260**	**16.5**	**16.5**	**Yes**
			56	**5280**	**16.5**	**16.5**	
			60	**5300**	**16.5**	**16.5**	
			64	**5320**	**15.0**	**15.0**	
	802.11a CDD	**2 Tx**	**52**	**5260**	**16.5**	**16.5**	**Yes**
			56	**5280**	**16.5**	**16.5**	
			60	**5300**	**16.5**	**16.5**	
			64	**5320**	**14.0**	**14.0**	
	802.11n HT20	1 Tx	52	5260	16.3	16.4	No
			60	5300	16.4	16.5	
			64	5320	15.0	15.0	
	802.11n HT40	1 Tx	54	5270	16.4	16.3	No
			62	5310	14.5	14.4	
	802.11n HT20 CDD	2 Tx	52	5260	16.3	16.4	No
			56	5280	16.5	16.4	
			60	5300	16.4	16.4	
			64	5320	14.0	14.0	
	802.11n HT20 STBC	2 Tx	52	5260	16.3	16.4	No
			56	5280	16.4	16.4	
			60	5300	16.3	16.5	
			64	5320	14.0	14.0	
	802.11n HT20 SDM	2 Tx	52	5260	16.5	16.4	No
			56	5280	16.4	16.4	
			60	5300	16.4	16.4	
			64	5320	14.0	14.0	
	802.11n HT40 CDD	2 Tx	54	5270	16.3	16.3	No
			62	5310	12.4	12.5	
	802.11n HT40 STBC	2 Tx	54	5270	16.4	16.4	No
			62	5310	12.3	12.4	
	802.11n HT40 SDM	2 Tx	54	5270	16.3	16.4	No
			62	5310	12.3	12.4	

Note(s):

Per KDB 248227, SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels.

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WiFi 5 GHz Bands Measured Results continued

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					WiFi 1	WiFi 2	
5.5 (UNII)	**802.11a**	**1 Tx**	**100**	**5500**	**15.0**	**15.0**	**Yes**
			104	**5520**	**16.5**	**16.5**	
			108	**5540**	**16.5**	**16.5**	
			112	**5560**	**16.5**	**16.5**	
			116	**5580**	**16.5**	**16.5**	
			120	**5600**	**16.5**	**16.5**	
			124	**5620**	**16.5**	**16.5**	
			128	**5640**	**16.5**	**16.5**	
			132	**5660**	**16.5**	**16.5**	
			136	**5680**	**16.5**	**16.5**	
			140	**5700**	**14.5**	**14.5**	
	802.11a CDD	**2 Tx**	**100**	**5500**	**14.0**	**14.0**	**Yes**
			104	**5520**	**16.0**	**16.0**	
			108	**5540**	**16.0**	**16.0**	
			112	**5560**	**16.0**	**16.0**	
			116	**5580**	**16.0**	**16.0**	
			120	**5600**	**16.0**	**16.0**	
			124	**5620**	**16.0**	**16.0**	
			128	**5640**	**16.0**	**16.0**	
			132	**5660**	**16.0**	**16.0**	
			136	**5680**	**16.0**	**16.0**	
			140	**5700**	**13.0**	**13.0**	
	802.11n HT20	1 Tx	100	5500	15.0	15.0	No
			104	5520	16.4	16.5	
			120	5600	16.4	16.4	
			136	5680	16.3	16.4	
			140	5700	14.5	14.5	
	802.11n HT40	1 Tx	102	5510	13.8	14.0	No
			110	5550	16.4	16.3	
			134	5670	16.0	16.0	
	802.11n HT20 CDD	2 Tx	100	5500	14.0	14.0	No
			104	5520	16.0	16.0	
			120	5600	15.9	15.9	
			136	5680	15.9	16.0	
			140	5700	13.0	13.0	
	802.11n HT20 STBC	**2 Tx**	100	5500	14.0	14.0	No
			104	**5520**	**16.5**	**16.5**	**Yes**
			120	**5600**	**16.5**	**16.5**	
			136	**5680**	**16.5**	**16.5**	
			140	5700	13.0	13.0	No
	802.11n HT20 SDM	2 Tx	100	5500	14.0	14.0	No
			104	5520	16.4	16.4	
			120	5600	16.5	16.3	
			136	5680	16.5	16.4	
			140	5700	13.0	13.0	
	802.11n HT40 CDD	2 Tx	102	5510	11.8	11.9	No
			110	5550	16.3	16.4	
			134	5670	15.3	15.3	
	802.11n HT40 STBC	2 Tx	102	5510	11.9	12.0	No
			110	5550	16.5	16.4	
			134	5670	15.5	15.5	
	802.11n HT40 SDM	2 Tx	102	5510	11.8	11.9	No
			110	5550	16.4	16.3	
			134	5670	15.5	15.4	

Note(s):

Per KDB 248227, SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels.

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WiFi 5 GHz Bands Measured Results continued

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					WiFi 1	WiFi 2	
5.8 (DTS)	**802.11a**	**1 Tx**	**149**	**5745**	**16.0**	**16.0**	**Yes**
			153	**5765**	**16.0**	**16.0**	
			157	**5785**	**16.0**	**16.0**	
			161	**5805**	**16.0**	**16.0**	
			165	**5825**	**16.0**	**16.0**	
	802.11a CDD	**2 Tx**	**149**	**5745**	**16.0**	**16.0**	**Yes**
			153	**5765**	**16.0**	**16.0**	
			157	**5785**	**16.0**	**16.0**	
			161	**5805**	**16.0**	**16.0**	
			165	**5825**	**16.0**	**16.0**	
	802.11n HT20	1 Tx	149	5745	16.0	16.0	No
			157	5785	16.0	16.0	
			165	5825	16.0	16.0	
	802.11n HT40	1 Tx	151	5755	15.8	15.9	No
			159	5795	15.9	15.9	
	802.11n HT20 CDD	2 Tx	149	5745	16.0	15.9	No
			157	5785	16.0	15.8	
			165	5825	15.9	16.0	
	802.11n HT20 STBC	2 Tx	149	5745	16.0	16.0	No
			157	5785	16.0	15.9	
			165	5825	15.9	16.0	
	802.11n HT20 SDM	2 Tx	149	5745	16.0	15.9	No
			157	5785	16.0	16.0	
			165	5825	15.9	15.8	
	802.11n HT40 CDD	2 Tx	151	5755	15.8	15.8	No
			159	5795	15.9	15.8	
	802.11n HT40 STBC	2 Tx	151	5755	15.9	15.7	No
			159	5795	15.8	15.8	
	802.11n HT40 SDM	2 Tx	151	5755	15.7	15.8	No
			159	5795	15.8	15.9	

Note(s):

Per KDB 248227, SAR is not required for 802.11n HT20/HT40 channels when the maximum average output power is less than 1/4 dB higher than that measured on the corresponding 802.11a/b channels.

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8.7. Bluetooth

Band (GHz)	Mode	Ch #	Freq. (MHz)	Avg Pwr (dBm) WiFi 1	SAR Test (Yes/No)
2.4	**V3.0 + EDR, GFSK**	**0**	**2402**	**12.7**	**Yes**
		39	**2441**	**12.9**	
		78	**2480**	**12.8**	
	V3.0 + EDR, π/4 DQPSK	0	2402	10.8	No
		39	2441	11.4	
		78	2480	11.1	
	V3.0 + EDR, 8-DPSK	0	2402	11.2	No
		39	2441	11.5	
		78	2480	11.1	
	V4.0 LE, GFSK	0	2402	7.2	No
		19	2440	7.6	
		39	2480	7.4	

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9. RF Exposure Conditions

9.1. 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.

Refer to Appendix for the specific details on the antenna-to-antenna and antenna-to-edge(s) distances used for test exclusion calculations.

9.1.1. 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. A sensor triggering of 16 mm is included for both Rear and Edge 1																
Cellular	GPRS 2 Slots	848.8	32.50	445	17.4	18.4	24.8	227.8	98.6		24.1 -MEASURE-	22.8 -MEASURE-	16.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	GPRS 2 Slots	1909.8	29.00	199	17.4	18.4	24.8	227.8	98.6		16.2 -MEASURE-	15.3 -MEASURE-	11 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 5	846.6	24.50	282	17.4	18.4	24.8	227.8	98.6		15.3 -MEASURE-	14.4 -MEASURE-	10.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 4	1752.6	23.00	200	17.4	18.4	24.8	227.8	98.6		15.6 -MEASURE-	14.7 -MEASURE-	10.6 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 2	1907.6	22.51	178	17.4	18.4	24.8	227.8	98.6		14.5 -MEASURE-	13.7 -MEASURE-	9.8 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC0	848.31	24.50	282	17.4	18.4	24.8	227.8	98.6		15.3 -MEASURE-	14.4 -MEASURE-	10.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC1	1908.75	22.50	178	17.4	18.4	24.8	227.8	98.6		14.5 -MEASURE-	13.7 -MEASURE-	9.8 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC10	823.1	25.00	316	17.4	18.4	24.8	227.8	98.6		16.9 -MEASURE-	15.9 -MEASURE-	11.5 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC15	1753.75	23.00	200	17.4	18.4	24.8	227.8	98.6		15.6 -MEASURE-	14.7 -MEASURE-	10.6 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 2	1900	22.50	178	17.4	18.4	24.8	227.8	98.6		14.4 -MEASURE-	13.6 -MEASURE-	9.8 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 4	1754.3	23.00	200	17.4	18.4	24.8	227.8	98.6		15.6 -MEASURE-	14.7 -MEASURE-	10.6 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 5	844	24.00	251	17.4	18.4	24.8	227.8	98.6		13.6 -MEASURE-	12.8 -MEASURE-	9.2 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 13	782	24.00	251	17.4	18.4	24.8	227.8	98.6		13.1 -MEASURE-	12.3 -MEASURE-	8.9 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 17	710	25.00	316	17.4	18.4	24.8	227.8	98.6		15.7 -MEASURE-	14.8 -MEASURE-	10.7 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 25	1905	22.50	178	17.4	18.4	24.8	227.8	98.6		14.5 -MEASURE-	13.6 -MEASURE-	9.8 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 26	8213	23.50	224	17.4	18.4	24.8	227.8	98.6		11.9 -MEASURE-	11.3 -MEASURE-	8.1 -MEASURE-	> 50 mm	> 50 mm	N/A

Note(s):

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

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Antennas < 50mm to adjacent edges (continued)

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
Second Stage Power Back-off, Proximity Sensor On (C2, t2, P2)																
Cellular	GPRS 2 Slots	848.8	24.50	70	5	5					12.9 -MEASURE-	12.9 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	GPRS 2 Slots	1909.8	20.00	25	5	5					6.9 -MEASURE-	6.9 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 5	846.6	19.00	79	5	5					14.5 -MEASURE-	14.5 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 4	1752.6	13.50	22	5	5					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 2	1907.6	13.50	22	5	5					6.1 -MEASURE-	6.1 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC0	848.31	18.75	75	5	5					13.8 -MEASURE-	13.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC1	1908.75	13.25	21	5	5					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC10	823.1	18.75	75	5	5					13.6 -MEASURE-	13.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC15	1753.75	13.25	21	5	5					5.6 -MEASURE-	5.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 2	1900	13.25	21	5	5					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 4	1754.3	13.25	21	5	5					5.6 -MEASURE-	5.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 5	844	19.00	79	5	5					14.5 -MEASURE-	14.5 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 13	782	19.00	79	5	5					14 -MEASURE-	14 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 17	710	18.75	75	5	5					12.6 -MEASURE-	12.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 25	1905	13.25	21	5	5					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 26	821.3	19.00	79	5	5					14.3 -MEASURE-	14.3 -MEASURE-	N/A	N/A	N/A	N/A

Note(s):

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

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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. A sensor triggering of 16 mm is included for both Rear and Edge 1																
Cellular	GPRS 2 Slots	848.8	32.50	445	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1168.9 mW -EXEMPT-	437.8- MEASURE-	N/A
Cellular	GPRS 2 Slots	1909.8	29.00	199	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1886.5 mW -EXEMPT-	594.5 mW -EXEMPT-	N/A
Cellular	W-CDMA 5	846.6	24.50	282	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1166.5 mW -EXEMPT-	437.3 mW -EXEMPT-	N/A
Cellular	W-CDMA 4	1752.6	23.00	200	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1891.3 mW -EXEMPT-	599.3 mW -EXEMPT-	N/A
Cellular	W-CDMA 2	1907.6	22.51	178	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1886.6 mW -EXEMPT-	594.6 mW -EXEMPT-	N/A
Cellular	CDMA BC0	848.31	24.50	282	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1168.4 mW -EXEMPT-	437.7 mW -EXEMPT-	N/A
Cellular	CDMA BC1	1908.75	22.50	178	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1886.6 mW -EXEMPT-	594.6 mW -EXEMPT-	N/A
Cellular	CDMA BC10	823.1	25.00	316	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1141mW -EXEMPT-	432 mW -EXEMPT-	N/A
Cellular	CDMA BC15	1753.75	23.00	200	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1891.3 mW -EXEMPT-	599.3 mW -EXEMPT-	N/A
Cellular	LTE Band 2	1900	22.50	178	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1886.8 mW -EXEMPT-	594.8 mW -EXEMPT-	N/A
Cellular	LTE Band 4	1754.3	23.00	200	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1891.3 mW -EXEMPT-	599.3 mW -EXEMPT-	N/A
Cellular	LTE Band 5	844	24.00	251	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1163.7 mW -EXEMPT-	436.7 mW -EXEMPT-	N/A
Cellular	LTE Band 13	782	24.00	251	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1096.6 mW -EXEMPT-	423 mW -EXEMPT-	N/A
Cellular	LTE Band 17	710	25.00	316	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1019.6 mW -EXEMPT-	408.1mW -EXEMPT-	N/A
Cellular	LTE Band 25	1905	22.50	178	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1886.7 mW -EXEMPT-	594.7 mW -EXEMPT-	N/A
Cellular	LTE Band 26	821.3	23.50	224	17.4	18.4	24.8	227.8	98.6		< 50 mm	< 50 mm	< 50 mm	1139 mW -EXEMPT-	431.6 mW -EXEMPT-	N/A

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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9.1.2. SAR Test Exclusion Calculations for WiFi SISO (1 Tx) Transmit Conditions

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
WiFi 1 / Bluetooth																
WiFi 1	Wi-Fi 2.4 GHz	2462	16.00	40	6.3	227.6	137.7	5	11		10.5 -MEASURE-	>50 mm	>50 mm	12.6 -MEASURE-	5.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	16.00	40	6.3	227.6	137.7	5	11		15.2 -MEASURE-	>50 mm	>50 mm	18.3 -MEASURE-	8.3 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	137.7	5	11		17.3 -MEASURE-	>50 mm	>50 mm	20.7 -MEASURE-	9.4 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	137.7	5	11		17.9 -MEASURE-	>50 mm	>50 mm	21.4 -MEASURE-	9.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	137.7	5	11		16.1 -MEASURE-	>50 mm	>50 mm	19.3 -MEASURE-	8.8 -MEASURE-	N/A
WiFi 1	Bluetooth	2441	13.00	20	6.3	227.6	137.7	5	11		5.2 -MEASURE-	>50 mm	>50 mm	6.2 -MEASURE-	3 -EXEMPT-	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2462	16.00	40	6.3	227.6	12	5	135.4		10.5 -MEASURE-	>50 mm	5.2 -MEASURE-	12.6 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	16.00	40	6.3	227.6	12	5	135.4		15.2 -MEASURE-	>50 mm	7.6 -MEASURE-	18.3 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	12	5	135.4		17.3 -MEASURE-	>50 mm	8.6 -MEASURE-	20.7 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	12	5	135.4		17.9 -MEASURE-	>50 mm	8.9 -MEASURE-	21.4 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	12	5	135.4		16.1 -MEASURE-	>50 mm	8 -MEASURE-	19.3 -MEASURE-	>50 mm	N/A

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
WiFi 1 / Bluetooth																
WiFi 1	Wi-Fi 2.4 GHz	2462	16.00	40	6.3	227.6	137.7	5	11		<50 mm	18716 mW -EXEMPT-	972.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	16.00	40	6.3	227.6	137.7	5	11		<50 mm	18416 mW -EXEMPT-	942.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	137.7	5	11		<50 mm	18412 mW -EXEMPT-	942.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	137.7	5	11		<50 mm	18838.9 mW -EXEMPT-	939.9 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	137.7	5	11		<50 mm	18838.2 mW -EXEMPT-	939.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Bluetooth	2441	13.00	20	6.3	227.6	137.7	5	11		<50 mm	1872 mW -EXEMPT-	973 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2462	16.00	40	6.3	227.6	12	5	135.4		<50 mm	18716 mW -EXEMPT-	<50 mm	<50 mm	949.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	16.00	40	6.3	227.6	12	5	135.4		<50 mm	18416 mW -EXEMPT-	<50 mm	<50 mm	919.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	12	5	135.4		<50 mm	18412 mW -EXEMPT-	<50 mm	<50 mm	919.2 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	12	5	135.4		<50 mm	18838.9 mW -EXEMPT-	<50 mm	<50 mm	916.9 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	12	5	135.4		<50 mm	18838.2 mW -EXEMPT-	<50 mm	<50 mm	916.2 mW -EXEMPT-	N/A

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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9.1.3. SAR Test Exclusion Calculations for WiFi MIMO (2 Tx) Transmit Conditions

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
WiFi 1																
WiFi 1	Wi-Fi 2.4 GHz	2457	16.00	40	6.3	227.6	137.7	5	11		10.4 -MEASURE-	>50 mm	>50 mm	12.5 -MEASURE-	5.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	13.50	22	6.3	227.6	137.7	5	11		8.4 -MEASURE-	>50 mm	>50 mm	10.1 -MEASURE-	4.6 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	137.7	5	11		17.3 -MEASURE-	>50 mm	>50 mm	20.7 -MEASURE-	9.4 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	137.7	5	11		17.9 -MEASURE-	>50 mm	>50 mm	21.4 -MEASURE-	9.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	137.7	5	11		16.1 -MEASURE-	>50 mm	>50 mm	19.3 -MEASURE-	8.8 -MEASURE-	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2457	16.00	40	6.3	227.6	12	5	135.4		10.4 -MEASURE-	>50 mm	5.2 -MEASURE-	12.5 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	13.50	22	6.3	227.6	12	5	135.4		8.4 -MEASURE-	>50 mm	4.2 -MEASURE-	10.1 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	12	5	135.4		17.3 -MEASURE-	>50 mm	8.6 -MEASURE-	20.7 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	12	5	135.4		17.9 -MEASURE-	>50 mm	8.9 -MEASURE-	21.4 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	12	5	135.4		16.1 -MEASURE-	>50 mm	8 -MEASURE-	19.3 -MEASURE-	>50 mm	N/A

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
WiFi 1																
WiFi 1	Wi-Fi 2.4 GHz	2457	16.00	40	6.3	227.6	137.7	5	11		<50 mm	1871.7 mW -EXEMPT-	972.7 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	13.50	22	6.3	227.6	137.7	5	11		<50 mm	1841.6 mW -EXEMPT-	942.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	137.7	5	11		<50 mm	1841.2 mW -EXEMPT-	942.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	137.7	5	11		<50 mm	1838.9 mW -EXEMPT-	939.9 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	137.7	5	11		<50 mm	1838.2 mW -EXEMPT-	939.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2457	16.00	40	6.3	227.6	12	5	135.4		<50 mm	1871.7 mW -EXEMPT-	<50 mm	<50 mm	949.7 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	13.50	22	6.3	227.6	12	5	135.4		<50 mm	1841.6 mW -EXEMPT-	<50 mm	<50 mm	919.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.3	227.6	12	5	135.4		<50 mm	1841.2 mW -EXEMPT-	<50 mm	<50 mm	919.2 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.3	227.6	12	5	135.4		<50 mm	1838.9 mW -EXEMPT-	<50 mm	<50 mm	916.9 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.3	227.6	12	5	135.4		<50 mm	1838.2 mW -EXEMPT-	<50 mm	<50 mm	916.2 mW -EXEMPT-	N/A

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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9.2. Required Test Configurations

The table below identifies the standalone test configurations required for this device according to the findings in Section 9.1:

For WWAN

Test Configurations	Rear	Edge 1 (Top Edge)	Edge 2 (Right Edge)	Edge 3[1] (Bottom Edge)	Edge 4 (Left Edge)
GSM850 Prox. Off	Yes	Yes	Yes	No	Yes
GSM850 Prox. On	Yes	Yes	No	No	No
GSM1900 Prox. Off	Yes	Yes	Yes	No	No
GSM1900 Prox. On	Yes	Yes	No	No	No
W-CDMA Band 2 Prox. Off	Yes	Yes	Yes	No	No
W-CDMA Band 2 Prox. On	Yes	Yes	No	No	No
W-CDMA Band 4 Prox. Off	Yes	Yes	Yes	No	No
W-CDMA Band 4 Prox. On	Yes	Yes	No	No	No
W-CDMA Band 5 Prox. Off	Yes	Yes	Yes	No	No
W-CDMA Band 5 Prox. On	Yes	Yes	No	No	No
CDMA BC0 Prox. Off	Yes	Yes	Yes	No	No
CDMA BC0 Prox. On	Yes	Yes	No	No	No
CDMA BC1 Prox. Off	Yes	Yes	Yes	No	No
CDMA BC1 Prox. On	Yes	Yes	No	No	No
CDMA BC10 Prox. Off	Yes	Yes	Yes	No	No
CDMA BC10 Prox. On	Yes	Yes	No	No	No
CDMA BC15 Prox. Off	Yes	Yes	Yes	No	No
CDMA BC15 Prox. On	Yes	Yes	No	No	No
LTE Band 2 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 2 Prox. On	Yes	Yes	No	No	No
LTE Band 4 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 4 Prox. On	Yes	Yes	No	No	No
LTE Band 5 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 5 Prox. On	Yes	Yes	No	No	No
LTE Band 13 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 13 Prox. On	Yes	Yes	No	No	No
LTE Band 17 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 17 Prox. On	Yes	Yes	No	No	No
LTE Band 25 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 25 Prox. On	Yes	Yes	No	No	No
LTE Band 26 Prox. Off	Yes	Yes	Yes	No	No
LTE Band 26 Prox. On	Yes	Yes	No	No	No

Note(s):

1. Yes = Testing is required.
2. No = Testing is not required.

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For WiFi

Test Configurations	Rear	Edge 1 (Top Edge)	Edge 2 (Right Edge)	Edge 3 (Bottom Edge)	Edge 4 (Left Edge)
WiFi1 802.11a/b/g/n SISO	Yes	No	No	Yes	Yes
WiFi2 802.11a/b/g/n SISO	Yes	No	Yes	Yes	No
WiFi1 802.11a/b/g/n MIMO	Yes	No	No	Yes	Yes
WiFi2 802.11a/b/g/n MIMO	Yes	No	Yes	Yes	No
WiFi1 Bluetooth	Yes	No	No[1]	Yes	Yes

Note(s):

1. Yes = Testing is required.
2. No = Testing is not required.
3. Though Bluetooth qualifies for test exclusion at Edge 2, SAR was measured at this edge as the corresponding SAR estimation value was overly conservative.

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10. Tissue Dielectric Properties

IEEE Std 1528-2003 Table 2

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
1450	40.5	1.20
1800 – 2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r01

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

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10.1. Composition of Ingredients for the Tissue Material Used in the SAR Tests

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

Ingredients (% by weight)	Frequency (MHz)									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

Salt: 99+% Pure Sodium Chloride Sugar: 98+% Pure Sucrose
Water: De-ionized, 16 MΩ+ resistivity HEC: Hydroxyethyl Cellulose
DGBE: 99+% Di(ethylene glycol) butyl ether, [2-(2-butoxyethoxy)ethanol]
Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

MSL/HSL750 (Body and Head liquids for 700 – 800 MHz)

Item	Head Tissue Simulation Liquids HSL750 Muscle (body) Tissue Simulation Liquids MSL750
Type No	SL AAH 075
Manufacturer	SPEAG
The item is composed of the following ingredients:	
H^2O	Water, 35 – 58%
Sucrese	Sugar, white, refined, 40-60%
NaCl	Sodium Chloride, 0-6%
Hydroxyethel-cellulsoe	Medium Viscosity (CAS# 9004-62-0), <0.3%
Preventol-D7	Preservative: aqueous preparation, (CAS# 55965-84-9), containing 5-chloro-2-methyl-3(2H)-isothiazolone and 2-methyyl-3(2H)-isothiazolone, 0.1-0.7%

MSL/HSL1750 (Body and Head liquids for 1700 – 1800 MHz)

Item	Head Tissue Simulation Liquids HSL1750 Muscle (body) Tissue Simulation Liquids MSL1750
Type No	SL AAM 175
Manufacturer	SPEAG
-The item is composed of the following ingredients:	
H^2O	Water, 52 – 75%
C8H18O3	Diethylene glycol monobutyl ether (DGBE), 25-48%
NaCl	Sodium Chloride, <1.0%

Simulating Liquids for 5 GHz, Manufactured by SPEAG

Ingredients	(% by weight)
Water	78
Mineral oil	11
Emulsifiers	9
Additives and Salt	2

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10.2. Tissue Dielectric Parameter Check Results

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.

SAR Room A

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/7/2013	Body 2450	e'	51.8100	Relative Permittivity (ε_r):	51.81	52.70	-1.69	5
		e''	13.8100	Conductivity (σ):	1.88	1.95	-3.52	5
	Body 2410	e'	51.9800	Relative Permittivity (ε_r):	51.98	52.76	-1.48	5
		e''	13.7300	Conductivity (σ):	1.84	1.91	-3.54	5
	Body 2475	e'	51.7900	Relative Permittivity (ε_r):	51.79	52.67	-1.67	5
		e''	14.0900	Conductivity (σ):	1.94	1.99	-2.32	5
8/12/2013	Body 750	e'	54.4400	Relative Permittivity (ε_r):	54.44	55.55	-1.99	5
		e''	23.3200	Conductivity (σ):	0.97	0.96	0.98	5
	Body 700	e'	55.0000	Relative Permittivity (ε_r):	55.00	55.74	-1.32	5
		e''	23.7500	Conductivity (σ):	0.92	0.96	-3.63	5
	Body 790	e'	54.0700	Relative Permittivity (ε_r):	54.07	55.39	-2.39	5
		e''	23.0300	Conductivity (σ):	1.01	0.97	4.71	5
8/15/2013	Body 2450	e'	53.8100	Relative Permittivity (ε_r):	53.81	52.70	2.11	5
		e''	14.3900	Conductivity (σ):	1.96	1.95	0.53	5
	Body 2410	e'	53.8500	Relative Permittivity (ε_r):	53.85	52.76	2.07	5
		e''	14.2500	Conductivity (σ):	1.91	1.91	0.11	5
	Body 2475	e'	53.7200	Relative Permittivity (ε_r):	53.72	52.67	2.00	5
		e''	14.4900	Conductivity (σ):	1.99	1.99	0.45	5
8/15/2013	Body 750	e'	55.0200	Relative Permittivity (ε_r):	55.02	55.55	-0.95	5
		e''	23.1800	Conductivity (σ):	0.97	0.96	0.37	5
	Body 700	e'	55.5700	Relative Permittivity (ε_r):	55.57	55.74	-0.30	5
		e''	23.5900	Conductivity (σ):	0.92	0.96	-4.28	5
	Body 790	e'	54.6200	Relative Permittivity (ε_r):	54.62	55.39	-1.39	5
		e''	22.9300	Conductivity (σ):	1.01	0.97	4.25	5
8/22/2013	Body 2450	e'	53.1000	Relative Permittivity (ε_r):	53.10	52.70	0.76	5
		e''	14.8000	Conductivity (σ):	2.02	1.95	3.39	5
	Body 2410	e'	53.1400	Relative Permittivity (ε_r):	53.14	52.76	0.72	5
		e''	14.6600	Conductivity (σ):	1.96	1.91	2.99	5
	Body 2475	e'	52.9100	Relative Permittivity (ε_r):	52.91	52.67	0.46	5
		e''	14.8500	Conductivity (σ):	2.04	1.99	2.95	5
8/29/2013	Body 2450	e'	51.0000	Relative Permittivity (ε_r):	51.00	52.70	-3.23	5
		e''	14.1900	Conductivity (σ):	1.93	1.95	-0.87	5
	Body 2410	e'	51.1800	Relative Permittivity (ε_r):	51.18	52.76	-2.99	5
		e''	14.4400	Conductivity (σ):	1.94	1.91	1.44	5
	Body 2475	e'	50.7900	Relative Permittivity (ε_r):	50.79	52.67	-3.57	5
		e''	14.2900	Conductivity (σ):	1.97	1.99	-0.94	5

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Tissue Dielectric Parameter Check Results (continued)
SAR Room A

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/29/2013	Body 750	e'	54.9600	Relative Permittivity (ϵ_r):	54.96	55.55	-1.06	5
		e''	23.4300	Conductivity (σ):	0.98	0.96	1.45	5
	Body 700	e'	55.5500	Relative Permittivity (ϵ_r):	55.55	55.74	-0.34	5
		e''	24.0800	Conductivity (σ):	0.94	0.96	-2.29	5
	Body 790	e'	54.0500	Relative Permittivity (ϵ_r):	54.05	55.39	-2.42	5
		e''	23.0900	Conductivity (σ):	1.01	0.97	4.98	5
9/2/2013	Body 2450	e'	53.5200	Relative Permittivity (ϵ_r):	53.52	52.70	1.56	5
		e''	14.0300	Conductivity (σ):	1.91	1.95	-1.99	5
	Body 2410	e'	53.6500	Relative Permittivity (ϵ_r):	53.65	52.76	1.69	5
		e''	13.8600	Conductivity (σ):	1.86	1.91	-2.63	5
	Body 2475	e'	53.4200	Relative Permittivity (ϵ_r):	53.42	52.67	1.43	5
		e''	14.1200	Conductivity (σ):	1.94	1.99	-2.11	5

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Tissue Dielectric Parameter Check Results (continued)
SAR Room B

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/7/2013	Body 5180	e'	47.6100	Relative Permittivity (ϵ_r):	47.61	49.05	-2.93	5
		e''	18.8900	Conductivity (σ):	5.44	5.27	3.21	5
	Body 5200	e'	48.5100	Relative Permittivity (ϵ_r):	48.51	49.02	-1.04	5
		e''	18.0500	Conductivity (σ):	5.22	5.29	-1.43	5
	Body 5600	e'	47.8000	Relative Permittivity (ϵ_r):	47.80	48.48	-1.40	5
		e''	18.6600	Conductivity (σ):	5.81	5.76	0.86	5
	Body 5800	e'	47.1300	Relative Permittivity (ϵ_r):	47.13	48.20	-2.22	5
		e''	18.8000	Conductivity (σ):	6.06	6.00	1.05	5
	Body 5825	e'	47.8100	Relative Permittivity (ϵ_r):	47.81	48.20	-0.81	5
		e''	18.7800	Conductivity (σ):	6.08	6.00	1.38	5
8/12/2013	Body 5180	e'	47.5100	Relative Permittivity (εr):	47.51	49.05	-3.13	5
		e''	18.0600	Conductivity (σ):	5.20	5.27	-1.32	5
	Body 5200	e'	47.4800	Relative Permittivity (εr):	47.48	49.02	-3.14	5
		e''	18.0700	Conductivity (σ):	5.22	5.29	-1.32	5
	Body 5600	e'	46.8600	Relative Permittivity (εr):	46.86	48.48	-3.34	5
		e''	18.4100	Conductivity (σ):	5.73	5.76	-0.50	5
	Body 5800	e'	46.5600	Relative Permittivity (εr):	46.56	48.20	-3.40	5
		e''	18.6000	Conductivity (σ):	6.00	6.00	-0.03	5
	Body 5825	e'	46.5200	Relative Permittivity (εr):	46.52	48.20	-3.49	5
		e''	18.6100	Conductivity (σ):	6.03	6.00	0.46	5
8/12/2013	Body 835	e'	54.8500	Relative Permittivity (ϵ_r):	54.85	55.20	-0.63	5
		e''	21.8898	Conductivity (σ):	1.02	0.97	4.77	5
	Body 820	e'	54.9895	Relative Permittivity (ϵ_r):	54.99	55.28	-0.52	5
		e''	21.9700	Conductivity (σ):	1.00	0.97	3.43	5
	Body 850	e'	54.6800	Relative Permittivity (ϵ_r):	54.68	55.16	-0.87	5
		e''	21.8200	Conductivity (σ):	1.03	0.99	4.47	5
8/15/2013	Body 835	e'	52.7200	Relative Permittivity (ϵ_r):	52.72	55.20	-4.49	5
		e''	21.6200	Conductivity (σ):	1.00	0.97	3.48	5
	Body 820	e'	52.8700	Relative Permittivity (ϵ_r):	52.87	55.28	-4.35	5
		e''	21.6400	Conductivity (σ):	0.99	0.97	1.88	5
	Body 850	e'	52.5500	Relative Permittivity (ϵ_r):	52.55	55.16	-4.73	5
		e''	21.5300	Conductivity (σ):	1.02	0.99	3.08	5
8/19/2013	Body 835	e'	55.8400	Relative Permittivity (εr):	55.84	55.20	1.16	5
		e''	21.8000	Conductivity (σ):	1.01	0.97	4.34	5
	Body 820	e'	55.9800	Relative Permittivity (εr):	55.98	55.28	1.27	5
		e''	21.8200	Conductivity (σ):	0.99	0.97	2.73	5
	Body 850	e'	55.6700	Relative Permittivity (εr):	55.67	55.16	0.93	5
		e''	21.7300	Conductivity (σ):	1.03	0.99	4.04	5
8/22/2013	Body 835	e'	53.4900	Relative Permittivity (ϵ_r):	53.49	55.20	-3.10	5
		e''	21.6000	Conductivity (σ):	1.00	0.97	3.39	5
	Body 820	e'	53.6100	Relative Permittivity (ϵ_r):	53.61	55.28	-3.02	5
		e''	21.6900	Conductivity (σ):	0.99	0.97	2.12	5
	Body 850	e'	53.3300	Relative Permittivity (ϵ_r):	53.33	55.16	-3.31	5
		e''	21.5900	Conductivity (σ):	1.02	0.99	3.37	5

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Tissue Dielectric Parameter Check Results (continued)
SAR Room C

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/7/2013	Body 5180	e'	47.6000	Relative Permittivity (ϵ_r):	47.60	49.05	-2.95	5
		e''	18.5100	Conductivity (σ):	5.33	5.27	1.14	5
	Body 5200	e'	47.9100	Relative Permittivity (ϵ_r):	47.91	49.02	-2.26	5
		e''	18.4000	Conductivity (σ):	5.32	5.29	0.48	5
	Body 5600	e'	47.1600	Relative Permittivity (ϵ_r):	47.16	48.48	-2.72	5
		e''	18.9600	Conductivity (σ):	5.90	5.76	2.48	5
	Body 5800	e'	46.4600	Relative Permittivity (ϵ_r):	46.46	48.20	-3.61	5
		e''	19.0900	Conductivity (σ):	6.16	6.00	2.61	5
	Body 5825	e'	47.1600	Relative Permittivity (ϵ_r):	47.16	48.20	-2.16	5
		e''	19.0900	Conductivity (σ):	6.18	6.00	3.05	5
8/12/2013	Body 5180	e'	47.6400	Relative Permittivity (εr):	47.64	49.05	-2.87	5
		e''	18.1300	Conductivity (σ):	5.22	5.27	-0.94	5
	Body 5200	e'	47.6100	Relative Permittivity (εr):	47.61	49.02	-2.88	5
		e''	18.1400	Conductivity (σ):	5.24	5.29	-0.94	5
	Body 5600	e'	46.9800	Relative Permittivity (εr):	46.98	48.48	-3.09	5
		e''	18.4700	Conductivity (σ):	5.75	5.76	-0.17	5
	Body 5800	e'	46.6700	Relative Permittivity (εr):	46.67	48.20	-3.17	5
		e''	18.6700	Conductivity (σ):	6.02	6.00	0.35	5
	Body 5825	e'	46.6400	Relative Permittivity (εr):	46.64	48.20	-3.24	5
		e''	18.6800	Conductivity (σ):	6.05	6.00	0.84	5
8/13/2013	Body 1900	e'	53.7600	Relative Permittivity (ϵ_r):	53.76	53.30	0.86	5
		e''	14.1300	Conductivity (σ):	1.49	1.52	-1.79	5
	Body 1850	e'	53.9400	Relative Permittivity (ϵ_r):	53.94	53.30	1.20	5
		e''	14.0600	Conductivity (σ):	1.45	1.52	-4.85	5
	Body 1910	e'	53.7300	Relative Permittivity (ϵ_r):	53.73	53.30	0.81	5
		e''	14.1600	Conductivity (σ):	1.50	1.52	-1.06	5
8/15/2013	Body 1900	e'	53.5600	Relative Permittivity (εr):	53.56	53.30	0.49	5
		e''	14.3900	Conductivity (σ):	1.52	1.52	0.02	5
	Body 1850	e'	53.7100	Relative Permittivity (εr):	53.71	53.30	0.77	5
		e''	14.2400	Conductivity (σ):	1.46	1.52	-3.63	5
	Body 1910	e'	53.5300	Relative Permittivity (εr):	53.53	53.30	0.43	5
		e''	14.4100	Conductivity (σ):	1.53	1.52	0.68	5
8/19/2013	Body 1900	e'	52.9900	Relative Permittivity (εr):	52.99	53.30	-0.58	5
		e''	14.2300	Conductivity (σ):	1.50	1.52	-1.10	5
	Body 1850	e'	53.1900	Relative Permittivity (εr):	53.19	53.30	-0.21	5
		e''	14.1400	Conductivity (σ):	1.45	1.52	-4.31	5
	Body 1910	e'	52.9300	Relative Permittivity (εr):	52.93	53.30	-0.69	5
		e''	14.2400	Conductivity (σ):	1.51	1.52	-0.51	5

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Tissue Dielectric Parameter Check Results (continued)
SAR Room E

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/7/2013	Body 5180	e'	47.0200	Relative Permittivity (ϵ_r):	47.02	49.05	-4.13	5
		e''	18.4500	Conductivity (σ):	5.31	5.27	0.81	5
	Body 5200	e'	47.3400	Relative Permittivity (ϵ_r):	47.34	49.02	-3.43	5
		e''	18.3300	Conductivity (σ):	5.30	5.29	0.10	5
	Body 5600	e'	46.5700	Relative Permittivity (ϵ_r):	46.57	48.48	-3.94	5
		e''	18.8800	Conductivity (σ):	5.88	5.76	2.04	5
	Body 5800	e'	45.8700	Relative Permittivity (ϵ_r):	45.87	48.20	-4.83	5
		e''	19.0100	Conductivity (σ):	6.13	6.00	2.18	5
	Body 5825	e'	46.5900	Relative Permittivity (ϵ_r):	46.59	48.20	-3.34	5
		e''	19.0100	Conductivity (σ):	6.16	6.00	2.62	5
8/12/2013	Body 5180	e'	47.0700	Relative Permittivity (ϵ_r):	47.07	49.05	-4.03	5
		e''	18.2100	Conductivity (σ):	5.24	5.27	-0.50	5
	Body 5200	e'	47.0400	Relative Permittivity (ϵ_r):	47.04	49.02	-4.04	5
		e''	18.2200	Conductivity (σ):	5.27	5.29	-0.50	5
	Body 5600	e'	46.3900	Relative Permittivity (ϵ_r):	46.39	48.48	-4.31	5
		e''	18.5400	Conductivity (σ):	5.77	5.76	0.21	5
	Body 5800	e'	46.0900	Relative Permittivity (ϵ_r):	46.09	48.20	-4.38	5
		e''	18.7200	Conductivity (σ):	6.04	6.00	0.62	5
	Body 5825	e'	46.0500	Relative Permittivity (ϵ_r):	46.05	48.20	-4.46	5
		e''	18.7300	Conductivity (σ):	6.07	6.00	1.11	5
8/13/2013	Body 835	e'	52.9600	Relative Permittivity (ϵ_r):	52.96	55.20	-4.06	5
		e''	21.6400	Conductivity (σ):	1.00	0.97	3.58	5
	Body 820	e'	53.0800	Relative Permittivity (ϵ_r):	53.08	55.28	-3.97	5
		e''	21.6800	Conductivity (σ):	0.99	0.97	2.07	5
	Body 850	e'	52.8300	Relative Permittivity (ϵ_r):	52.83	55.16	-4.22	5
		e''	21.6000	Conductivity (σ):	1.02	0.99	3.42	5
8/15/2013	Body 835	e'	54.8400	Relative Permittivity (ϵ_r):	54.84	55.20	-0.65	5
		e''	21.8600	Conductivity (σ):	1.01	0.97	4.63	5
	Body 820	e'	54.9900	Relative Permittivity (ϵ_r):	54.99	55.28	-0.52	5
		e''	21.8900	Conductivity (σ):	1.00	0.97	3.06	5
	Body 850	e'	54.6900	Relative Permittivity (ϵ_r):	54.69	55.16	-0.85	5
		e''	21.7800	Conductivity (σ):	1.03	0.99	4.28	5
8/19/2013	Body 1750	e'	53.0500	Relative Permittivity (ϵ_r):	53.05	53.44	-0.73	5
		e''	15.0700	Conductivity (σ):	1.47	1.49	-1.33	5
	Body 1710	e'	53.1400	Relative Permittivity (ϵ_r):	53.14	53.54	-0.75	5
		e''	15.0100	Conductivity (σ):	1.43	1.46	-2.35	5
	Body 1755	e'	53.0200	Relative Permittivity (ϵ_r):	53.02	53.43	-0.76	5
		e''	15.0900	Conductivity (σ):	1.47	1.49	-1.12	5

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Tissue Dielectric Parameter Check Results (continued)
SAR Room F

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/7/2013	Body 5180	e'	47.7300	Relative Permittivity (ϵ_r):	47.73	49.05	-2.68	5
		e''	18.4700	Conductivity (σ):	5.32	5.27	0.92	5
	Body 5200	e'	48.0300	Relative Permittivity (ϵ_r):	48.03	49.02	-2.02	5
		e''	18.3600	Conductivity (σ):	5.31	5.29	0.26	5
	Body 5600	e'	47.2900	Relative Permittivity (ϵ_r):	47.29	48.48	-2.45	5
		e''	18.9000	Conductivity (σ):	5.89	5.76	2.15	5
	Body 5800	e'	46.5900	Relative Permittivity (ϵ_r):	46.59	48.20	-3.34	5
		e''	19.0400	Conductivity (σ):	6.14	6.00	2.34	5
	Body 5825	e'	47.2900	Relative Permittivity (ϵ_r):	47.29	48.20	-1.89	5
		e''	19.0300	Conductivity (σ):	6.16	6.00	2.73	5
8/12/2013	Body 5180	e'	47.5000	Relative Permittivity (ϵ_r):	47.50	49.05	-3.15	5
		e''	18.0500	Conductivity (σ):	5.20	5.27	-1.38	5
	Body 5200	e'	47.4700	Relative Permittivity (ϵ_r):	47.47	49.02	-3.16	5
		e''	18.0700	Conductivity (σ):	5.22	5.29	-1.32	5
	Body 5600	e'	46.8600	Relative Permittivity (ϵ_r):	46.86	48.48	-3.34	5
		e''	18.4000	Conductivity (σ):	5.73	5.76	-0.55	5
	Body 5800	e'	46.5500	Relative Permittivity (ϵ_r):	46.55	48.20	-3.42	5
		e''	18.5900	Conductivity (σ):	6.00	6.00	-0.08	5
	Body 5825	e'	46.5200	Relative Permittivity (ϵ_r):	46.52	48.20	-3.49	5
		e''	18.6100	Conductivity (σ):	6.03	6.00	0.46	5
8/13/2013	Body 1900	e'	52.0600	Relative Permittivity (ϵ_r):	52.06	53.30	-2.33	5
		e''	15.0000	Conductivity (σ):	1.58	1.52	4.26	5
	Body 1850	e'	52.1500	Relative Permittivity (ϵ_r):	52.15	53.30	-2.16	5
		e''	14.7200	Conductivity (σ):	1.51	1.52	-0.38	5
	Body 1910	e'	52.0200	Relative Permittivity (ϵ_r):	52.02	53.30	-2.40	5
		e''	15.0100	Conductivity (σ):	1.59	1.52	4.87	5
8/15/2013	Body 1900	e'	55.5400	Relative Permittivity (ϵ_r):	55.54	53.30	4.20	5
		e''	14.9900	Conductivity (σ):	1.58	1.52	4.19	5
	Body 1850	e'	55.7700	Relative Permittivity (ϵ_r):	55.77	53.30	4.63	5
		e''	14.8900	Conductivity (σ):	1.53	1.52	0.77	5
	Body 1910	e'	55.5100	Relative Permittivity (ϵ_r):	55.51	53.30	4.15	5
		e''	14.9800	Conductivity (σ):	1.59	1.52	4.66	5
8/19/2013	Body 1900	e'	55.0100	Relative Permittivity (ϵ_r):	55.01	53.30	3.21	5
		e''	14.5000	Conductivity (σ):	1.53	1.52	0.78	5
	Body 1850	e'	55.1900	Relative Permittivity (ϵ_r):	55.19	53.30	3.55	5
		e''	14.3900	Conductivity (σ):	1.48	1.52	-2.62	5
	Body 1910	e'	54.9700	Relative Permittivity (ϵ_r):	54.97	53.30	3.13	5
		e''	14.5200	Conductivity (σ):	1.54	1.52	1.45	5
8/22/2013	Body 1900	e'	53.2500	Relative Permittivity (ϵ_r):	53.25	53.30	-0.09	5
		e''	14.8200	Conductivity (σ):	1.57	1.52	3.00	5
	Body 1850	e'	53.4600	Relative Permittivity (ϵ_r):	53.46	53.30	0.30	5
		e''	14.5800	Conductivity (σ):	1.50	1.52	-1.33	5
	Body 1910	e'	53.2500	Relative Permittivity (ϵ_r):	53.25	53.30	-0.09	5
		e''	14.8600	Conductivity (σ):	1.58	1.52	3.83	5

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11. System Performance 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 remeasured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

11.1. 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 ± 0.5 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm ± 0.5 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 3 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

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11.2. Reference SAR Values for System Performance Check

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 (mW/g)		
				1g/10g	Head	Body
D750V3	1071	10/05/2012	750	1g	8.29	8.79
				10g	5.49	5.82
D750V3	1024	05/28/2013	750	1g	8.52	8.71
				10g	5.58	5.71
D835V2	4d117	05/28/2013	835	1g	9.54	9.40
				10g	6.21	6.16
D835V2	4d142	10/04/2012	835	1g	9.45	9.5
				10g	6.23	6.29
D1750V2	1077	10/03/2012	1750	1g	36.1	37.7
				10g	19.3	20.3
D1900V2	5d140	04/18/2013	1900	1g	41.2	41.5
				10g	21.5	22.0
D1900V2	5d163	10/04/2012	1900	1g	39.4	39.6
				10g	20.7	21.1
D2450V2	748	02/11/2013	2450	1g	52.9	49.9
				10g	24.6	23.2
D5GHV2	1138	10/09/2012	5200	1g	79.5	73.2
				10g	22.8	20.4
			5500	1g	83.6	77.9
				10g	23.8	21.7
			5800	1g	78.7	72.8
				10g	22.4	20.1
D5GHV2	1003	09/18/2012	5200	1g	76.5	74.8
				10g	21.9	20.9
			5600	1g	82.8	79.0
				10g	23.6	22.0
			5800	1g	76.9	77.0
				10g	22.0	21.4

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11.3. System Performance 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 Room A

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
8/7/2013	D2450V2	748	Body	1g	5.51	5.17	51.70	49.9	3.61	6.17	1,2
				10g	2.40	2.36	23.60	23.2	1.72		
8/12/2013	D2450v2	748	Body	1g	4.87	4.82	48.20	49.9	-3.41	1.03	
				10g	2.13	2.18	21.80	23.2	-6.03		
8/12/2013	D750v2	1071	Body	1g	0.851	0.836	8.36	8.79	-4.89	1.76	3,4
				10g	0.576	0.556	5.56	5.82	-4.47		
8/15/2013	D2450v2	748	Body	1g	4.99	4.92	49.20	49.9	-1.40	1.40	
				10g	2.20	2.24	22.40	23.2	-3.45		
8/15/2013	D750v2	1071	Body	1g	0.924	0.915	9.15	8.79	4.10	0.97	
				10g	0.626	0.610	6.10	5.82	4.81		
8/19/2013	D2450v2	748	Body	1g	4.81	4.91	49.10	49.9	-1.60	-2.08	
				10g	2.12	2.24	22.40	23.2	-3.45		
8/22/2013	D2450v2	748	Body	1g	5.17	5.07	50.70	49.9	1.60	1.93	
				10g	2.28	2.32	23.20	23.2	0.00		
8/29/2013	D2450v2	748	Body	1g	5.10	4.99	49.90	49.9	0.00	2.16	
				10g	2.24	2.26	22.60	23.2	-2.59		
8/29/2013	D750V3	1024	Body	1g	0.907	0.888	8.88	8.71	1.95	2.09	5,6
				10g	0.615	0.593	5.93	5.71	3.85		
9/2/2013	D2450v2	748	Body	1g	5.13	5.12	51.20	49.9	2.61	0.19	
				10g	2.26	2.34	23.40	23.2	0.86		

SAR Room B

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
8/7/2013	D5GHzV2 (5.2GHz)	1003	Body	1g	7.08	7.30	73.00	74.80	-2.41	-3.11	7,8
				10g	1.93	2.05	20.50	20.90	-1.91		
8/12/2013	D5GHzV2 (5.2GHz)	1138	Body	1g	6.77	7.21	72.10	73.20	-1.50	-6.50	9,10
				10g	1.87	2.02	20.20	20.40	-0.98		
8/13/2013	D835V2	4d142	Body	1g	0.979	0.958	9.58	9.50	0.84	2.15	11,12
				10g	0.655	0.630	6.30	6.29	0.16		
8/15/2013	D835V2	4d117	Body	1g	0.999	0.974	9.74	9.40	3.62	2.50	
				10g	0.668	0.641	6.41	6.16	4.06		
8/19/2013	D835V2	4d117	Body	1g	0.937	0.922	9.22	9.40	-1.91	1.60	
				10g	0.627	0.605	6.05	6.16	-1.79		
8/22/2013	D835V2	4d117	Body	1g	0.954	0.905	9.05	9.40	-3.72	5.14	13,14
				10g	0.638	0.595	5.95	6.16	-3.41		

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SAR Room C

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
8/7/2013	D5GHzV2 (5.3GHz)	1138	Body	1g	7.32	7.42	74.20	73.2	1.37	-1.37	15,16
				10g	2.05	2.11	21.10	20.4	3.43		
8/12/2013	D5GHzV2 (5.3GHz)	1138	Body	1g	6.96	7.36	73.60	73.2	0.55	-5.75	
				10g	1.95	2.07	20.70	20.4	1.47		
8/13/2013	D1900V2	5d140	Body	1g	4.13	4.13	41.30	41.5	-0.48	0.00	
				10g	2.04	2.18	21.80	22.0	-0.91		
8/15/2013	D1900V2	5d140	Body	1g	4.02	4.04	40.40	41.5	-2.65	-0.50	17,18
				10g	2.00	2.15	21.50	22.0	-2.27		
8/19/2013	D1900V2	5d140	Body	1g	4.10	4.12	41.20	41.5	-0.72	-0.49	
				10g	2.04	2.18	21.80	22.0	-0.91		

SAR Room E

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
8/7/2013	D5GHzV2 (5.6GHz)	1003	Body	1g	7.56	7.73	77.30	79.0	-2.15	-2.25	19,20
				10g	2.12	2.21	22.10	22.0	0.45		
8/12/2013	D5GHzV2 (5.6GHz)	1003	Body	1g	7.39	8.01	80.10	79.0	1.39	-8.39	
				10g	2.01	2.24	22.40	22.0	1.82		
8/13/2013	D835V2	4d142	Body	1g	1.03	1.00	10.00	9.50	5.26	2.91	21,22
				10g	0.69	0.66	6.60	6.29	4.93		
8/15/2013	D835V2	4d142	Body	1g	0.947	0.919	9.19	9.50	-3.26	2.96	
				10g	0.634	0.605	6.05	6.29	-3.82		
8/19/2013	D1750V2	1077	Body	1g	4.01	3.66	36.60	37.7	-2.92	8.73	23,24
				10g	2.08	1.96	19.60	20.3	-3.45		

SAR Room F

Date Tested	System Dipole		T.S. Liquid		Measured Results			Target (Ref. Value)	Delta ±10 %	Est./Zoom Ratio ±3 %	Plot No.
	Type	Serial #			Area Scan	Zoom Scan	Normalize to 1 W				
8/7/2013	D5GHzV2 (5.8GHz)	1138	Body	1g	7.33	7.14	71.40	72.80	-1.92	2.59	25,26
				10g	2.04	2.03	20.30	20.10	1.00		
8/12/2013	D5GHzV2 (5.8GHz)	1003	Body	1g	6.92	7.38	73.80	77.00	-4.16	-6.65	27,28
				10g	1.92	2.09	20.90	21.40	-2.34		
8/13/2013	D1900V2	5d163	Body	1g	4.13	4.06	40.60	39.60	2.53	1.69	29,30
				10g	2.08	2.11	21.10	21.10	0.00		
8/15/2013	D1900V2	5d163	Body	1g	4.19	4.02	40.20	39.60	1.52	4.06	
				10g	2.09	2.06	20.60	21.10	-2.37		
8/19/2013	D1900V2	5d163	Body	1g	3.98	3.91	39.10	39.60	-1.26	1.76	
				10g	2.00	2.01	20.10	21.10	-4.74		
8/22/2013	D1900V2	5d163	Body	1g	4.06	4.02	40.20	39.60	1.52	0.99	
				10g	2.05	2.09	20.90	21.10	-0.95		

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12. SAR Test Results

12.1. GSM850

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	GPRS 2 slots	Rear	16	190	836.6	32.50	32.50	0.728	0.728	0.494	0.494	
		Edge 1	16	190	836.6	32.50	32.50	0.485	0.485	0.328	0.328	
		Edge 2	0	190	836.6	32.50	32.50	0.664	0.664	0.362	0.362	
		Edge 4	0	190	836.6	32.50	32.50	0.127	0.127	0.067	0.067	
On (Second Stage)	GPRS 2 slots	Rear	0	128	824.2	24.50	24.50	1.080	1.080	0.556	0.556	
			0	190	836.6	24.50	24.50	1.140	1.140	0.595	0.595	1
			0	251	848.8	24.50	24.50	1.090	1.090	0.569	0.569	
		Edge 1	0	190	836.6	24.50	24.50	0.706	0.706	0.390	0.390	

12.2. GSM1900

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	GPRS 2 slots	Rear	16	661	1880.0	29.00	28.90	0.765	0.783	0.442	0.452	
		Edge 1	16	512	1850.2	29.00	28.90	1.050	1.074	0.630	0.645	2
			16	661	1880.0	29.00	28.90	0.987	1.010	0.586	0.600	
			16	810	1909.8	29.00	28.80	0.882	0.924	0.523	0.548	
		Edge 2	0	661	1880.0	29.00	28.90	0.742	0.759	0.357	0.365	
On (Second Stage)	GPRS 2 slots	Rear	0	512	1850.2	20.00	19.60	1.030	1.129	0.491	0.538	
			0	661	1880.0	20.00	19.75	1.030	1.091	0.482	0.511	
			0	810	1909.8	20.00	19.70	0.996	1.067	0.474	0.508	
		Edge 1	0	512	1850.2	20.00	19.60	0.746	0.818	0.362	0.397	
			0	661	1880.0	20.00	19.75	0.810	0.858	0.390	0.413	
			0	810	1909.8	20.00	19.70	0.875	0.938	0.419	0.449	

Note(s):

1. 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

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12.3. W-CDMA Band 5

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	Rel 99 RMC 12.2kbps	Rear	16	4183	836.6	24.50	24.50	0.575	0.575	0.390	0.390	
		Edge 1	16	4183	836.6	24.50	24.50	0.387	0.387	0.261	0.261	
		Edge 2	0	4183	836.6	24.50	24.50	0.565	0.565	0.310	0.310	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	4132	826.4	19.00	19.00	1.170	1.170	0.627	0.627	
			0	4183	836.6	19.00	19.00	1.180	1.180	0.621	0.621	
			0	4233	846.6	19.00	19.00	1.190	1.190	0.622	0.622	3
		Edge 1	0	4132	826.4	19.00	19.00	0.891	0.891	0.495	0.495	
			0	4183	836.6	19.00	19.00	0.963	0.963	0.541	0.541	
			0	4233	846.6	19.00	19.00	0.935	0.935	0.522	0.522	

12.4. W-CDMA Band 2

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	Rel 99 RMC 12.2kbps	Rear	16	9262	1852.4	22.50	22.50	0.883	0.883	0.514	0.514	
			16	9400	1880.0	22.50	22.50	0.881	0.881	0.513	0.513	
			16	9538	1907.6	22.50	22.38	0.820	0.843	0.476	0.489	
		Edge 1	16	9262	1852.4	22.50	22.50	1.160	1.160	0.686	0.686	
			16	9400	1880.0	22.50	22.50	1.170	1.170	0.691	0.691	4
			16	9538	1907.6	22.50	22.38	1.090	1.121	0.642	0.660	
		Edge 2	0	9400	1880.0	22.50	22.50	0.772	0.772	0.369	0.369	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	9262	1852.4	13.50	13.38	1.140	1.172	0.541	0.556	
			0	9400	1880.0	13.50	13.30	1.010	1.058	0.476	0.498	
			0	9538	1907.6	13.50	13.50	1.000	1.000	0.474	0.474	
		Edge 1	0	9262	1852.4	13.50	13.38	0.885	0.910	0.427	0.439	
			0	9400	1880.0	13.50	13.30	0.976	1.022	0.469	0.491	
			0	9538	1907.6	13.50	13.50	1.120	1.120	0.533	0.533	

Note(s):

1. 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

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12.5. W-CDMA Band 4

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	Rel 99 RMC 12.2kbps	Rear	16	1312	1712.4	23.00	23.00	0.817	0.817	0.482	0.482	
			16	1413	1732.6	23.00	23.00	0.837	0.837	0.492	0.492	
			16	1513	1752.6	23.00	22.90	0.917	0.938	0.537	0.550	
		Edge 1	16	1312	1712.4	23.00	23.00	0.936	0.936	0.569	0.569	
			16	1413	1732.6	23.00	23.00	0.980	0.980	0.593	0.593	
			16	1513	1752.6	23.00	22.90	0.974	0.997	0.592	0.606	
		Edge 2	0	1312	1712.4	23.00	23.00	0.760	0.760	0.374	0.374	
			0	1413	1732.6	23.00	23.00	0.779	0.779	0.381	0.381	
			0	1513	1752.6	23.00	22.90	0.877	0.897	0.428	0.438	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	1312	1712.4	13.50	13.50	1.180	1.180	0.559	0.559	5
			0	1413	1732.6	13.50	13.50	1.160	1.160	0.549	0.549	
			0	1513	1752.6	13.50	13.50	1.010	1.010	0.479	0.479	
		Edge 1	0	1312	1712.4	13.50	13.50	0.940	0.940	0.463	0.463	
			0	1413	1732.6	13.50	13.50	0.951	0.951	0.465	0.465	
			0	1513	1752.6	13.50	13.50	0.803	0.803	0.392	0.392	

Note(s):

1. 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

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12.6. CDMA BC0

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	1xRTT (RC3 SO32)	Rear	16	384	836.5	24.50	24.50	0.618	0.618	0.419	0.419	
		Edge 1	16	384	836.5	24.50	24.50	0.445	0.445	0.303	0.303	
		Edge 2	0	384	836.5	24.50	24.50	0.548	0.548	0.292	0.292	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	1013	824.7	18.75	18.65	1.150	1.177	0.585	0.599	
			0	384	836.5	18.75	18.73	1.160	1.165	0.592	0.595	
			0	777	848.3	18.75	18.50	1.110	1.176	0.564	0.597	
		Edge 1	0	1013	824.7	18.75	18.65	0.818	0.837	0.461	0.472	
			0	384	836.5	18.75	18.73	0.831	0.835	0.466	0.468	
			0	777	848.3	18.75	18.50	0.761	0.806	0.428	0.453	
Off	1xEVDO (Rel.0)	Rear	16	384	836.5	24.50	23.75	0.547	0.650	0.37	0.440	
		Edge 1	16	384	836.5	24.50	23.75	0.404	0.480	0.276	0.328	
		Edge 2	0	384	836.5	24.50	23.75	0.488	0.580	0.267	0.317	
On (Second Stage)	1xEVDO (Rel.0)	Rear	0	1013	824.7	18.75	18.70	1.080	1.093	0.557	0.563	
			0	384	836.5	18.75	18.57	1.090	1.136	0.560	0.584	
			0	777	848.3	18.75	18.60	1.050	1.087	0.540	0.559	
		Edge 1	0	1013	824.7	18.75	18.70	0.881	0.891	0.493	0.499	
			0	384	836.5	18.75	18.57	0.871	0.908	0.482	0.502	
			0	777	848.3	18.75	18.60	0.807	0.835	0.442	0.458	

Note(s):

1. 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

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CDMA BC0 SAR Test Results (continued)

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	1xEVDO (Rev. B) Two Carrier Mini.	Rear	16	384+425	836.52+837.75	22.00	20.75	0.208	0.277	0.137	0.183	
		Edge 1	16	384+425	836.52+837.75	22.00	20.75	0.192	0.256	0.128	0.171	
		Edge 2	0	384+425	836.52+837.75	22.00	20.75	0.246	0.328	0.135	0.180	
On (Second Stage)	1xEVDO (Rev. B) Two Carrier Mini.	Rear	0	1013+31	824.70+825.93	18.75	18.75	1.160	1.160	0.606	0.606	
			0	384+425	836.52+837.75	18.75	18.75	1.140	1.140	0.587	0.587	
			0	736+777	847.08+848.31	18.75	18.75	1.130	1.130	0.587	0.587	
		Edge 1	0	1013+31	824.70+825.93	18.75	18.75	0.848	0.848	0.458	0.458	
			0	384+425	836.52+837.75	18.75	18.75	0.850	0.850	0.466	0.466	
			0	736+777	847.08+848.31	18.75	18.75	0.869	0.869	0.472	0.472	
Off	1xEVDO (Rev. B) Three Carrier Mini.	Rear	16	384+425+466	836.52+837.75+838.98	22.00	20.80	0.299	0.394	0.197	0.260	
		Edge 1	16	384+425+466	836.52+837.75+838.98	22.00	20.80	0.192	0.253	0.128	0.169	
		Edge 2	0	384+425+466	836.52+837.75+838.98	22.00	20.80	0.253	0.334	0.137	0.181	
On (Second Stage)	1xEVDO (Rev. B) Three Carrier Mini.	Rear	0	1013+31+72	824.70+825.93+827.16	18.75	18.75	1.170	1.170	0.608	0.608	6
			0	384+425+466	836.52+837.75+838.98	18.75	18.75	1.130	1.130	0.583	0.583	
			0	695+736+777	845.85+847.08+848.31	18.75	18.75	1.140	1.140	0.591	0.591	
		Edge 1	0	1013+31+72	824.70+825.93+827.16	18.75	18.75	0.877	0.877	0.472	0.472	
			0	384+425+466	836.52+837.75+838.98	18.75	18.75	0.839	0.839	0.453	0.453	
			0	695+736+777	845.85+847.08+848.31	18.75	18.75	0.845	0.845	0.452	0.452	

Note(s):

1. 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

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12.7. CDMA BC1

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	1xRTT (RC3 SO32)	Rear	16	25	1851.25	22.50	22.50	0.852	0.852	0.491	0.491	
			16	600	1880.00	22.50	22.50	0.893	0.893	0.513	0.513	
			16	1175	1908.75	22.50	22.50	0.913	0.913	0.522	0.522	
		Edge 1	16	25	1851.25	22.50	22.50	1.090	1.090	0.643	0.643	
			16	600	1880.00	22.50	22.50	1.140	1.140	0.671	0.671	7
			16	1175	1908.75	22.50	22.50	1.100	1.100	0.652	0.652	
		Edge 2	0	600	1880.00	22.50	22.50	0.758	0.758	0.364	0.364	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	25	1851.25	13.25	13.00	1.030	1.091	0.482	0.511	
			0	600	1880.00	13.25	13.00	1.050	1.112	0.496	0.525	
			0	1175	1908.75	13.25	13.00	1.080	1.144	0.501	0.531	
		Edge 1	0	25	1851.25	13.25	13.00	0.729	0.772	0.348	0.369	
			0	600	1880.00	13.25	13.00	0.812	0.860	0.385	0.408	
			0	1175	1908.75	13.25	13.00	0.959	1.016	0.452	0.479	
Off	1xEVDO (Rel.0)	Rear	16	25	1851.25	22.50	22.40	0.852	0.872	0.494	0.506	
			16	600	1880.00	22.50	22.48	0.906	0.910	0.524	0.526	
			16	1175	1908.75	22.50	22.44	0.923	0.936	0.533	0.540	
		Edge 1	16	25	1851.25	22.50	22.40	1.040	1.064	0.617	0.631	
			16	600	1880.00	22.50	22.48	1.130	1.135	0.669	0.672	
			16	1175	1908.75	22.50	22.44	1.110	1.125	0.662	0.671	
		Edge 2	0	25	1851.25	22.50	22.40	0.763	0.781	0.373	0.382	
			0	600	1880.00	22.50	22.48	0.827	0.831	0.401	0.403	
			0	1175	1908.75	22.50	22.44	0.838	0.850	0.406	0.412	
On (Second Stage)	1xEVDO (Rel.0)	Rear	0	25	1851.25	13.25	13.21	0.982	0.991	0.464	0.468	
			0	600	1880.00	13.25	13.24	0.971	0.973	0.459	0.460	
			0	1175	1908.75	13.25	13.20	0.988	0.999	0.469	0.474	
		Edge 1	0	25	1851.25	13.25	13.21	0.703	0.710	0.339	0.342	
			0	600	1880.00	13.25	13.24	0.783	0.785	0.375	0.376	
			0	1175	1908.75	13.25	13.20	0.948	0.959	0.451	0.456	

Note(s):

1. 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

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12.8. CDMA BC10

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	1xRTT (RC3 SO32)	Rear	16	580	820.50	25.00	25.00	0.633	0.633	0.428	0.428	
		Edge 1	16	580	820.50	25.00	25.00	0.421	0.421	0.289	0.289	
		Edge 2	0	580	820.50	25.00	25.00	0.494	0.494	0.276	0.276	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	476	817.90	18.75	18.75	1.180	1.180	0.615	0.615	8
			0	580	820.50	18.75	18.75	1.160	1.160	0.607	0.607	
			0	684	823.10	18.75	18.75	1.130	1.130	0.591	0.591	
		Edge 1	0	476	817.90	18.75	18.75	0.834	0.834	0.463	0.463	
			0	580	820.50	18.75	18.75	0.817	0.817	0.458	0.458	
			0	684	823.10	18.75	18.75	0.821	0.821	0.458	0.458	
Off	1xEVDO (Rel.0)	Rear	16	580	820.50	25.00	23.85	0.547	0.713	0.372	0.485	
		Edge 1	16	580	820.50	25.00	23.85	0.377	0.491	0.257	0.335	
		Edge 2	0	580	820.50	25.00	23.85	0.473	0.616	0.260	0.339	
On (Second Stage)	1xEVDO (Rel.0)	Rear	0	476	817.90	18.75	18.75	1.120	1.120	0.578	0.578	
			0	580	820.50	18.75	18.75	1.110	1.110	0.579	0.579	
			0	684	823.10	18.75	18.54	1.100	1.154	0.558	0.586	
		Edge 1	0	476	817.90	18.75	18.75	0.898	0.898	0.507	0.507	
			0	580	820.50	18.75	18.75	0.894	0.894	0.499	0.499	
			0	684	823.10	18.75	18.54	0.877	0.920	0.491	0.515	

Note(s):

1. 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

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12.9. CDMA BC15

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	1xRTT (RC3 SO32)	Rear	16	450	1732.50	23.00	23.00	0.785	0.785	0.461	0.461	
		Edge 1	16	25	1711.25	23.00	23.00	0.895	0.895	0.543	0.543	
			16	450	1732.50	23.00	23.00	0.989	0.989	0.598	0.598	
			16	875	1753.75	23.00	22.97	1.080	1.087	0.649	0.653	
		Edge 2	0	25	1711.25	23.00	23.00	0.779	0.779	0.387	0.387	
			0	450	1732.50	23.00	23.00	0.864	0.864	0.428	0.428	
			0	875	1753.75	23.00	22.97	0.927	0.933	0.448	0.451	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	25	1711.25	13.25	13.08	1.120	1.165	0.531	0.552	
			0	450	1732.50	13.25	13.25	1.160	1.160	0.543	0.543	9
			0	875	1753.75	13.25	13.15	1.070	1.095	0.508	0.520	
		Edge 1	0	25	1711.25	13.25	13.08	0.902	0.938	0.442	0.460	
			0	450	1732.50	13.25	13.25	0.895	0.895	0.437	0.437	
			0	875	1753.75	13.25	13.15	0.758	0.776	0.369	0.378	
Off	1xEVDO (Rel.0)	Rear	16	25	1711.25	23.00	22.93	0.798	0.811	0.471	0.479	
			16	450	1732.50	23.00	23.00	0.865	0.865	0.509	0.509	
			16	875	1753.75	23.00	22.93	0.918	0.933	0.538	0.547	
		Edge 1	16	25	1711.25	23.00	22.93	0.925	0.940	0.563	0.572	
			16	450	1732.50	23.00	23.00	1.030	1.030	0.625	0.625	
			16	875	1753.75	23.00	22.93	1.120	1.138	0.678	0.689	
		Edge 2	0	25	1711.25	23.00	22.93	0.724	0.736	0.355	0.361	
			0	450	1732.50	23.00	23.00	0.806	0.806	0.395	0.395	
			0	875	1753.75	23.00	22.93	0.837	0.851	0.407	0.414	
On (Second Stage)	1xEVDO (Rel.0)	Rear	0	25	1711.25	13.25	13.10	1.010	1.045	0.488	0.505	
			0	450	1732.50	13.25	13.25	1.140	1.140	0.552	0.552	
			0	875	1753.75	13.25	13.11	0.966	0.998	0.466	0.481	
		Edge 1	0	25	1711.25	13.25	13.10	0.784	0.812	0.385	0.399	
			0	450	1732.50	13.25	13.25	0.931	0.931	0.457	0.457	
			0	875	1753.75	13.25	13.11	0.633	0.654	0.309	0.319	

Note(s):

1. 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

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12.10. LTE Band 2

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	18700	1860.0	1	49	22.50	22.50	1.060	1.060	0.626	0.626	
						50	24	22.50	21.60	0.827	1.017	0.488	0.600	
			16	18900	1880.0	1	49	22.50	22.50	1.130	1.130	0.668	0.668	
						50	49	22.50	21.60	0.891	1.096	0.525	0.646	
						100	0	22.50	21.60	0.865	1.064	0.511	0.629	
			16	19100	1900.0	1	49	22.50	22.50	1.130	1.130	0.664	0.664	
						50	0	22.50	21.60	0.887	1.091	0.521	0.641	
		Edge 1	16	18700	1860.0	1	49	22.50	22.50	1.090	1.090	0.670	0.670	
						50	24	22.50	21.60	0.837	1.030	0.513	0.631	
			16	18900	1880.0	1	49	22.50	22.50	1.150	1.150	0.705	0.705	10
						50	49	22.50	21.60	0.891	1.096	0.549	0.675	
						100	0	22.50	21.60	0.893	1.099	0.548	0.674	
			16	19100	1900.0	1	49	22.50	22.50	1.120	1.120	0.685	0.685	
						50	0	22.50	21.60	0.890	1.095	0.544	0.669	
		Edge 2	0	18700	1860.0	1	49	22.50	22.50	1.070	1.070	0.514	0.514	
			0	18900	1880.0	1	49	22.50	22.50	0.889	0.889	0.437	0.437	
						50	49	22.50	21.60	0.748	0.920	0.363	0.447	
						100	0	22.50	21.60	0.789	0.971	0.381	0.469	
			0	18900	1880.0	1	49	22.50	22.50	1.030	1.030	0.486	0.486	
On (Second Stage)	QPSK	Rear	0	18700	1860.0	1	49	13.25	13.11	1.090	1.126	0.535	0.553	
						50	24	13.25	13.15	1.090	1.115	0.528	0.540	
			0	18900	1880.0	1	0	13.25	13.14	1.100	1.128	0.531	0.545	
						50	0	13.25	13.16	1.060	1.082	0.519	0.530	
						100	0	13.25	13.24	1.100	1.103	0.532	0.533	
			0	19100	1900.0	1	0	13.25	13.08	1.090	1.134	0.532	0.553	
						50	0	13.25	13.08	1.060	1.102	0.518	0.539	
		Edge 1	0	18700	1860.0	1	49	13.25	13.11	0.780	0.806	0.381	0.393	
						50	24	13.25	13.15	0.764	0.782	0.375	0.384	
			0	18900	1880.0	1	0	13.25	13.14	0.783	0.803	0.381	0.391	
						50	0	13.25	13.16	0.793	0.810	0.377	0.385	
						100	0	13.25	13.24	0.808	0.810	0.391	0.392	
			0	19100	1900.0	1	0	13.25	13.08	0.858	0.892	0.415	0.432	
						50	0	13.25	13.08	0.844	0.878	0.408	0.424	

Note(s):

1. 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

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12.11. LTE Band 4

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	20175	1732.5	1	49	23.00	23.00	0.788	0.788	0.469	0.469	
						50	24	23.00	23.00	0.595	0.595	0.352	0.352	
		Edge 1	16	20050	1720.0	1	49	23.00	23.00	0.956	0.956	0.579	0.579	
			16	20175	1732.5	1	49	23.00	23.00	1.010	1.010	0.612	0.612	
						50	24	23.00	23.00	0.771	0.771	0.465	0.465	
						100	0	23.00	23.00	0.777	0.777	0.469	0.469	
			16	20300	1745.0	1	49	23.00	23.00	1.050	1.050	0.637	0.637	11
		Edge 2	0	20175	1732.5	1	49	23.00	23.00	0.771	0.771	0.372	0.372	
						50	24	23.00	23.00	0.604	0.604	0.292	0.292	
On (Second Stage)	QPSK	Rear	0	20050	1720.0	1	49	13.25	12.80	0.967	1.073	0.459	0.509	
						50	24	13.25	12.80	0.971	1.077	0.465	0.516	
			0	20175	1732.5	1	49	13.25	13.20	1.010	1.022	0.484	0.490	
						50	24	13.25	13.20	0.994	1.006	0.479	0.485	
						100	0	13.25	12.80	1.000	1.109	0.479	0.531	
			0	20300	1745.0	1	49	13.25	12.80	1.020	1.131	0.486	0.539	
						50	24	13.25	12.80	1.030	1.142	0.492	0.546	
		Edge 1	0	20175	1732.5	1	49	13.25	13.20	0.771	0.780	0.378	0.382	
						50	24	13.25	13.20	0.772	0.781	0.380	0.384	

12.12. LTE Band 5

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	20525	836.5	1	24	24.00	23.90	0.501	0.513	0.341	0.349	
						25	12	24.00	23.40	0.454	0.521	0.307	0.352	
		Edge 1	16	20525	836.5	1	24	24.00	23.90	0.393	0.402	0.268	0.274	
						25	12	24.00	23.40	0.373	0.428	0.253	0.290	
		Edge 2	0	20525	836.5	1	24	24.00	23.90	0.616	0.630	0.355	0.363	
						25	12	24.00	23.40	0.588	0.675	0.328	0.377	
On (Second Stage)	QPSK	Rear	0	20450	829.0	1	24	19.00	18.60	0.999	1.095	0.525	0.576	
						25	12	19.00	18.75	1.000	1.059	0.526	0.557	
			0	20525	836.5	1	0	19.00	18.75	1.000	1.059	0.534	0.566	12
						25	24	19.00	18.75	0.992	1.051	0.519	0.550	
						50	0	19.00	18.75	1.000	1.059	0.523	0.554	
			0	20600	844.0	1	0	19.00	18.70	1.000	1.072	0.524	0.561	
						25	12	19.00	18.70	0.995	1.066	0.518	0.555	
		Edge 1	0	20450	829.0	1	24	19.00	18.60	0.815	0.894	0.462	0.507	
						25	12	19.00	18.75	0.823	0.872	0.463	0.490	
			0	20525	836.5	1	0	19.00	18.75	0.842	0.892	0.474	0.502	
						25	24	19.00	18.75	0.830	0.879	0.464	0.491	
						50	0	19.00	18.75	0.828	0.877	0.464	0.491	
			0	20600	844.0	1	0	19.00	18.70	0.830	0.889	0.466	0.499	
						25	12	19.00	18.70	0.803	0.860	0.450	0.482	

Note(s):

1. 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

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12.13. LTE Band 13

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	23230	782.0	1	24	24.00	23.80	0.386	0.404	0.262	0.274	
						25	0	24.00	22.70	0.300	0.405	0.203	0.274	
		Edge 1	16	23230	782.0	1	24	24.00	23.80	0.234	0.245	0.160	0.168	
						25	0	24.00	22.70	0.188	0.254	0.129	0.174	
		Edge 2	0	23230	782.0	1	24	24.00	23.80	0.459	0.481	0.255	0.267	
						25	0	24.00	22.70	0.355	0.479	0.197	0.266	
On (Second Stage)	QPSK	Rear	0	23230	782.0	1	49	19.0	19.0	1.170	1.170	0.619	0.619	13
						25	12	19.0	19.0	1.160	1.160	0.610	0.610	
						50	0	19.0	19.0	1.140	1.140	0.602	0.602	
		Edge 1	0	23230	782.0	1	49	19.0	19.0	0.774	0.774	0.419	0.419	
						25	12	19.0	19.0	0.803	0.803	0.441	0.441	
						50	0	19.0	19.0	0.797	0.797	0.432	0.432	

12.14. LTE Band 17

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	23790	710.0	1	0	25.00	24.90	0.264	0.270	0.185	0.189	
						25	12	25.00	23.80	0.221	0.291	0.153	0.202	
		Edge 1	16	23790	710.0	1	0	25.00	24.90	0.199	0.204	0.142	0.145	
						25	12	25.00	23.80	0.150	0.198	0.107	0.141	
		Edge 2	0	23790	710.0	1	0	25.00	24.90	0.264	0.270	0.142	0.145	
						25	12	25.00	23.80	0.202	0.266	0.113	0.149	
On (Second Stage)	QPSK	Rear	0	23790	710.0	1	24	18.75	18.61	1.080	1.115	0.576	0.595	
						25	12	18.75	18.68	1.070	1.087	0.571	0.580	
						50	0	18.75	18.75	1.090	1.090	0.568	0.568	14
		Edge 1	0	23790	710.0	1	24	18.75	18.61	0.876	0.905	0.415	0.429	
						25	12	18.75	18.68	0.869	0.883	0.415	0.422	
						50	0	18.75	18.75	0.852	0.852	0.406	0.406	

Note(s):

1. 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

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12.15. LTE Band 25

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	26140	1860.0	1	49	22.5	22.5	0.971	0.971	0.578	0.578	
						50	0	22.5	21.7	0.760	0.914	0.455	0.547	
			16	26365	1882.5	1	49	22.5	22.5	1.030	1.030	0.616	0.616	
						50	24	22.5	21.6	0.797	0.981	0.474	0.583	
						100	0	22.5	21.5	0.793	0.998	0.471	0.593	
			16	26590	1905.0	1	49	22.5	22.5	1.070	1.070	0.637	0.637	
						50	24	22.5	21.6	0.811	0.998	0.480	0.591	
		Edge 1	16	26140	1860.0	1	49	22.5	22.5	1.080	1.080	0.665	0.665	
						50	0	22.5	21.7	0.847	1.018	0.521	0.626	
			16	26365	1882.5	1	49	22.5	22.5	1.170	1.170	0.720	0.720	15
						50	24	22.5	21.6	0.897	1.104	0.550	0.677	
						100	0	22.5	21.5	0.891	1.122	0.547	0.689	
			16	26590	1905.0	1	49	22.5	22.5	1.120	1.120	0.687	0.687	
						50	24	22.5	21.6	0.857	1.054	0.526	0.647	
		Edge 2	0	26140	1860.0	1	49	22.5	22.5	1.080	1.080	0.517	0.517	
						50	0	22.5	21.7	0.849	1.021	0.409	0.492	
			0	26365	1882.5	1	49	22.5	22.5	0.974	0.974	0.473	0.473	
						50	24	22.5	21.6	0.797	0.981	0.381	0.469	
						100	0	22.5	21.5	0.799	1.006	0.384	0.483	
			0	26590	1905.0	1	49	22.5	22.5	1.060	1.060	0.500	0.500	
						50	24	22.5	21.6	0.823	1.013	0.386	0.475	
On (Second Stage)	QPSK	Rear	0	26140	1860.0	1	49	13.25	13.05	1.090	1.141	0.536	0.561	
						50	0	13.25	13.10	1.120	1.159	0.549	0.568	
			0	26365	1882.5	1	49	13.25	13.10	1.130	1.170	0.547	0.566	
						50	24	13.25	13.09	1.110	1.152	0.541	0.561	
						100	0	13.25	13.11	1.100	1.136	0.534	0.551	
			0	26590	1905.0	1	99	13.25	13.14	1.100	1.128	0.539	0.553	
						50	24	13.25	13.07	1.030	1.074	0.513	0.535	
		Edge 1	0	26140	1860.0	1	49	13.25	13.05	0.767	0.803	0.383	0.401	
						50	0	13.25	13.10	0.795	0.823	0.394	0.408	
			0	26365	1882.5	1	49	13.25	13.11	0.829	0.856	0.406	0.419	
						50	24	13.25	13.09	0.826	0.857	0.402	0.417	
						100	0	13.25	13.11	0.811	0.838	0.397	0.410	
			0	26590	1905.0	1	99	13.25	13.14	0.902	0.925	0.441	0.452	
						50	24	13.25	13.07	0.855	0.891	0.416	0.434	

Note(s):

1. 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

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12.16. LTE Band 26

Proximity Sensor State	Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	UL RB Allocation	UL RB Start	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Off	QPSK	Rear	16	26763	821.3	1	12	23.50	23.50	0.454	0.454	0.312	0.312	
						12	6	23.50	22.50	0.358	0.451	0.246	0.310	
		Edge 1	16	26763	821.3	1	12	23.50	23.50	0.343	0.343	0.234	0.234	
						12	6	23.50	22.50	0.272	0.342	0.186	0.234	
		Edge 2	0	26763	821.3	1	12	23.50	23.50	0.527	0.527	0.296	0.296	
						12	6	23.50	22.50	0.407	0.512	0.230	0.290	
On (Second Stage)	QPSK	Rear	0	26763	821.3	1	24	19.00	18.75	1.020	1.080	0.531	0.562	
						12	11	19.00	18.75	1.020	1.080	0.537	0.569	16
						25	0	19.00	18.75	0.977	1.035	0.516	0.547	
		Edge 1	0	26763	821.3	1	24	19.00	18.75	0.756	0.801	0.424	0.449	
						12	11	19.00	18.75	0.766	0.811	0.428	0.453	

Note(s):

1. 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

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12.17. WiFi DTS Bands

12.17.1. 2.4 GHz Band

BOM #1

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
2.4 GHz	802.11b	1 Tx	Rear	0	6	2437	16.0	16.0			0.088	0.042	0.088	0.042					
			Edge 3	0	1	2412	16.0	16.0			0.803	0.257	0.803	0.257					
					6	2437	16.0	16.0			0.950	0.304	0.950	0.304					
					11	2462	16.0	16.0			1.100	0.353	1.100	0.353					
			Edge 4	0	6	2437	16.0	16.0			0.164	0.078	0.164	0.078					
		1 Tx	Rear	0	6	2437			16.0	16.0					0.084	0.038	0.084	0.038	
			Edge 2	0	6	2437			16.0	16.0					0.163	0.075	0.163	0.075	
			Edge 3	0	1	2412			16.0	16.0					0.978	0.315	0.978	0.315	
					6	2437			16.0	16.0					1.160	0.375	1.160	0.375	
					11	2462			16.0	16.0					1.110	0.361	1.110	0.361	
	802.11g CDD MIMO	2 Tx	Rear	0	6	2437	16.0	16.0	16.0	16.0	0.086	0.041	0.086	0.041	0.080	0.037	0.080	0.037	
			Edge 2	0	6	2437	16.0	16.0	16.0	16.0					0.213	0.099	0.213	0.099	
			Edge 3	0	2	2417	16.0	16.0	16.0	16.0	0.844	0.271	0.844	0.271	1.090	0.355	1.090	0.355	
					6	2437	16.0	16.0	16.0	16.0	0.864	0.276	0.864	0.276	1.190	0.386	**1.190**	0.386	17
					10	2457	16.0	16.0	16.0	16.0	0.989	0.322	0.989	0.322	0.937	0.306	0.937	0.306	
			Edge 4	0	6	2437	16.0	16.0	16.0	16.0	0.175	0.082	0.175	0.082					

BOM #2

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
2.4 GHz	802.11g CDD MIMO	2 Tx	Edge 3	0	6	2437	16.0	16.0	16.0	16.0	0.779	0.257	0.779	0.257	0.951	0.307	0.951	0.307	

Note(s):

1. 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

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12.17.2. 5.8 GHz Band

BOM #1

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.8 GHz	802.11a	1 Tx	Rear	0	165	5825	16.0	16.0			0.066	0.030	0.066	0.030					
			Edge 3	0	149	5745	16.0	16.0			0.879	0.283	0.879	0.283					
					157	5785	16.0	16.0			0.836	0.264	0.836	0.264					
					165	5825	16.0	16.0			0.964	0.307	0.964	0.307					
			Edge 4	0	165	5825	16.0	16.0			0.108	0.050	0.108	0.050					
		1 Tx	Rear	0	165	5825			16.0	16.0					0.070	0.038	0.070	0.038	
			Edge 2	0	165	5825			16.0	16.0					0.105	0.042	0.105	0.042	
			Edge 3	0	149	5745			16.0	16.0					0.786	0.282	0.786	0.282	
					157	5785			16.0	16.0					0.845	0.291	0.845	0.291	
					165	5825			16.0	16.0					0.907	0.315	0.907	0.315	
	802.11a CDD MIMO	2 Tx	Rear	0	165	5825	16.0	16.0	16.0	16.0	0.081	0.040	0.081	0.040	0.080	0.036	0.080	0.036	
			Edge 2	0	165	5825	16.0	16.0	16.0	16.0					0.161	0.070	0.161	0.070	
			Edge 3	0	149	5745	16.0	16.0	16.0	16.0	1.010	0.326	1.010	0.326	0.834	0.296	0.834	0.296	
					157	5785	16.0	16.0	16.0	16.0	1.080	0.350	1.080	0.350	0.859	0.318	0.859	0.318	
					165	5825	16.0	16.0	16.0	16.0	1.090	0.340	**1.090**	0.340	0.923	0.329	0.923	0.329	18
			Edge 4	0	165	5825	16.0	16.0	16.0	16.0	0.163	0.068	0.163	0.068					

BOM #2

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.8 GHz	802.11a CDD MIMO	2 Tx	Edge 3	0	165	5825	16.0	16.0	16.0	16.0	0.895	0.293	0.895	0.293	0.806	0.277	0.806	0.277	

Note(s):

1. 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

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12.18. WiFi UNII Bands

12.18.1. 5.2 GHz Band

BOM #1

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.2 GHz	802.11a	1 Tx	Rear	0	48	5240	14.0	14.0			0.046	0.015	0.046	0.015					
			Edge 3	0	48	5240	14.0	14.0			0.461	0.148	0.461	0.148					
			Edge 4	0	48	5240	14.0	14.0			0.058	0.022	0.058	0.022					
		1 Tx	Rear	0	48	5240			14.0	14.0					0.065	0.024	0.065	0.024	
			Edge 2	0	48	5240			14.0	14.0					0.056	0.021	0.056	0.021	
			Edge 3	0	48	5240			14.0	14.0					0.512	0.175	0.512	0.175	
	802.11n HT40 SISO	1 Tx	Rear	0	46	5230	16.0	16.0			0.087	0.033	0.087	0.033					
			Edge 3	0	38	5190	13.0	13.0			0.374	0.117	0.374	0.117					
				0	46	5230	16.0	16.0			0.950	0.317	**0.950**	0.317					19
			Edge 4	0	46	5230	16.0	16.0			0.139	0.049	0.139	0.049					
		1 Tx	Rear	0	46	5230			16.0	16.0					0.087	0.029	0.087	0.029	
			Edge 2	0	46	5230			16.0	16.0					0.014	0.005	0.014	0.005	
			Edge 3	0	38	5190			13.0	13.0					0.447	0.150	0.447	0.150	
				0	46	5230			16.0	16.0					0.850	0.270	0.850	0.270	
	802.11a CDD MIMO	2 Tx	Rear	0	48	5240	10.5	10.5	10.5	10.5	0.028	0.011	0.028	0.011	0.027	0.010	0.027	0.010	
			Edge 2	0	48	5240	10.5	10.5	10.5	10.5					0.020	0.007	0.020	0.007	
			Edge 3	0	48	5240	10.5	10.5	10.5	10.5	0.209	0.072	0.209	0.072	0.203	0.065	0.203	0.065	
			Edge 4	0	48	5240	10.5	10.5	10.5	10.5	0.027	0.011	0.027	0.011					
	802.11n HT40 STBC MIMO	2 Tx	Rear	0	46	5230	13.5	13.5	13.5	13.5	0.052	0.018	0.052	0.018	0.048	0.018	0.048	0.018	
			Edge 2	0	46	5230	13.5	13.5	13.5	13.5					0.063	0.022	0.063	0.022	
			Edge 3	0	46	5230	13.5	13.5	13.5	13.5	0.551	0.178	0.551	0.178	0.488	0.165	0.488	0.165	
			Edge 4	0	46	5230	13.5	13.5	13.5	13.5	0.088	0.034	0.088	0.034					

BOM #2

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.2 GHz	802.11n HT40 SISO	1 Tx	Edge 3	0	46	5230	16.0	16.0			0.827	0.278	0.827	0.278					

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12.18.2. 5.3 GHz Band

BOM #1

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.3 GHz	802.11a	1 Tx	Rear	0	60	5300	16.5	16.5			0.056	0.019	0.056	0.019					
			Edge 3	0	52	5260	16.5	16.5			0.893	0.293	0.893	0.293					
					60	5300	16.5	16.5			0.958	0.309	0.958	0.309					
			Edge 4	0	52	5260	16.5	16.5			0.124	0.042	0.124	0.042					
		1 Tx	Rear	0	60	5300			16.5	16.5					0.080	0.029	0.080	0.029	
			Edge 2	0	60	5300			16.5	16.5					0.089	0.029	0.089	0.029	
			Edge 3	0	52	5260			16.5	16.5					1.050	0.359	1.050	0.359	
					60	5300			16.5	16.5					1.090	0.372	1.090	0.372	
	802.11a CDD MIMO	2 Tx	Rear	0	60	5300	16.5	16.5	16.5	16.5	0.054	0.017	0.054	0.017	0.074	0.027	0.074	0.027	
			Edge 2	0	60	5300	16.5	16.5	16.5	16.5					0.105	0.035	0.105	0.035	
			Edge 3	0	52	5260	16.5	16.5	16.5	16.5	0.971	0.323	0.971	0.323	1.010	0.341	1.010	0.341	
					60	5300	16.5	16.5	16.5	16.5	1.040	0.347	1.040	0.347	1.180	0.335	**1.180**	0.335	20
			Edge 4	0	60	5300	16.5	16.5	16.5	16.5	0.173	0.058	0.173	0.058					

BOM #2

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.3 GHz	802.11a CDD MIMO	2 Tx	Edge 3	0	60	5300	16.5	16.5	16.5	16.5	0.992	0.326	0.992	0.326	1.050	0.367	1.050	0.367	

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12.18.3. 5.5 GHz Band

BOM #1

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.5 GHz	802.11a	1 Tx	Rear	0	116	5580	16.5	16.5			0.052	0.016	0.052	0.016					
			Edge 3	0	104	5580	16.5	16.5			0.803	0.255	0.803	0.255					
					116	5520	16.5	16.5			0.828	0.259	0.828	0.259					
					124	5580	16.5	16.5			0.931	0.295	0.931	0.295					
					136	5620	16.5	16.5			1.020	0.321	1.020	0.321					
			Edge 4	0	116	5580	16.5	16.5			0.104	0.036	0.104	0.036					
		1 Tx	Rear	0	116	5580			16.5	16.5					0.064	0.018	0.064	0.018	
			Edge 2	0	116	5580			16.5	16.5					0.064	0.024	0.064	0.024	
			Edge 3	0	104	5520			16.5	16.5					0.825	0.275	0.825	0.275	
					116	5580			16.5	16.5					0.799	0.270	0.799	0.270	
					124	5620			16.5	16.5					0.796	0.268	0.796	0.268	
					136	5680			16.5	16.5					0.768	0.258	0.768	0.258	
	802.11a CDD MIMO	2 Tx	Rear	0	116	5580	16.0	16.0	16.0	16.0	0.062	0.024	0.062	0.024	0.072	0.021	0.072	0.021	
			Edge 2	0	116	5580	16.0	16.0	16.0	16.0					0.065	0.021	0.065	0.021	
			Edge 3	0	104	5520	16.0	16.0	16.0	16.0	0.704	0.213	0.704	0.213	0.747	0.253	0.747	0.253	
					116	5580	16.0	16.0	16.0	16.0	0.770	0.230	0.770	0.230	0.739	0.249	0.739	0.249	
					124	5620	16.0	16.0	16.0	16.0	0.810	0.245	0.810	0.245	0.736	0.241	0.736	0.241	
					136	5680	16.0	16.0	16.0	16.0	0.860	0.264	0.860	0.264	0.773	0.258	0.773	0.258	
			Edge 4	0	116	5580	16.0	16.0	16.0	16.0	0.087	0.026	0.087	0.026					
	802.11n HT20 STBC MIMO	2 Tx	Rear	0	120	5600	16.5	16.5	16.5	16.5	0.069	0.020	0.069	0.020	0.073	0.020	0.073	0.020	
			Edge 2	0	120	5600	16.5	16.5	16.5	16.5					0.091	0.029	0.091	0.029	
			Edge 3	0	104	5520	16.5	16.5	16.5	16.5	0.821	0.258	0.821	0.258	0.911	0.311	0.911	0.311	
					120	5600	16.5	16.5	16.5	16.5	0.890	0.282	0.890	0.282	0.910	0.310	0.910	0.310	
					136	5680	16.5	16.5	16.5	16.5	0.853	0.289	0.853	0.289	1.110	0.330	**1.110**	0.330	21
			Edge 4	0	120	5600	16.5	16.5	16.5	16.5	0.146	0.047	0.146	0.047					

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SAR Test Results for 5.5 GHz Band (continued)

BOM #2

Band	Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)				SAR (W/kg)								Plot No.
							WiFi 1		WiFi 2		WiFi 1				WiFi 2				
							Tune-up Limit	Measured	Tune-up Limit	Measured	Measured		Scaled		Measured		Scaled		
											1-g	10-g	1-g	10-g	1-g	10-g	1-g	10-g	
5.5 GHz	802.11n HT20 STBC MIMO	2 Tx/ Wi-Fi 1 + Wi-Fi 2	Edge 3	0	136	5680	16.5	16.5	16.5	16.5	0.783	0.280	0.783	0.280	1.010	0.309	1.010	0.309	

Note(s):

1. 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

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12.18.4. Bluetooth (DTS Band)

BOM #1

Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
GFSK	1 Tx	Rear	0	39	2441	13.0	12.9	0.047	0.048	0.022	0.023	
		Edge 2	0	39	2441	13.0	12.9	0.001	0.001	< 0.001	< .001	
		Edge 3	0	39	2441	13.0	12.9	0.358	0.366	0.114	0.117	22
		Edge 4	0	39	2441	13.0	12.9	0.060	0.061	0.028	0.029	

BOM #2

Mode	Tx Condition/ Tx Antenna	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
						Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
GFSK	1 Tx	Edge 3	0	39	2441	13.0	12.9	0.326	0.334	0.105	0.107	

Note(s):

1. 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

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13. SAR Measurement Variability

In accordance with published RF Exposure KDB procedure 865664 D01 SAR measurement 100 MHz to 6 GHz v01. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

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

13.1. The Highest Measured SAR Configuration in Each Frequency Band

Frequency Band (MHz)	Air Interface	Body
850	GSM 850	1.140 W/kg
	CDMA BC0	1.170 W/kg
	CDMA BC10	1.180 W/kg
	W-CDMA Band 5	1.190 W/kg
	LTE Band 5	1.000 W/kg
	LTE Band 26	1.020 W/kg
1900	GSM 1900	1.050 W/kg
	CDMA BC1	1.140 W/kg
	W-CDMA Band 2	1.170 W/kg
	LTE Band 2	1.150 W/kg
	LTE Band 25	1.17 W/kg
1700	CDMA BC15	1.160 W/kg
	W-CDMA Band 4	1.180 W/kg
	LTE Band 4	1.050 W/kg
700	LTE Band 13	1.170 W/kg
	LTE Band 17	1.090 W/kg
2400	WiFi 802.11b/g/n	1.190 W/kg
	Bluetooth	<0.800 W/kg
5200	WiFi 802.11a/n	0.950 W/kg
5300	WiFi 802.11a/n	1.180 W/kg
5500	WiFi 802.11a/n	1.110 W/kg
5800	WiFi 802.11a/n	1.090 W/kg

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13.2. Repeated Measurement Results

Frequency band	Test Position	Proximity Sensor State	Mode	Ch #.	Freq. (MHz)	Meas. SAR (W/kg)		Largest to Smallest SAR Ratio	Note
						Original	Repeated		
W-CDMA Band 5	Rear	On	Rel 99 RMC 12.2kbps	4233	846.6	1.190	1.160	1.03	1
LTE Band 25	Edge 1	Off	QPSK RB1,49	26365	1882.5	1.170	1.170	1.00	1
W-CDMA Band 4	Rear	On	Rel 99 RMC 12.2kbps	1312	1712.4	1.180	1.130	1.04	1
LTE Band 13	Rear	On	QPSK RB1,49	23230	782.0	1.170	1.160	1.01	1

Band	Test Position	Mode	No. of Transmitters	Ch. #	Freq. (MHz)	1-g SAR (W/kg)		1-g SAR (W/kg)		Largest to Smallest SAR Ratio		Note
						Original		Repeated				
						WiFi 1	WiFi 2	WiFi 1	WiFi 2	WiFi 1	WiFi 2	
2.4GHz	Edge 3	802.11g CDD	2Tx	6	2437	**0.864**	1.190	**0.899**	1.180	1.04	1.01	1
5.3GHz	Edge 3	802.11n HT40	1 Tx	46	5230	0.950		0.889		1.07		1
5.3GHz	Edge 3	802.11a CDD	2 Tx	60	5300	1.040	1.180	1.040	1.070	1.00	1.10	1
5.5GHz	Edge 3	802.11n HT 20 STBC	2 Tx	136	5680	0.853	1.110	0.984	**1.140**	1.15	1.03	1
5.8GHz	Edge 3	802.11a CDD	2 Tx	165	5825	1.090	0.923	1.070	0.909	1.02	1.02	1

Note(s):

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

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14. Simultaneous Transmission SAR Analysis

KDB 447498 D01 General RF Exposure Guidance v05, 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 $\mathbf{[(x_1-x_2)^2 + (y_1-y_2)^2 + (z_1-z_2)^2]}$

A new threshold of 0.04 is also introduced in the draft KDB. Thus, 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:

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

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14.1. 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

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14.1.1. 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. A sensor triggering of 16 mm is included for both Rear and Edge 1																
Cellular	GPRS 2 Slots	848.8	32.50	445	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	GPRS 2 Slots	1909.8	29.00	199	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	W-CDMA 5	846.6	24.50	282	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	W-CDMA 4	1752.6	23.00	200	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	W-CDMA 2	1907.6	22.50	178	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC0	848.31	24.50	282	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC1	1908.75	22.50	178	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC10	823.1	25.00	316	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC15	1753.75	23.00	200	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 2	1900	22.50	178	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 4	1754.3	23.00	200	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 5	844	24.00	251	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 13	782	24.00	251	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 17	710	25.00	316	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 25	1905	22.50	178	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 26	821.3	23.50	224	17.4	18.4	24.8	227.8	98.6		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A

Use of WWAN estimated SAR in simultaneous transmission SAR analysis

- Edge 4: For wireless technologies and bands that qualify for SAR test exclusion and estimation, the value of **0.400** W/kg from the table above is used in simultaneous transmission analysis, and distinguished from measured SAR values with green text.

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14.1.2. Estimated SAR for WiFi and Bluetooth

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
WiFi 1 / Bluetooth																
WiFi1	WiFi 2.4 GHz	2462	16.00	40	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
WiFi1	WiFi 5.2 GHz	5230	16.00	40	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
WiFi1	WiFi 5.3 GHz	5300	16.50	45	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
WiFi1	WiFi 5.5 GHz	5680	16.50	45	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
WiFi1	WiFi 5.8 GHz	5825	16.00	40	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
WiFi1	Bluetooth	2402	13.00	20	6.3	227.6	137.7	5	11		-MEASURE-	0.400	0.400	-MEASURE-	0.376	N/A
WiFi 2																
WiFi2	WiFi 2.4 GHz	2462	16.00	40	6.3	227.6	12	5	135.4		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
WiFi2	WiFi 5.2 GHz	5230	16.00	40	6.3	227.6	12	5	135.4		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
WiFi2	WiFi 5.3 GHz	5300	16.50	45	6.3	227.6	12	5	135.4		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
WiFi2	WiFi 5.5 GHz	5680	16.50	45	6.3	227.6	12	5	135.4		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
WiFi2	WiFi 5.8 GHz	5825	16.00	40	6.3	227.6	12	5	135.4		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A

Use of WiFi estimated SAR in simultaneous transmission SAR analysis

- Edge 2 for Bluetooth: Even though Bluetooth qualifies for test exclusion and SAR estimation at Edge 2, the estimated values were deemed too conservative. SAR measurement was subsequently made, with the resultant value of therefore made, with the resultant reported SAR value of **0.007 W/kg** used to Bluetooth in simultaneous transmission analysis.

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14.2. Sum of the SAR for GSM850 + WiFi + Bluetooth

14.2.1. GSM 850 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		GSM 850	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.140	0.088				1.228	No
		1.140		0.084			1.224	No
		1.140			0.086		1.226	No
		1.140				0.048	1.188	No
	Edge 2	0.664		0.163			0.827	No
		0.664			0.213		0.877	No
		0.664				0.001	0.665	No
	Edge 4	0.127	0.175				0.302	No
		0.127		0.163			0.290	No
		0.127				0.061	0.188	No

14.2.2. GSM 850 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		GSM850	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.140	0.066						0.048	1.254	No
		1.140		0.070					0.048	1.258	No
		1.140			0.081				0.048	1.269	No
		1.140				0.087			0.048	1.275	No
		1.140					0.087		0.048	1.275	No
		1.140						0.074	0.048	1.262	No
	Edge 2	0.664		0.105					0.001	0.770	No
		0.664			0.161				0.001	0.826	No
		0.664					0.089		0.001	0.754	No
		0.664						0.105	0.001	0.770	No
	Edge 4	0.127	0.108						0.061	0.296	No
		0.127			0.163				0.061	0.351	No
		0.127				0.139			0.061	0.327	No
		0.127						0.173	0.061	0.361	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.3. Sum of the SAR for GSM1900 + WiFi + Bluetooth

14.3.1. GSM 1900 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		GSM 1900	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.129	0.088				1.217	No
		1.129		0.084			1.213	No
		1.129			0.086		1.215	No
		1.129				0.048	1.177	No
	Edge 2	0.759		0.163			0.922	No
		0.759			0.213		0.972	No
		0.759				0.001	0.760	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.3.2. GSM 1900 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		GSM1900	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.129	0.066						0.048	1.243	No
		1.129		0.070					0.048	1.247	No
		1.129			0.081				0.048	1.258	No
		1.129				0.087			0.048	1.264	No
		1.129					0.087		0.048	1.264	No
		1.129						0.074	0.048	1.251	No
	Edge 2	0.759		0.105					0.001	0.865	No
		0.759			0.161				0.001	0.921	No
		0.759					0.089		0.001	0.849	No
		0.759						0.105	0.001	0.865	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.4. Sum of the SAR for W-CDMA Band 5 + WiFi + Bluetooth

14.4.1. W-CDMA Band 5 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 5	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.190	0.088				1.278	No
		1.190		0.084			1.274	No
		1.190			0.086		1.276	No
		1.190				0.048	1.238	No
	Edge 2	0.565		0.163			0.728	No
		0.565			0.213		0.778	No
		0.565				0.001	0.566	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.4.2. W-CDMA Band 5 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 5	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.190	0.066						0.048	1.304	No
		1.190		0.070					0.048	1.308	No
		1.190			0.081				0.048	1.319	No
		1.190				0.087			0.048	1.325	No
		1.190					0.087		0.048	**1.325**	No
		1.190						0.074	0.048	1.312	No
	Edge 2	0.565		0.105					0.001	0.671	No
		0.565			0.161				0.001	0.727	No
		0.565					0.089		0.001	0.655	No
		0.565						0.105	0.001	0.671	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.5. Sum of the SAR for W-CDMA Band 2 + WiFi + Bluetooth

14.5.1. W-CDMA Band 2 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 2	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.172	0.088				1.260	No
		1.172		0.084			1.256	No
		1.172			0.086		1.258	No
		1.172				0.048	1.220	No
	Edge 2	0.772		0.163			0.935	No
		0.772			0.213		0.985	No
		0.772				0.001	0.773	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.5.2. W-CDMA Band 2 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 2	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.172	0.066						0.048	1.286	No
		1.172		0.070					0.048	1.290	No
		1.172			0.081				0.048	1.301	No
		1.172				0.087			0.048	1.307	No
		1.172					0.087		0.048	1.307	No
		1.172						0.074	0.048	1.294	No
	Edge 2	0.772		0.105					0.001	0.878	No
		0.772			0.161				0.001	0.934	No
		0.772					0.089		0.001	0.862	No
		0.772						0.105	0.001	0.878	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.6. Sum of the SAR for W-CDMA Band 4 + WiFi + Bluetooth

14.6.1. W-CDMA Band 4 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 4	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.180	0.088				1.268	No
		1.180		0.084			1.264	No
		1.180			0.086		1.266	No
		1.180				0.048	1.228	No
	Edge 2	0.877		0.163			1.040	No
		0.877			0.213		1.090	No
		0.877				0.001	0.878	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.6.2. W-CDMA Band 4 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		W-CDMA Band 4	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.180	0.066						0.048	1.294	No
		1.180		0.070					0.048	1.298	No
		1.180			0.081				0.048	1.309	No
		1.180				0.087			0.048	1.315	No
		1.180					0.087		0.048	1.315	No
		1.180						0.074	0.048	1.302	No
	Edge 2	0.877		0.105					0.001	0.983	No
		0.877			0.161				0.001	1.039	No
		0.877					0.089		0.001	0.967	No
		0.877						0.105	0.001	0.983	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.7. Sum of the SAR for CDMA BC0 + WiFi + Bluetooth

14.7.1. CDMA BC0 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC0	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.177	0.088				1.265	No
		1.177		0.084			1.261	No
		1.177			0.086		1.263	No
		1.177				0.048	1.225	No
	Edge 2	0.548		0.163			0.711	No
		0.548			0.213		0.761	No
		0.548				0.001	0.549	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.7.2. CDMA BC0 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC0	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.177	0.066						0.048	1.291	No
		1.177		0.070					0.048	1.295	No
		1.177			0.081				0.048	1.306	No
		1.177				0.087			0.048	1.312	No
		1.177					0.087		0.048	1.312	No
		1.177						0.074	0.048	1.299	No
	Edge 2	0.548		0.105					0.001	0.654	No
		0.548			0.161				0.001	0.710	No
		0.548					0.089		0.001	0.638	No
		0.548						0.105	0.001	0.654	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.8. Sum of the SAR for CDMA BC1 + WiFi + Bluetooth

14.8.1. CDMA BC1 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC1	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.144	0.088				1.232	No
		1.144		0.084			1.228	No
		1.144			0.086		1.230	No
		1.144				0.048	1.192	No
	Edge 2	0.850		0.163			1.013	No
		0.850			0.213		1.063	No
		0.850				0.001	0.851	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.8.2. CDMA BC1 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC1	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.144	0.066						0.048	1.258	No
		1.144		0.070					0.048	1.262	No
		1.144			0.081				0.048	1.273	No
		1.144				0.087			0.048	1.279	No
		1.144					0.087		0.048	1.279	No
		1.144						0.074	0.048	1.266	No
	Edge 2	0.850		0.105					0.001	0.956	No
		0.850			0.161				0.001	1.012	No
		0.850					0.089		0.001	0.940	No
		0.850						0.105	0.001	0.956	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.9. Sum of the SAR for CDMA BC10 + WiFi + Bluetooth

14.9.1. CDMA BC10 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC10	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.180	0.088				1.268	No
		1.180		0.084			1.264	No
		1.180			0.086		1.266	No
		1.180				0.048	1.228	No
	Edge 2	0.616		0.163			0.779	No
		0.616			0.213		0.829	No
		0.616				0.001	0.617	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.9.2. CDMA BC10 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC10	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.180	0.066						0.048	1.294	No
		1.180		0.070					0.048	1.298	No
		1.180			0.081				0.048	1.309	No
		1.180				0.087			0.048	1.315	No
		1.180					0.087		0.048	1.315	No
		1.180						0.074	0.048	1.302	No
	Edge 2	0.616		0.105					0.001	0.722	No
		0.616			0.161				0.001	0.778	No
		0.616					0.089		0.001	0.706	No
		0.616						0.105	0.001	0.722	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.10. Sum of the SAR for CDMA BC15 + WiFi + Bluetooth

14.10.1. CDMA BC15 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC15	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.165	0.088				1.253	No
		1.165		0.084			1.249	No
		1.165			0.086		1.251	No
		1.165				0.048	1.213	No
	Edge 2	0.933		0.163			1.096	No
		0.933			0.213		1.146	No
		0.933				0.001	0.934	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.10.2. CDMA BC15 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		CDMA BC15	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.165	0.066						0.048	1.279	No
		1.165		0.070					0.048	1.283	No
		1.165			0.081				0.048	1.294	No
		1.165				0.087			0.048	1.300	No
		1.165					0.087		0.048	1.300	No
		1.165						0.074	0.048	1.287	No
	Edge 2	0.933		0.105					0.001	1.039	No
		0.933			0.161				0.001	1.095	No
		0.933					0.089		0.001	1.023	No
		0.933						0.105	0.001	1.039	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.11. Sum of the SAR for LTE Band 2 + WiFi + Bluetooth

14.11.1. LTE Band 2 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 2	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.134	0.088				1.222	No
		1.134		0.084			1.218	No
		1.134			0.086		1.220	No
		1.134				0.048	1.182	No
	Edge 2	1.070		0.163			1.233	No
		1.070			0.213		1.283	No
		1.070				0.001	1.071	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.11.2. LTE Band 2 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 2	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.134	0.066						0.048	1.248	No
		1.134		0.070					0.048	1.252	No
		1.134			0.081				0.048	1.263	No
		1.134				0.087			0.048	1.269	No
		1.134					0.087		0.048	1.269	No
		1.134						0.074	0.048	1.256	No
	Edge 2	1.070		0.105					0.001	1.176	No
		1.070			0.161				0.001	1.232	No
		1.070					0.089		0.001	1.160	No
		1.070						0.105	0.001	1.176	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.12. Sum of the SAR for LTE Band 4 + WiFi + Bluetooth

14.12.1. LTE Band 4 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 4	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.142	0.088				1.230	No
		1.142		0.084			1.226	No
		1.142			0.086		1.228	No
		1.142				0.048	1.190	No
	Edge 2	0.771		0.163			0.934	No
		0.771			0.213		0.984	No
		0.771				0.001	0.772	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.12.2. LTE Band 4 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 4	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.142	0.066						0.048	1.256	No
		1.142		0.070					0.048	1.260	No
		1.142			0.081				0.048	1.271	No
		1.142				0.087			0.048	1.277	No
		1.142					0.087		0.048	1.277	No
		1.142						0.074	0.048	1.264	No
	Edge 2	0.771		0.105					0.001	0.877	No
		0.771			0.161				0.001	0.933	No
		0.771					0.089		0.001	0.861	No
		0.771						0.105	0.001	0.877	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.13. Sum of the SAR for LTE Band 5 + WiFi + Bluetooth

14.13.1. LTE Band 5 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 5	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.095	0.088				1.183	No
		1.095		0.084			1.179	No
		1.095			0.086		1.181	No
		1.095				0.048	1.143	No
	Edge 2	0.675		0.163			0.838	No
		0.675			0.213		0.888	No
		0.675				0.001	0.676	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.13.2. LTE Band 5 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 5	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.095	0.066						0.048	1.209	No
		1.095		0.070					0.048	1.213	No
		1.095			0.081				0.048	1.224	No
		1.095				0.087			0.048	1.230	No
		1.095					0.087		0.048	1.230	No
		1.095						0.074	0.048	1.217	No
	Edge 2	0.675		0.105					0.001	0.781	No
		0.675			0.161				0.001	0.837	No
		0.675					0.089		0.001	0.765	No
		0.675						0.105	0.001	0.781	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.14. Sum of the SAR for LTE Band 13 + WiFi + Bluetooth

14.14.1. LTE Band 13 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 13	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.182	0.088				1.270	No
		1.182		0.084			1.266	No
		1.182			0.086		1.268	No
		1.182				0.048	1.230	No
	Edge 2	0.481		0.163			0.644	No
		0.481			0.213		0.694	No
		0.481				0.001	0.482	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.14.2. LTE Band 13 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 13	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.182	0.066						0.048	1.296	No
		1.182		0.070					0.048	1.300	No
		1.182			0.081				0.048	1.311	No
		1.182				0.087			0.048	1.317	No
		1.182					0.087		0.048	1.317	No
		1.182						0.074	0.048	1.304	No
	Edge 2	0.481		0.105					0.001	0.587	No
		0.481			0.161				0.001	0.643	No
		0.481					0.089		0.001	0.571	No
		0.481						0.105	0.001	0.587	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.15. Sum of the SAR for LTE Band 17 + WiFi + Bluetooth

14.15.1. LTE Band 17 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 13	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.115	0.088				1.203	No
		1.115		0.084			1.199	No
		1.115			0.086		1.201	No
		1.115				0.048	1.163	No
	Edge 2	0.270		0.163			0.433	No
		0.270			0.213		0.483	No
		0.270				0.001	0.271	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.15.2. LTE Band 17 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 17	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.115	0.066						0.048	1.229	No
		1.115		0.070					0.048	1.233	No
		1.115			0.081				0.048	1.244	No
		1.115				0.087			0.048	1.250	No
		1.115					0.087		0.048	1.250	No
		1.115						0.074	0.048	1.237	No
	Edge 2	0.270		0.105					0.001	0.376	No
		0.270			0.161				0.001	0.432	No
		0.270					0.089		0.001	0.360	No
		0.270						0.105	0.001	0.376	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.16. Sum of the SAR for LTE Band 25 + WiFi + Bluetooth

14.16.1. LTE Band 25 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 25	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.170	0.088				1.258	No
		1.170		0.084			1.254	No
		1.170			0.086		1.256	No
		1.170				0.048	1.218	No
	Edge 2	1.080		0.163			1.243	No
		1.080			0.213		1.293	No
		1.080				0.001	1.081	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.16.2. LTE Band 25 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 25	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.170	0.066						0.048	1.284	No
		1.170		0.070					0.048	1.288	No
		1.170			0.081				0.048	1.299	No
		1.170				0.087			0.048	1.305	No
		1.170					0.087		0.048	1.305	No
		1.170						0.074	0.048	1.292	No
	Edge 2	1.080		0.105					0.001	1.186	No
		1.080			0.161				0.001	1.242	No
		1.080					0.089		0.001	1.170	No
		1.080						0.105	0.001	1.186	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.17. Sum of the SAR for LTE Band 26 + WiFi + Bluetooth

14.17.1. LTE Band 26 + 2.4GHz Band + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 26	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.080	0.088				1.168	No
		1.080		0.084			1.164	No
		1.080			0.086		1.166	No
		1.080				0.048	1.128	No
	Edge 2	0.527		0.163			0.690	No
		0.527			0.213		0.740	No
		0.527				0.001	0.528	No
	Edge 4	0.400	0.175				0.575	No
		0.400		0.163			0.563	No
		0.400				0.061	0.461	No

14.17.2. LTE Band 26 + 5GHz Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario							∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 26	DTS Band			UNII Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2	WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.080	0.066						0.048	1.194	No
		1.080		0.070					0.048	1.198	No
		1.080			0.081				0.048	1.209	No
		1.080				0.087			0.048	1.215	No
		1.080					0.087		0.048	1.215	No
		1.080						0.074	0.048	1.202	No
	Edge 2	0.527		0.105					0.001	0.633	No
		0.527			0.161				0.001	0.689	No
		0.527					0.089		0.001	0.617	No
		0.527						0.105	0.001	0.633	No
	Edge 4	0.400	0.108						0.061	0.569	No
		0.400			0.163				0.061	0.624	No
		0.400				0.139			0.061	0.600	No
		0.400						0.173	0.061	0.634	No

SAR to Peak Location Separation Ratio (SPLSR)

As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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14.18. Sum of the SAR for WiFi DTS Bands+ Bluetooth

14.18.1. 5.8 GHz Bands

RF Exposure condition	Test Position	Simultaneous Transmission Scenario				∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		DTS Band			Bluetooth		
		WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	0.066			0.048	0.114	No
			0.070		0.048	0.118	No
				0.081	0.048	0.129	No
	Edge 2		0.105		0.001	0.106	No
				0.161	0.001	0.162	No
	Edge 3	0.964			0.366	1.330	No
			0.907		0.366	1.273	No
				1.090	0.366	**1.456**	No
	Edge 4	0.108			0.061	0.169	No
					0.061	0.061	No
				0.163	0.061	0.224	No

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

14.19. Sum of the SAR for WiFi UNII Bands + Bluetooth

RF Exposure condition	Test Position	Simultaneous Transmission Scenario				∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		UNII Band			Bluetooth		
		WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	0.087			0.048	0.135	No
			0.087		0.048	0.135	No
				0.074	0.048	0.122	No
	Edge 2		0.089		0.001	0.090	No
				0.105	0.001	0.106	No
	Edge 3	1.020			0.366	1.386	No
			1.090		0.366	1.456	No
				1.180	0.366	**1.546**	No
	Edge 4	0.139			0.061	0.200	No
					0.061	0.061	No
				0.173	0.061	0.234	No

SAR to Peak Location Separation Ratio (SPLSR)
As the Sum of the SAR is not greater than 1.6 W/kg SPLSR assessment is not required.

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15. Appendixes

Refer to separated files for the following appendixes.

15.1. DUT and SAR setup Photos (STC)

15.2. Antenna Location and Separation Distances (STC)

15.3. System Performance Check Plots

15.4. Highest SAR Test Plots

15.5. Calibration Certificate for E-Field Probe EX3DV4 - SN 3749

15.6. Calibration Certificate for E-Field Probe EX3DV4 - SN 3751

15.7. Calibration Certificate for E-Field Probe EX3DV4 - SN 3772

15.8. Calibration Certificate for E-Field Probe EX3DV4 - SN 3901

15.9. Calibration Certificate for E-Field Probe EX3DV4 - SN 3885

15.10. Calibration Certificate for D750V3 - SN 1071

15.11. Calibration Certificate for D750V3 - SN 1024

15.12. Calibration Certificate for D835V2 – SN 4d117

15.13. Calibration Certificate for D835V2 - SN 4d142

15.14. Calibration Certificate for D1750V2- SN 1077

15.15. Calibration Certificate for D1900V2 - SN 5d163

15.16. Calibration Certificate for D1900V2 - SN 5d140

15.17. Calibration Certificate for D2450V2 - SN 748

15.18. Calibration Certificate for D5GHzV2 - SN 1003

15.19. Calibration Certificate for D5GHzV2 - SN 1138

END OF REPORT

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