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: A1490
FCC ID: BCGA1490

Report Number: 13U15668-14
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
--	09/18/2013	Initial Issue	--
A	09/22/2013	Made the following changes based 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 description. 3. Sec. 9.2: Revised table and notes.	Ray Su

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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	A1490			
Test device is	An identical prototype			
Device category	Portable			
Exposure category	General Population/Uncontrolled Exposure			
Date tested	08/07/2013 – 09/03/2013			
The highest reported SAR values	RF exposure condition	Licensed	DTS	UNII
	Body	1.192 W/kg	1.140 W/kg (2.4GHz) 0.703 W/kg (5.8 GHz)	0.970 W/kg
	Simultaneous Transmission	1.297 W/kg	1.028 W/kg (5.8GHz)	1.204 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			

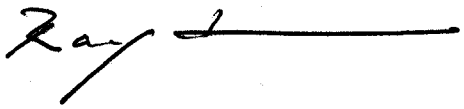
UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement 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:

Bobby Bayani
WiSE Engineer
UL Verification Services Inc.

Prepared By:



Ray Su
WiSE Laboratory Engineer
UL Verification Services Inc.

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, & 18920 Forge Drive, Cupertino California, USA.

Facility 1: 47173 Benicia Street, Fremont	Facility 2: 18920 Forge Drive, Cupertino
SAR Lab A	Lab A
SAR Lab B	Lab B
SAR Lab C	Lab C
SAR Lab D	Lab D
SAR Lab E	
SAR Lab F	

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.

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.

4.1.1. Facility 1, 47173 Benicia Street Fremont

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	3686	3/12/2014
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
Data Acquisition Electronics	SPEAG	DAE4	1360	2/7/2014
System Validation Dipole	SPEAG	750V3	1024	5/28/2014
System Validation Dipole	SPEAG	D835V2	4d117	5/28/2014
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

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

4.1.2. Facility 2, 18920 Forge Drive, Cupertino

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
S-Parameter Network Analyzer	Agilent	N5230C	MY49001813	4/30/2014
Thermometer	Control Company	4353	122102412	2/24/2014
Dielectronic Probe kit	SPEAG	DAK-3.5	1055	4/30/2014

System Performance Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Vector Signal Generator	R & S	SMU200A	104592	7/27/2014
Vector Signal Generator	R & S	SMU200A	104591	7/26/2014
Power Meter	R & S	NRP2	102822	6/18/2014
Power Meter	R & S	NRP2	102823	6/18/2014
Power Sensor	R & S	NRP - Z81	112143	6/18/2014
Power Sensor	R & S	NRP - Z81	112142	6/18/2014
Amplifier	Amplifier Research	15S1G4M41, 0.7-4.2 GHz	335565	N/A
Amplifier	Amplifier Research	35S4G8A, 4-8 GHz	336934	N/A
Amplifier	Amplifier Research	15S1G4M41, 0.7-4.2 GHz	320316	N/A
Amplifier	Amplifier Research	35S4G8A, 4-8 GHz	341209	N/A
Directional coupler	KRYTAR	158010	142253	N/A
Directional coupler	KRYTAR	158010	92552	N/A
E-Field Probe	SPEAG	EX3DV4	3778	1/14/2014
E-Field Probe	SPEAG	EX3DV4	3720	1/14/2014
E-Field Probe	SPEAG	EX3DV4	3871	7/29/2014
E-Field Probe	SPEAG	EX3DV4	3676	1/14/2014
Data Acquisition Electronics	SPEAG	DAE4	1263	1/14/2014
Data Acquisition Electronics	SPEAG	DAE4	1264	1/14/2014
Data Acquisition Electronics	SPEAG	DAE4	1261	1/16/2014
Data Acquisition Electronics	SPEAG	DAE4	1278	1/30/2014
System Validation Dipole	SPEAG	D2450V2	900	10/5/2013
System Validation Dipole	SPEAG	D5GHzV2	1139	10/9/2013
System Validation Dipole	SPEAG	D5GHzV2	1072	2/8/2014

Others

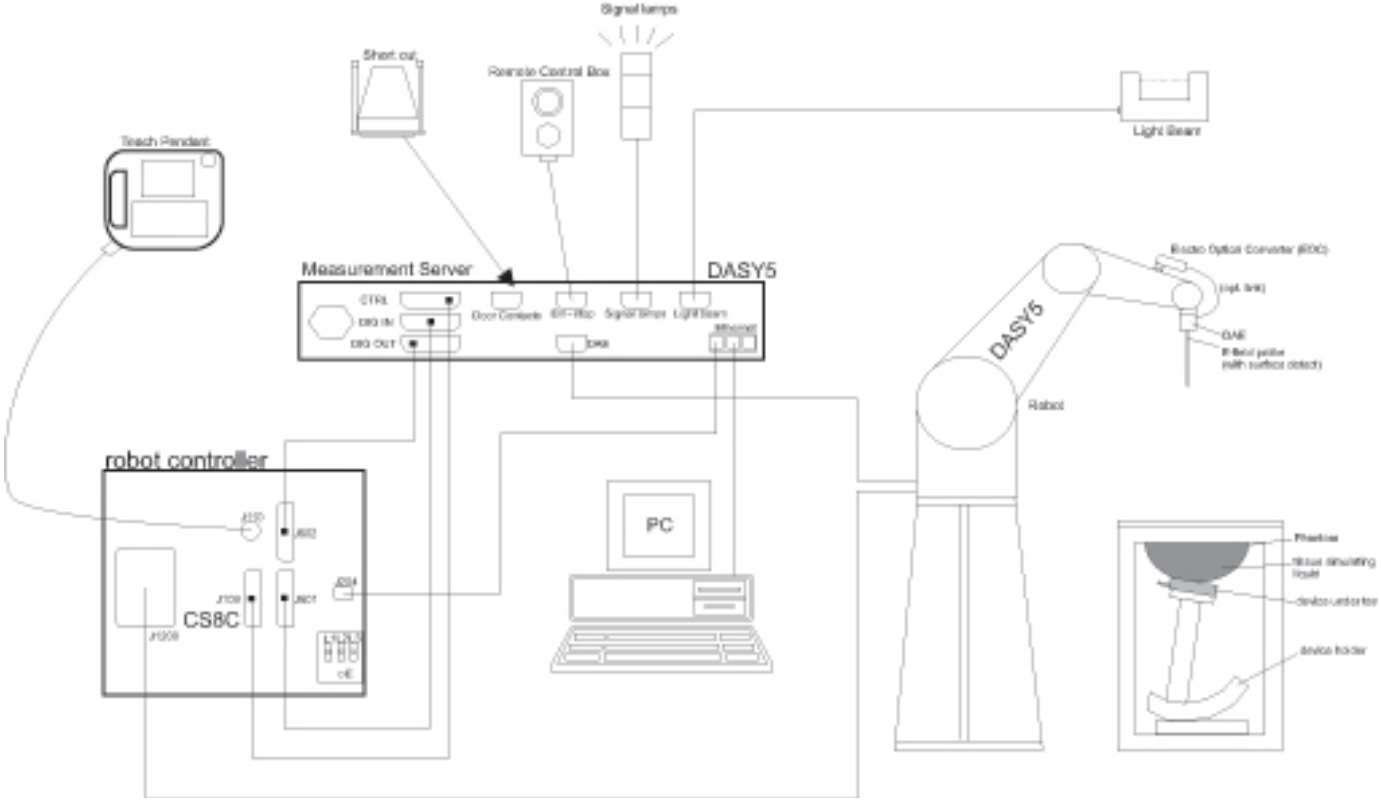
Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Power Meter	R & S	NRP2	101663	4/24/2014
Power Meter	R & S	NRP2	101664	4/24/2014
Power Sensor	R & S	NRP - Z81	101298	4/24/2014
Power Sensor	R & S	NRP - Z81	112138	4/26/2014

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.

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.

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.	

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.

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.

7. Device Under Test

7.1. General Information

Model: A1490 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)
Device dimension	Overall (Length x Width): 200.14mm x 134.75mm Overall Diagonal: 230mm Display Diagonal: 200mm

Notes:

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

BOM #1 = Wi-Fi/BT module vendor 1

BOM #2 = Wi-Fi/BT module vendor 2

The Wi-Fi/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 Wi-Fi/Bluetooth radio module and then, the test is repeated on the device with the other Wi-Fi/Bluetooth module at the highest peak SAR value.

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
Air Interfaces	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.

7.4. Simultaneous Transmission Condition

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

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		

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.

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.

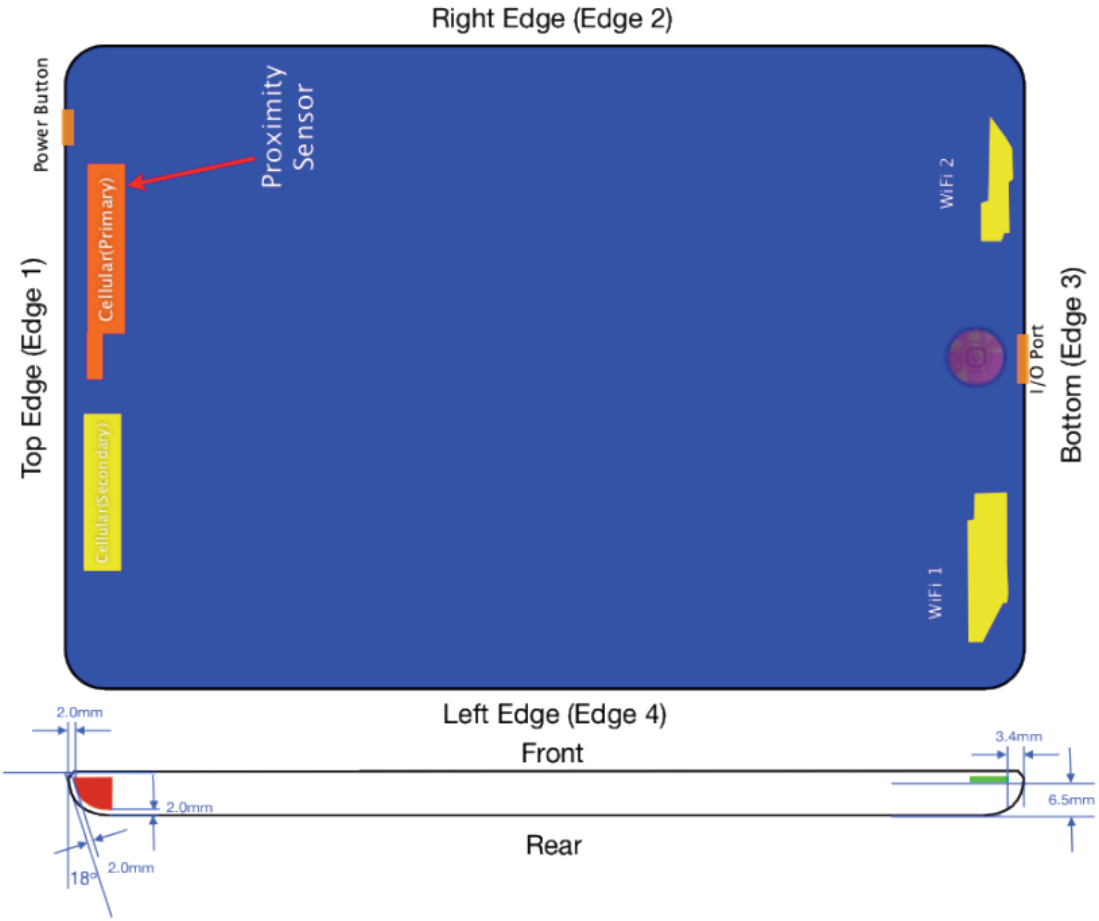
The proximity sensor is triggered at the following conservative distances when:

- The Top Edge of the device is 20 mm for the first-stage trigger, and 14 mm for the second-stage trigger, from the phantom.
- The Rear Surface of the device is 20 mm for the first-stage trigger, and 14 mm 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.



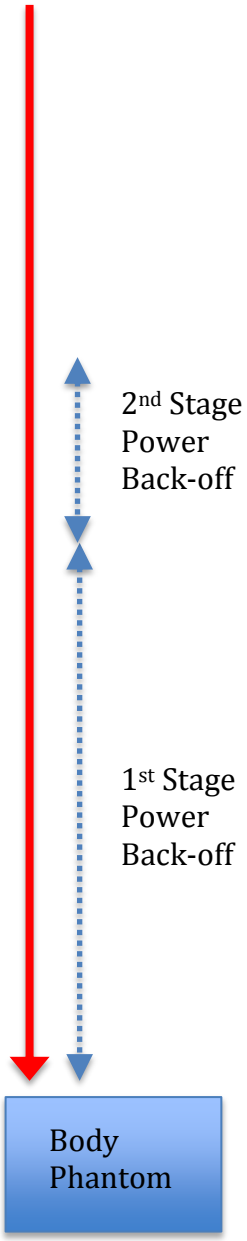
Separation Distances (mm)	Cellular (Primary)	Cellular (Secondary)	WiFi 1/ BT	WiFi 2
Cellular (Primary)		5.2	179.9	178.2
Cellular (Secondary)			175.2	182.1
WiFi 1/ BT				52.3
WiFi 2				
Top Edge (Edge 1)	2.1	2.1	181.3	191.1
Right Edge (Edge 2)	24.8	75.9	93.5	14.4
Bottom Edge (Edge 3)	185.1	185.1	3.4	3.4
Left Edge (Edge 4)	64.1	24.8	9.8	93.5
Rear Surface	1.7	1.7	6.5	6.5

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 (C1, t1, P1)	ON (C1, t1, P1)
15	ON (C1, t1, P1)	ON (C1, t1, P1)
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)



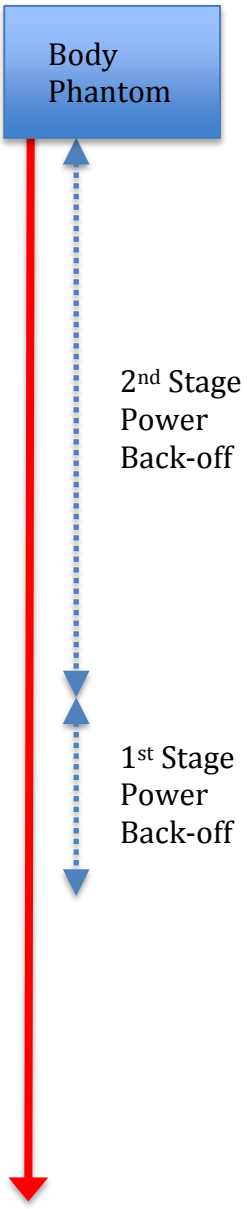
Notes:

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.

Now, the DUT is moved away from flat phantom

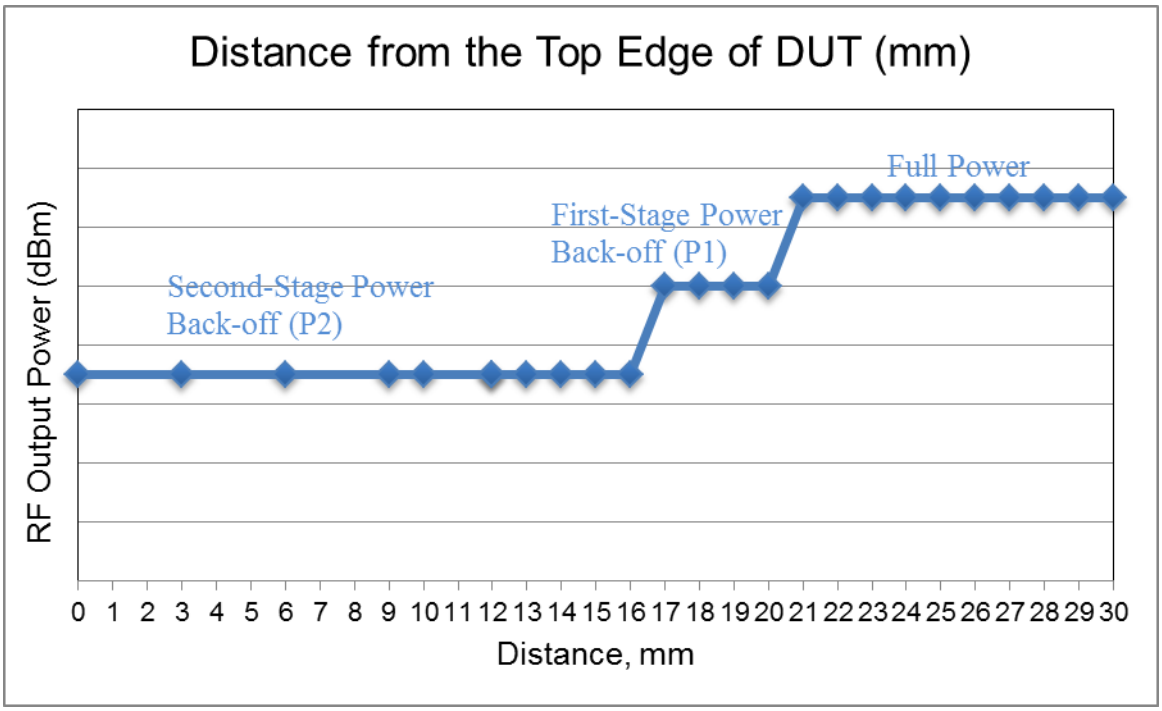
Proximity Sensor Status Table when DUT is moving away from the phantom

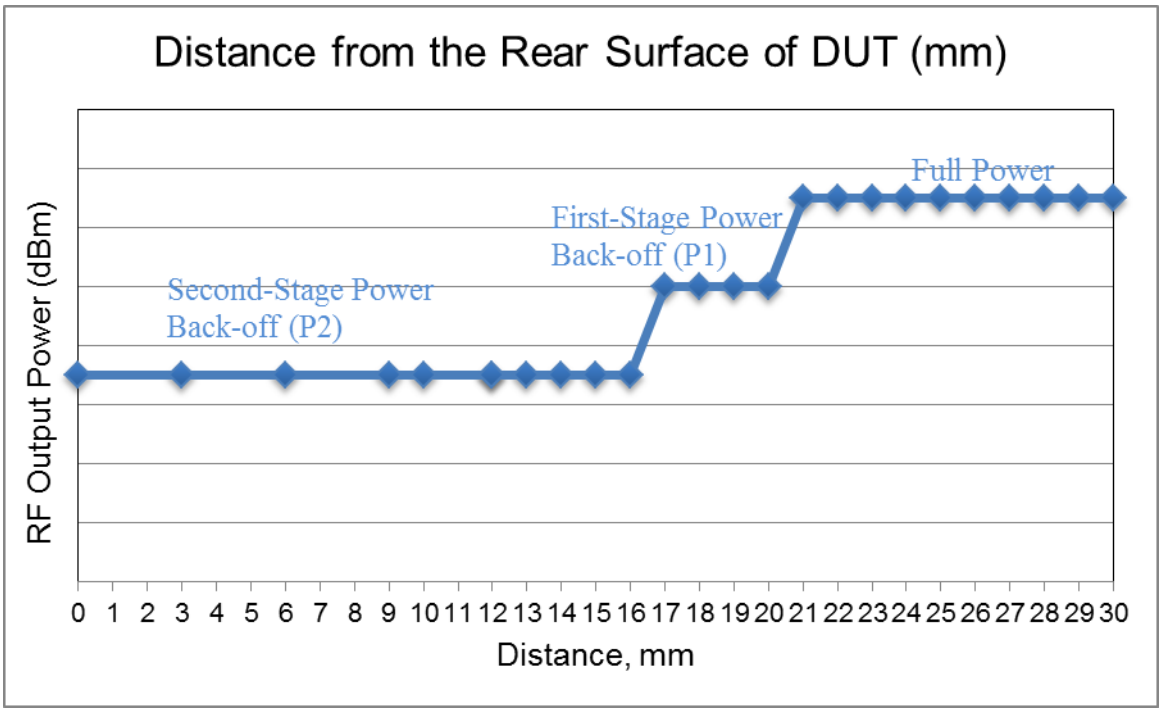
Distance to DUT (mm)	Proximity Sensor Status – Rear Surface	Proximity Sensor Status – Top-Edge
0	ON (C2, t2, P2)	ON (C2, t2, P2)
3	ON (C2, t2, P2)	ON (C2, t2, P2)
6	ON (C2, t2, P2)	ON (C2, t2, P2)
9	ON (C2, t2, P2)	ON (C2, t2, P2)
10	ON (C2, t2, P2)	ON (C2, t2, P2)
11	ON (C2, t2, P2)	ON (C2, t2, P2)
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 (C1, t1, P1)	ON (C1, t1, P1)
16	ON (C1, t1, P1)	ON (C1, t1, P1)
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.



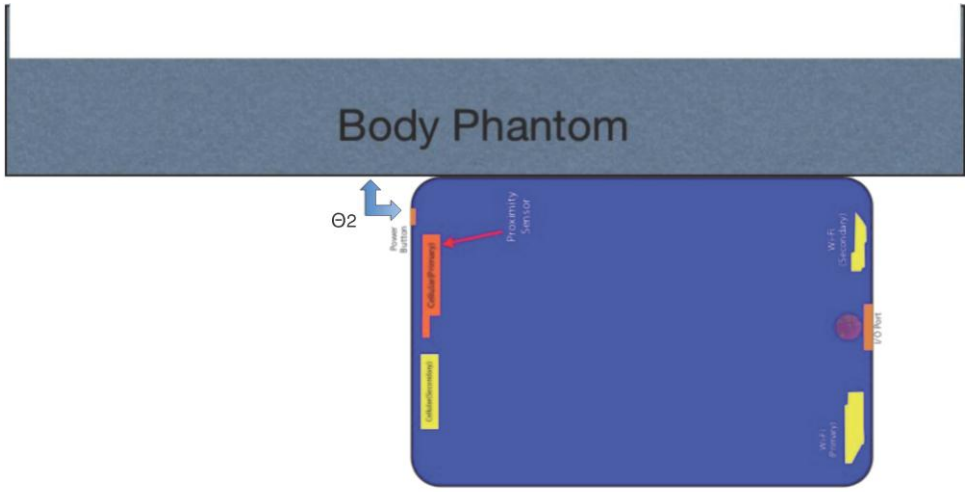


Since, the antenna and proximity sensor are not spatially offset in this implementation, the procedure in KDB 616217 D04 SAR for laptop and tablets v01r0 doesn't apply to device.

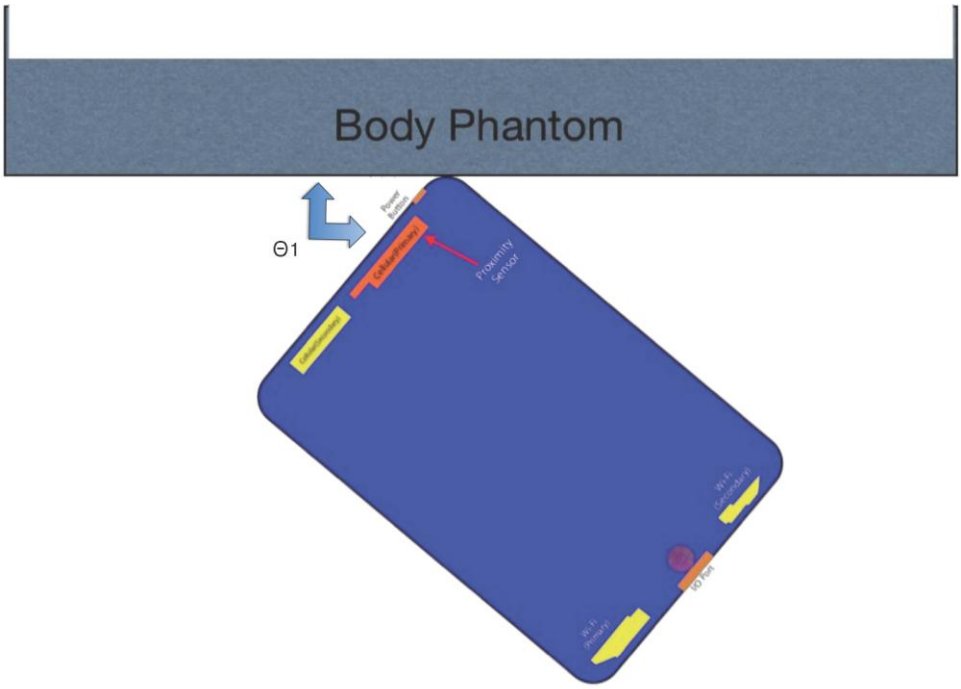
7.6.2. Coverage at the Corner of the DUT

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 41° (θ1).



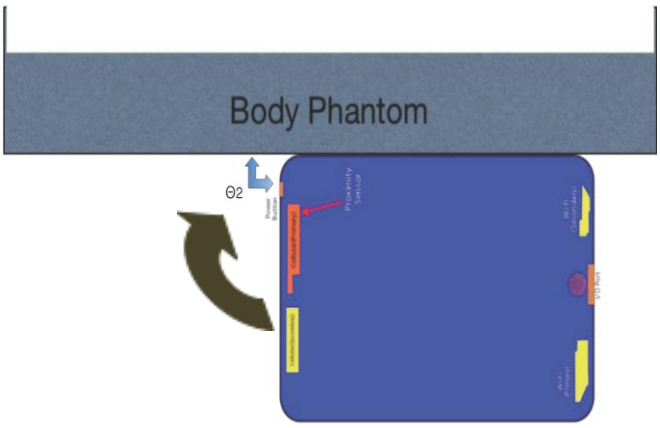
DUT angle at which first–stage is activated



DUT angle at which second–stage is activated

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)
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)

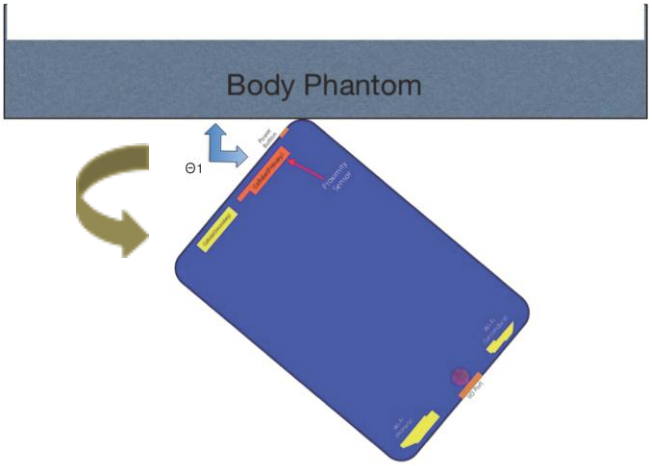


Notes:

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.

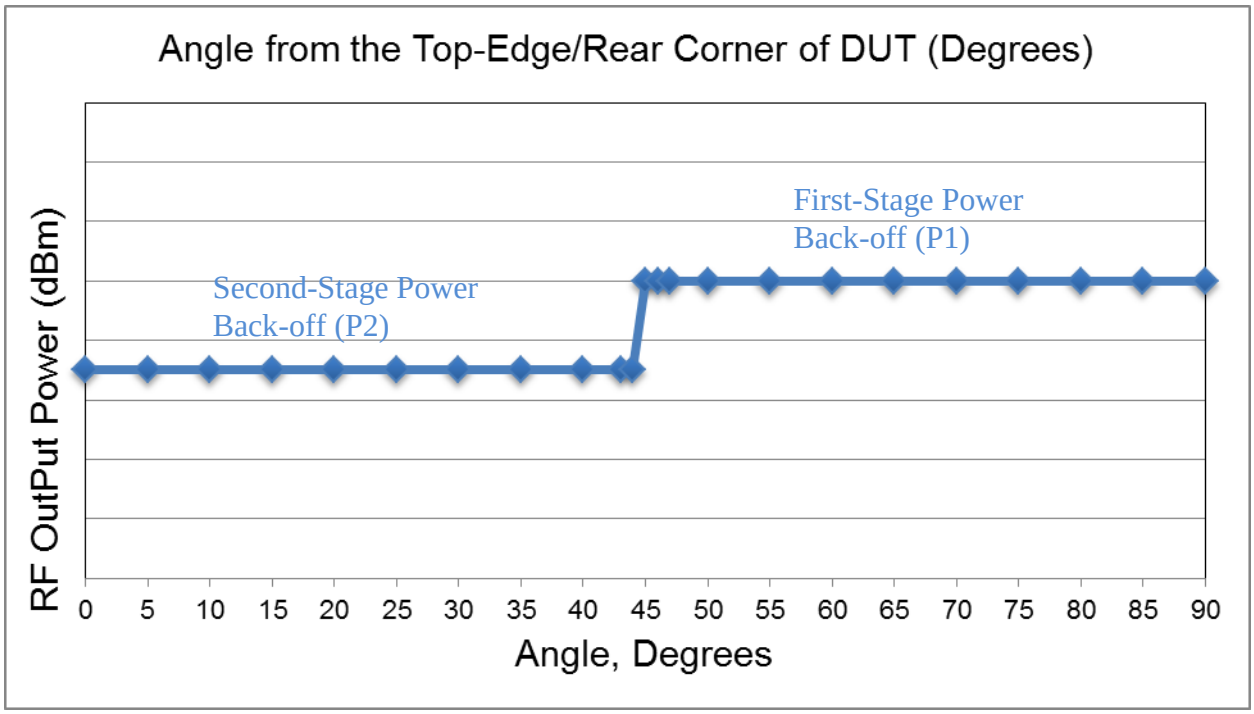
Proximity Sensor Status Table when DUT is moving away from the phantom

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)
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)



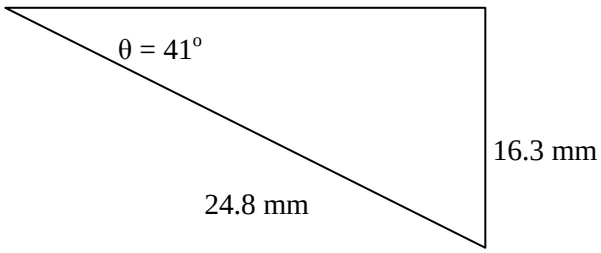
Notes:

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.



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 41° (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 16.3 mm, which is more than the 14 mm for the Rear Surface (at which SAR evaluation will be performed at full power).

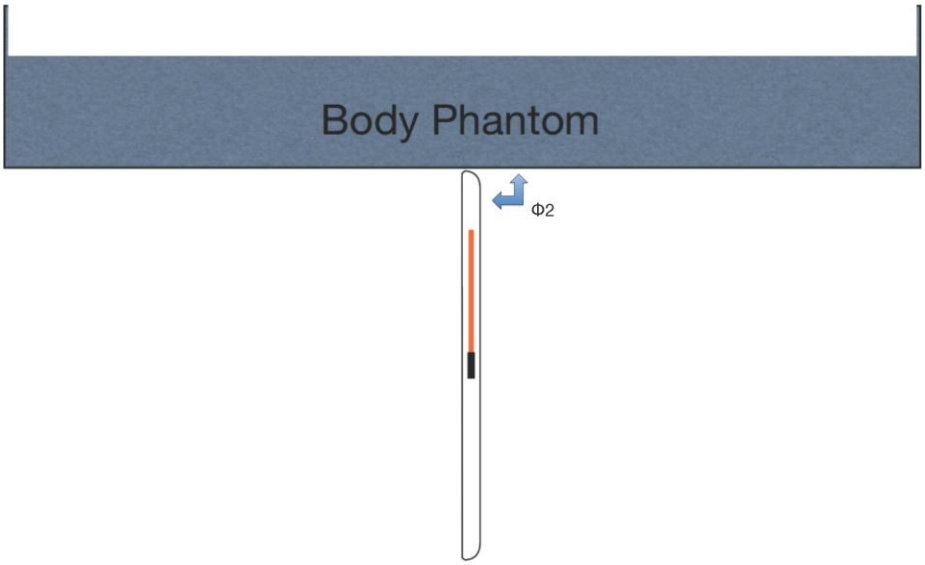
With the Top Edge of the device against the phantom, when the front of the device (LCD side) is tilted toward the phantom, the proximity sensor will remain triggered all the time.

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.

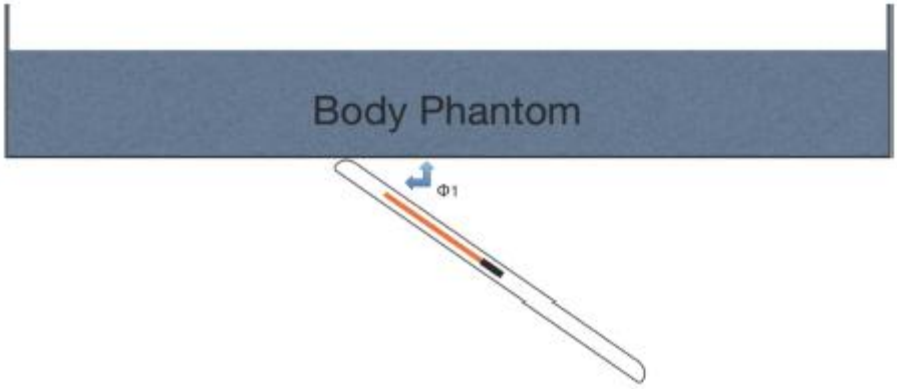
7.6.3. Coverage at the Edge of the DUT

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 37° (Φ_1**).**



DUT angle at which first-stage is activated

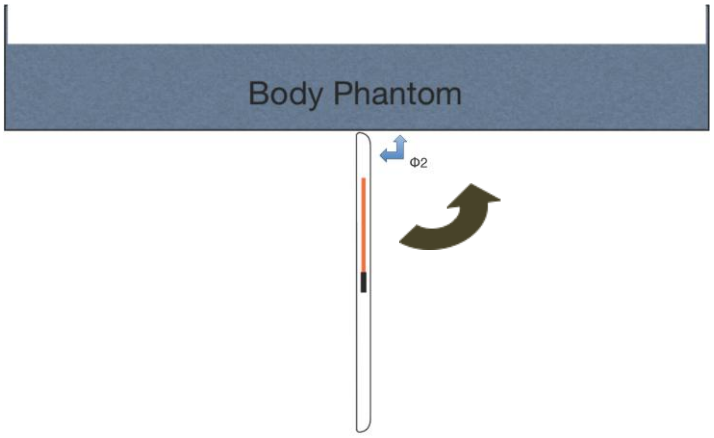


DUT angle at which second-stage is activated

DUT angle at which second-stage is activated

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)
40	ON (C1, t1, P1)
39	ON (C1, t1, P1)
38	ON (C1, t1, P1)
37	ON (C2, t2, P2))
36	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)

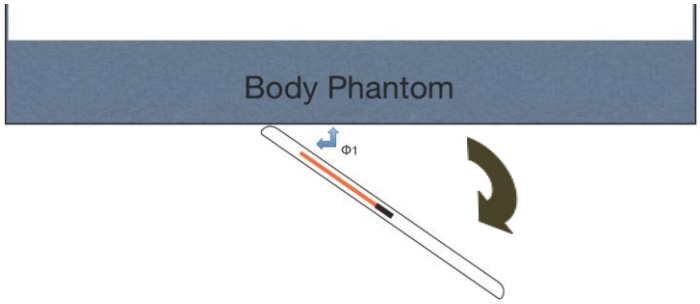


Notes:

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.

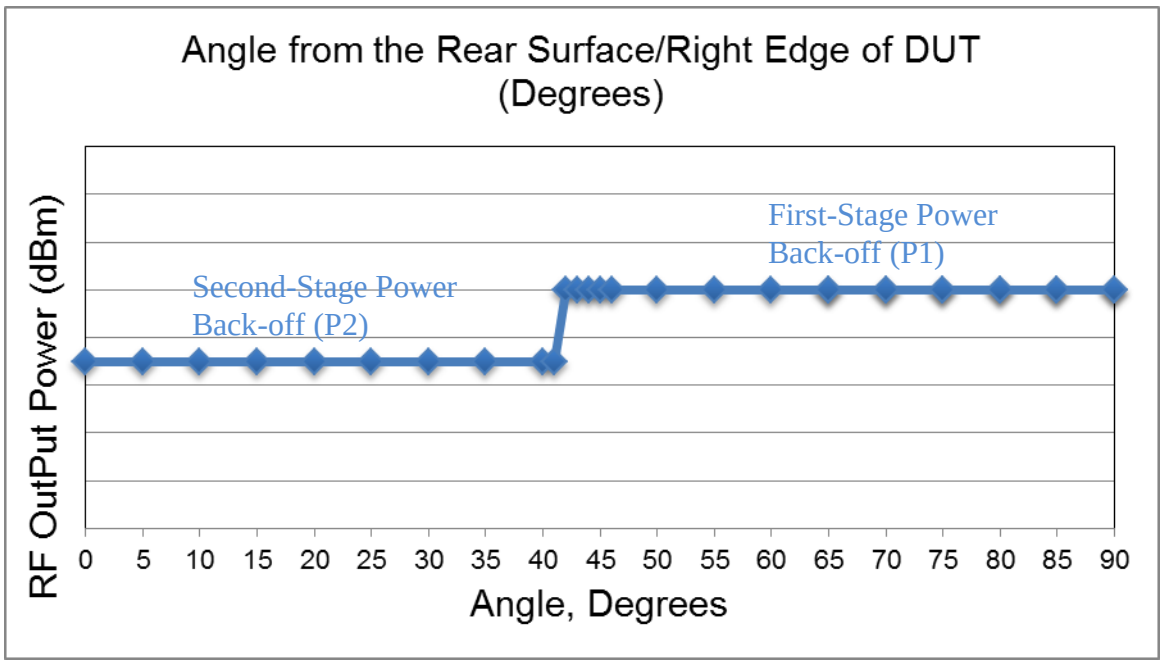
Proximity Sensor Status Table when DUT is moving away from the phantom

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)
36	ON (C2, t2, P2)
37	ON (C2, t2, P2)
38	ON (C1, t1, P1)
39	ON (C1, t1, P1)
40	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)



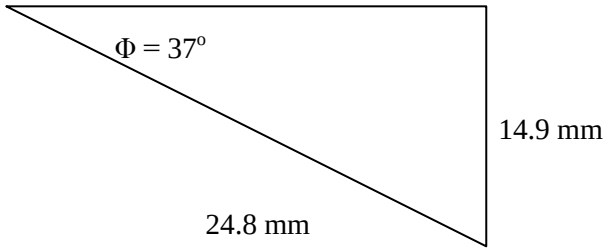
Notes:

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.



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 37° (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 14.9 mm, which is more than the 14 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.

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. SAR testing is conducted at first-stage power back-off level.

- Rear Surface of the DUT with conservative distance of 14 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 14 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 41° 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 16.3 mm, which is more than the 14 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 37° 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 14.9 mm, which is more than the 14 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.

7.6.5. Special Development Software

During the Top Edge (14 mm), Rear Surface (14mm), Right Edge (0mm), 41° angle from the Top Edge (0mm), and 37° 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.

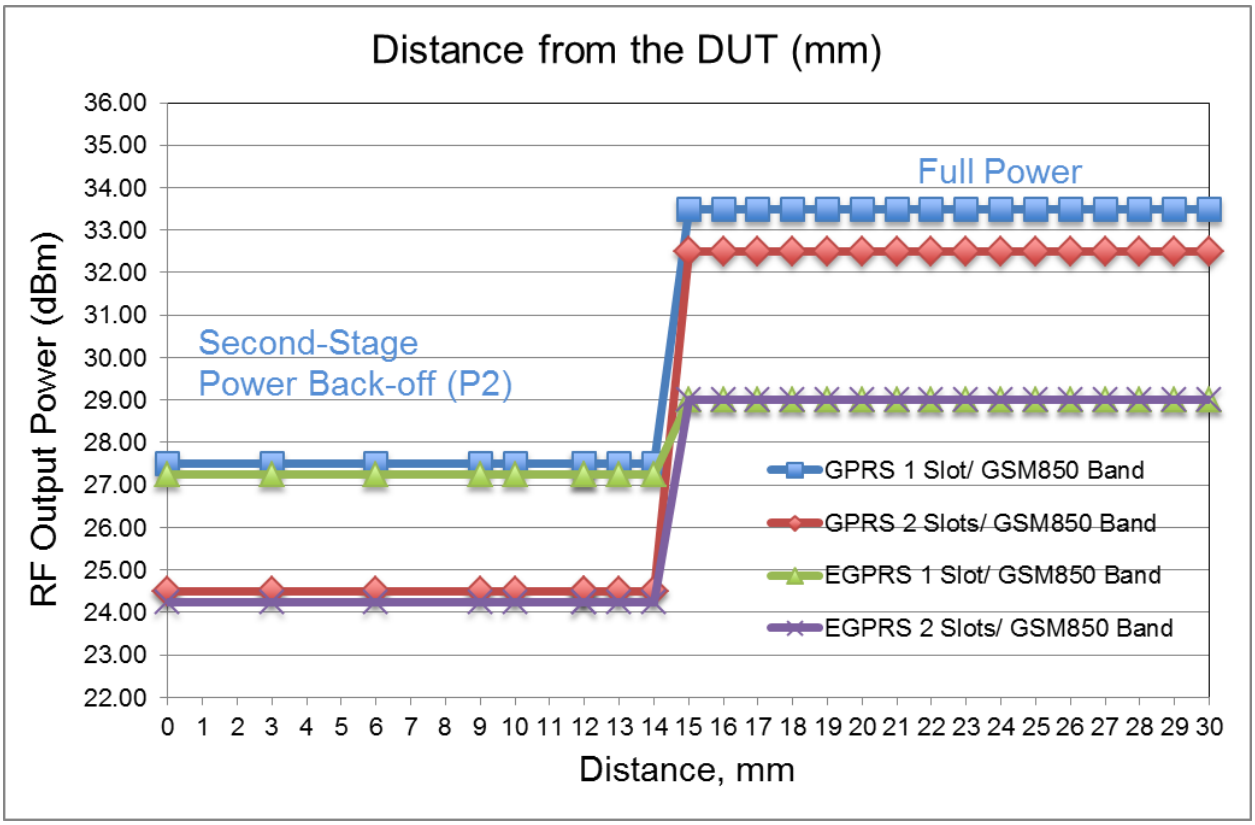
7.7. Power Reduction per Air-interface

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.

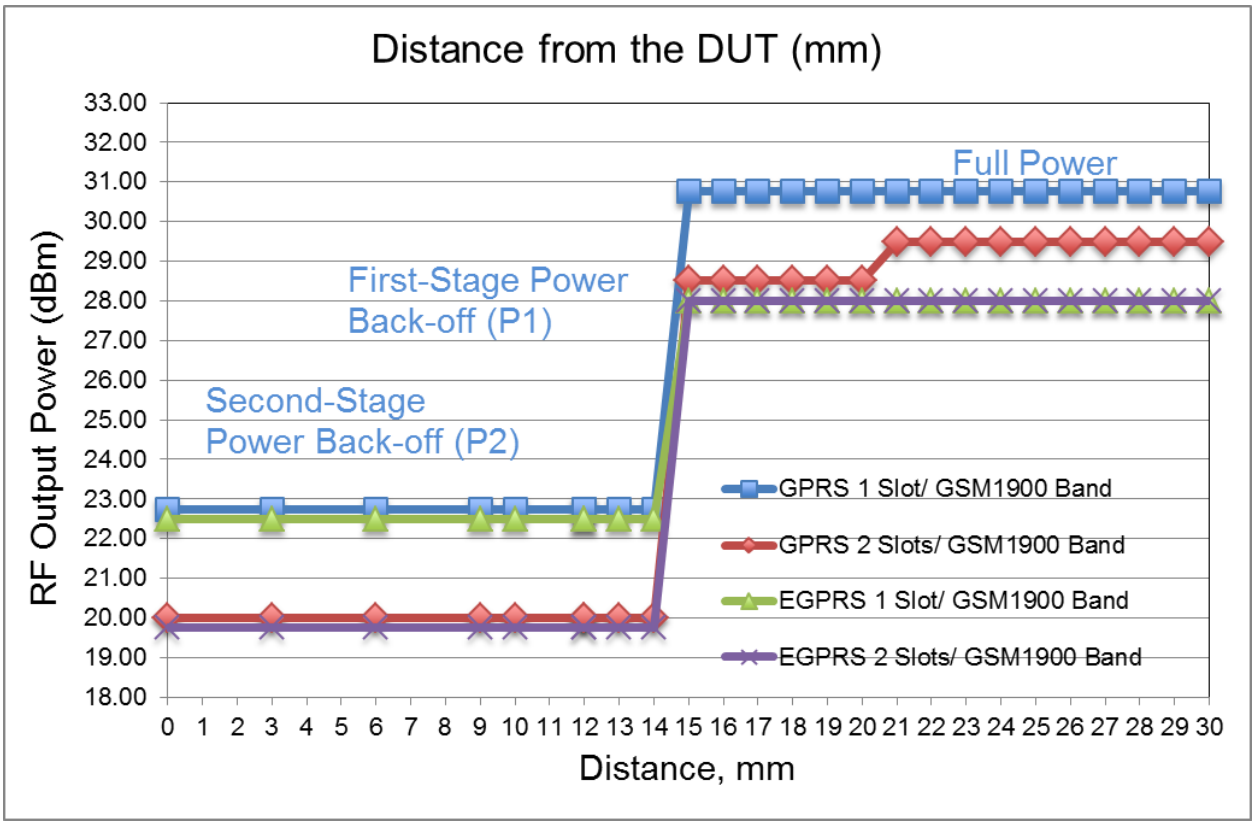
Additionally, for technologies and bands where the First Stage Back-off power levels are identical to Full Power levels, the First Stage Back-off label was removed in the graphs for clarity.

7.7.1. GSM Bands

GSM850

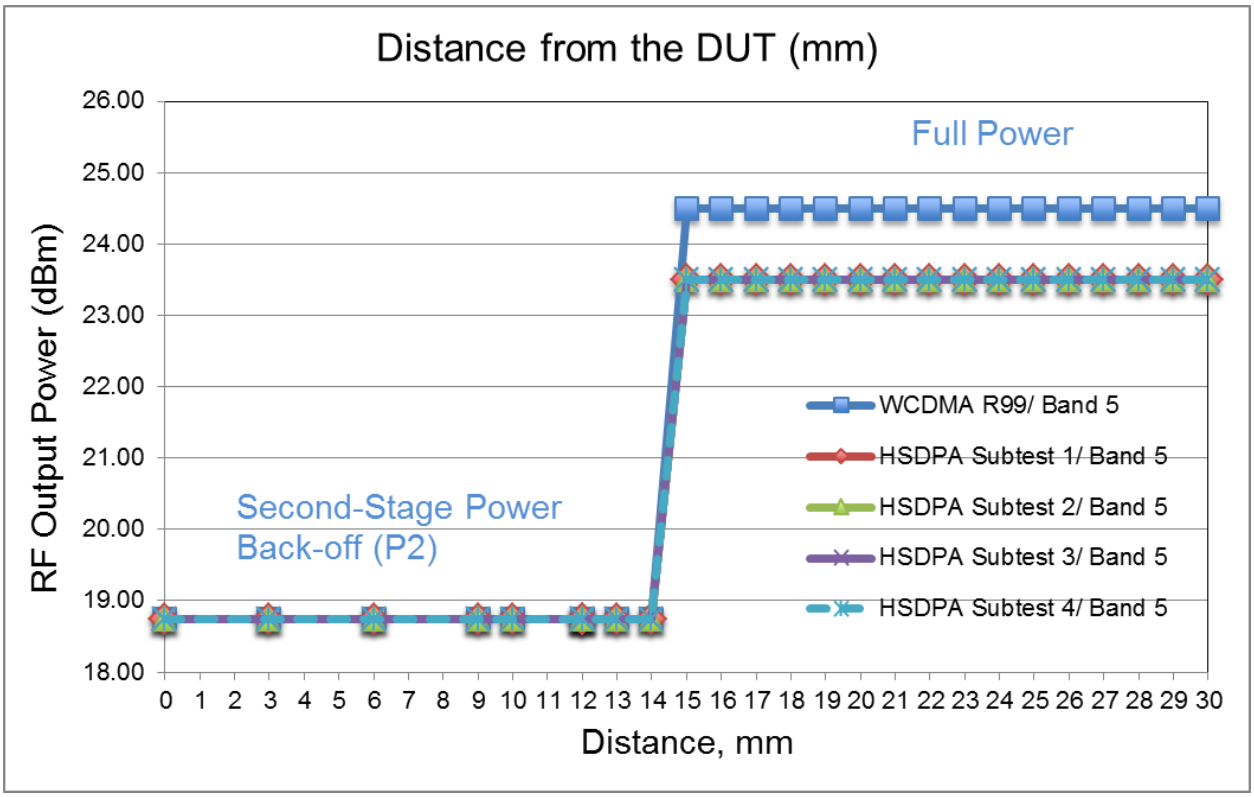


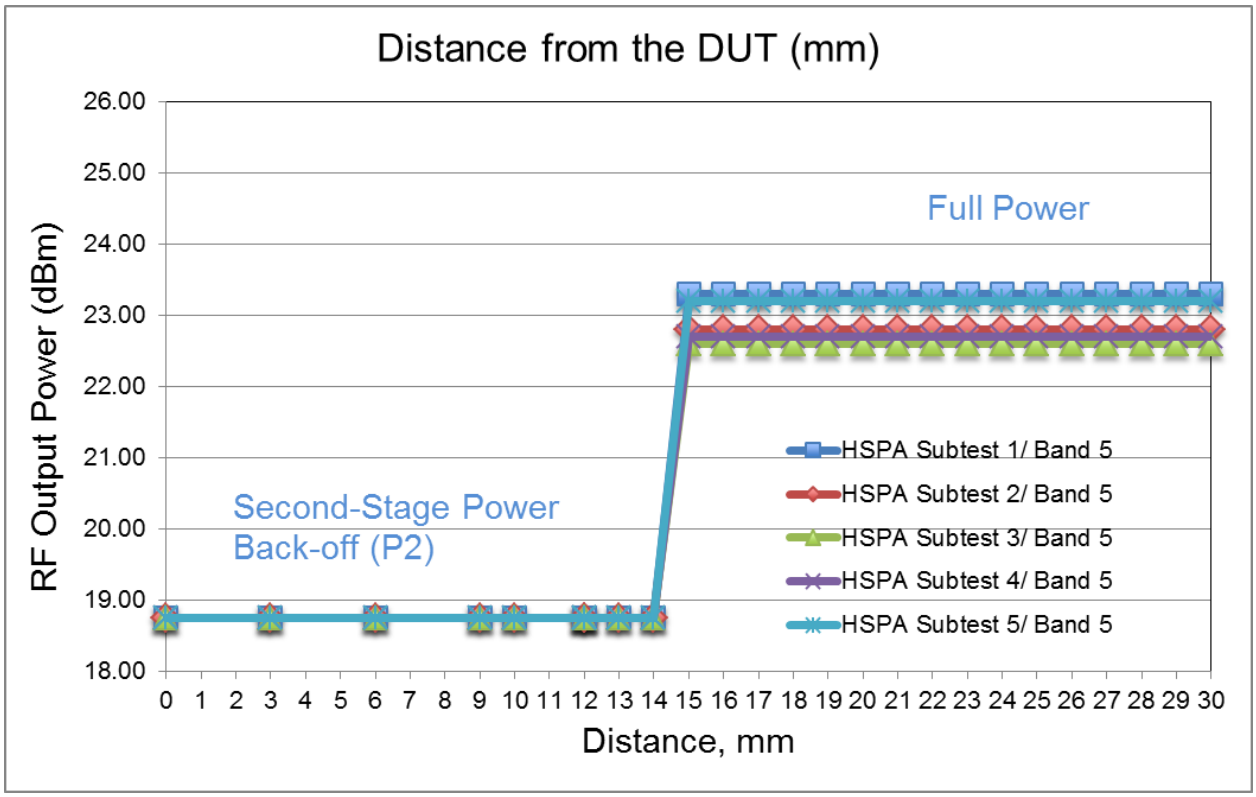
GSM1900



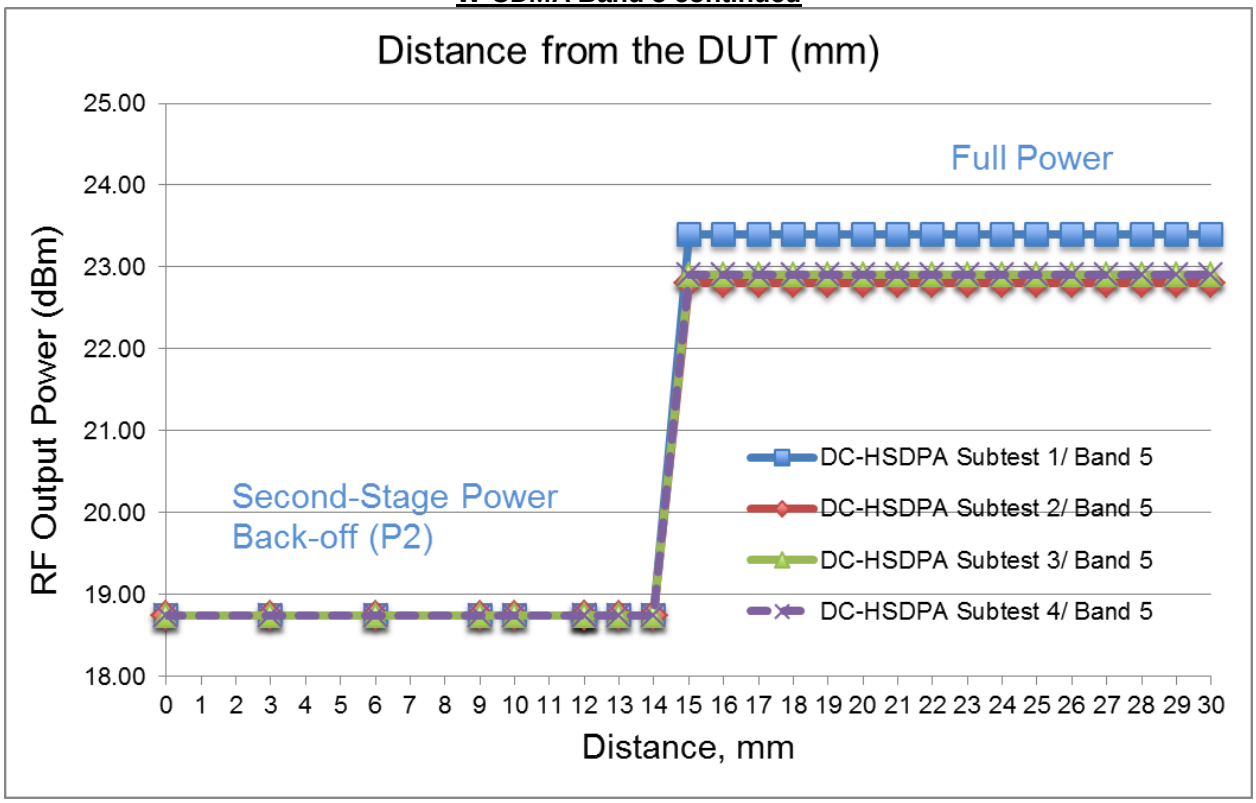
7.7.2. WCDMA Bands

W-CDMA Band 5

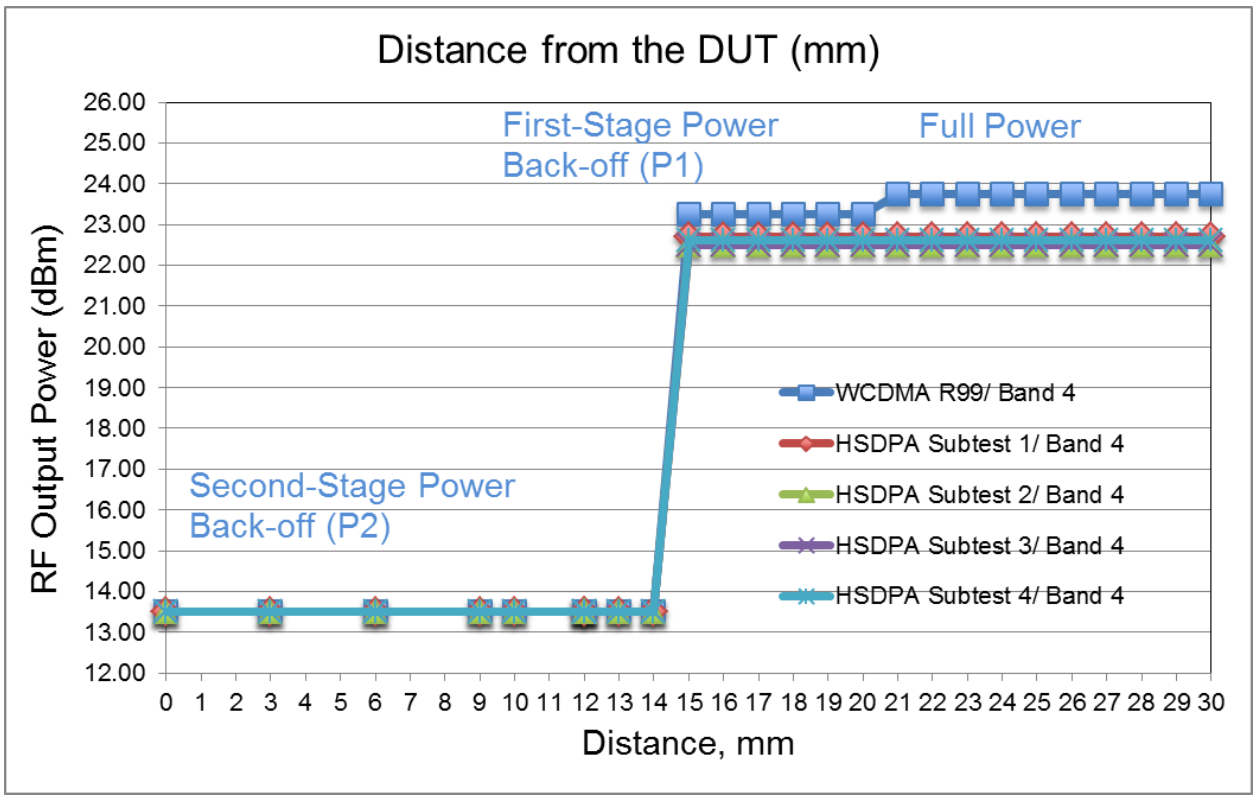


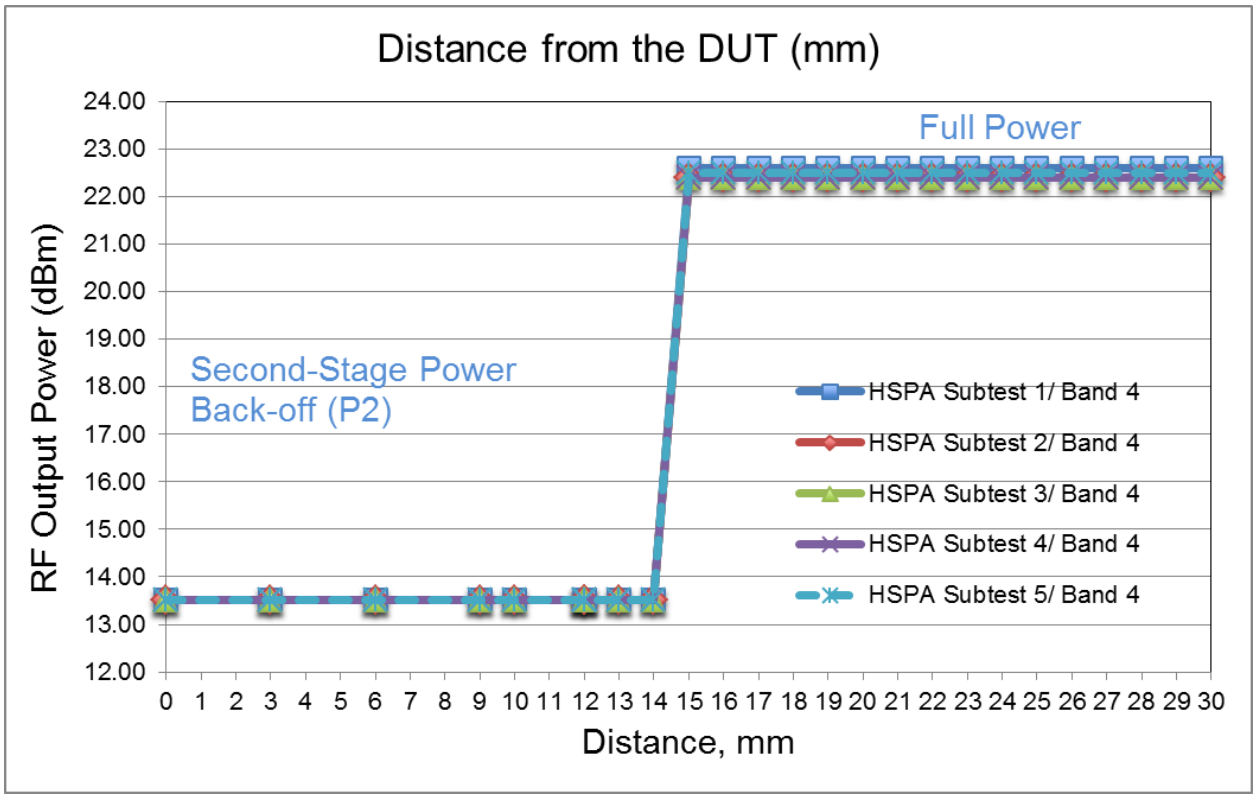


W-CDMA Band 5 continued

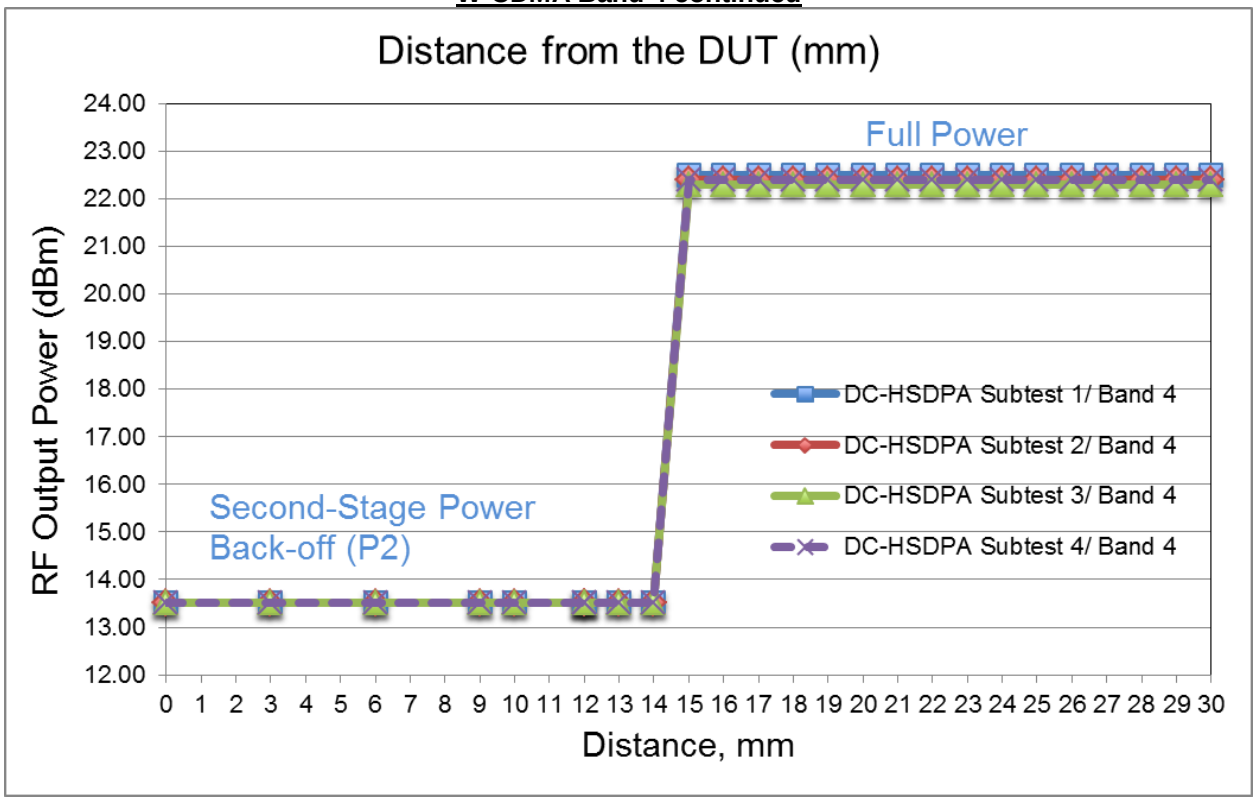


W-CDMA Band 4

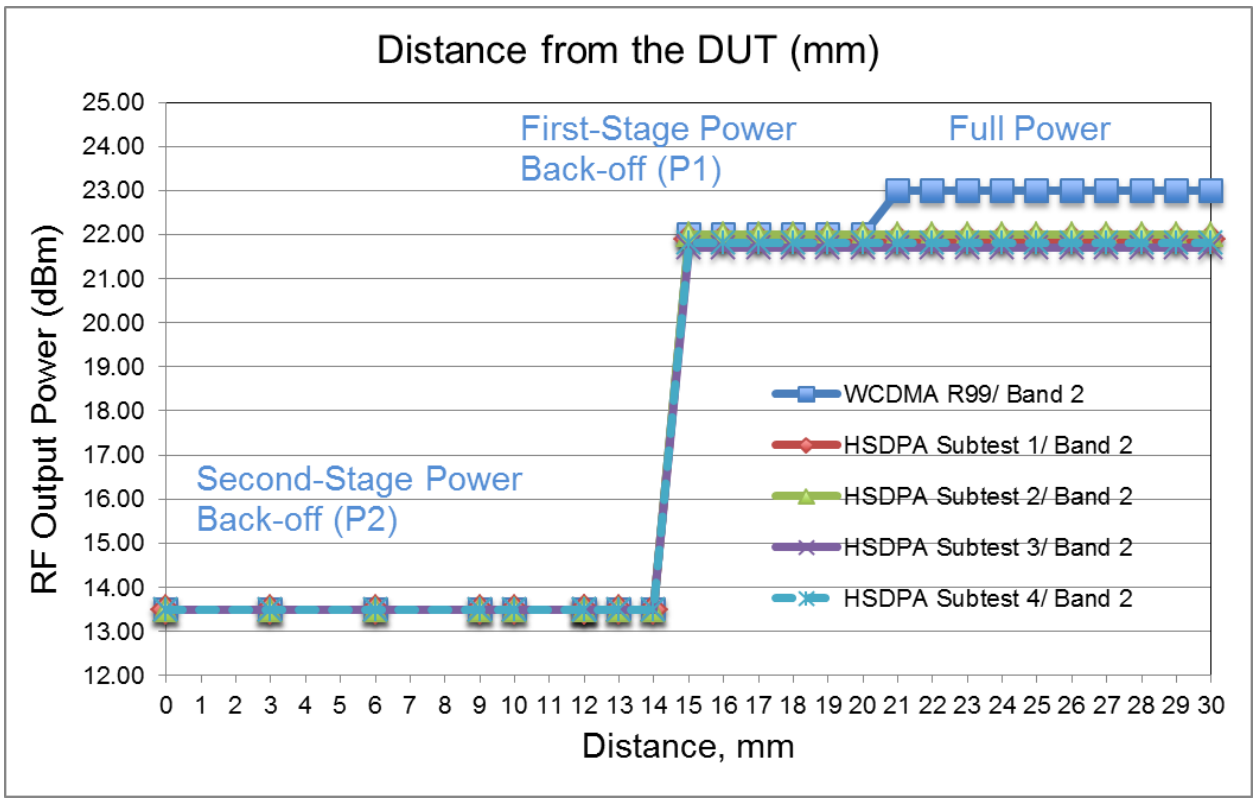


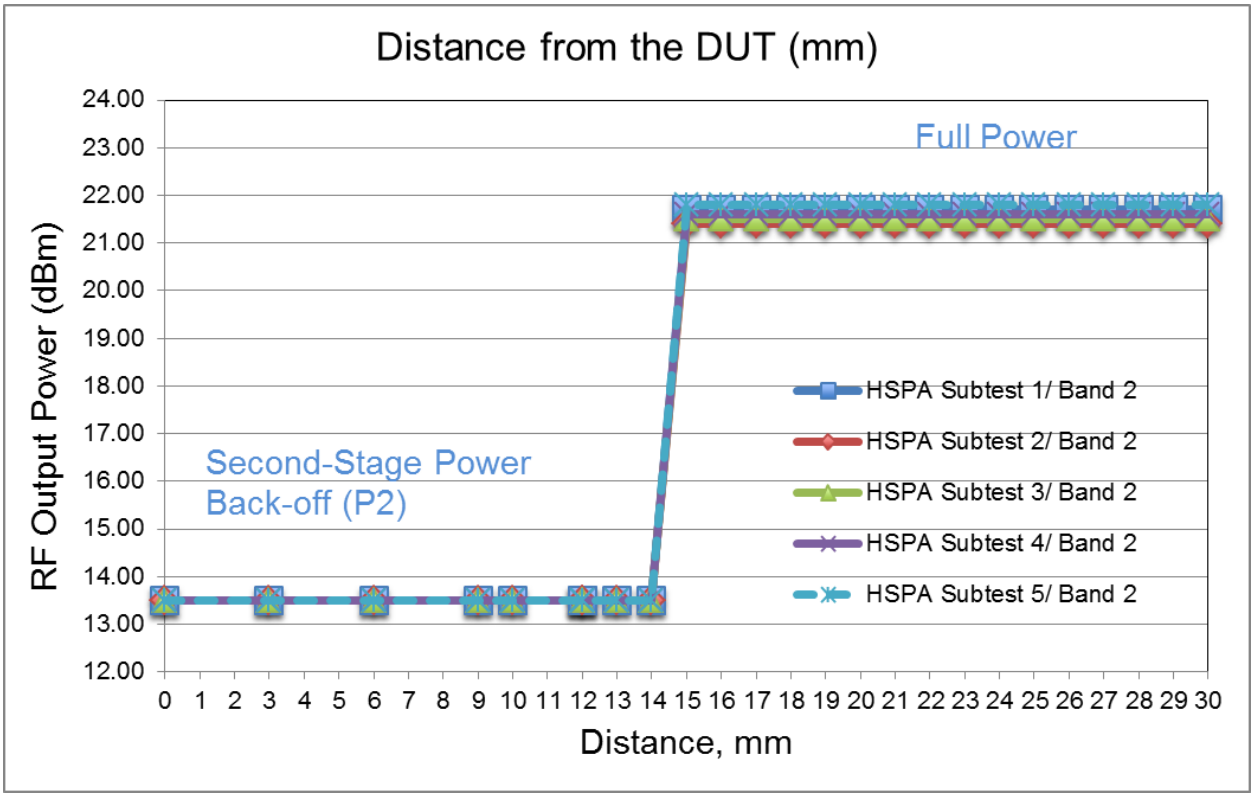


W-CDMA Band 4 continued

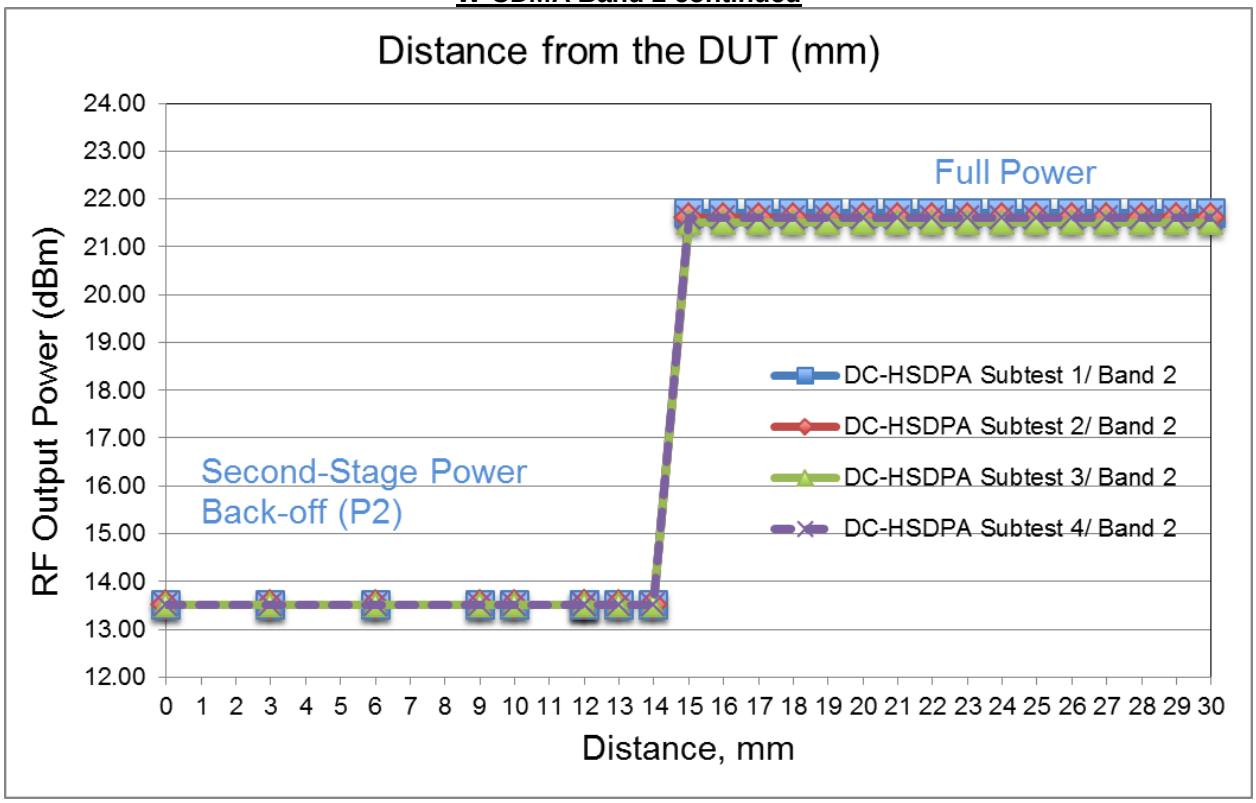


W-CDMA Band 2



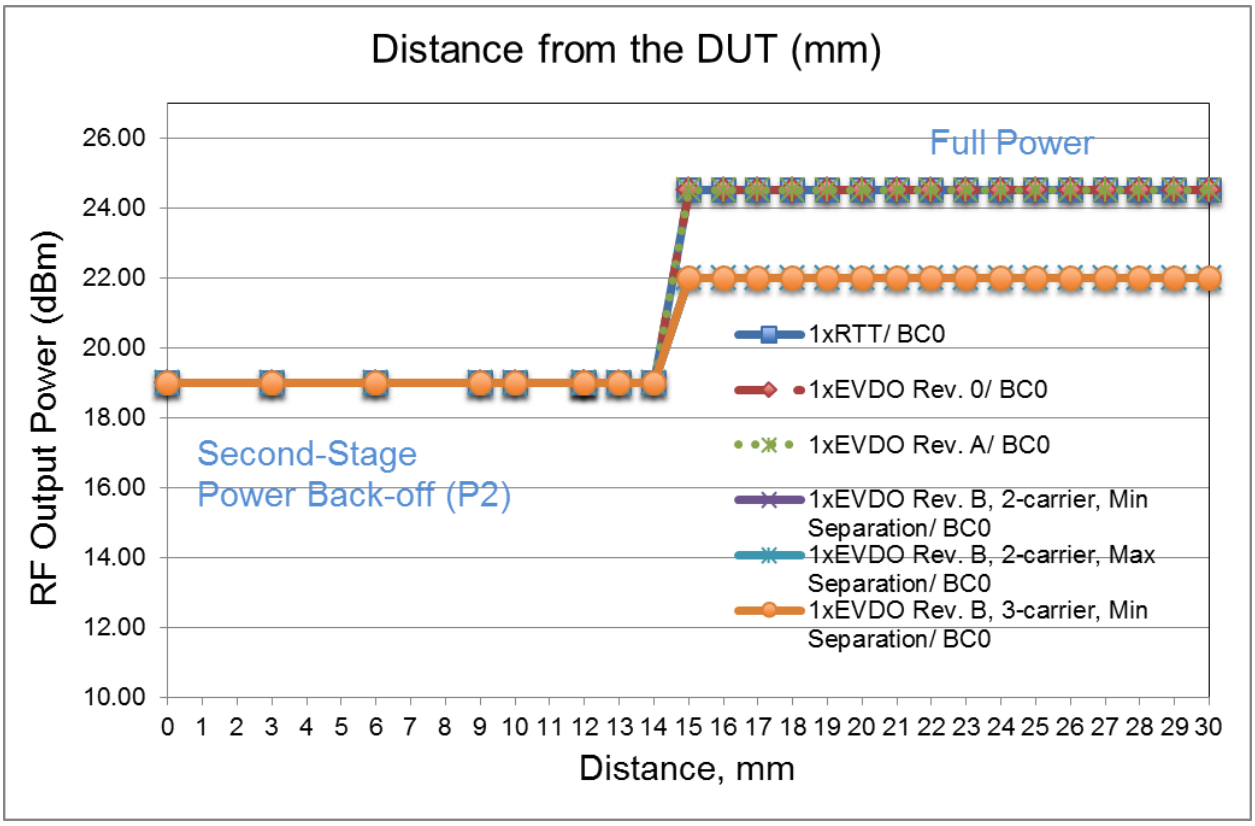


W-CDMA Band 2 continued

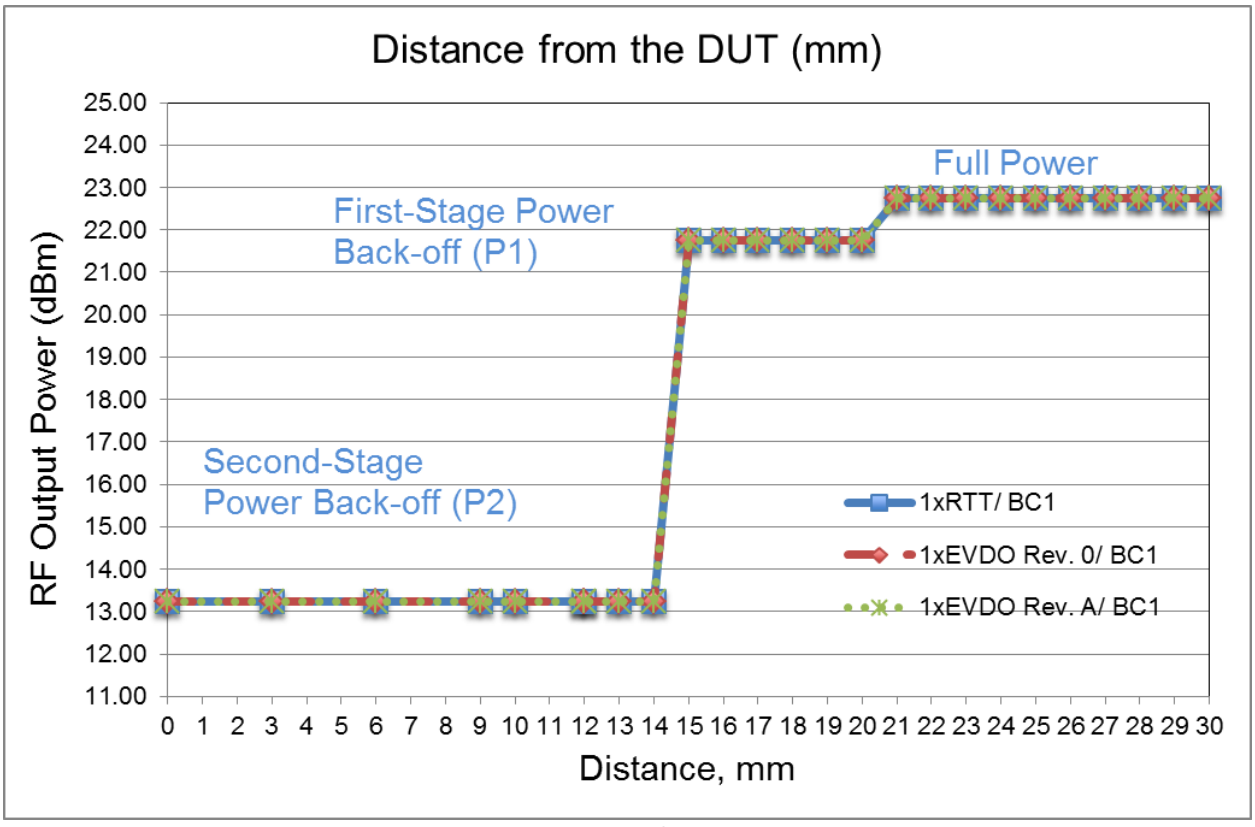


7.7.3. CDMA Bands

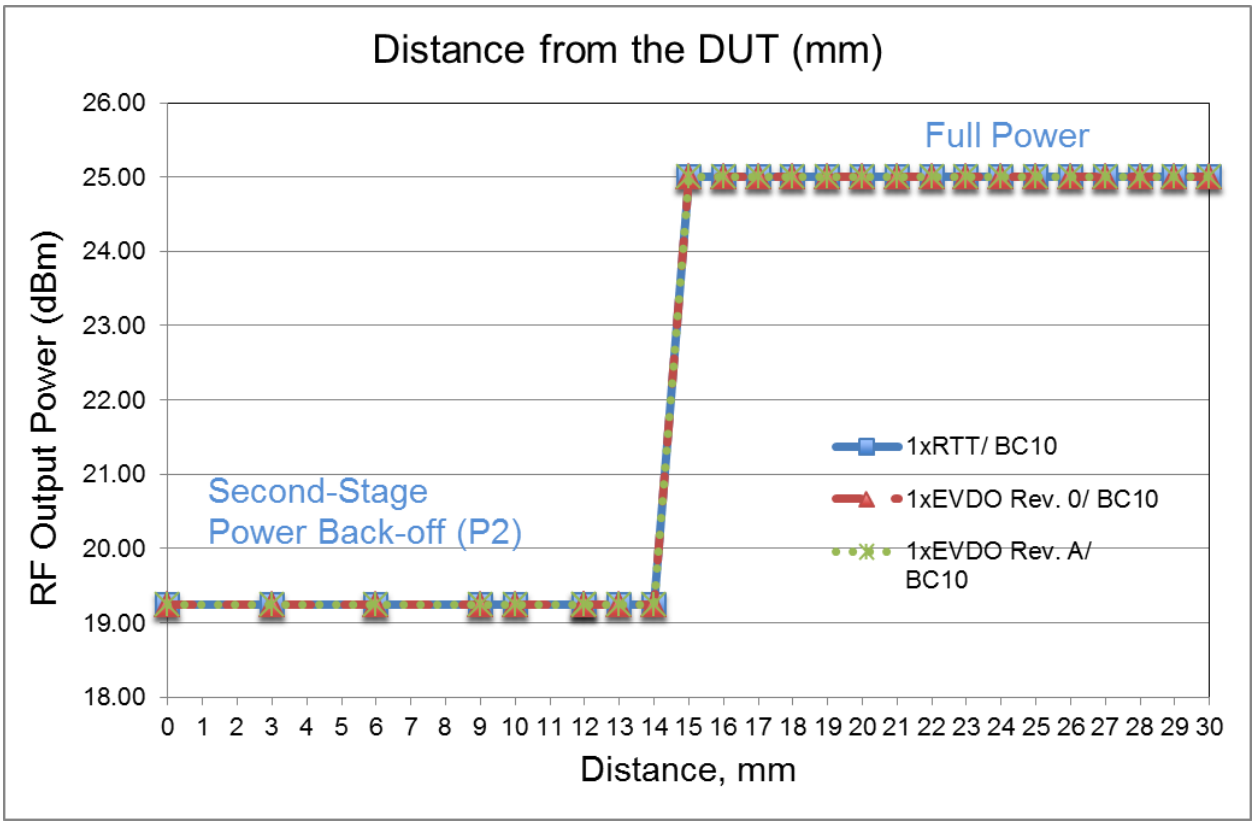
CDMA BC0



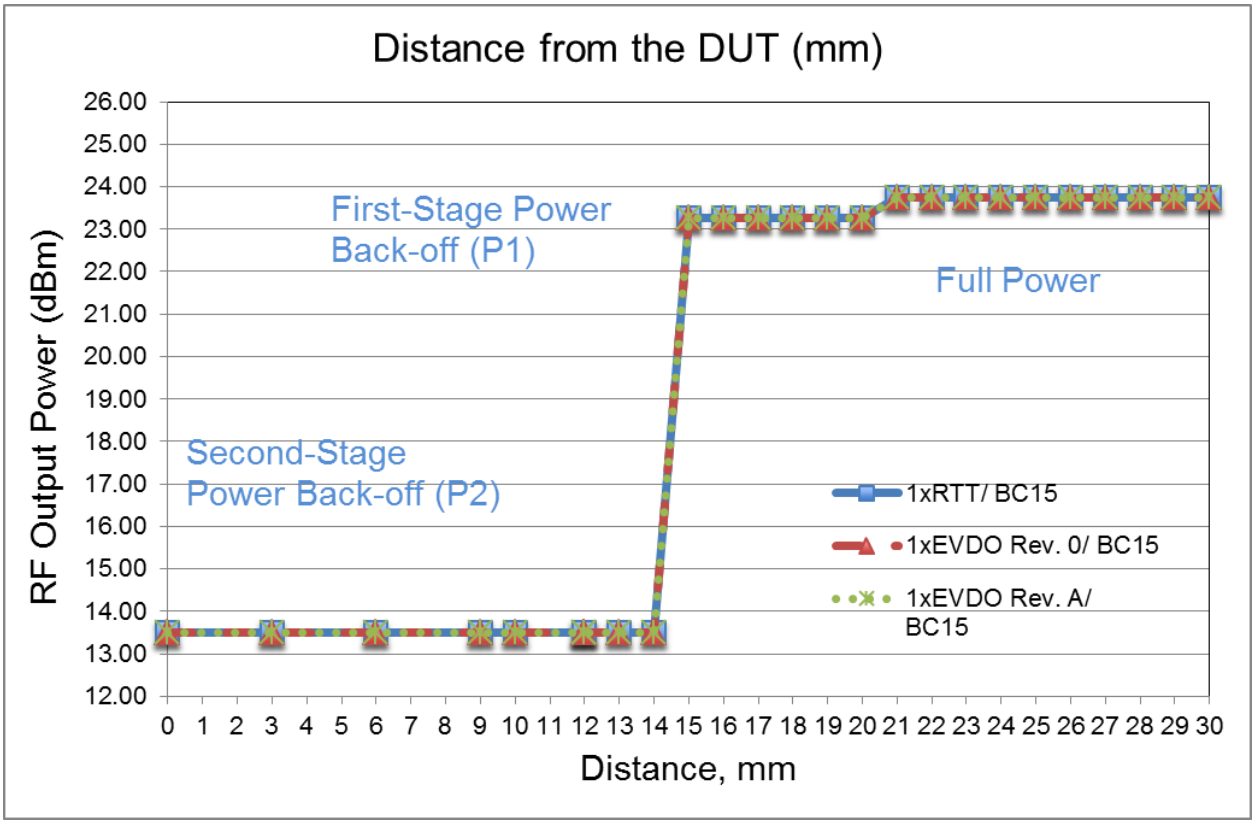
CDMA BC1



CDMA BC10

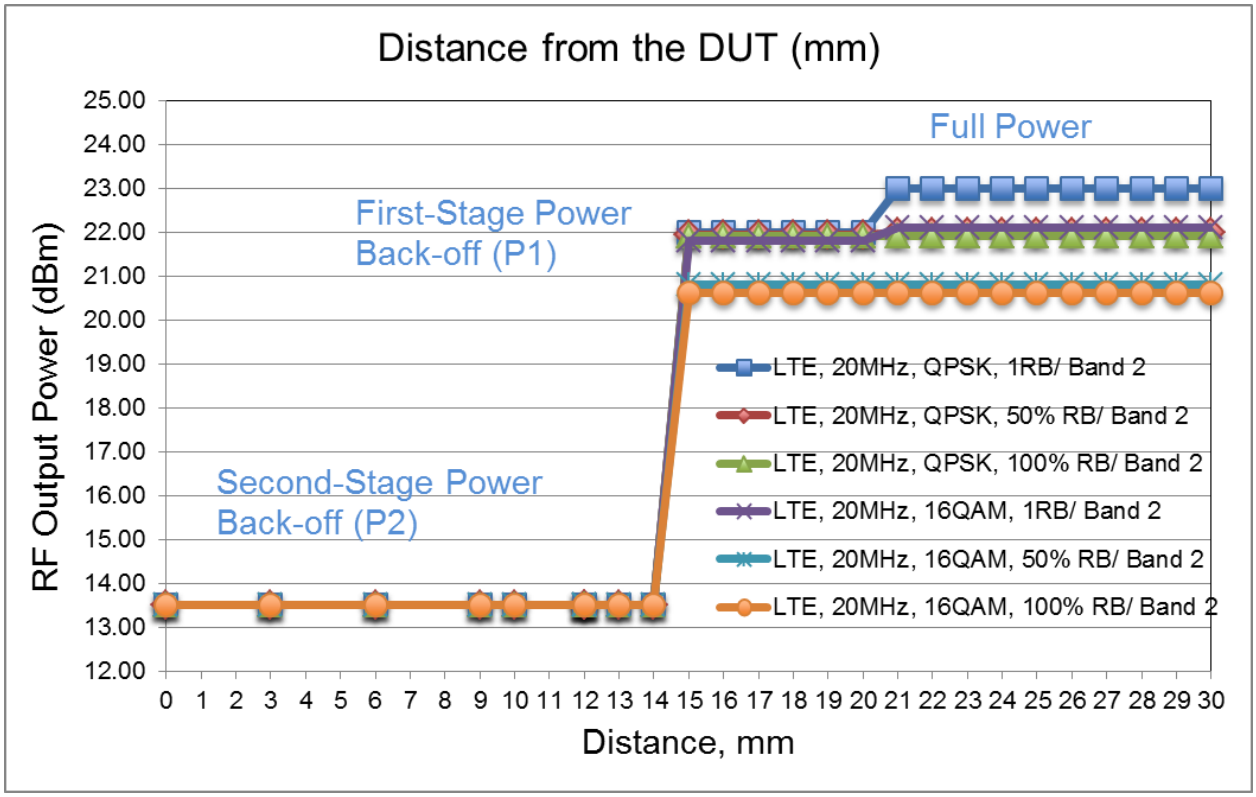


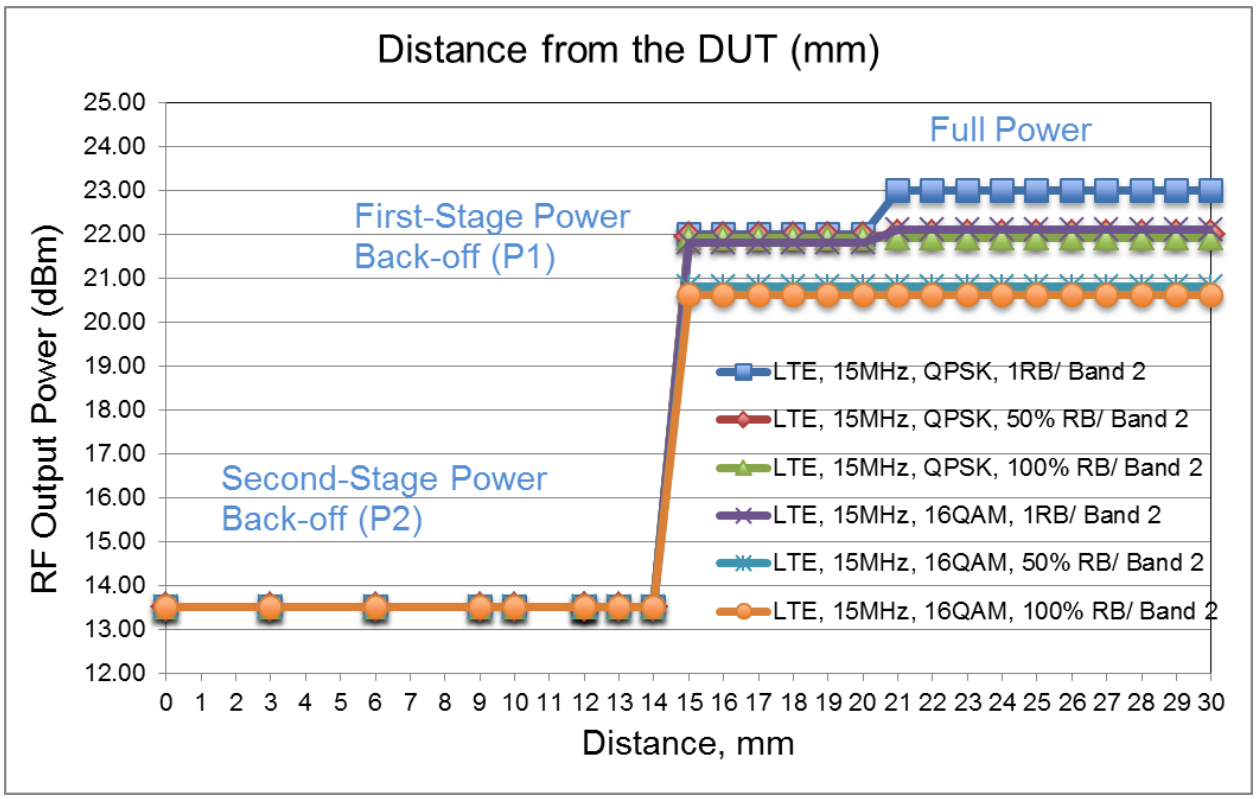
CDMA BC15



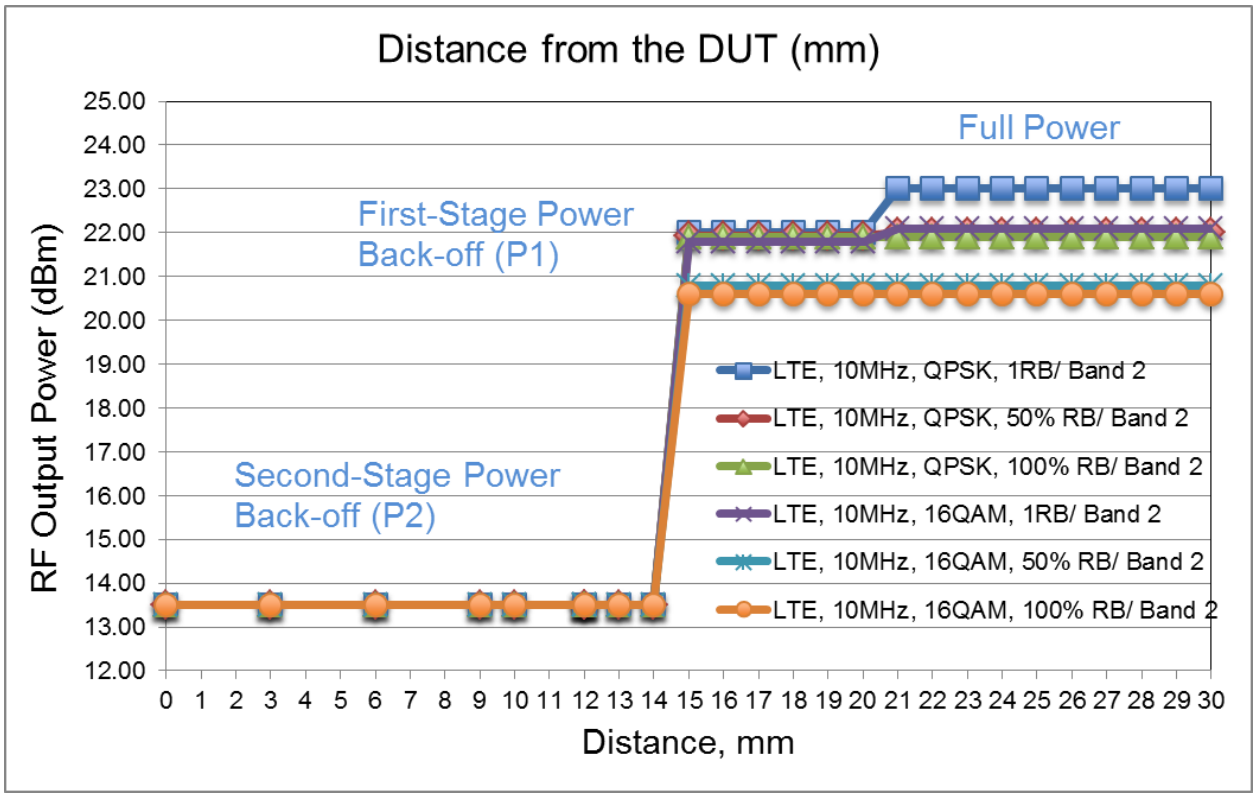
7.7.4. LTE Bands

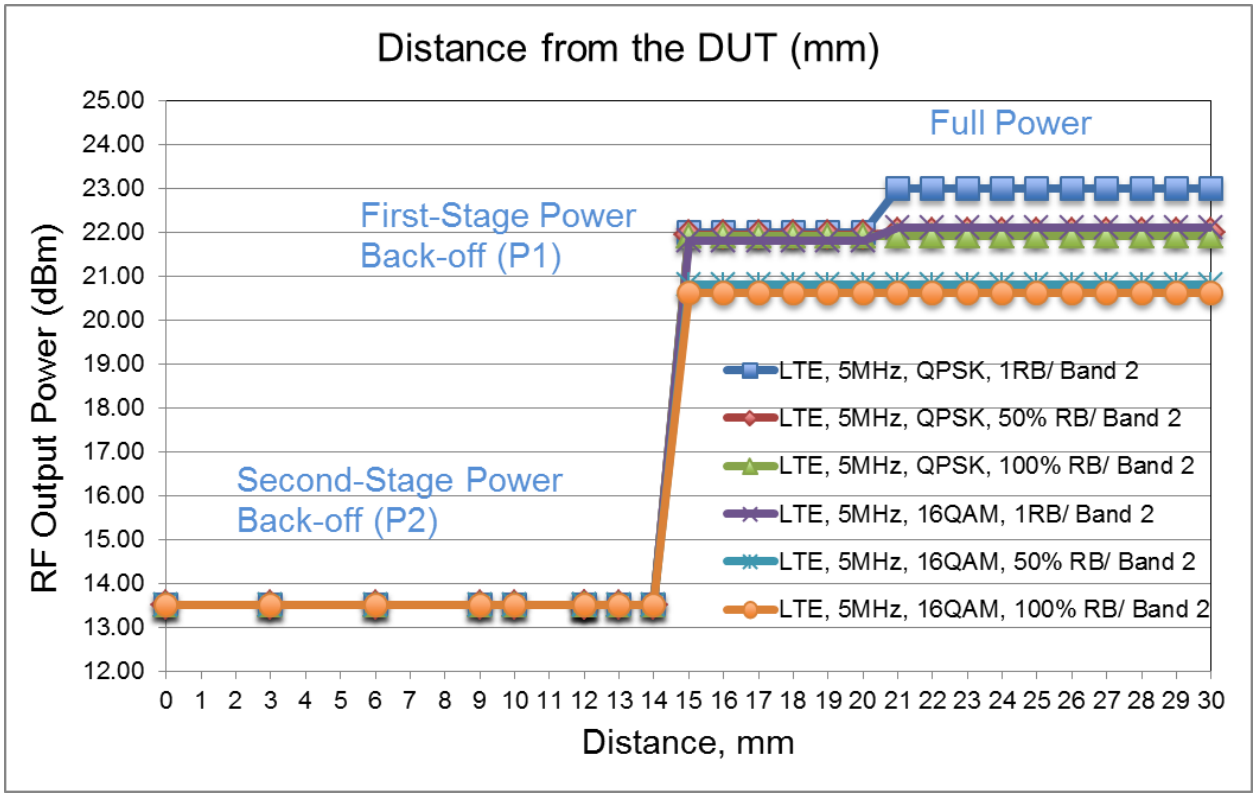
LTE Band 2



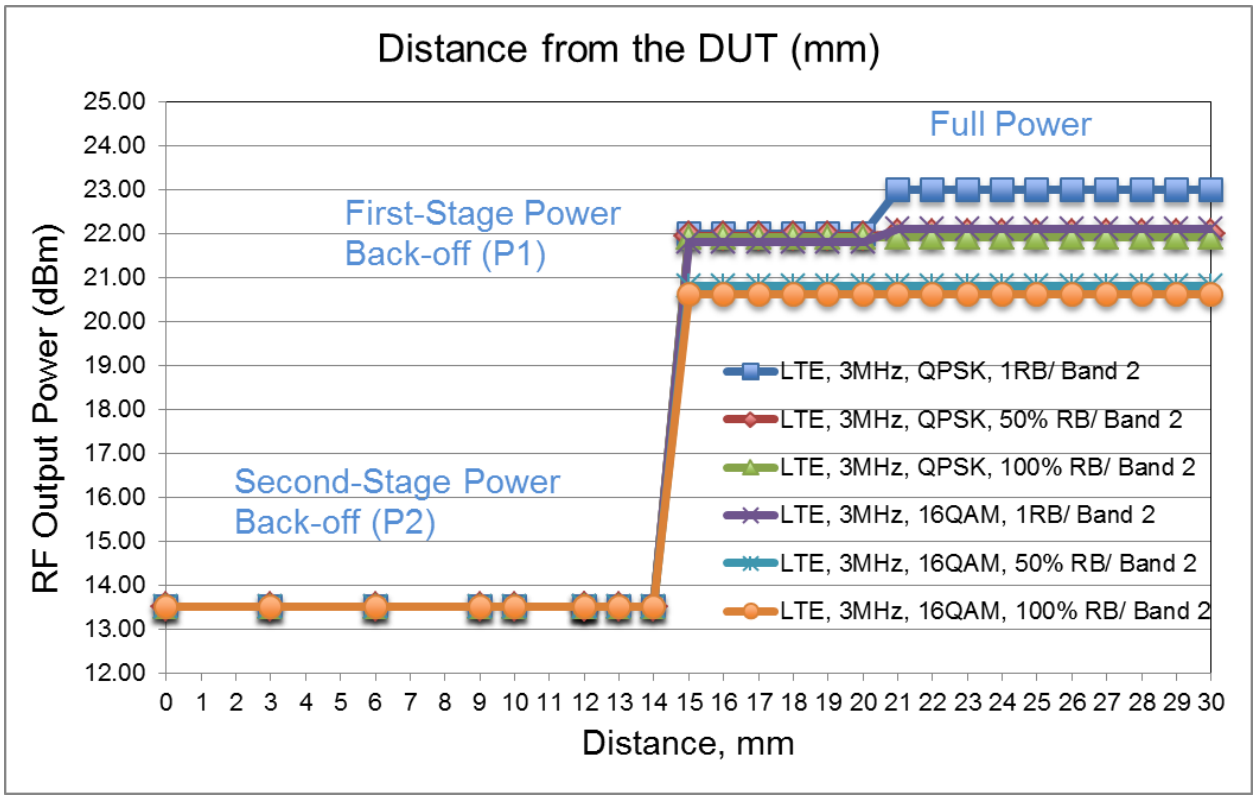


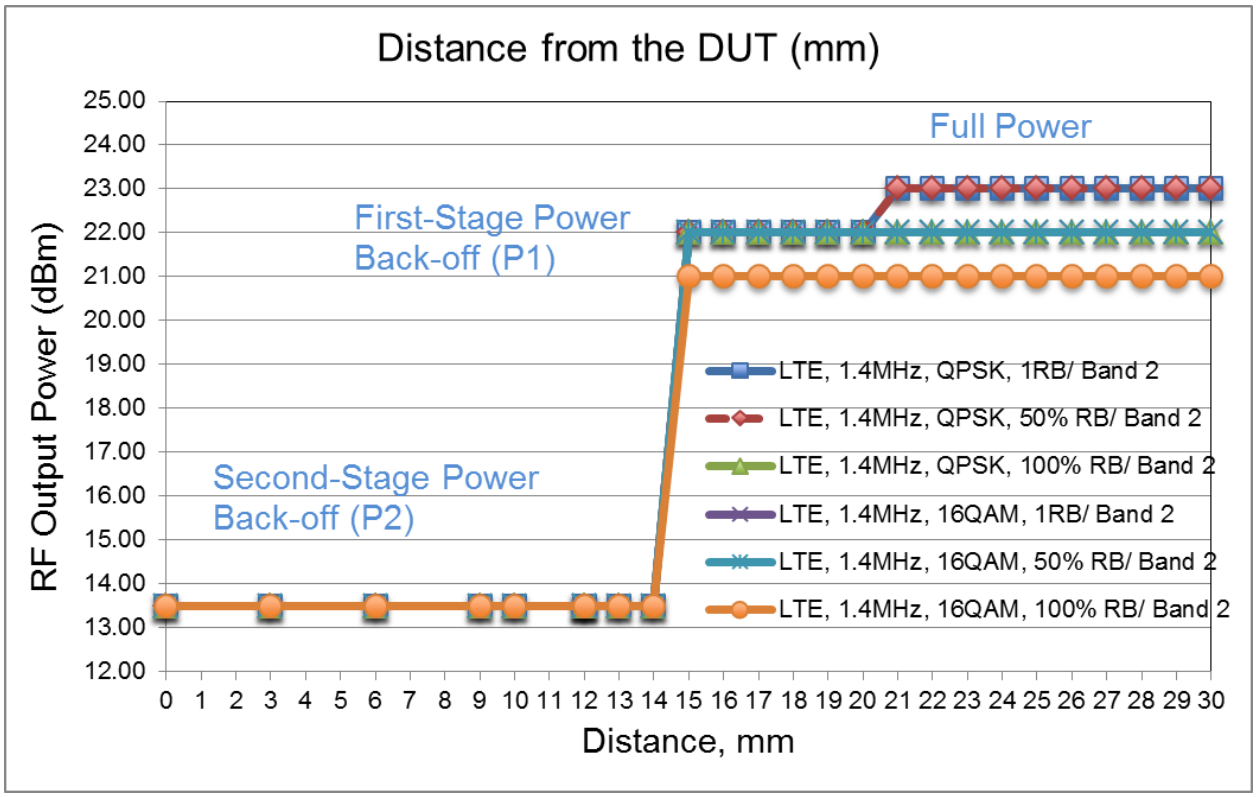
LTE Band 2 continued



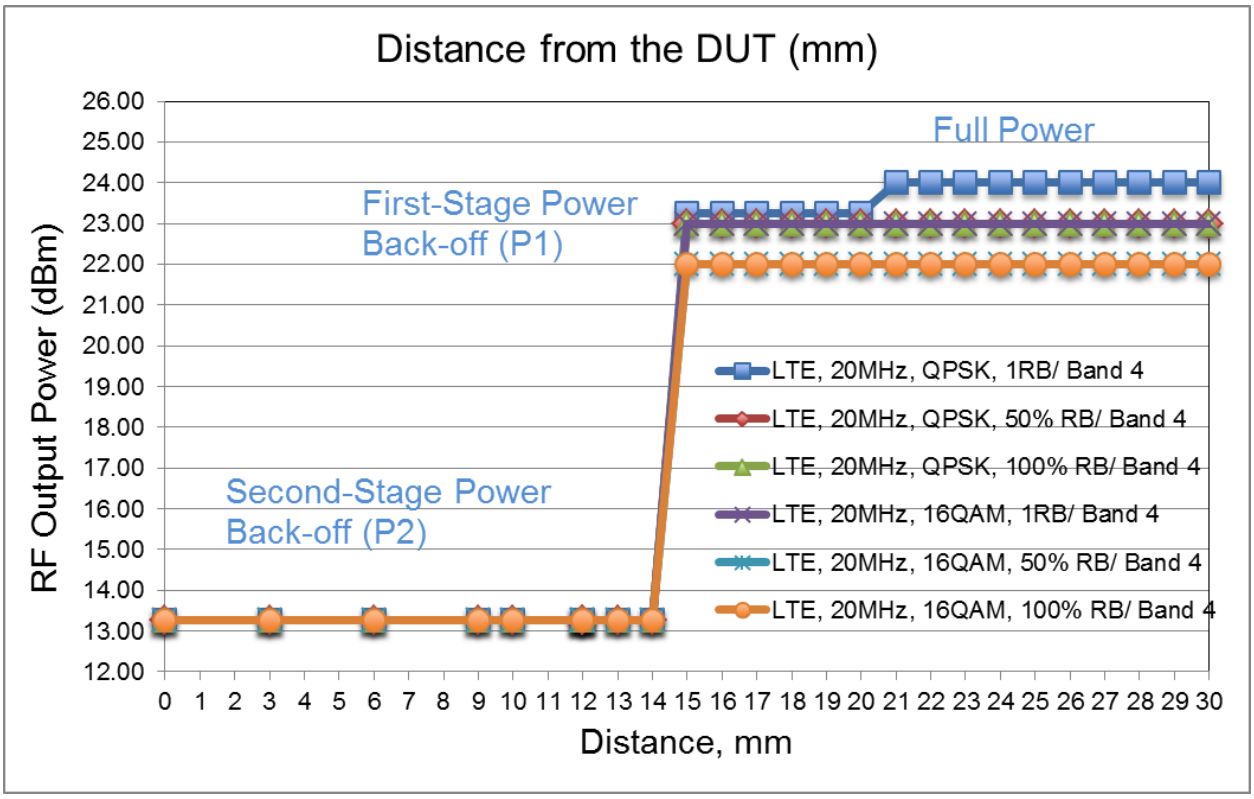


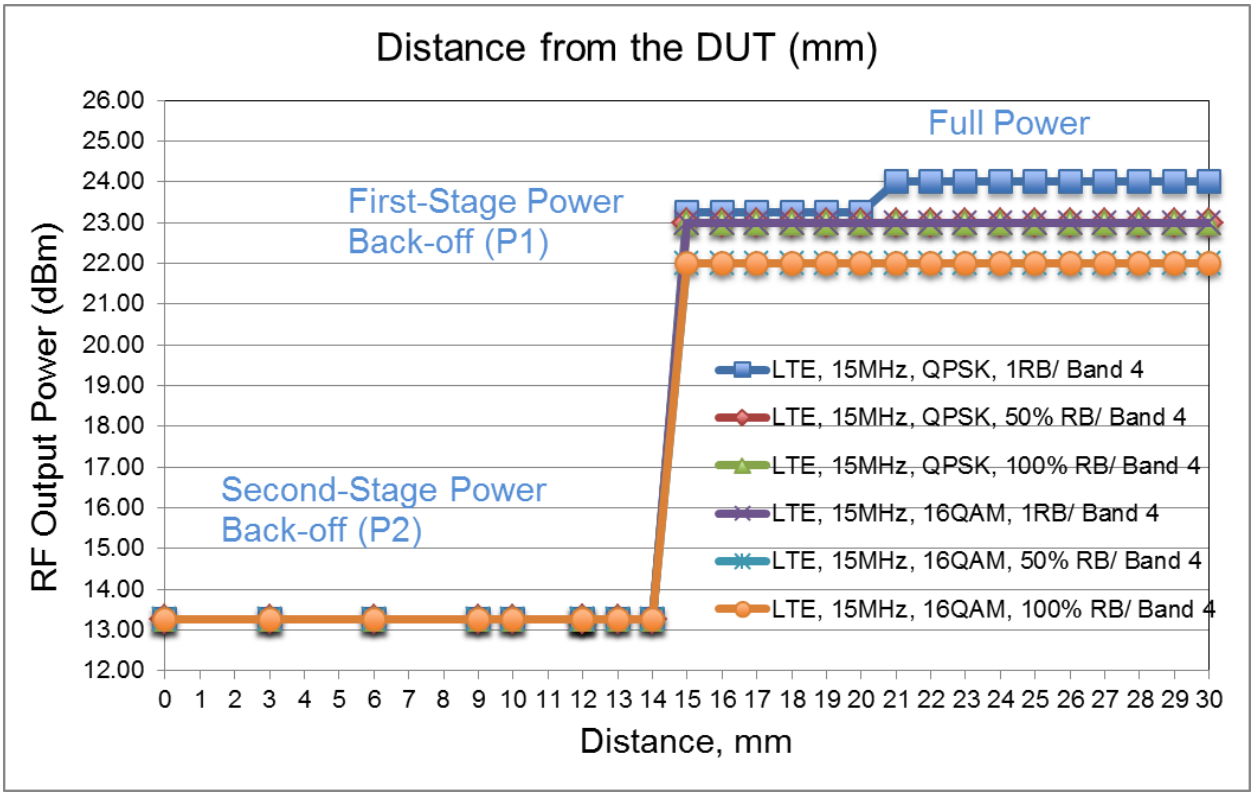
LTE Band 2 continued



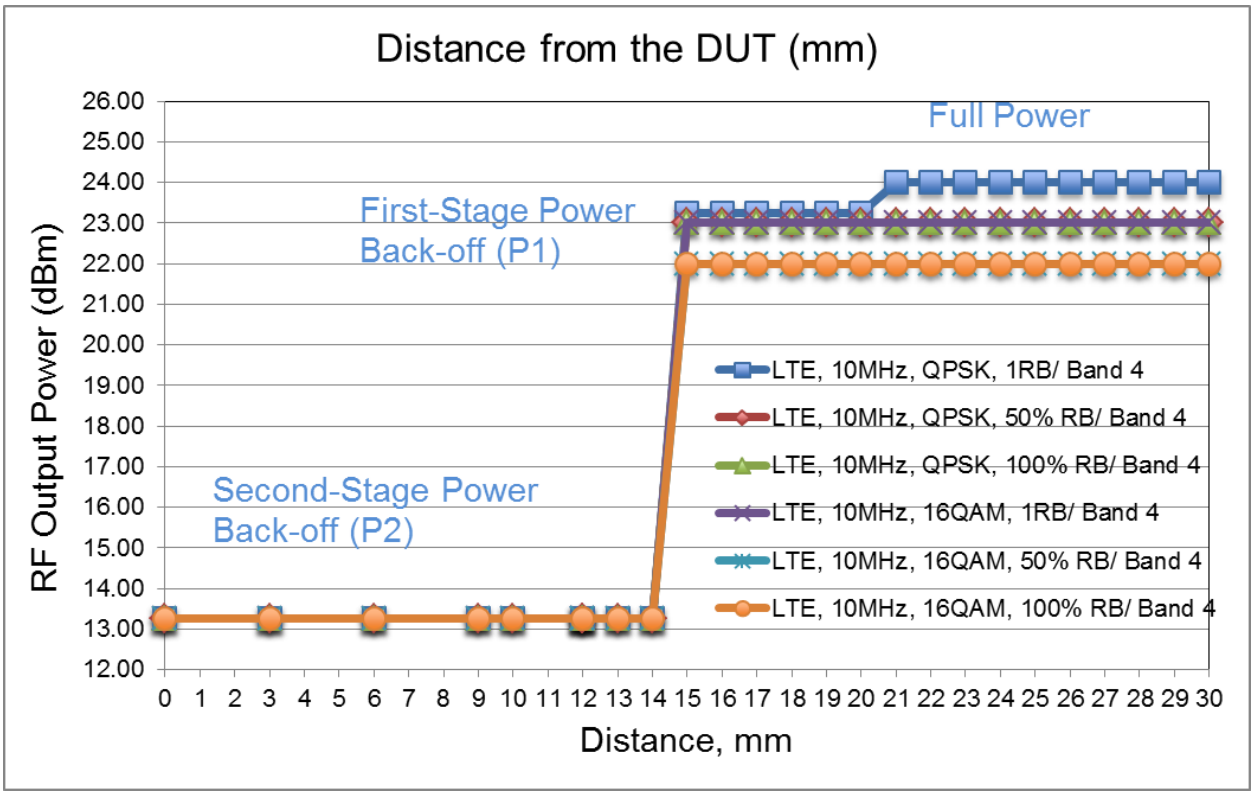


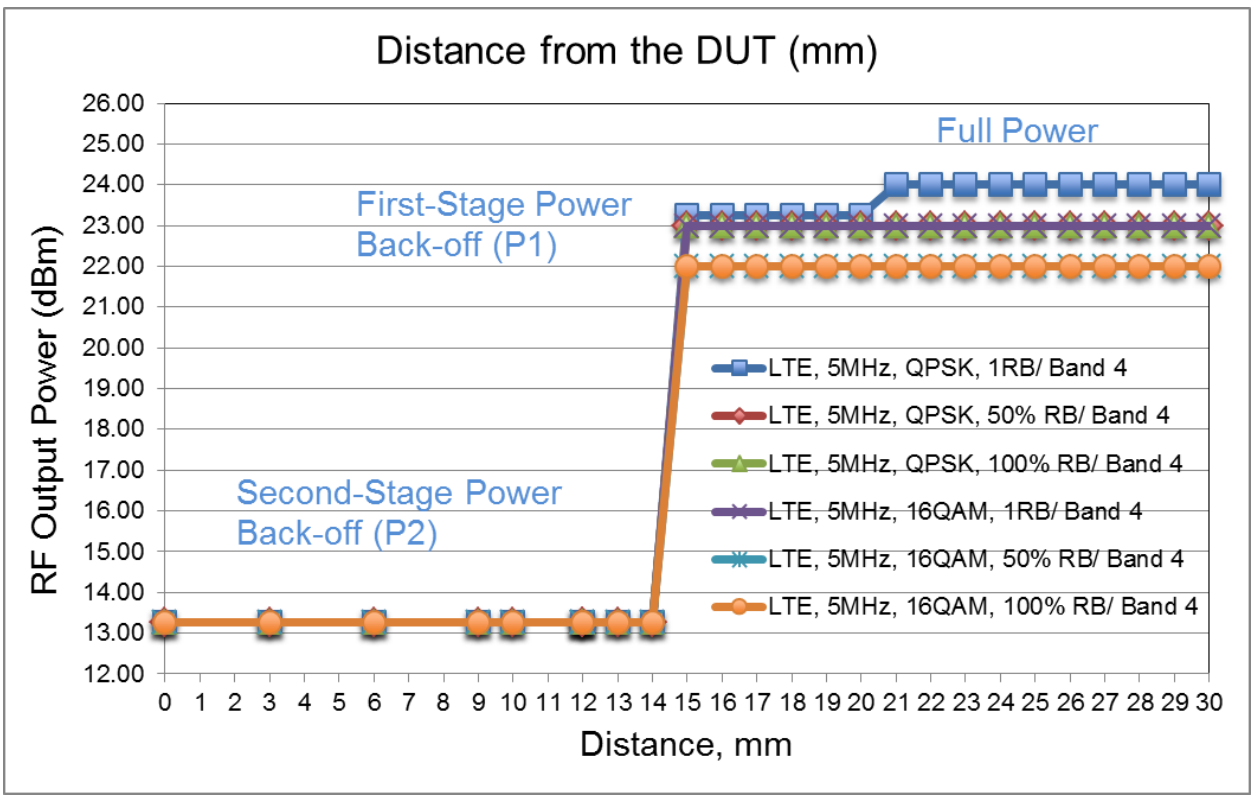
LTE Band 4



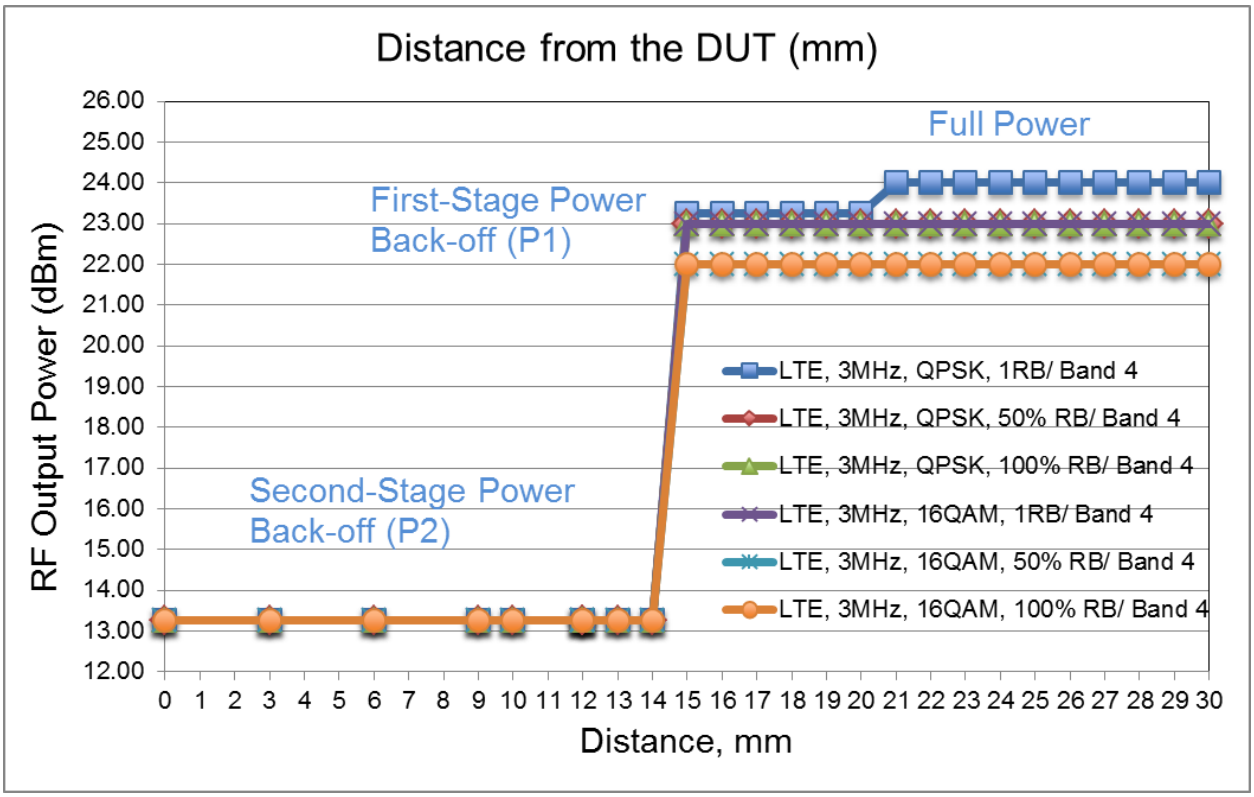


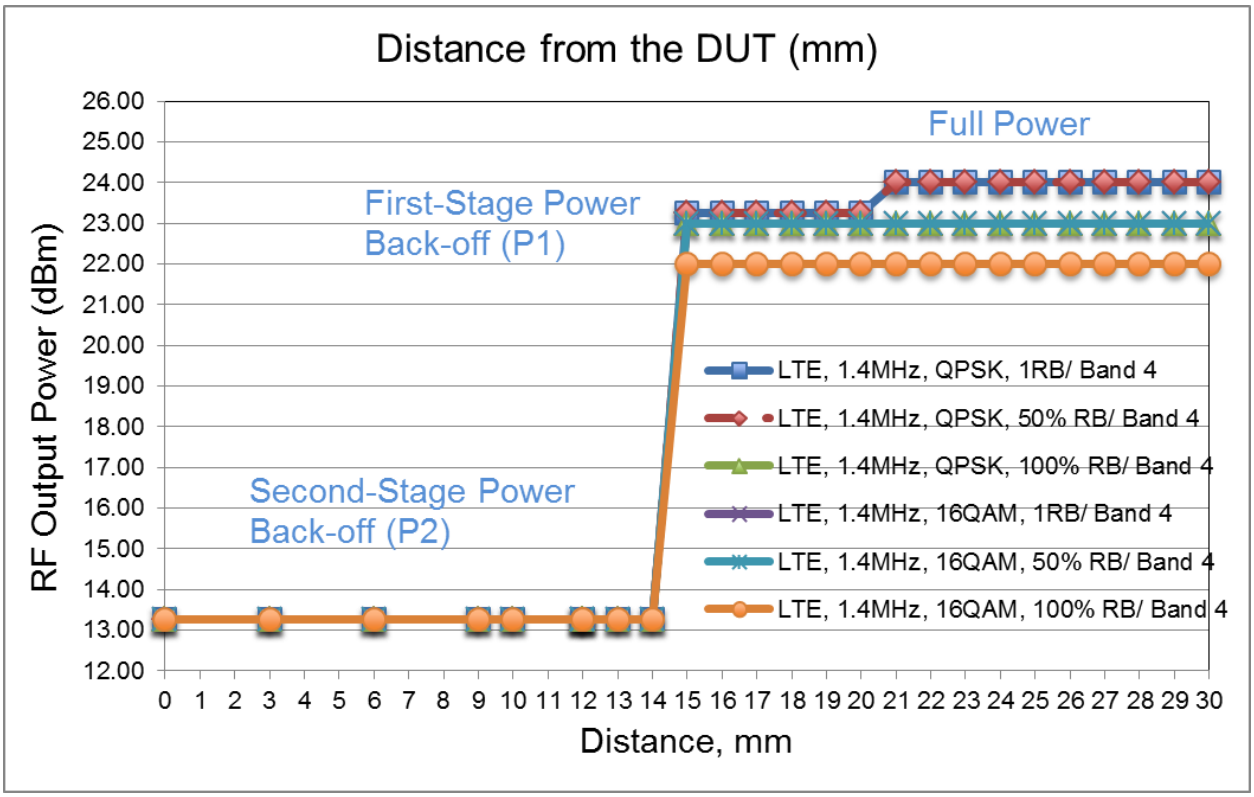
LTE Band 4 continued



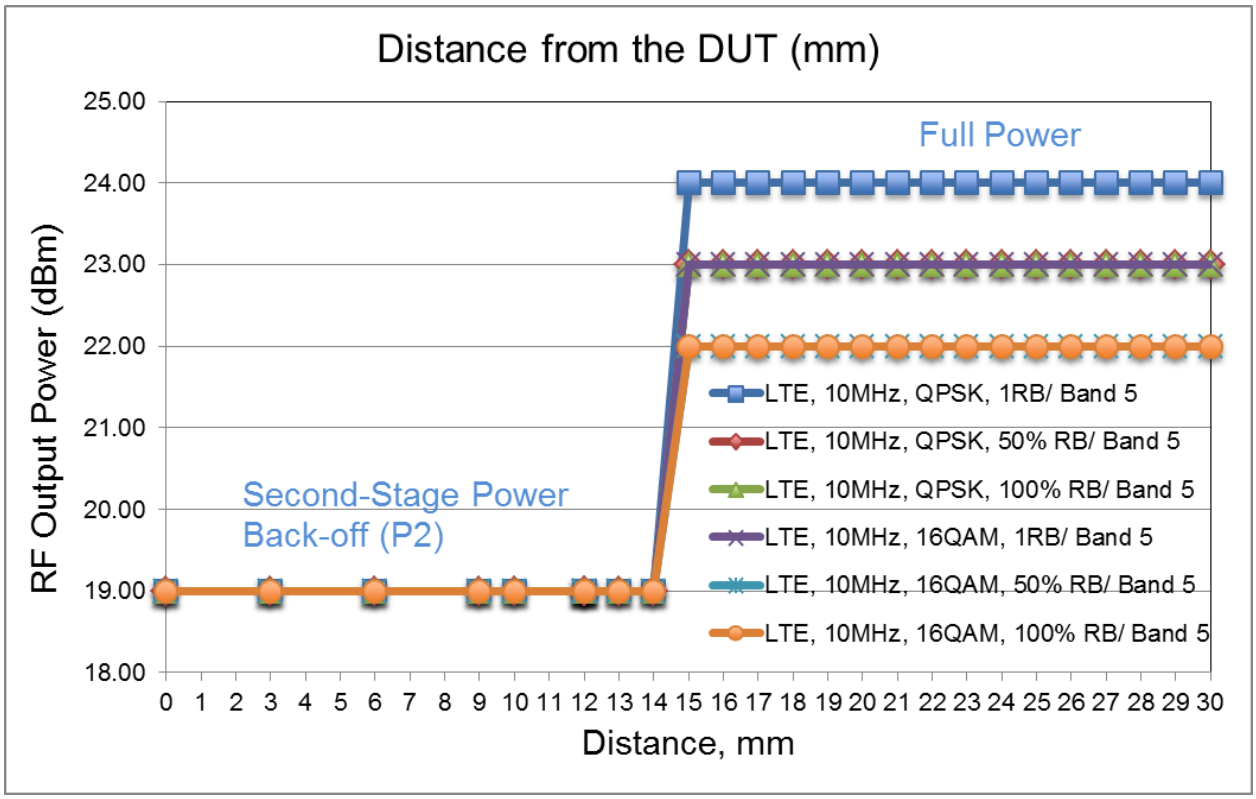


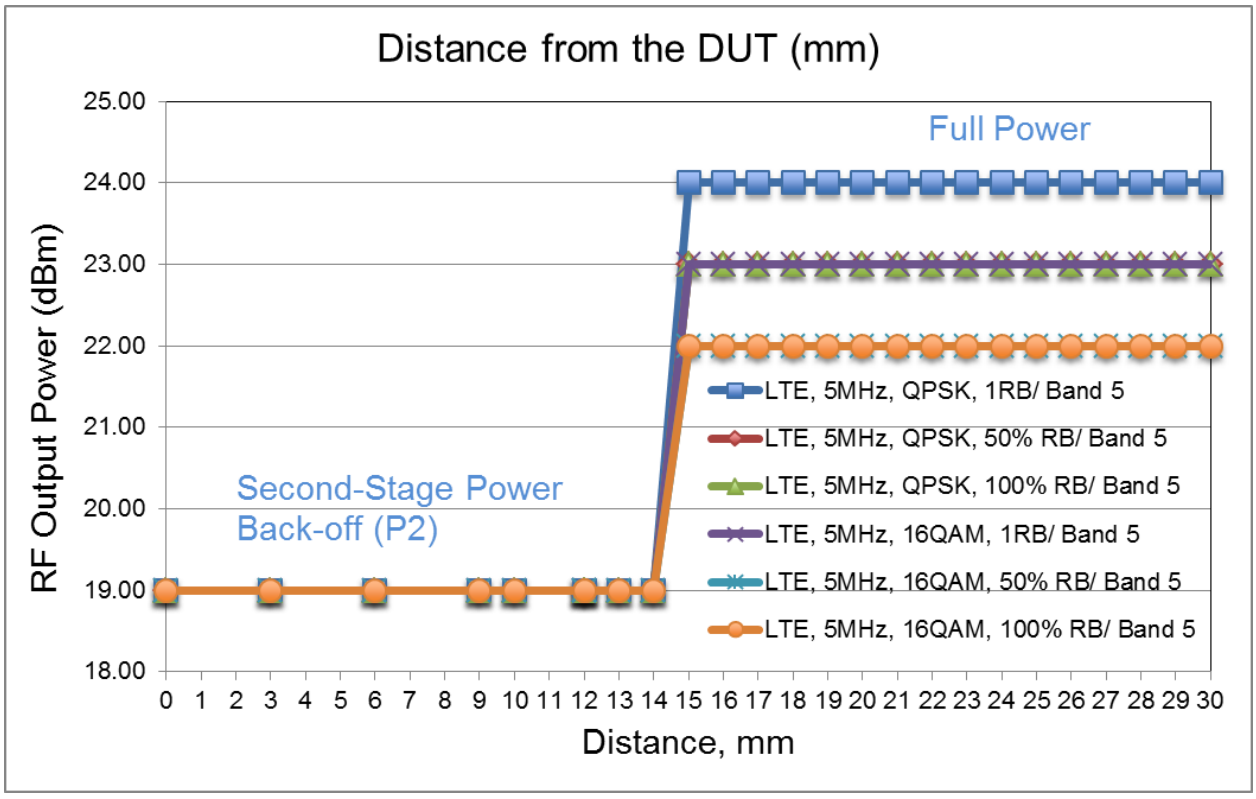
LTE Band 4 continued



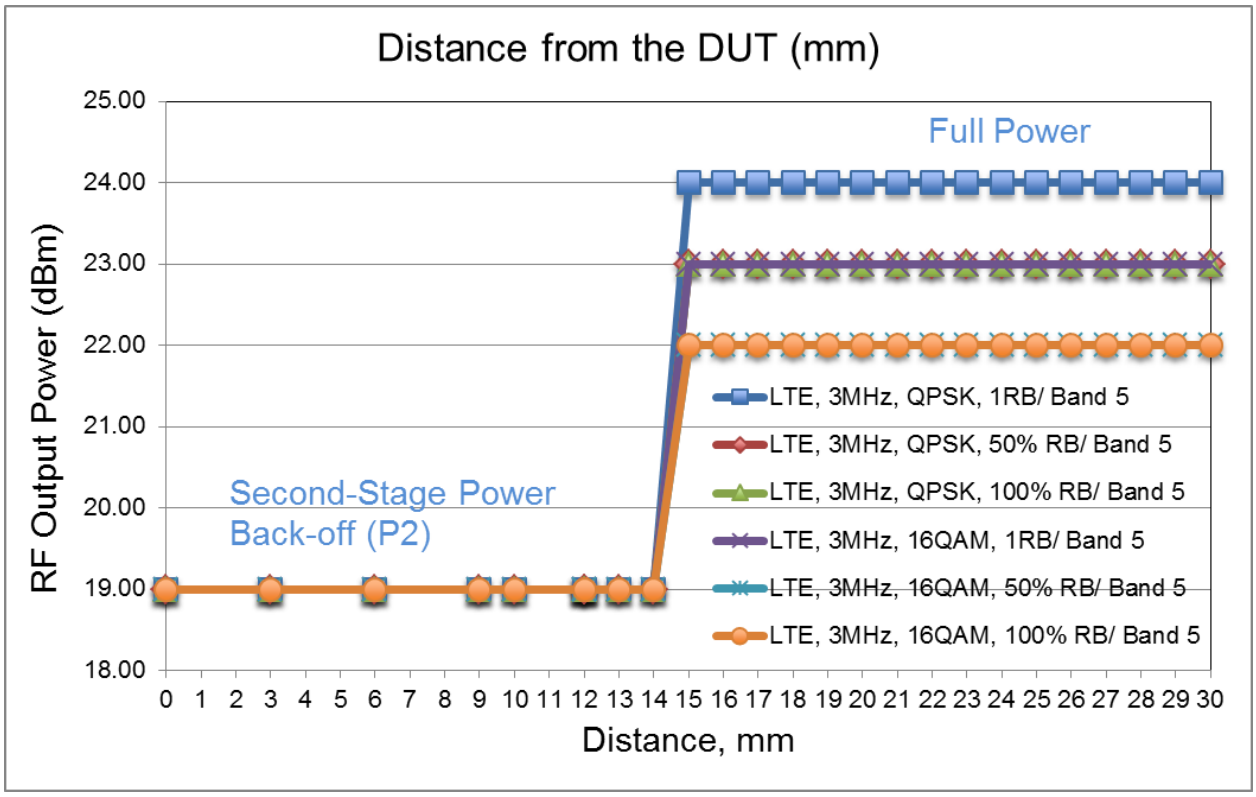


LTE Band 5

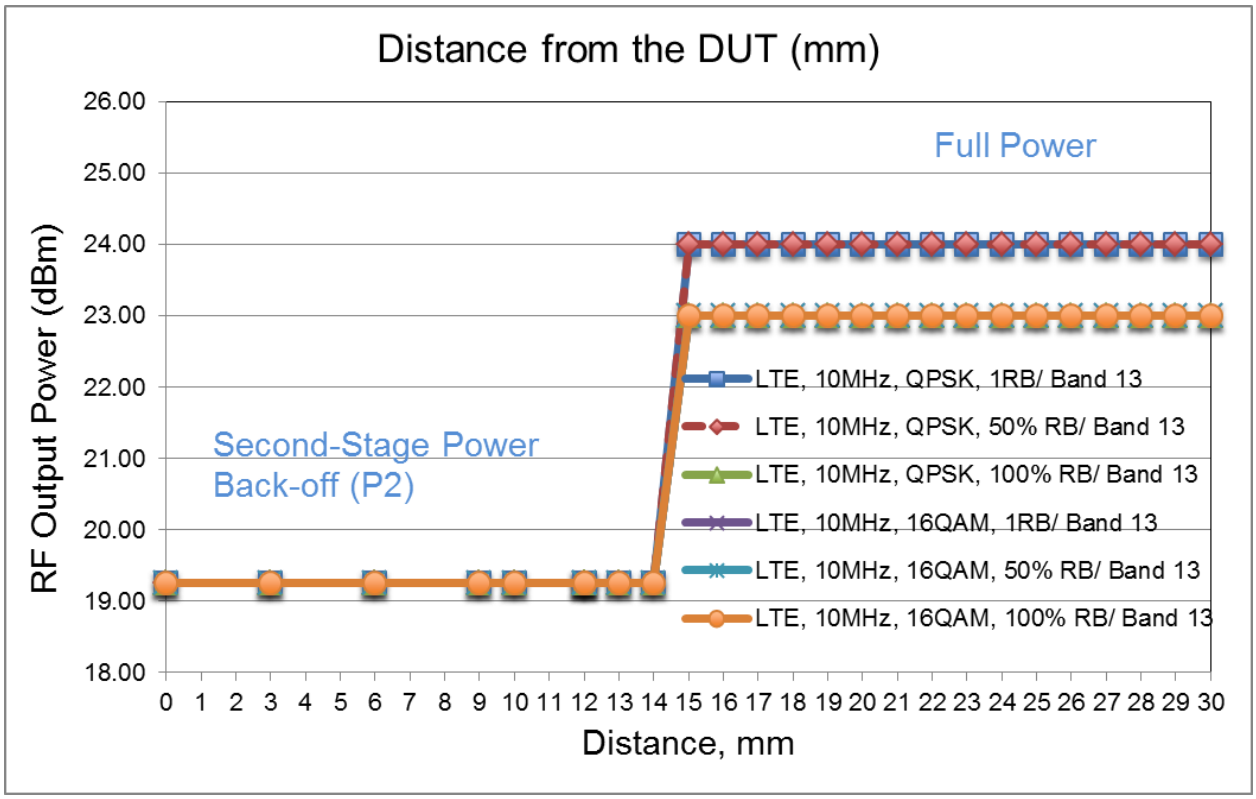


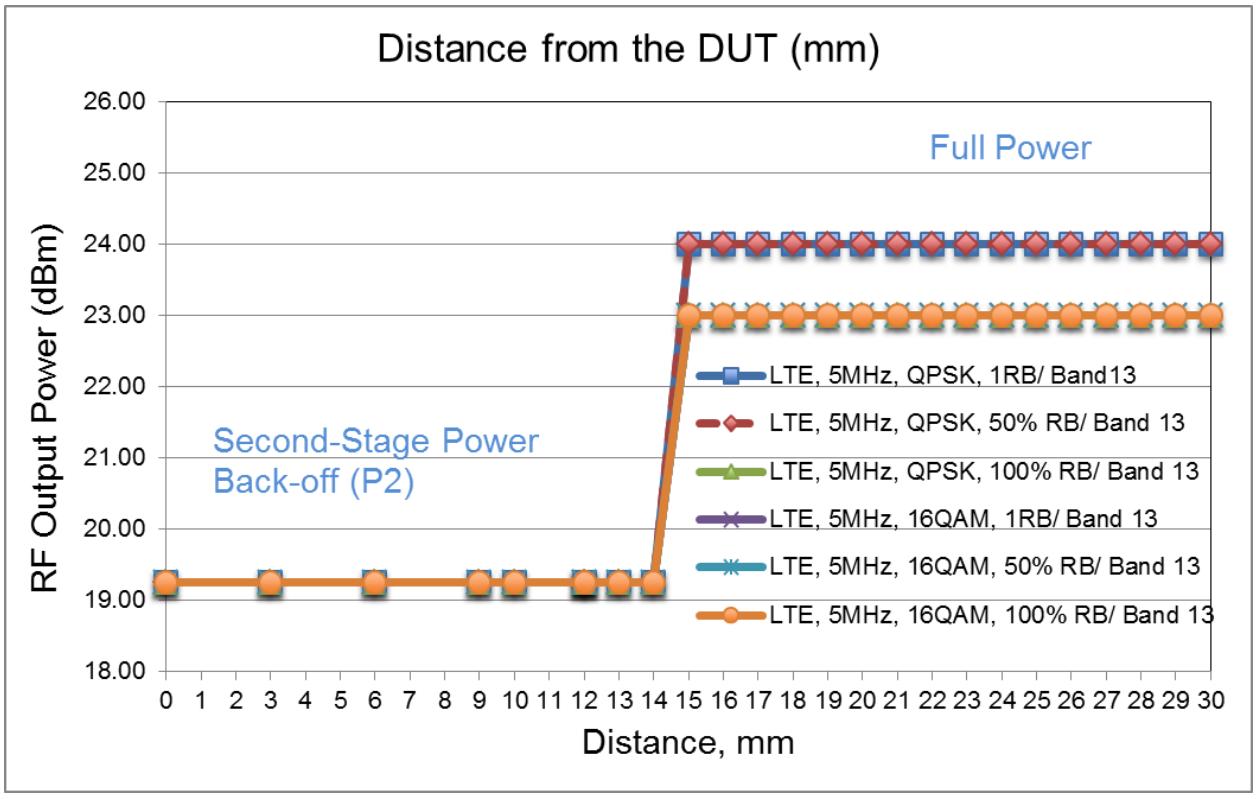


LTE Band 5 continued

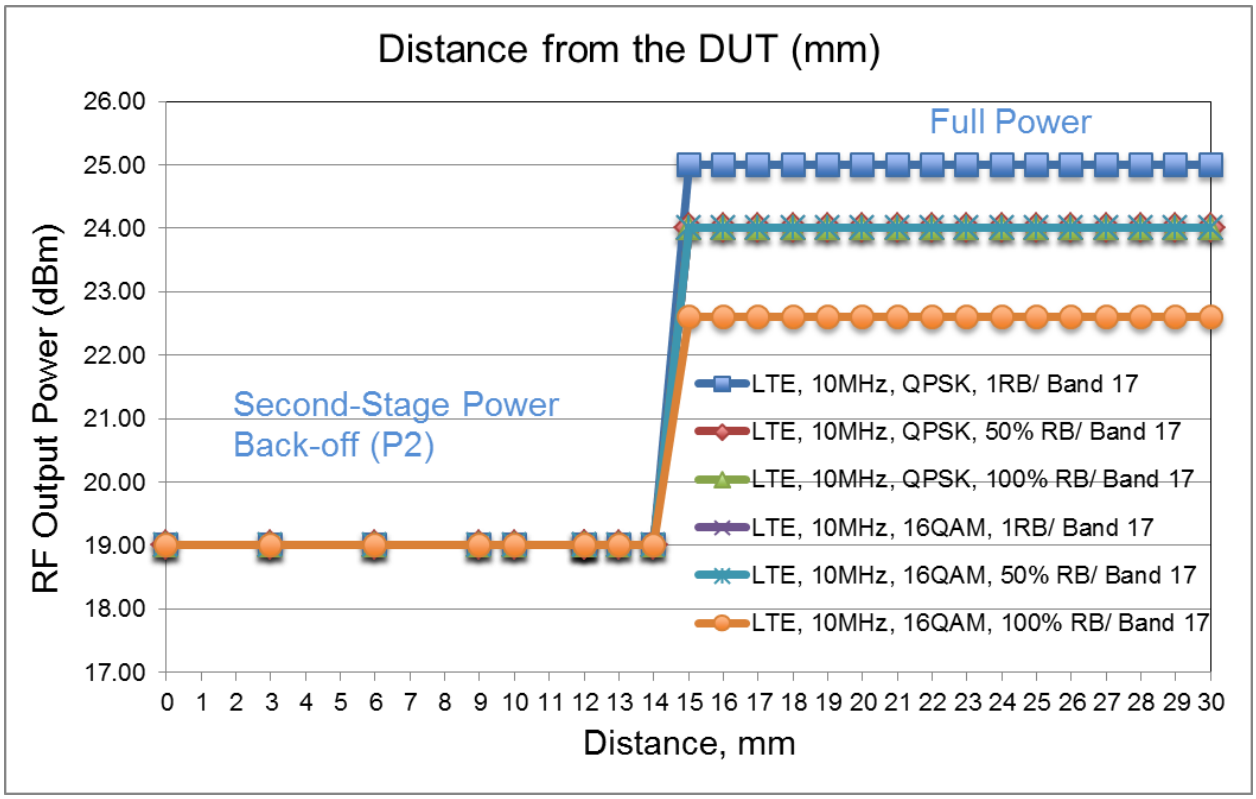


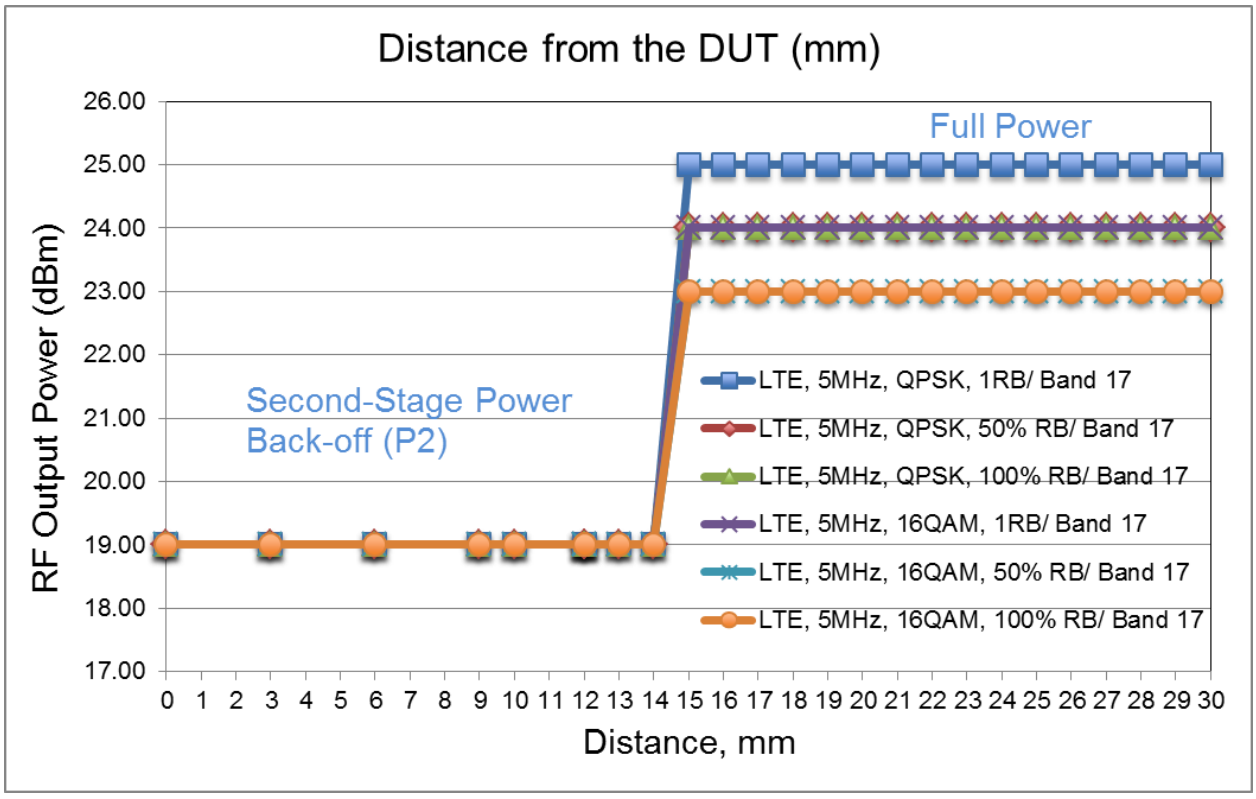
LTE Band 13



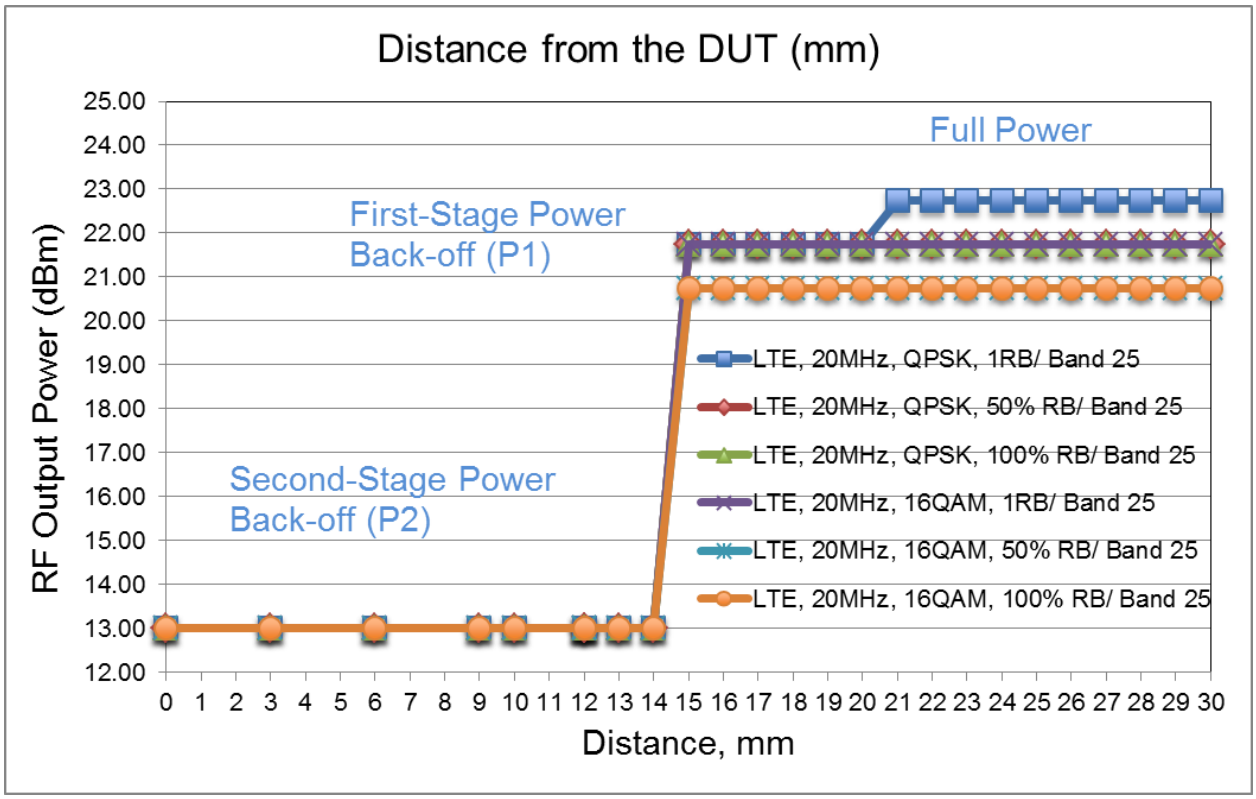


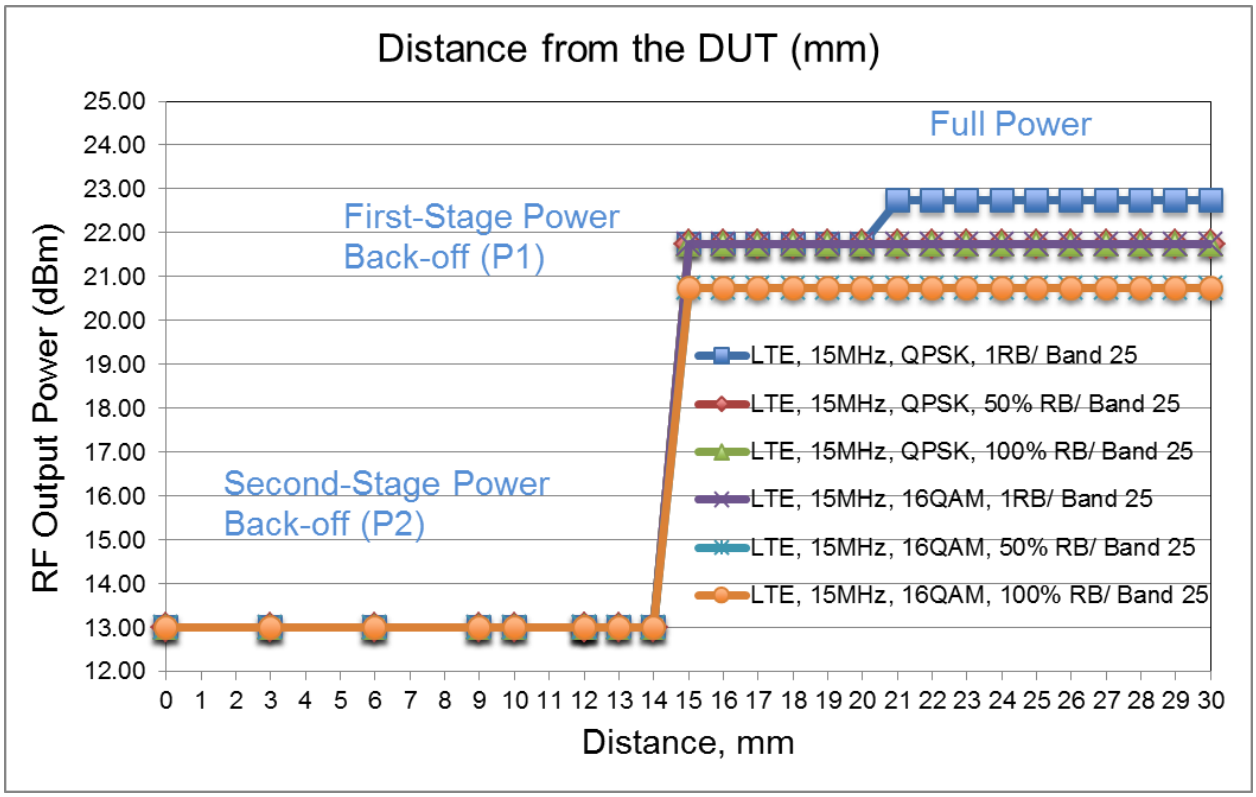
LTE Band 17



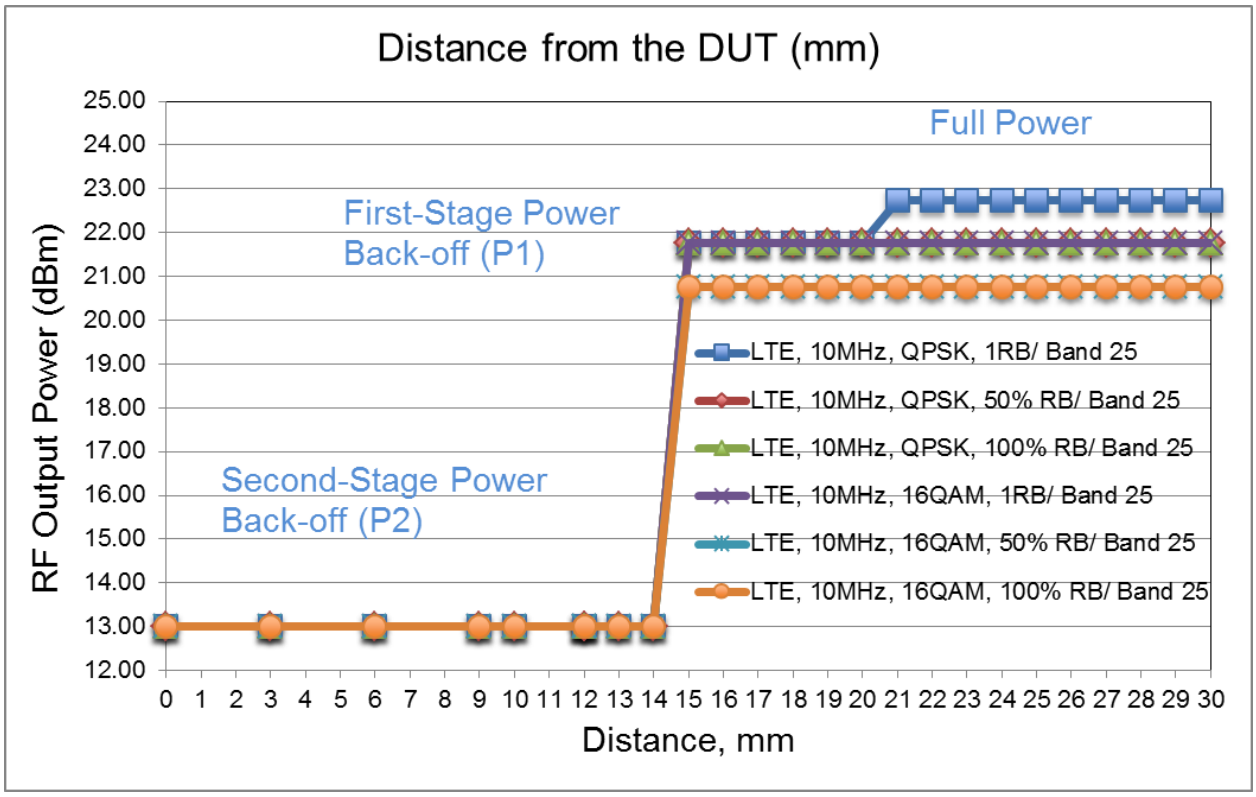


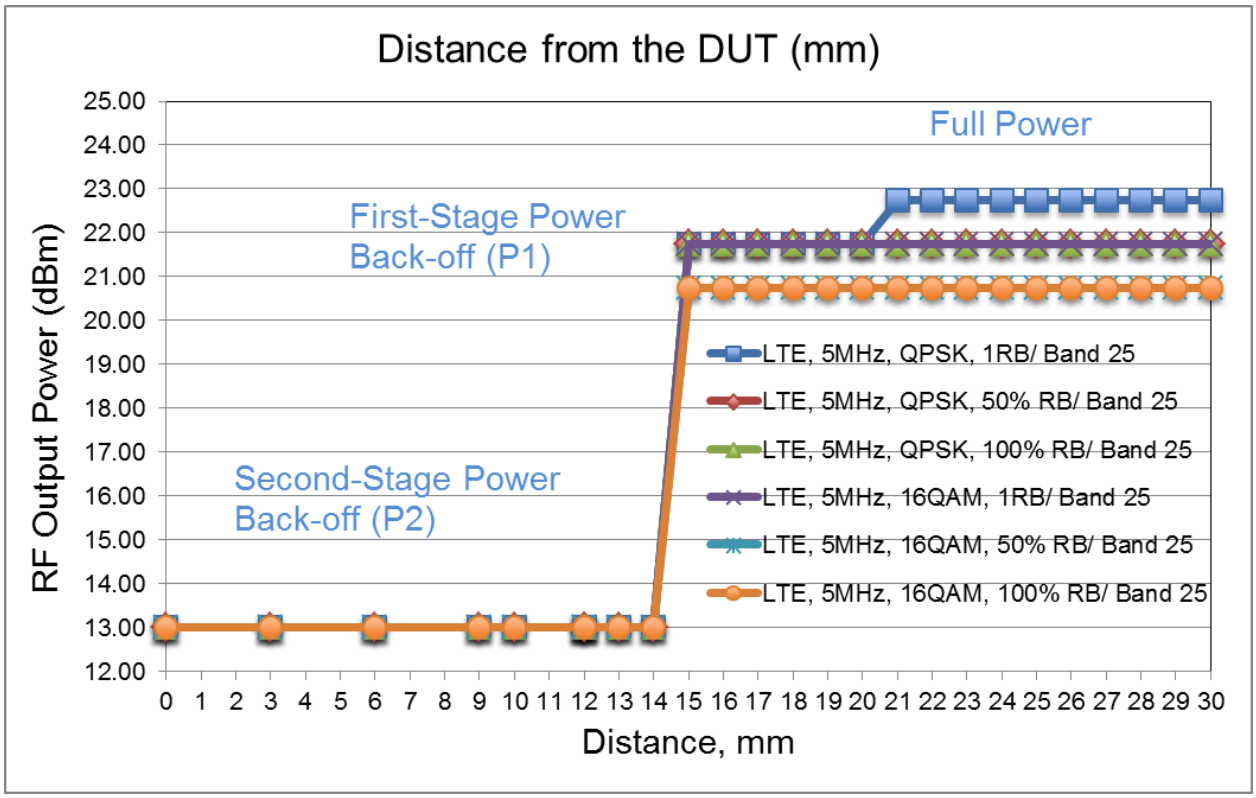
LTE Band 25



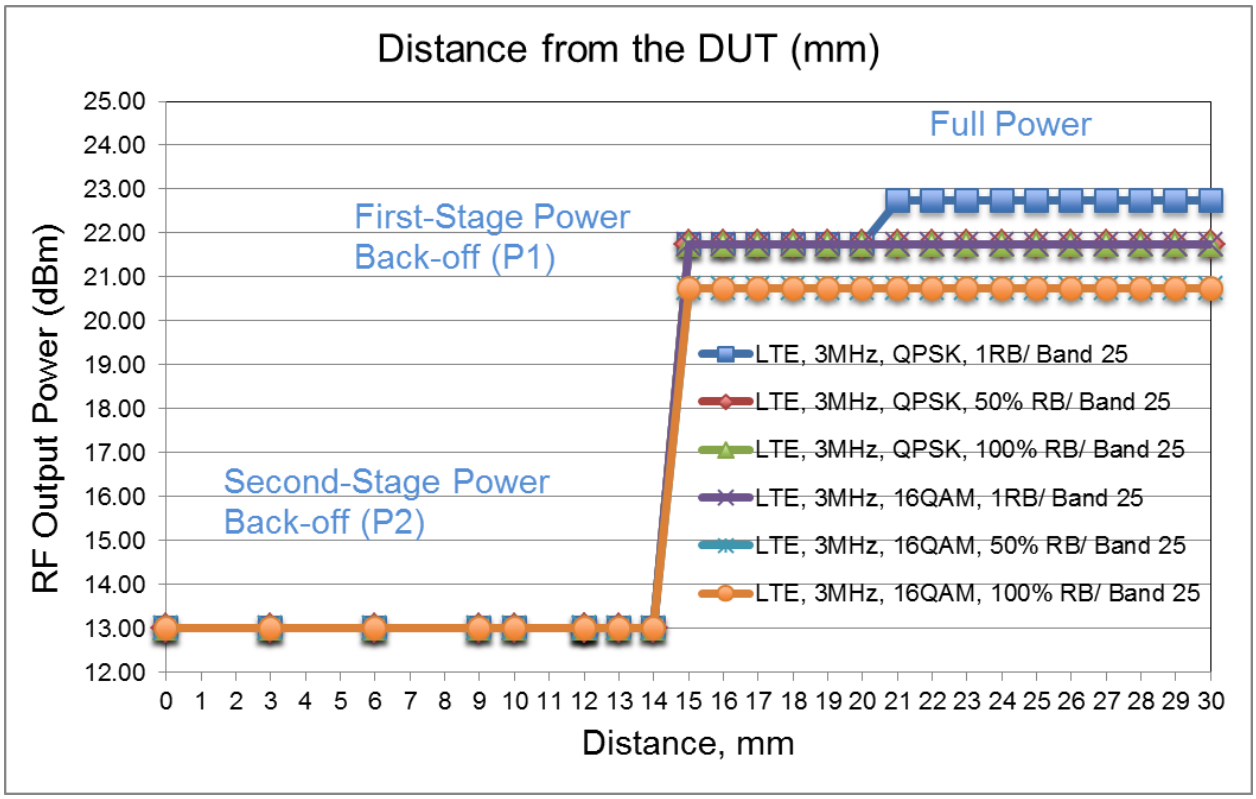


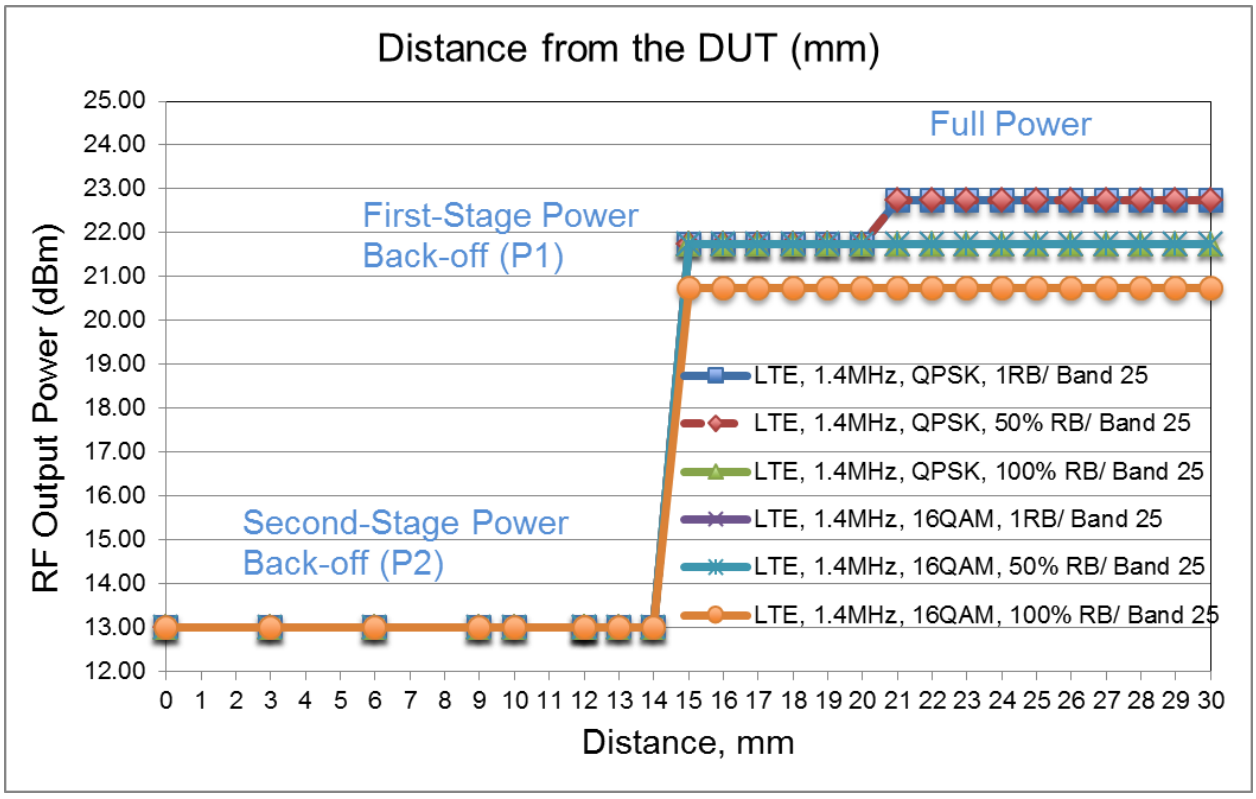
LTE Band 25 continued



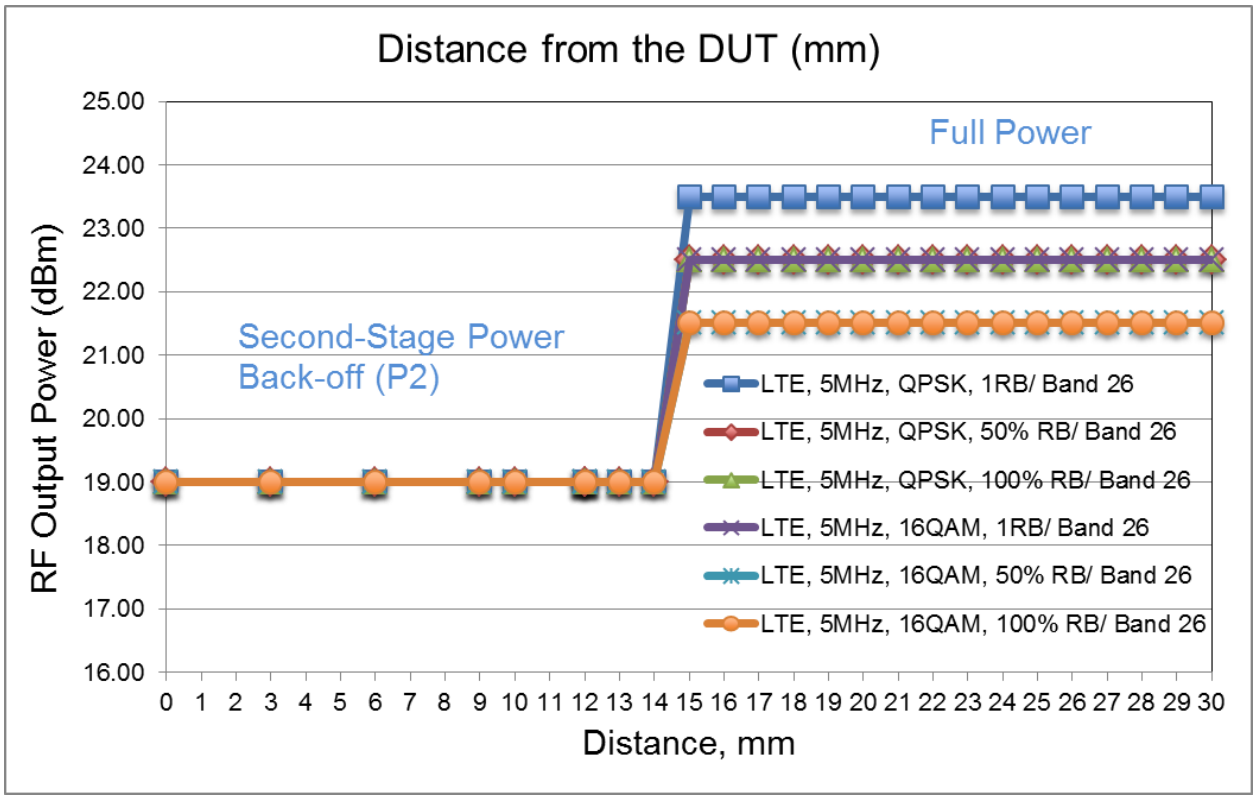


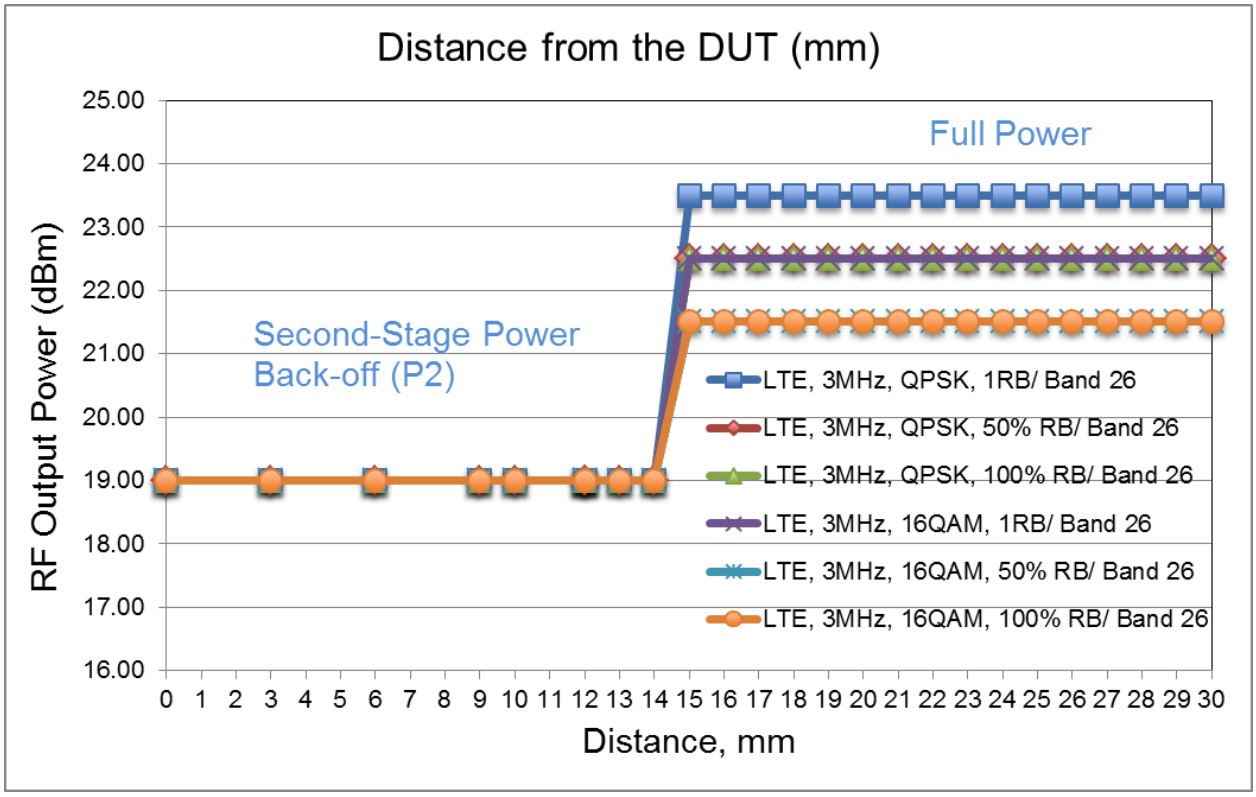
LTE Band 25 continued





LTE Band 26





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	33.50	**32.5**	33.50	**32.5**	27.50	24.50
	190	836.6	33.50	**32.5**	33.50	**32.5**	27.50	24.50
	251	848.8	33.50	**32.5**	33.50	**32.5**	27.50	24.50
			Frame Power (dBm)					
850	128	824.2	24.5	**26.5**	24.5	**26.5**	18.5	18.5
	190	836.6	24.5	**26.5**	24.5	**26.5**	18.5	18.5
	251	848.8	24.5	**26.5**	24.5	**26.5**	18.5	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	29.0	29.0	29.0	29.0	27.25	24.25
	190	836.6	29.0	29.0	29.0	29.0	27.25	24.25
	251	848.8	29.0	29.0	29.0	29.0	27.25	24.25
			Frame Power (dBm)					
850	128	824.2	20.0	23.0	20.0	23.0	18.2	18.2
	190	836.6	20.0	23.0	20.0	23.0	18.2	18.2
	251	848.8	20.0	23.0	20.0	23.0	18.2	18.2

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

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	30.70	29.5	30.70	**28.4**	22.75	20.0
	661	1880	30.75	29.5	30.75	**28.5**	22.60	20.0
	810	1909.8	30.70	29.5	30.70	**28.4**	22.60	19.9
			Frame Power (dBm)					
1900	512	1850.2	21.7	**23.5**	21.7	**22.4**	13.7	**14.0**
	661	1880	21.7	**23.5**	21.7	**22.5**	13.6	**14.0**
	810	1909.8	21.7	**23.5**	21.7	**22.4**	13.6	**13.9**
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	28.0	28.0	28.0	28.0	22.5	19.75
	661	1880	28.0	28.0	28.0	28.0	22.5	19.75
	810	1909.8	28.0	28.0	28.0	28.0	22.5	19.75
			Frame Power (dBm)					
1900	512	1850.2	19.0	22.0	19.0	22.0	13.5	13.7
	661	1880	19.0	22.0	19.0	22.0	13.5	13.7
	810	1909.8	19.0	22.0	19.0	22.0	13.5	13.7

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

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	23.0	22.0	13.4
		9400	1880.0	23.0	22.0	13.3
		9538	1907.6	23.0	22.0	13.5
W-CDMA Band 4	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	23.75	23.18	13.5
		1413	1732.6	23.75	23.12	13.4
		1513	1752.6	23.75	23.08	13.5
W-CDMA Band 5	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.5	24.5	18.75
		4183	836.6	24.5	24.5	18.75
		4233	846.6	24.5	24.5	18.75

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			

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	21.8	21.8	13.3
		9400	1880.0	21.9	21.9	13.4
		9538	1907.6	21.6	21.6	13.4
	Subtest 2	9262	1852.4	21.6	21.6	13.4
		9400	1880.0	22.0	22.0	13.5
		9538	1907.6	21.6	21.6	13.3
	Subtest 3	9262	1852.4	21.5	21.5	13.2
		9400	1880.0	21.6	21.6	13.3
		9538	1907.6	21.7	21.7	13.4
	Subtest 4	9262	1852.4	21.6	21.6	13.5
		9400	1880.0	21.8	21.8	13.3
		9538	1907.6	21.7	21.7	13.4
W-CDMA Band 4	Subtest 1	1312	1712.4	22.5	22.5	13.2
		1413	1732.6	22.7	22.7	13.3
		1513	1752.6	22.6	22.6	13.3
	Subtest 2	1312	1712.4	22.5	22.5	13.4
		1413	1732.6	22.5	22.5	13.2
		1513	1752.6	22.4	22.4	13.2
	Subtest 3	1312	1712.4	22.4	22.4	13.3
		1413	1732.6	22.5	22.5	13.3
		1513	1752.6	22.4	22.4	13.5
	Subtest 4	1312	1712.4	22.5	22.5	13.2
		1413	1732.6	22.6	22.6	13.2
		1513	1752.6	22.5	22.5	13.4
W-CDMA Band 5	Subtest 1	4132	826.4	23.3	23.3	18.7
		4183	836.6	23.5	23.5	18.7
		4233	846.6	23.4	23.4	18.7
	Subtest 2	4132	826.4	23.4	23.4	18.6
		4183	836.6	23.4	23.4	18.5
		4233	846.6	23.3	23.3	18.6
	Subtest 3	4132	826.4	23.2	23.2	18.5
		4183	836.6	23.2	23.2	18.5
		4233	846.6	23.3	23.3	18.6
	Subtest 4	4132	826.4	23.2	23.2	18.6
		4183	836.6	23.3	23.3	18.7
		4233	846.6	23.3	23.3	18.6

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

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	

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	21.5	21.5	13.4
		9400	1880.0	21.5	21.5	13.3
		9538	1907.6	21.7	21.7	13.3
	Subtest 2	9262	1852.4	21.4	21.4	13.2
		9400	1880.0	21.2	21.2	13.5
		9538	1907.6	21.3	21.3	13.3
	Subtest 3	9262	1852.4	21.4	21.4	13.5
		9400	1880.0	21.5	21.5	13.4
		9538	1907.6	21.5	21.5	13.4
	Subtest 4	9262	1852.4	21.5	21.5	13.3
		9400	1880.0	21.6	21.6	13.2
		9538	1907.6	21.6	21.6	13.3
	Subtest 5	9262	1852.4	21.7	21.7	13.4
		9400	1880.0	21.8	21.8	13.5
		9538	1907.6	21.7	21.7	13.4
W-CDMA Band 4	Subtest 1	1312	1712.4	22.4	22.4	13.2
		1413	1732.6	22.6	22.6	13.3
		1513	1752.6	22.5	22.5	13.3
	Subtest 2	1312	1712.4	22.4	22.4	13.4
		1413	1732.6	22.3	22.3	13.3
		1513	1752.6	22.2	22.2	13.5
	Subtest 3	1312	1712.4	22.2	22.2	13.4
		1413	1732.6	22.3	22.3	13.4
		1513	1752.6	22.4	22.4	13.3
	Subtest 4	1312	1712.4	22.3	22.3	13.2
		1413	1732.6	22.4	22.4	13.2
		1513	1752.6	22.4	22.4	13.3
	Subtest 5	1312	1712.4	22.5	22.5	13.5
		1413	1732.6	22.5	22.5	13.4
		1513	1752.6	22.4	22.4	13.4
W-CDMA Band 5	Subtest 1	4132	826.4	23.2	23.2	18.6
		4183	836.6	23.3	23.3	18.7
		4233	846.6	23.1	23.1	18.6
	Subtest 2	4132	826.4	22.6	22.6	18.6
		4183	836.6	22.8	22.8	18.5
		4233	846.6	22.8	22.8	18.5
	Subtest 3	4132	826.4	22.6	22.6	18.5
		4183	836.6	22.5	22.5	18.6
		4233	846.6	22.4	22.4	18.7
	Subtest 4	4132	826.4	22.2	22.2	18.4
		4183	836.6	22.5	22.5	18.5
		4233	846.6	22.7	22.7	18.5
	Subtest 5	4132	826.4	23.0	23.0	18.4
		4183	836.6	23.2	23.2	18.6
		4233	846.6	23.1	23.1	18.7

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.		

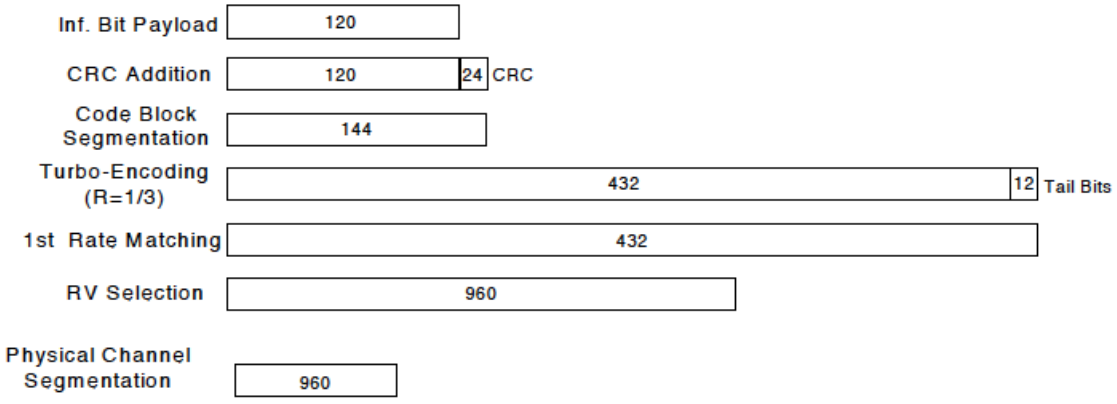


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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.

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	21.6	21.6	13.5
		9400	1880.0	21.7	21.7	13.4
		9538	1907.6	21.5	21.5	13.3
	Subtest 2	9262	1852.4	21.6	21.6	13.4
		9400	1880.0	21.6	21.6	13.2
		9538	1907.6	21.4	21.4	13.2
	Subtest 3	9262	1852.4	21.3	21.3	13.3
		9400	1880.0	21.4	21.4	13.3
		9538	1907.6	21.5	21.5	13.4
	Subtest 4	9262	1852.4	21.4	21.4	13.4
		9400	1880.0	21.6	21.6	13.2
		9538	1907.6	21.5	21.5	13.4
W-CDMA Band 4	Subtest 1	1312	1712.4	22.4	22.4	13.2
		1413	1732.6	22.5	22.5	13.2
		1513	1752.6	22.4	22.4	13.3
	Subtest 2	1312	1712.4	22.2	22.2	13.3
		1413	1732.6	22.4	22.4	13.3
		1513	1752.6	22.3	22.3	13.4
	Subtest 3	1312	1712.4	22.2	22.2	13.4
		1413	1732.6	22.3	22.3	13.2
		1513	1752.6	22.2	22.2	13.5
	Subtest 4	1312	1712.4	22.3	22.3	13.5
		1413	1732.6	22.4	22.4	13.4
		1513	1752.6	22.3	22.3	13.3
W-CDMA Band 5	Subtest 1	4132	826.4	23.2	23.2	18.6
		4183	836.6	23.4	23.4	18.6
		4233	846.6	23.2	23.2	18.5
	Subtest 2	4132	826.4	23.2	23.2	18.5
		4183	836.6	23.3	23.3	18.7
		4233	846.6	23.2	23.2	18.7
	Subtest 3	4132	826.4	22.8	22.8	18.5
		4183	836.6	22.8	22.8	18.7
		4233	846.6	22.7	22.7	18.6
	Subtest 4	4132	826.4	22.8	22.8	18.5
		4183	836.6	22.8	22.8	18.4
		4233	846.6	22.9	22.9	18.6

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.

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	19.00
		384	836.52	24.5	24.5	19.00
		777	848.31	24.5	24.5	19.00
	RC3 SO55 (Loopback)	1013	824.70	24.5	24.5	19.00
		384	836.52	24.5	24.5	19.00
		777	848.31	24.5	24.5	19.00
	RC3 SO32 (+F-SCH)	1013	824.70	24.5	24.5	19.00
		384	836.52	24.5	24.5	19.00
		777	848.31	24.5	24.5	19.00
BC 1	RC1 SO55 (Loopback)	25	1851.25	22.72	21.75	13.25
		600	1880.00	22.75	21.75	13.09
		1175	1908.75	22.72	21.75	13.25
	RC3 SO55 (Loopback)	25	1851.25	22.72	21.75	13.25
		600	1880.00	22.75	21.75	13.09
		1175	1908.75	22.72	21.75	13.25
	RC3 SO32 (+F-SCH)	25	1851.25	22.72	21.75	13.25
		600	1880.00	22.75	21.75	13.09
		1175	1908.75	22.72	21.75	13.25
BC 10	RC1 SO55 (Loopback)	476	817.9	25.0	25.0	19.25
		580	820.5	24.9	24.9	19.19
		684	823.1	24.9	24.9	19.18
	RC3 SO55 (Loopback)	476	817.9	25.0	25.0	19.25
		580	820.5	24.9	24.9	19.19
		684	823.1	24.9	24.9	19.18
	RC3 SO32 (+F-SCH)	476	817.9	25.0	25.0	19.25
		580	820.5	24.9	24.9	19.19
		684	823.1	24.9	24.9	19.18
BC 15	RC1 SO55 (Loopback)	25	1711.25	23.75	23.25	13.5
		450	1732.50	23.75	23.25	13.5
		875	1753.75	23.75	23.25	13.5
	RC3 SO55 (Loopback)	25	1711.25	23.75	23.25	13.5
		450	1732.50	23.75	23.25	13.5
		875	1753.75	23.75	23.25	13.5
	RC3 SO32 (+F-SCH)	25	1711.25	23.75	23.25	13.5
		450	1732.50	23.75	23.25	13.5
		875	1753.75	23.75	23.25	13.5

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	24.0	24.0	19.0
			384	836.52	24.0	24.0	19.0
			777	848.31	24.2	24.2	19.0
BC1	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1851.25	22.70	21.66	13.15
			600	1880.00	22.72	21.67	13.00
			1175	1908.75	22.67	21.70	13.25
BC10	307.2 kbps (2 slot, QPSK)	153.6 kbps	476	817.9	24.0	24.0	19.25
			580	820.5	24.0	24.0	19.25
			684	823.1	24.1	24.1	19.22
BC15	307.2 kbps (2 slot, QPSK)	153.6 kbps	25	1711.25	23.65	23.18	13.50
			450	1732.50	23.75	23.22	13.50
			875	1753.75	23.65	23.34	13.50

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	24.0	24.0	19.0
			384	836.52	24.0	24.0	19.0
			777	848.31	24.2	24.2	19.0
BC1	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1851.25	22.7	21.7	13.2
			600	1880.00	22.7	21.7	13.0
			1175	1908.75	22.7	21.7	13.3
BC10	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	476	817.9	24.0	24.0	19.3
			580	820.5	24.0	24.0	19.3
			684	823.1	24.1	24.1	19.2
BC15	307.2k, QPSK/ ACK channel is transmitted at all the slots	4096	25	1711.25	23.7	23.2	13.5
			450	1732.50	23.8	23.2	13.5
			875	1753.75	23.7	23.3	13.5

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	22.0	22.0	18.9
		384+425	836.52+837.75	22.0	22.0	19.0
		736+777	847.08+848.31	22.0	22.0	18.9
	Two Carrier Max Separation	1013+156	824.70+829.68	22.0	22.0	18.9
		384+550	836.52+841.50	22.0	22.0	19.0
		611+777	843.33+848.31	22.0	22.0	18.9
	Three Carrier Max Separation	1013+31+72	824.70+825.93+827.16	22.0	22.0	18.8
		384+425+466	836.52+837.75+838.98	22.0	22.0	19.0
		695+736+777	845.85+847.08+848.31	22.0	22.0	18.9

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.					

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	22.8	22.00	13.30
				1	49	0	22.9	21.95	13.22
				1	99	0	22.9	22.00	13.25
				50	0	1	21.8	21.77	13.26
				50	24	1	21.8	21.65	13.38
				50	49	1	21.7	21.62	13.20
				100	0	1	21.8	21.70	13.27
			16QAM	1	0	1	21.7	21.70	13.20
				1	49	1	21.7	21.80	13.21
				1	99	1	21.6	21.70	13.22
				50	0	2	20.5	21.60	13.25
				50	24	2	20.6	21.60	13.24
				50	49	2	20.6	21.60	13.24
				100	0	2	20.6	21.60	13.23
	18900	1880.0	QPSK	1	0	0	22.7	22.00	13.44
				1	49	0	22.9	22.00	13.31
				1	99	0	22.8	22.00	13.50
				50	0	1	21.9	21.80	13.29
				50	24	1	21.9	21.79	13.39
				50	49	1	22.0	21.76	13.50
				100	0	1	21.9	21.80	13.45
			16QAM	1	0	1	21.8	21.70	13.30
				1	49	1	22.1	21.70	13.24
				1	99	1	21.8	21.60	13.25
				50	0	2	20.8	21.60	13.33
				50	24	2	20.8	21.70	13.27
				50	49	2	20.7	21.60	13.25
				100	0	2	20.6	21.50	13.25
	19100	1900.0	QPSK	1	0	0	23.0	22.00	13.44
				1	49	0	22.9	21.96	13.25
				1	99	0	23.0	22.00	13.50
				50	0	1	21.8	21.70	13.27
				50	24	1	21.8	21.61	13.12
				50	49	1	21.8	21.92	13.20
				100	0	1	21.9	21.80	13.19
			16QAM	1	0	1	21.7	21.60	13.20
				1	49	1	21.7	21.70	13.33
				1	99	1	21.9	21.70	13.30
				50	0	2	20.5	21.60	13.23
				50	24	2	20.5	21.80	13.22
				50	49	2	20.6	21.60	13.22
				100	0	2	20.5	21.70	13.23

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	22.7	21.9	13.2
				1	37	0	22.7	21.8	13.3
				1	74	0	22.8	21.9	13.3
				36	0	1	21.6	21.7	13.4
				36	16	1	21.6	21.8	13.4
				36	35	1	21.6	21.9	13.4
				75	0	1	21.6	21.7	13.3
			16QAM	1	0	1	21.6	21.7	13.4
				1	37	1	21.7	21.8	13.3
				1	74	1	21.7	21.7	13.2
				36	0	2	20.5	21.6	13.3
				36	16	2	20.5	21.6	13.4
				36	35	2	20.6	21.5	13.3
				75	0	2	20.6	21.7	13.2
	18900	1880.0	QPSK	1	0	0	22.9	21.8	13.5
				1	37	0	23.0	21.9	13.4
				1	74	0	22.9	21.8	13.5
				36	0	1	21.9	21.7	13.4
				36	16	1	21.8	21.7	13.3
				36	35	1	21.7	21.6	13.3
				75	0	1	21.7	21.6	13.4
			16QAM	1	0	1	21.8	21.6	13.3
				1	37	1	22.1	21.7	13.3
				1	74	1	21.9	21.8	13.3
				36	0	2	20.9	21.8	13.2
				36	16	2	20.9	21.7	13.4
				36	35	2	20.7	21.6	13.4
				75	0	2	20.8	21.7	13.3
	19125	1902.5	QPSK	1	0	0	22.6	21.6	13.4
				1	37	0	22.8	21.8	13.3
				1	74	0	22.9	21.7	13.3
				36	0	1	21.6	21.8	13.4
				36	16	1	21.7	21.8	13.2
				36	35	1	21.7	21.7	13.3
				75	0	1	21.6	21.9	13.4
			16QAM	1	0	1	21.6	21.8	13.4
				1	37	1	21.7	21.8	13.4
				1	74	1	21.9	21.7	13.3
				36	0	2	20.7	21.6	13.2
				36	16	2	20.6	21.7	13.4
				36	35	2	20.6	21.6	13.2
				75	0	2	20.6	21.8	13.3

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
10	18650	1855.0	QPSK	1	0	0	22.8	21.8	13.4
				1	24	0	22.8	21.9	13.5
				1	49	0	22.8	21.8	13.4
				25	0	1	21.7	21.6	13.3
				25	12	1	21.8	21.6	13.4
				25	24	1	21.7	21.7	13.3
				50	0	1	21.7	21.6	13.3
			16QAM	1	0	1	21.7	21.6	13.2
				1	24	1	21.9	21.6	13.3
				1	49	1	21.7	21.8	13.4
				25	0	2	20.8	21.6	13.4
				25	12	2	20.8	21.5	13.2
				25	24	2	20.7	21.6	13.3
				50	0	2	20.6	21.5	13.4
	18900	1880.0	QPSK	1	0	0	22.9	21.8	13.4
				1	24	0	23.0	21.7	13.5
				1	49	0	22.8	21.8	13.5
				25	0	1	21.9	21.7	13.4
				25	12	1	21.9	21.8	13.5
				25	24	1	21.9	21.7	13.4
				50	0	1	21.8	21.7	13.3
			16QAM	1	0	1	21.9	21.7	13.3
				1	24	1	22.0	21.7	13.4
				1	49	1	21.8	21.6	13.2
				25	0	2	20.9	21.6	13.4
				25	12	2	20.9	21.5	13.3
				25	24	2	20.9	21.6	13.3
				50	0	2	20.7	21.5	13.3
	19150	1905.0	QPSK	1	0	0	22.7	21.8	13.3
				1	24	0	22.8	22.0	13.2
				1	49	0	22.8	21.9	13.4
				25	0	1	21.6	21.8	13.3
				25	12	1	21.6	21.7	13.3
				25	24	1	21.8	21.6	13.3
				50	0	1	21.6	21.7	13.4
			16QAM	1	0	1	21.7	21.6	13.3
				1	24	1	21.8	21.8	13.2
				1	49	1	21.8	21.7	13.2
				25	0	2	20.7	21.7	13.4
				25	12	2	20.6	21.6	13.3
				25	24	2	20.8	21.5	13.2
				50	0	2	20.5	21.5	13.2

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	22.8	21.9	13.3
				1	12	0	22.9	21.8	13.3
				1	24	0	23.0	21.8	13.3
				12	0	1	21.7	21.8	13.3
				12	6	1	21.8	21.8	13.2
				12	11	1	21.8	21.7	13.4
				25	0	1	21.8	21.8	13.3
			16QAM	1	0	1	21.8	21.8	13.2
				1	12	1	21.9	21.6	13.3
				1	24	1	21.8	21.6	13.3
				12	0	2	20.8	21.7	13.4
				12	6	2	20.9	21.7	13.3
				12	11	2	20.9	21.6	13.2
				25	0	2	20.7	21.5	13.2
	18900	1880.0	QPSK	1	0	0	23.0	21.8	13.2
				1	12	0	23.0	21.9	13.5
				1	24	0	23.0	22.0	13.3
				12	0	1	22.1	21.8	13.4
				12	6	1	22.0	21.7	13.4
				12	11	1	22.1	21.7	13.3
				25	0	1	22.0	21.6	13.2
			16QAM	1	0	1	22.1	21.6	13.3
				1	12	1	22.0	21.7	13.3
				1	24	1	22.2	21.8	13.2
				12	0	2	21.2	21.7	13.2
				12	6	2	21.1	21.6	13.2
				12	11	2	21.1	21.5	13.4
				25	0	2	20.9	21.5	13.2
	19175	1907.5	QPSK	1	0	0	22.8	21.6	13.4
				1	12	0	22.9	21.8	13.4
				1	24	0	22.8	21.8	13.2
				12	0	1	21.8	21.5	13.3
				12	6	1	21.9	21.6	13.2
				12	11	1	21.9	21.6	13.4
				25	0	1	21.7	21.7	13.3
			16QAM	1	0	1	21.8	21.7	13.4
				1	12	1	21.9	21.6	13.2
				1	24	1	21.9	21.6	13.2
				12	0	2	20.9	21.5	13.3
				12	6	2	21.0	21.5	13.2
				12	11	2	20.9	21.6	13.3
				25	0	2	20.7	21.5	13.4

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	22.8	21.7	13.5
				1	7	0	22.9	21.7	13.3
				1	14	0	22.8	21.6	13.2
				8	0	1	21.8	21.8	13.3
				8	4	1	21.8	21.5	13.4
				8	7	1	21.9	21.6	13.3
				15	0	1	21.8	21.7	13.4
			16QAM	1	0	1	21.7	21.7	13.2
				1	7	1	21.8	21.8	13.3
				1	14	1	21.8	21.8	13.3
				8	0	2	20.7	21.6	13.1
				8	4	2	20.8	21.7	13.3
				8	7	2	20.7	21.6	13.2
				15	0	2	20.8	21.5	13.2
	18900	1880.0	QPSK	1	0	0	23.0	21.8	13.2
				1	7	0	23.0	22.0	13.3
				1	14	0	23.0	21.9	13.4
				8	0	1	22.1	21.7	13.3
				8	4	1	22.0	21.8	13.1
				8	7	1	22.1	21.7	13.2
				15	0	1	22.0	21.7	13.2
			16QAM	1	0	1	22.1	21.6	13.4
				1	7	1	22.0	21.7	13.3
				1	14	1	22.0	21.7	13.3
				8	0	2	21.1	21.6	13.2
				8	4	2	21.1	21.5	13.3
				8	7	2	21.0	21.5	13.3
				15	0	2	21.0	21.6	13.2
	19185	1908.5	QPSK	1	0	0	22.9	21.5	13.3
				1	7	0	22.9	21.6	13.2
				1	14	0	22.8	21.7	13.3
				8	0	1	22.0	21.8	13.4
				8	4	1	22.0	21.7	13.4
				8	7	1	22.0	21.8	13.2
				15	0	1	22.0	21.6	13.2
			16QAM	1	0	1	21.9	21.5	13.2
				1	7	1	22.0	21.6	13.3
				1	14	1	21.9	21.7	13.3
				8	0	2	20.9	21.8	13.4
				8	4	2	21.0	21.7	13.4
				8	7	2	20.9	21.5	13.1
				15	0	2	21.0	21.6	13.1

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	22.7	21.6	13.5
				1	2	0	22.7	21.8	13.4
				1	5	0	22.7	21.8	13.4
				3	0	0	22.7	21.6	13.4
				3	1	0	22.7	21.7	13.3
				3	2	0	22.7	21.8	13.2
				6	0	1	21.7	21.8	13.3
			16QAM	1	0	1	21.7	21.6	13.4
				1	2	1	21.7	21.8	13.3
				1	5	1	21.7	21.7	13.2
				3	0	1	21.6	21.7	13.2
				3	1	1	21.7	21.6	13.3
				3	2	1	21.6	21.6	13.2
				6	0	2	20.7	21.7	13.4
	18900	1880.0	QPSK	1	0	0	23.0	21.6	13.2
				1	2	0	23.0	21.7	13.3
				1	5	0	23.0	21.7	13.3
				3	0	0	23.0	21.7	13.4
				3	1	0	23.0	21.5	13.4
				3	2	0	23.0	21.5	13.3
				6	0	1	22.0	21.5	13.3
			16QAM	1	0	1	22.0	21.6	13.4
				1	2	1	22.0	21.6	13.2
				1	5	1	22.0	21.5	13.3
				3	0	1	21.8	21.5	13.3
				3	1	1	21.8	21.7	13.2
				3	2	1	21.8	21.5	13.3
				6	0	2	21.0	21.7	13.4
	19193	1909.3	QPSK	1	0	0	22.8	21.8	13.4
				1	2	0	22.8	21.8	13.4
				1	5	0	22.7	21.9	13.3
				3	0	0	22.7	21.7	13.2
				3	1	0	22.9	21.5	13.3
				3	2	0	22.8	21.6	13.2
				6	0	1	21.9	21.6	13.4
			16QAM	1	0	1	21.8	21.5	13.4
				1	2	1	21.8	21.6	13.2
				1	5	1	21.7	21.7	13.3
				3	0	1	21.7	21.8	13.3
				3	1	1	21.7	21.7	13.2
				3	2	1	21.7	21.6	13.4
				6	0	2	20.8	21.5	13.2

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	23.9	23.25	13.25
				1	49	0	24.0	23.25	13.25
				1	99	0	24.0	23.25	13.25
				50	0	1	22.9	22.94	13.25
				50	24	1	22.9	22.89	13.25
				50	49	1	22.8	22.86	13.25
				100	0	1	22.9	22.93	13.25
			16QAM	1	0	1	22.6	23.00	13.24
				1	49	1	22.8	22.96	13.23
				1	99	1	22.8	23.00	13.25
				50	0	2	21.6	22.89	13.22
				50	24	2	21.7	22.90	13.22
				50	49	2	21.7	22.85	13.21
				100	0	2	21.6	22.87	13.23
	20175	1732.5	QPSK	1	0	0	24.0	23.25	13.25
				1	49	0	24.0	23.25	13.25
				1	99	0	24.0	23.25	13.25
				50	0	1	22.9	22.86	13.25
				50	24	1	23.0	22.93	13.25
				50	49	1	22.9	22.86	13.25
				100	0	1	22.9	22.91	13.25
			16QAM	1	0	1	22.8	22.87	13.24
				1	49	1	22.7	22.80	13.25
				1	99	1	22.7	22.80	13.20
				50	0	2	21.5	22.76	13.20
				50	24	2	21.6	22.79	13.21
				50	49	2	21.5	22.94	13.24
				100	0	2	21.6	22.80	13.22
	20300	1745.0	QPSK	1	0	0	23.9	23.25	13.25
				1	49	0	23.8	23.25	13.25
				1	99	0	23.8	23.25	13.25
				50	0	1	22.8	22.75	13.25
				50	24	1	22.7	22.70	13.25
				50	49	1	22.8	22.70	13.25
				100	0	1	22.8	22.94	13.25
			16QAM	1	0	1	22.6	22.90	13.22
				1	49	1	22.5	22.92	13.20
				1	99	1	22.5	22.89	13.19
				50	0	2	21.5	22.95	13.18
				50	24	2	21.5	22.87	13.22
				50	49	2	21.4	22.88	13.23
				100	0	2	21.5	22.91	13.20

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	23.8	23.25	13.25
				1	37	0	23.9	23.25	13.23
				1	74	0	23.9	23.23	13.23
				36	0	1	22.7	23.20	13.24
				36	16	1	22.6	23.24	13.23
				36	35	1	22.7	23.20	13.21
				75	0	1	22.7	23.20	13.22
			16QAM	1	0	1	22.7	23.10	13.21
				1	37	1	22.9	23.20	13.21
				1	74	1	22.9	23.20	13.21
				36	0	2	21.6	23.20	13.21
				36	16	2	21.7	23.10	13.22
				36	35	2	21.8	23.18	13.22
				75	0	2	21.7	23.20	13.21
	20175	1732.5	QPSK	1	0	0	23.8	23.24	13.25
				1	37	0	23.7	23.25	13.23
				1	74	0	23.8	23.24	13.24
				36	0	1	22.7	23.23	13.22
				36	16	1	22.6	23.22	13.22
				36	35	1	22.6	23.22	13.21
				75	0	1	22.6	23.21	13.23
			16QAM	1	0	1	22.8	23.18	13.18
				1	37	1	22.6	23.16	13.16
				1	74	1	22.7	23.18	13.19
				36	0	2	21.7	23.16	13.20
				36	16	2	21.6	23.18	13.20
				36	35	2	21.5	23.23	13.18
				75	0	2	21.6	23.22	13.15
	20325	1747.5	QPSK	1	0	0	23.8	23.24	13.13
				1	37	0	23.7	23.24	13.12
				1	74	0	23.5	23.23	13.20
				36	0	1	22.5	23.21	13.18
				36	16	1	22.4	23.00	13.17
				36	35	1	22.4	23.11	13.15
				75	0	1	22.3	23.15	13.14
			16QAM	1	0	1	22.7	23.00	13.11
				1	37	1	22.6	23.10	13.12
				1	74	1	22.5	23.10	13.10
				36	0	2	21.5	23.12	13.09
				36	16	2	21.4	23.15	13.14
				36	35	2	21.4	23.17	13.11
				75	0	2	21.3	23.18	13.16

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	23.8	23.20	13.25
				1	24	0	23.8	23.25	13.24
				1	49	0	23.9	23.24	13.23
				25	0	1	22.8	23.10	13.22
				25	12	1	22.8	23.10	13.24
				25	24	1	22.8	23.10	13.22
				50	0	1	22.7	23.15	13.19
			16QAM	1	0	1	22.7	23.14	13.19
				1	24	1	22.8	23.00	13.18
				1	49	1	22.9	23.00	13.19
				25	0	2	21.8	23.10	13.22
				25	12	2	21.7	23.10	13.20
				25	24	2	21.8	23.20	13.20
				50	0	2	21.6	23.00	13.19
	20175	1732.5	QPSK	1	0	0	23.8	23.25	13.20
				1	24	0	23.8	23.24	13.25
				1	49	0	23.8	23.24	13.23
				25	0	1	22.6	23.23	13.24
				25	12	1	22.6	23.20	13.20
				25	24	1	22.7	23.15	13.18
				50	0	1	22.6	23.16	13.19
			16QAM	1	0	1	22.8	23.14	13.19
				1	24	1	22.8	23.14	13.20
				1	49	1	22.8	23.13	13.20
				25	0	2	21.7	23.12	13.17
				25	12	2	21.8	23.15	13.16
				25	24	2	21.7	23.17	13.15
				50	0	2	21.6	23.14	13.19
	20350	1750.0	QPSK	1	0	0	23.6	23.22	13.22
				1	24	0	23.6	23.23	13.23
				1	49	0	23.5	23.23	13.23
				25	0	1	22.5	23.24	13.24
				25	12	1	22.4	23.21	13.24
				25	24	1	22.4	23.17	13.23
				50	0	1	22.3	23.18	13.23
			16QAM	1	0	1	22.6	23.20	13.18
				1	24	1	22.5	23.18	13.20
				1	49	1	22.5	23.19	13.20
				25	0	2	21.5	23.12	13.15
				25	12	2	21.5	23.12	13.14
				25	24	2	21.4	23.13	13.15
				50	0	2	21.4	23.09	13.13

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	23.9	23.20	13.24
				1	12	0	23.9	23.24	13.25
				1	24	0	23.9	23.22	13.20
				12	0	1	22.8	23.22	13.20
				12	6	1	22.8	23.22	13.22
				12	11	1	22.9	23.10	13.21
				25	0	1	22.8	23.15	13.22
			16QAM	1	0	1	22.8	23.13	13.18
				1	12	1	22.9	23.10	13.24
				1	24	1	23.0	23.14	13.23
				12	0	2	21.8	23.08	13.13
				12	6	2	22.0	23.12	13.18
				12	11	2	21.9	23.12	13.18
				25	0	2	21.7	23.06	13.19
	20175	1732.5	QPSK	1	0	0	23.8	23.18	13.19
				1	12	0	23.8	23.18	13.22
				1	24	0	23.9	23.15	13.25
				12	0	1	22.8	23.20	13.23
				12	6	1	22.8	23.19	13.24
				12	11	1	22.8	23.14	13.14
				25	0	1	22.7	23.11	13.13
			16QAM	1	0	1	22.8	23.08	13.16
				1	12	1	22.7	23.09	13.09
				1	24	1	22.8	23.13	13.08
				12	0	2	21.9	23.14	13.08
				12	6	2	22.0	23.15	13.11
				12	11	2	21.8	23.16	13.15
				25	0	2	21.7	23.07	13.16
	20375	1752.5	QPSK	1	0	0	23.7	23.21	13.14
				1	12	0	23.6	23.23	13.14
				1	24	0	23.6	23.21	13.13
				12	0	1	22.4	23.14	13.12
				12	6	1	22.5	23.15	13.22
				12	11	1	22.5	23.16	13.24
				25	0	1	22.4	23.10	13.15
			16QAM	1	0	1	22.6	23.06	13.20
				1	12	1	22.5	23.06	13.23
				1	24	1	22.5	23.07	13.13
				12	0	2	21.6	23.14	13.14
				12	6	2	21.6	23.15	13.15
				12	11	2	21.6	23.09	13.16
				25	0	2	21.4	23.11	13.20

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	23.9	23.21	13.20
				1	7	0	23.9	23.23	13.20
				1	14	0	23.9	23.22	13.24
				8	0	1	22.8	23.22	13.15
				8	4	1	22.9	23.15	13.14
				8	7	1	22.9	23.16	13.16
				15	0	1	22.8	23.17	13.13
			16QAM	1	0	1	22.8	23.19	13.14
				1	7	1	22.9	23.21	13.25
				1	14	1	22.9	23.23	13.24
				8	0	2	21.8	23.22	13.22
				8	4	2	21.9	23.15	13.14
				8	7	2	21.9	23.16	13.15
				15	0	2	21.9	23.18	13.16
	20175	1732.5	QPSK	1	0	0	23.8	23.18	13.19
				1	7	0	23.7	23.19	13.18
				1	14	0	23.8	23.14	13.22
				8	0	1	22.8	23.15	13.24
				8	4	1	22.8	23.13	13.22
				8	7	1	22.8	23.09	13.20
				15	0	1	22.8	23.08	13.13
			16QAM	1	0	1	22.8	23.15	13.13
				1	7	1	22.7	23.14	13.14
				1	14	1	22.8	23.14	13.23
				8	0	2	21.8	23.09	13.11
				8	4	2	21.9	23.11	13.14
				8	7	2	21.8	23.22	13.16
				15	0	2	21.8	23.11	13.17
	20385	1753.5	QPSK	1	0	0	23.5	23.20	13.19
				1	7	0	23.6	23.21	13.12
				1	14	0	23.6	23.24	13.13
				8	0	1	22.5	23.14	13.12
				8	4	1	22.4	23.16	13.16
				8	7	1	22.5	23.18	13.14
				15	0	1	22.4	23.19	13.19
			16QAM	1	0	1	22.5	23.11	13.17
				1	7	1	22.5	23.00	13.18
				1	14	1	22.5	23.00	13.14
				8	0	2	21.5	23.20	13.20
				8	4	2	21.5	23.10	13.22
				8	7	2	21.6	23.15	13.16
				15	0	2	21.4	23.04	13.18

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	23.8	23.12	13.24
				1	2	0	23.8	23.18	13.22
				1	5	0	23.8	23.20	13.24
				3	0	0	23.8	23.14	13.24
				3	1	0	23.8	23.16	13.15
				3	2	0	23.8	23.11	13.19
				6	0	1	22.8	23.08	13.23
			16QAM	1	0	1	22.8	23.11	13.20
				1	2	1	22.8	23.23	13.20
				1	5	1	22.8	23.14	13.14
				3	0	1	22.6	23.15	13.11
				3	1	1	22.6	23.14	13.08
				3	2	1	22.6	23.11	13.11
				6	0	2	21.8	23.10	13.05
	20175	1732.5	QPSK	1	0	0	23.9	23.20	13.09
				1	2	0	23.8	23.20	13.11
				1	5	0	23.8	23.24	13.24
				3	0	0	23.8	23.15	13.23
				3	1	0	23.8	23.19	13.11
				3	2	0	23.9	23.06	13.24
				6	0	1	22.9	23.12	13.22
			16QAM	1	0	1	22.7	23.05	13.16
				1	2	1	22.8	23.09	13.09
				1	5	1	22.7	23.10	13.08
				3	0	1	22.7	23.11	13.11
				3	1	1	22.6	23.06	13.09
				3	2	1	22.6	23.05	13.11
				6	0	2	21.8	23.04	13.20
	20393	1754.3	QPSK	1	0	0	23.5	23.11	13.12
				1	2	0	23.6	23.12	13.25
				1	5	0	23.6	23.15	13.24
				3	0	0	23.5	23.20	13.23
				3	1	0	23.5	23.10	13.24
				3	2	0	23.5	23.03	13.11
				6	0	1	22.6	23.04	13.14
			16QAM	1	0	1	22.5	23.05	13.20
				1	2	1	22.5	23.14	13.20
				1	5	1	22.5	23.15	13.15
				3	0	1	22.3	23.11	13.09
				3	1	1	22.3	23.10	13.11
				3	2	1	22.3	23.05	13.13
				6	0	2	21.5	23.06	13.14

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	23.7	23.7	18.75
				1	24	0	23.9	23.9	18.75
				1	49	0	24.0	24.0	18.75
				25	0	1	22.9	22.9	18.75
				25	12	1	23.0	23.0	18.75
				25	24	1	22.9	22.9	18.75
				50	0	1	22.8	22.8	18.75
			16QAM	1	0	1	22.7	22.7	18.74
				1	24	1	22.7	22.7	18.75
				1	49	1	22.7	22.7	18.74
				25	0	2	21.8	21.8	18.73
				25	12	2	21.9	21.9	18.73
				25	24	2	21.9	21.9	18.72
				50	0	2	21.8	21.8	18.75
	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	22.8	22.8	18.75
				25	12	1	23.0	23.0	18.75
				25	24	1	22.8	22.8	18.75
				50	0	1	22.8	22.8	18.75
			16QAM	1	0	1	22.6	22.6	18.75
				1	24	1	22.7	22.7	18.73
				1	49	1	22.8	22.8	18.72
				25	0	2	21.7	21.7	18.72
				25	12	2	21.7	21.7	18.73
				25	24	2	21.8	21.8	18.74
				50	0	2	21.6	21.6	18.74
	20600	844.0	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	22.8	22.8	18.75
				25	12	1	22.9	22.9	18.75
				25	24	1	22.9	22.9	18.75
				50	0	1	22.8	22.8	18.75
			16QAM	1	0	1	22.7	22.7	18.75
				1	24	1	22.7	22.7	18.75
				1	49	1	22.8	22.8	18.74
				25	0	2	21.6	21.6	18.73
				25	12	2	21.8	21.8	18.75
				25	24	2	21.7	21.7	18.73
				50	0	2	21.7	21.7	18.72

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	24.0	24.0	18.75
				1	12	0	23.9	23.9	18.74
				1	24	0	24.0	24.0	18.75
				12	0	1	22.8	22.8	18.75
				12	6	1	22.8	22.8	18.73
				12	11	1	22.8	22.8	18.75
				25	0	1	22.8	22.8	18.74
			16QAM	1	0	1	23.0	23.0	18.74
				1	12	1	22.8	22.8	18.72
				1	24	1	23.0	23.0	18.73
				12	0	2	21.9	21.9	18.73
				12	6	2	22.1	22.1	18.73
				12	11	2	22.0	22.0	18.75
				25	0	2	21.9	21.9	18.75
	20525	836.5	QPSK	1	0	0	23.8	23.8	18.74
				1	12	0	23.9	23.9	18.72
				1	24	0	23.9	23.9	18.73
				12	0	1	22.8	22.8	18.75
				12	6	1	22.7	22.7	18.75
				12	11	1	22.8	22.8	18.74
				25	0	1	22.7	22.7	18.72
			16QAM	1	0	1	22.8	22.8	18.71
				1	12	1	22.9	22.9	18.73
				1	24	1	22.8	22.8	18.71
				12	0	2	21.9	21.9	18.72
				12	6	2	21.9	21.9	18.73
				12	11	2	21.9	21.9	18.72
				25	0	2	21.6	21.6	18.72
	20625	846.5	QPSK	1	0	0	23.8	23.8	18.75
				1	12	0	23.8	23.8	18.73
				1	24	0	23.9	23.9	18.74
				12	0	1	22.7	22.7	18.74
				12	6	1	22.7	22.7	18.75
				12	11	1	22.8	22.8	18.72
				25	0	1	22.7	22.7	18.73
			16QAM	1	0	1	22.7	22.7	18.70
				1	12	1	22.8	22.8	18.71
				1	24	1	22.9	22.9	18.69
				12	0	2	21.9	21.9	18.73
				12	6	2	21.9	21.9	18.74
				12	11	2	22.0	22.0	18.75
				25	0	2	21.7	21.7	18.70

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	23.8	23.8	18.74
				1	7	0	23.8	23.8	18.75
				1	14	0	23.8	23.8	18.68
				8	0	1	22.8	22.8	18.73
				8	4	1	22.8	22.8	18.71
				8	7	1	22.7	22.7	18.74
				15	0	1	22.7	22.7	18.73
			16QAM	1	0	1	22.7	22.7	18.70
				1	7	1	22.7	22.7	18.69
				1	14	1	22.8	22.8	18.67
				8	0	2	21.8	21.8	18.73
				8	4	2	21.8	21.8	18.72
				8	7	2	21.8	21.8	18.71
				15	0	2	21.8	21.8	18.69
	20525	836.5	QPSK	1	0	0	23.9	23.9	18.67
				1	7	0	23.9	23.9	18.74
				1	14	0	23.9	23.9	18.73
				8	0	1	22.8	22.8	18.72
				8	4	1	22.8	22.8	18.72
				8	7	1	22.8	22.8	18.71
				15	0	1	22.8	22.8	18.71
			16QAM	1	0	1	22.8	22.8	18.74
				1	7	1	22.8	22.8	18.72
				1	14	1	22.9	22.9	18.73
				8	0	2	22.0	22.0	18.72
				8	4	2	21.9	21.9	18.72
				8	7	2	21.9	21.9	18.73
				15	0	2	22.0	22.0	18.66
	20635	847.5	QPSK	1	0	0	23.9	23.9	18.69
				1	7	0	23.8	23.8	18.73
				1	14	0	23.8	23.8	18.73
				8	0	1	22.9	22.9	18.75
				8	4	1	22.8	22.8	18.75
				8	7	1	22.8	22.8	18.75
				15	0	1	22.7	22.7	18.73
			16QAM	1	0	1	22.8	22.8	18.72
				1	7	1	22.8	22.8	18.66
				1	14	1	22.8	22.8	18.67
				8	0	2	21.9	21.9	18.69
				8	4	2	21.8	21.8	18.72
				8	7	2	21.9	21.9	18.71
				15	0	2	21.8	21.8	18.72

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	23.8	23.8	18.74
				1	2	0	23.8	23.8	18.75
				1	5	0	23.8	23.8	18.75
				3	0	0	23.7	23.7	18.75
				3	1	0	23.7	23.7	18.71
				3	2	0	23.8	23.8	18.72
				6	0	1	22.8	22.8	18.69
			16QAM	1	0	1	22.7	22.7	18.66
				1	2	1	22.7	22.7	18.70
				1	5	1	22.8	22.8	18.70
				3	0	1	22.5	22.5	18.72
				3	1	1	22.5	22.5	18.69
				3	2	1	22.6	22.6	18.71
				6	0	2	21.8	21.8	18.70
	20525	836.5	QPSK	1	0	0	23.9	23.9	18.72
				1	2	0	23.8	23.8	18.75
				1	5	0	23.9	23.9	18.75
				3	0	0	23.8	23.8	18.75
				3	1	0	23.8	23.8	18.72
				3	2	0	23.7	23.7	18.73
				6	0	1	22.8	22.8	18.73
			16QAM	1	0	1	22.7	22.7	18.72
				1	2	1	22.7	22.7	18.72
				1	5	1	22.8	22.8	18.69
				3	0	1	22.6	22.6	18.68
				3	1	1	22.6	22.6	18.67
				3	2	1	22.6	22.6	18.70
				6	0	2	21.8	21.8	18.72
	20643	848.3	QPSK	1	0	0	23.8	23.8	18.71
				1	2	0	23.8	23.8	18.71
				1	5	0	23.8	23.8	18.75
				3	0	0	23.8	23.8	18.72
				3	1	0	23.8	23.8	18.73
				3	2	0	23.8	23.8	18.73
				6	0	1	22.8	22.8	18.74
			16QAM	1	0	1	22.8	22.8	18.66
				1	2	1	22.7	22.7	18.69
				1	5	1	22.7	22.7	18.67
				3	0	1	22.6	22.6	18.68
				3	1	1	22.6	22.6	18.71
				3	2	1	22.6	22.6	18.70
				6	0	2	21.7	21.7	18.71

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	24.0	24.0	19.13
				1	24	0	24.0	24.0	19.06
				1	49	0	23.9	23.9	19.11
				25	0	1	23.0	23.0	19.12
				25	12	1	23.0	23.0	19.16
				25	24	1	22.9	22.9	19.21
				50	0	1	22.9	22.9	19.12
			16QAM	1	0	1	23.0	23.0	19.16
				1	24	1	23.1	23.1	19.19
				1	49	1	23.1	23.1	19.20
				25	0	2	22.9	22.9	19.22
				25	12	2	22.9	22.9	19.20
				25	24	2	22.9	22.9	19.20
				50	0	2	22.8	22.8	19.04

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	24.0	24.0	19.12
				1	12	0	23.9	23.9	19.13
				1	24	0	23.9	23.9	19.20
				12	0	1	23.9	23.9	19.20
				12	6	1	23.9	23.9	19.09
				12	11	1	23.9	23.9	19.09
				25	0	1	23.9	23.9	19.13
			16QAM	1	0	1	23.1	23.1	19.11
				1	12	1	23.1	23.1	19.17
				1	24	1	23.0	23.0	19.12
				12	0	2	22.9	22.9	19.10
				12	6	2	22.8	22.8	19.19
				12	11	2	22.8	22.8	19.20
				25	0	2	23.0	23.0	19.05

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

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	24.7	24.7	19.0
				1	24	0	24.7	24.7	19.0
				1	49	0	24.6	24.6	19.0
				25	0	1	24.2	24.2	19.0
				25	12	1	24.1	24.1	19.0
				25	24	1	24.0	24.0	19.0
				50	0	1	24.0	24.0	19.0
			16QAM	1	0	1	23.6	23.6	19.0
				1	24	1	23.7	23.7	18.8
				1	49	1	23.6	23.6	18.9
				25	0	2	22.7	22.7	19.0
				25	12	2	22.7	22.7	19.0
				25	24	2	22.6	22.6	18.7
				50	0	2	22.6	22.6	18.8

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	24.8	24.8	19.0
				1	12	0	24.7	24.7	19.0
				1	24	0	24.8	24.8	19.0
				12	0	1	23.7	23.7	18.7
				12	6	1	23.7	23.7	18.7
				12	11	1	23.7	23.7	18.6
				25	0	1	23.6	23.6	18.8
			16QAM	1	0	1	23.8	23.8	18.9
				1	12	1	23.7	23.7	18.8
				1	24	1	23.7	23.7	18.8
				12	0	2	22.8	22.8	19.0
				12	6	2	22.8	22.8	19.0
				12	11	2	22.8	22.8	18.7
				25	0	2	22.6	22.6	18.7

Note(s):

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

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	22.71	21.75	13.0
				1	49	0	22.74	21.75	13.0
				1	99	0	22.75	21.75	12.9
				50	0	1	21.69	21.73	13.0
				50	24	1	21.67	21.67	13.0
				50	49	1	21.64	21.65	13.0
				100	0	1	21.60	21.64	13.0
			16QAM	1	0	1	21.37	21.45	13.0
				1	49	1	21.37	21.45	13.0
				1	99	1	21.57	21.47	13.0
				50	0	2	20.37	21.52	12.8
				50	24	2	20.35	21.53	12.9
				50	49	2	20.43	21.60	13.0
				100	0	2	20.36	21.58	12.9
	26365	1882.5	QPSK	1	0	0	22.75	21.75	13.0
				1	49	0	22.75	21.75	13.0
				1	99	0	22.70	21.75	13.0
				50	0	1	21.75	21.75	13.0
				50	24	1	21.75	21.72	13.0
				50	49	1	21.75	21.75	13.0
				100	0	1	21.75	21.70	13.0
			16QAM	1	0	1	21.58	21.59	13.0
				1	49	1	21.72	21.63	12.9
				1	99	1	21.54	21.69	13.0
				50	0	2	20.51	21.65	12.8
				50	24	2	20.63	21.67	12.7
				50	49	2	20.47	21.64	12.7
				100	0	2	20.56	21.55	12.8
	26590	1905.0	QPSK	1	0	0	22.50	21.75	13.0
				1	49	0	22.68	21.75	13.0
				1	99	0	22.59	21.75	13.0
				50	0	1	21.65	21.70	13.0
				50	24	1	21.70	21.75	13.0
				50	49	1	21.70	21.75	13.0
				100	0	1	21.67	21.75	13.0
			16QAM	1	0	1	21.49	21.70	12.8
				1	49	1	21.52	21.69	12.9
				1	99	1	21.12	21.55	13.0
				50	0	2	20.35	21.56	13.0
				50	24	2	20.43	21.59	12.7
				50	49	2	20.40	21.68	12.9
				100	0	2	20.36	21.66	12.9

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	21.75	13.0
				1	37	0	22.6	21.75	13.0
				1	74	0	22.6	21.74	12.9
				36	0	1	21.4	21.73	13.0
				36	16	1	21.3	21.72	13.0
				36	35	1	21.4	21.66	12.8
				75	0	1	21.4	21.66	12.7
			16QAM	1	0	1	21.4	21.65	12.9
				1	37	1	21.4	21.63	13.0
				1	74	1	21.5	21.63	12.8
				36	0	2	20.4	21.62	12.8
				36	16	2	20.4	21.61	12.9
				36	35	2	20.4	21.70	12.7
				75	0	2	20.5	21.61	12.7
	26365	1882.5	QPSK	1	0	0	22.7	21.73	12.9
				1	37	0	22.7	21.72	12.9
				1	74	0	22.6	21.75	13.0
				36	0	1	21.6	21.75	13.0
				36	16	1	21.6	21.70	12.8
				36	35	1	21.6	21.73	12.7
				75	0	1	21.6	21.71	12.9
			16QAM	1	0	1	21.7	21.70	13.0
				1	37	1	21.7	21.65	13.0
				1	74	1	21.6	21.66	12.7
				36	0	2	20.6	21.69	12.8
				36	16	2	20.6	21.66	12.8
				36	35	2	20.6	21.68	12.8
				75	0	2	20.6	21.70	12.9
	26615	1907.5	QPSK	1	0	0	22.5	21.75	12.7
				1	37	0	22.6	21.74	12.7
				1	74	0	22.2	21.73	12.9
				36	0	1	21.5	21.73	12.9
				36	16	1	21.5	21.72	13.0
				36	35	1	21.4	21.55	13.0
				75	0	1	21.4	21.56	12.8
			16QAM	1	0	1	21.4	21.70	12.6
				1	37	1	21.5	21.72	12.6
				1	74	1	21.1	21.71	12.8
				36	0	2	20.5	21.74	12.8
				36	16	2	20.5	21.64	12.9
				36	35	2	20.4	21.65	12.7
				75	0	2	20.4	21.63	12.6

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
10	26090	1855.0	QPSK	1	0	0	22.47	21.75	13.0
				1	24	0	22.61	21.75	13.0
				1	49	0	22.56	21.75	13.0
				25	0	1	21.48	21.74	13.0
				25	12	1	21.57	21.75	13.0
				25	24	1	21.49	21.75	12.9
				50	0	1	21.51	21.72	12.8
			16QAM	1	0	1	21.46	21.66	12.7
				1	24	1	21.56	21.68	12.8
				1	49	1	21.54	21.69	12.9
				25	0	2	20.53	21.55	12.8
				25	12	2	20.56	21.59	13.0
				25	24	2	20.42	21.57	12.8
				50	0	2	20.43	21.58	13.0
	26365	1882.5	QPSK	1	0	0	22.76	21.74	12.9
				1	24	0	22.76	21.75	13.0
				1	49	0	22.71	21.75	13.0
				25	0	1	21.75	21.73	13.0
				25	12	1	21.71	21.72	12.8
				25	24	1	21.62	21.73	12.8
				50	0	1	21.66	21.74	12.7
			16QAM	1	0	1	21.73	21.69	12.7
				1	24	1	21.72	21.69	12.7
				1	49	1	21.65	21.68	12.8
				25	0	2	20.77	21.70	12.9
				25	12	2	20.72	21.70	12.8
				25	24	2	20.58	21.59	12.8
				50	0	2	20.61	21.55	12.8
	26640	1910.0	QPSK	1	0	0	22.58	21.75	13.0
				1	24	0	22.53	21.75	13.0
				1	49	0	22.22	21.75	12.8
				25	0	1	21.49	21.74	12.9
				25	12	1	21.39	21.70	12.8
				25	24	1	21.15	21.70	12.8
				50	0	1	21.29	21.71	12.7
			16QAM	1	0	1	21.53	21.70	12.6
				1	24	1	21.44	21.69	12.9
				1	49	1	21.18	21.61	12.9
				25	0	2	20.53	21.63	12.9
				25	12	2	20.46	21.62	12.7
				25	24	2	20.31	21.69	12.8
				50	0	2	20.36	21.67	12.9

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	22.59	21.75	13.0
				1	12	0	22.65	21.70	13.0
				1	24	0	22.69	21.71	12.8
				12	0	1	21.47	21.73	12.9
				12	6	1	21.63	21.73	12.9
				12	11	1	21.57	21.72	12.8
				25	0	1	21.58	21.72	12.9
			16QAM	1	0	1	21.53	21.66	13.0
				1	12	1	21.63	21.69	12.8
				1	24	1	21.66	21.71	12.7
				12	0	2	20.56	21.70	12.7
				12	6	2	20.63	21.69	12.8
				12	11	2	20.64	21.68	12.8
				25	0	2	20.44	21.66	12.9
	26365	1882.5	QPSK	1	0	0	22.87	21.75	13.0
				1	12	0	22.74	21.75	13.0
				1	24	0	22.71	21.75	13.0
				12	0	1	21.75	21.75	12.8
				12	6	1	21.78	21.73	12.9
				12	11	1	21.72	21.72	12.9
				25	0	1	21.72	21.70	12.9
			16QAM	1	0	1	21.85	21.69	12.8
				1	12	1	21.69	21.70	12.8
				1	24	1	21.68	21.69	12.7
				12	0	2	20.8	21.68	12.7
				12	6	2	20.87	21.70	12.8
				12	11	2	20.82	21.70	12.9
				25	0	2	20.66	21.69	12.8
	26665	1912.5	QPSK	1	0	0	22.54	21.73	13.0
				1	12	0	22.43	21.75	13.0
				1	24	0	22.28	21.75	12.9
				12	0	1	21.36	21.73	12.9
				12	6	1	21.37	21.72	12.9
				12	11	1	21.26	21.73	12.8
				25	0	1	21.28	21.73	12.7
			16QAM	1	0	1	21.48	21.55	12.7
				1	12	1	21.5	21.62	12.6
				1	24	1	21.29	21.65	12.7
				12	0	2	20.53	21.68	12.8
				12	6	2	20.53	21.69	12.6
				12	11	2	20.39	21.53	12.8
				25	0	2	20.28	21.55	12.9

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	22.52	21.75	13.0
				1	7	0	22.61	21.74	13.0
				1	14	0	22.55	21.73	13.0
				8	0	1	21.56	21.72	13.0
				8	4	1	21.6	21.74	12.8
				8	7	1	21.63	21.70	12.7
				15	0	1	21.63	21.71	12.7
			16QAM	1	0	1	21.52	21.66	12.7
				1	7	1	21.57	21.69	12.6
				1	14	1	21.57	21.70	12.8
				8	0	2	20.58	21.70	12.8
				8	4	2	20.64	21.70	12.7
				8	7	2	20.66	21.64	12.6
				15	0	2	20.58	21.63	12.6
	26365	1882.5	QPSK	1	0	0	22.74	21.73	13.0
				1	7	0	22.64	21.75	13.0
				1	14	0	22.73	21.74	12.8
				8	0	1	21.78	21.72	12.8
				8	4	1	21.78	21.68	12.9
				8	7	1	21.7	21.69	12.8
				15	0	1	21.75	21.70	12.7
			16QAM	1	0	1	21.76	21.70	12.8
				1	7	1	21.66	21.72	12.8
				1	14	1	21.67	21.70	12.6
				8	0	2	20.82	21.69	12.8
				8	4	2	20.85	21.68	12.7
				8	7	2	20.76	21.68	12.7
				15	0	2	20.75	21.65	12.8
	26675	1913.5	QPSK	1	0	0	22.48	21.72	12.9
				1	7	0	22.33	21.75	12.9
				1	14	0	22.21	21.73	13.0
				8	0	1	21.35	21.75	13.0
				8	4	1	21.38	21.74	12.8
				8	7	1	21.18	21.72	12.8
				15	0	1	21.18	21.71	12.8
			16QAM	1	0	1	21.39	21.71	12.7
				1	7	1	21.3	21.69	12.9
				1	14	1	21.14	21.66	12.8
				8	0	2	20.4	21.63	12.8
				8	4	2	20.37	21.60	12.9
				8	7	2	20.3	21.62	12.7
				15	0	2	20.25	21.61	12.6

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	22.52	21.75	13.0
				1	2	0	22.49	21.74	13.0
				1	5	0	22.52	21.73	13.0
				3	0	0	22.53	21.75	13.0
				3	1	0	22.49	21.75	13.0
				3	2	0	22.52	21.73	12.8
				6	0	1	21.56	21.71	12.9
			16QAM	1	0	1	21.5	21.71	12.9
				1	2	1	21.49	21.72	12.8
				1	5	1	21.51	21.69	12.8
				3	0	1	21.34	21.68	12.8
				3	1	1	21.4	21.70	12.7
				3	2	1	21.34	21.69	13.0
				6	0	2	20.53	21.60	12.8
	26365	1882.5	QPSK	1	0	0	22.74	21.72	13.0
				1	2	0	22.78	21.73	13.0
				1	5	0	22.73	21.72	12.8
				3	0	0	22.77	21.75	12.8
				3	1	0	22.74	21.71	12.7
				3	2	0	22.81	21.72	12.9
				6	0	1	21.87	21.73	12.9
			16QAM	1	0	1	21.74	21.74	12.6
				1	2	1	21.74	21.69	12.7
				1	5	1	21.67	21.69	12.7
				3	0	1	21.65	21.68	12.8
				3	1	1	21.64	21.66	12.8
				3	2	1	21.66	21.65	12.8
				6	0	2	20.8	21.64	12.6
	16683	1914.3	QPSK	1	0	0	22.34	21.70	13.0
				1	2	0	22.24	21.70	13.0
				1	5	0	22.18	21.73	13.0
				3	0	0	22.18	21.73	13.0
				3	1	0	22.11	21.74	12.9
				3	2	0	22.2	21.70	12.9
				6	0	1	21.19	21.69	12.9
			16QAM	1	0	1	21.19	21.60	12.8
				1	2	1	21.17	21.62	12.7
				1	5	1	21.17	21.63	12.8
				3	0	1	21.02	21.66	12.6
				3	1	1	21	21.64	12.7
				3	2	1	21.06	21.66	12.8
				6	0	2	20.18	21.61	12.8

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	22.5	22.5	18.75
				12	6	1	22.5	22.5	18.75
				12	11	1	22.4	22.4	18.75
				25	0	1	22.5	22.5	18.75
			16QAM	1	0	1	22.4	22.4	18.75
				1	12	1	22.4	22.4	18.75
				1	24	1	22.4	22.4	18.73
				12	0	2	21.5	21.5	18.75
				12	6	2	21.5	21.5	18.74
				12	11	2	21.5	21.5	18.74
				25	0	2	21.4	21.4	18.75

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	18.74
				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	18.72
				8	4	1	22.2	22.2	18.75
				8	7	1	22.3	22.3	18.74
				15	0	1	22.3	22.3	18.66
			16QAM	1	0	1	22.4	22.4	18.70
				1	7	1	22.3	22.3	18.69
				1	14	1	22.3	22.3	18.74
				8	0	2	21.5	21.5	18.73
				8	4	2	21.4	21.4	18.72
				8	7	2	21.4	21.4	18.71
				15	0	2	21.4	21.4	18.70

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

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)
					Wi-Fi 1	Wi-Fi 2	
2.4 (DTS)	802.11b	**1 Tx**	**1**	**2412**	**16.5**	**16.4**	**Yes**
			6	**2437**	**16.5**	**16.5**	
			11	**2462**	**16.5**	**16.5**	
			12	**2467**	**15.0**	**15.0**	
			13	**2472**	**14.0**	**14.0**	
	802.11g	1 Tx	1	2412	15.5	15.5	No
			2	2417	16.5	16.5	
			6	2437	16.5	16.5	
			10	2457	16.5	16.5	
			11	2462	15.0	15.0	
			12	2467	11.0	11.0	
			13	2472	3.5	3.5	
	802.11g CDD	**2 Tx**	**1**	**2412**	**14.5**	**14.5**	**Yes**
			2	**2417**	**16.5**	**16.4**	
			6	**2437**	**16.5**	**16.5**	
			10	**2457**	**16.5**	**16.3**	
			11	**2462**	**14.0**	**14.0**	
			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.

WiFi 2.4 GHz Measured Results continued

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					Wi-Fi 1	Wi-Fi 2	
2.4 (DTS)	802.11n HT20	1 Tx	1	2412	15.5	15.5	No
			2	2422	16.5	16.4	
			6	2437	16.5	16.5	
			10	2457	16.5	16.5	
			11	2462	15.0	15.0	
			12	2467	11.0	11.0	
			13	2472	3.5	3.5	
	802.11n HT MCS0 CDD	2 Tx	1	2412	14.5	14.5	No
			2	2417	16.5	16.5	
			6	2437	16.5	16.4	
			10	2457	16.5	16.4	
			11	2462	14.0	14.0	
			12	2467	9.0	9.0	
			13	2472	1.5	1.5	
	802.11n HT20 MCS0 STBC	2 Tx	1	2412	14.5	14.5	No
			2	2417	16.5	16.5	
			6	2437	16.5	16.5	
			10	2457	16.5	16.5	
			11	2462	14.0	14.0	
			12	2467	9.0	9.0	
			13	2472	1.5	1.5	
	802.11n HT20 MCS0 SDM	2 Tx	1	2412	14.5	14.5	No
			2	2417	16.5	16.5	
			6	2437	16.5	16.5	
			10	2457	16.5	16.5	
			11	2462	14.0	14.0	
			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.

8.1. 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.

WiFi 5 GHz Bands Measured Results

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					Wi-Fi 1	Wi-Fi 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**	**11.0**	**10.9**	**Yes**
			40	**5200**	**11.0**	**11.0**	
			44	**5220**	**11.0**	**11.0**	
			48	**5240**	**11.0**	**10.8**	
	802.11n HT20 SISO	1 Tx	36	5180	14.0	13.9	No
			40	5200	14.0	14.0	
			48	5240	14.0	13.9	
	802.11n HT40 SISO	**1 Tx**	38	5180	13.5	13.5	No
			46	**5230**	**16.0**	**16.0**	**Yes**
	802.11n HT20 CDD	2 Tx	36	5180	11.0	11.0	No
			40	5200	10.9	11.0	
			48	5240	11.0	10.9	
	802.11n HT20 STBC	2 Tx	36	5180	11.0	11.0	No
			40	5200	11.0	10.9	
			48	5240	11.0	11.0	
	802.11n HT20 SDM	2 Tx	36	5180	11.0	11.0	No
			40	5200	11.0	11.0	
			48	5240	11.0	11.0	
	802.11n HT40 CDD	**2 Tx**	**38**	**5190**	**11.5**	**11.4**	**Yes**
			46	**5230**	**13.5**	**13.4**	
	802.11n HT40 STBC	2 Tx	38	5190	11.5	11.4	No
			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**	**16.0**	**16.0**	**Yes**
			56	**5280**	**16.0**	**16.0**	
			60	**5300**	**16.0**	**16.0**	
			64	**5320**	**15.0**	**15.0**	
	802.11a CDD	**2 Tx**	**52**	**5260**	**16.0**	**16.0**	**Yes**
			56	**5280**	**16.0**	**16.0**	
			60	**5300**	**16.0**	**16.0**	
			64	**5320**	**14.0**	**14.0**	
	802.11n HT20 SISO	1 Tx	52	5260	16.0	15.9	No
			60	5300	16.0	16.0	
			64	5320	15.0	15.0	
	802.11n HT40 SISO	1 Tx	54	5270	15.9	16.0	No
			62	5310	14.5	14.5	
	802.11n HT20 CDD	2 Tx	52	5260	15.9	16.0	No
			56	5280	15.9	16.0	
			60	5300	16.0	16.0	
			64	5320	14.0	14.0	
	802.11n HT20 STBC	2 Tx	52	5260	16.0	16.0	No
			56	5280	16.0	16.0	
			60	5300	16.0	16.0	
			64	5320	14.0	14.0	
	802.11n HT20 SDM	2 Tx	52	5260	16.0	16.0	No
			56	5280	16.0	16.0	
			60	5300	15.9	16.0	
			64	5320	14.0	14.0	
	802.11n HT40 CDD	2 Tx	54	5270	16.0	16.0	No
			62	5310	12.5	12.5	
	802.11n HT40 STBC	2 Tx	54	5270	16.0	16.0	No
			62	5310	12.5	12.5	
	802.11n HT40 SDM	2 Tx	54	5270	15.9	16.0	No
			62	5310	12.5	12.5	

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.

WiFi 5 GHz Bands Measured Results continued

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					Wi-Fi 1	Wi-Fi 2	
5.5 (UNII)	**802.11a**	**1 Tx**	**100**	**5500**	**14.0**	**14.0**	**Yes**
			104	**5520**	**15.0**	**15.0**	
			108	**5540**	**14.9**	**15.0**	
			112	**5560**	**15.0**	**15.0**	
			116	**5580**	**15.0**	**15.0**	
			120	**5600**	**14.9**	**15.0**	
			124	**5620**	**15.0**	**15.0**	
			128	**5640**	**14.9**	**15.0**	
			132	**5660**	**15.0**	**15.0**	
			136	**5680**	**15.0**	**15.0**	
			140	**5700**	**14.0**	**14.0**	
	802.11a CDD	**2 Tx CDD**	**100**	**5500**	**13.5**	**13.5**	**Yes**
			104	**5520**	**15.0**	**15.0**	
			108	**5540**	**15.0**	**14.9**	
			112	**5560**	**15.0**	**15.0**	
			116	**5580**	**15.0**	**15.0**	
			120	**5600**	**14.9**	**15.0**	
			124	**5620**	**15.0**	**15.0**	
			128	**5640**	**15.0**	**14.9**	
			132	**5660**	**15.0**	**14.9**	
			136	**5680**	**15.0**	**15.0**	
			140	**5700**	**13.0**	**13.0**	
	802.11n HT20 SISO	1 Tx	100	5500	14.0	14.0	No
			104	5520	14.9	15.0	
			120	5600	15.0	15.0	
			136	5680	15.0	14.8	
			140	5700	14.0	14.0	
	802.11n HT40 SISO	1 Tx	102	5510	14.0	14.0	No
			110	5550	15.0	15.0	
			134	5670	15.0	14.9	
	802.11n HT20 CDD	2 Tx	100	5500	13.5	13.4	No
			104	5520	15.0	15.0	
			120	5600	15.0	15.0	
			136	5680	15.0	15.0	
			140	5700	13.0	13.0	
	802.11n HT20 STBC	2 Tx	100	5500	13.5	13.4	No
			104	5520	15.0	14.8	
			120	5600	15.0	15.0	
			136	5680	15.0	15.0	
			140	5700	13.0	13.0	
	802.11n HT20 SDM	2 Tx	100	5500	13.5	13.5	No
			104	5520	15.0	15.0	
			120	5600	15.0	15.0	
			136	5680	15.0	15.0	
			140	5700	13.0	13.0	
	802.11n HT40 CDD	2 Tx	102	5510	12.0	12.0	No
			110	5550	15.0	15.0	
			134	5670	15.0	15.0	
	802.11n HT40 STBC	2 Tx	102	5510	12.0	12.0	No
			110	5550	15.0	15.0	
			134	5670	15.0	15.0	
	802.11n HT40 SDM	2 Tx	102	5510	12.0	12.0	No
			110	5550	15.0	15.0	
			134	5670	15.0	15.0	

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.

WiFi 5 GHz Bands Measured Results continued

Band (GHz)	Mode	No. of Transmitters	Ch #	Freq. (MHz)	Avg Pwr (dBm)		SAR Test (Yes/No)
					Wi-Fi 1	Wi-Fi 2	
5.8 (DTS)	**802.11a**	**1 Tx**	**149**	**5745**	**15.5**	**15.5**	**Yes**
			153	**5765**	**15.4**	**15.5**	
			157	**5785**	**15.5**	**15.5**	
			161	**5805**	**15.5**	**15.5**	
			165	**5825**	**15.5**	**15.5**	
	802.11a CDD	**2 Tx CDD**	**149**	**5745**	**15.5**	**15.5**	**Yes**
			153	**5765**	**15.4**	**15.5**	
			157	**5785**	**15.5**	**15.5**	
			161	**5805**	**15.5**	**15.5**	
			165	**5825**	**15.5**	**15.5**	
	802.11n HT20 SISO	1 Tx	149	5745	15.5	15.4	No
			157	5785	15.5	15.5	
			165	5825	15.5	15.5	
	802.11n HT40	1 Tx	151	5755	15.5	15.5	No
			159	5795	15.5	15.4	
	802.11n HT20 CDD	2 Tx	149	5745	15.5	15.5	No
			157	5785	15.4	15.5	
			165	5825	15.5	15.5	
	802.11n HT20 STBC	2 Tx	149	5745	15.5	15.5	No
			157	5785	15.4	15.5	
			165	5825	15.4	15.5	
	802.11n HT20 SDM	2 Tx	149	5745	15.5	15.5	No
			157	5785	15.5	15.5	
			165	5825	15.5	15.5	
	802.11n HT40 CDD	2 Tx	151	5755	15.5	15.5	No
			159	5795	15.5	15.5	
	802.11n HT40 STBC	2 Tx	151	5755	15.5	15.5	No
			159	5795	15.5	15.5	
	802.11n HT40 SDM	2 Tx	151	5755	15.5	15.5	No
			159	5795	15.5	15.5	

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.

8.1. Bluetooth

Band (GHz)	Mode	Channel #	Freq. (MHz)	Avg Pwr (dBm)	SAR Test (Yes/No)
2.4 (DTS)	**V3.0 + EDR, GFSK**	**0**	**2402**	**11.1**	**Yes**
		39	**2441**	**11.1**	
		78	**2480**	**11.1**	
	V3.0 + EDR, π/4 DQPSK	0	2402	11.0	No
		39	2441	11.0	
		78	2480	11.0	
	V3.0 + EDR, 8-DPSK	0	2402	11.0	No
		39	2441	11.0	
		78	2480	11.0	
	V4.0 LE, GFSK	0	2402	8.0	No
		19	2440	8.0	
		39	2480	8.0	

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 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	15.7	16.1	24.8	185.1	64.1		25.6 -MEASURE-	25.6 -MEASURE-	16.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	GPRS 2 Slots	1909.8	29.50	223	15.7	16.1		185.1	64.1		19.3 -MEASURE-	19.3 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 5	846.6	24.50	282	15.7	16.1	24.8	185.1	64.1		16.2 -MEASURE-	16.2 -MEASURE-	10.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 4	1752.6	23.75	237	15.7	16.1		185.1	64.1		19.6 -MEASURE-	19.6 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	W-CDMA 2	1907.6	23.00	200	15.7	16.1		185.1	64.1		17.3 -MEASURE-	17.3 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC0	848.31	24.50	282	15.7	16.1	24.8	185.1	64.1		16.2 -MEASURE-	16.2 -MEASURE-	10.4 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC1	1908.75	22.75	188	15.7	16.1		185.1	64.1		16.2 -MEASURE-	16.2 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC10	823.1	25.00	316	15.7	16.1	24.8	185.1	64.1		17.9 -MEASURE-	17.9 -MEASURE-	11.5 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	CDMA BC15	1753.75	23.75	237	15.7	16.1		185.1	64.1		19.6 -MEASURE-	19.6 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 2	1900	23.00	200	15.7	16.1		185.1	64.1		17.2 -MEASURE-	17.2 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 4	1754.3	24.00	251	15.7	16.1		185.1	64.1		20.8 -MEASURE-	20.8 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 5	844	24.00	251	15.7	16.1	24.8	185.1	64.1		14.4 -MEASURE-	14.4 -MEASURE-	9.2 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 13	782	24.00	251	15.7	16.1	24.8	185.1	64.1		13.9 -MEASURE-	13.9 -MEASURE-	8.9 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 17	710	25.00	316	15.7	16.1	24.8	185.1	64.1		16.6 -MEASURE-	16.6 -MEASURE-	10.7 -MEASURE-	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 25	1905	22.75	188	15.7	16.1		185.1	64.1		16.2 -MEASURE-	16.2 -MEASURE-	N/A	> 50 mm	> 50 mm	N/A
Cellular	LTE Band 26	8213	23.50	224	15.7	16.1	24.8	185.1	64.1		12.7 -MEASURE-	12.7 -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.

SAR Test Exclusion, 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
First Stage Power Back-off, Proximity Sensor On (C1, t1, P1)																
Cellular	GPRS 2 Slots	848.8									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	GPRS 2 Slots	1909.8	28.50	177			24.8				N/A	N/A	9.8 -MEASURE-	N/A	N/A	N/A
Cellular	W-CDMA 5	846.6									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	W-CDMA 4	1752.6	23.25	211			24.8				N/A	N/A	11.2 -MEASURE-	N/A	N/A	N/A
Cellular	W-CDMA 2	1907.6	22.00	158			24.8				N/A	N/A	8.7 -MEASURE-	N/A	N/A	N/A
Cellular	CDMA BC0	848.31									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	CDMA BC1	1908.75	21.75	150			24.8				N/A	N/A	8.3 -MEASURE-	N/A	N/A	N/A
Cellular	CDMA BC10	823.1									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	CDMA BC15	1753.75	23.25	211			24.8				N/A	N/A	11.2 -MEASURE-	N/A	N/A	N/A
Cellular	LTE Band 2	1900	22.00	158			24.8				N/A	N/A	8.7 -MEASURE-	N/A	N/A	N/A
Cellular	LTE Band 4	1754.3	23.50	224			24.8				N/A	N/A	11.9 -MEASURE-	N/A	N/A	N/A
Cellular	LTE Band 5	844									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	LTE Band 13	782									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	LTE Band 17	710									N/A	N/A	N/A	N/A	N/A	N/A
Cellular	LTE Band 25	1905	21.75	150			24.8				N/A	N/A	8.3 -MEASURE-	N/A	N/A	N/A
Cellular	LTE Band 26	821.3									N/A	N/A	N/A	N/A	N/A	N/A
Second Stage Power Back-off, Proximity Sensor On (C2, t2, P2)																
Cellular	GPRS 2 Slots	848.8	24.50	70	1.7	2.1					12.9 -MEASURE-	12.9 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	GPRS 2 Slots	1909.8	20.00	25	1.7	2.1					6.9 -MEASURE-	6.9 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 5	846.6	18.75	75	1.7	2.1					13.8 -MEASURE-	13.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 4	1752.6	13.25	21	1.7	2.1					5.6 -MEASURE-	5.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	W-CDMA 2	1907.6	13.50	22	1.7	2.1					6.1 -MEASURE-	6.1 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC0	848.31	19.00	79	1.7	2.1					14.6 -MEASURE-	14.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC1	1908.75	13.25	21	1.7	2.1					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC10	823.1	19.25	84	1.7	2.1					15.2 -MEASURE-	15.2 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	CDMA BC15	1753.75	13.50	22	1.7	2.1					5.8 -MEASURE-	5.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 2	1900	13.50	22	1.7	2.1					6.1 -MEASURE-	6.1 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 4	1754.3	13.25	21	1.7	2.1					5.6 -MEASURE-	5.6 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 5	844	18.75	75	1.7	2.1					13.8 -MEASURE-	13.8 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 13	782	19.25	84	1.7	2.1					14.9 -MEASURE-	14.9 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 17	710	19.00	79	1.7	2.1					13.3 -MEASURE-	13.3 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 25	1905	13.50	22	1.7	2.1					6.1 -MEASURE-	6.1 -MEASURE-	N/A	N/A	N/A	N/A
Cellular	LTE Band 26	821.3	18.75	75	1.7	2.1					13.6 -MEASURE-	13.6 -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.

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	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	927.3 mW -EXEMPT-	242.6- MEASURE-	N/A
Cellular	GPRS 2 Slots	1909.8	29.50	223	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1459.5 mW -EXEMPT-	249.5 mW -EXEMPT-	N/A
Cellular	W-CDMA 5	846.6	24.50	282	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	925.5 mW -EXEMPT-	242.6- MEASURE-	N/A
Cellular	W-CDMA 4	1752.6	23.75	237	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1464.3 mW -EXEMPT-	254.3 mW -EXEMPT-	N/A
Cellular	W-CDMA 2	1907.6	23.00	200	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1459.6 mW -EXEMPT-	249.6 mW -EXEMPT-	N/A
Cellular	CDMA BC0	848.31	24.50	282	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	926.9 mW -EXEMPT-	242.6- MEASURE-	N/A
Cellular	CDMA BC1	1908.75	22.75	188	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1459.6 mW -EXEMPT-	249.6 mW -EXEMPT-	N/A
Cellular	CDMA BC10	823.1	25.00	316	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	906.7 mW -EXEMPT-	242.7- MEASURE-	N/A
Cellular	CDMA BC15	1753.75	23.75	237	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1464.3 mW -EXEMPT-	254.3 mW -EXEMPT-	N/A
Cellular	LTE Band 2	1900	23.00	200	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1459.8 mW -EXEMPT-	249.8 mW -EXEMPT-	N/A
Cellular	LTE Band 4	1754.3	24.00	251	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1464.3 mW -EXEMPT-	254.3 mW -EXEMPT-	N/A
Cellular	LTE Band 5	844	24.00	251	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	923.4 mW -EXEMPT-	242.6- MEASURE-	N/A
Cellular	LTE Band 13	782	24.00	251	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	873.9 mW -EXEMPT-	243.1- MEASURE-	N/A
Cellular	LTE Band 17	710	25.00	316	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	817.5 mW -EXEMPT-	244.8- MEASURE-	N/A
Cellular	LTE Band 25	1905	22.75	188	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	1459.7 mW -EXEMPT-	249.7 mW -EXEMPT-	N/A
Cellular	LTE Band 26	821.3	23.50	224	15.7	16.1	24.8	185.1	64.1		< 50 mm	< 50 mm	< 50 mm	905.2 mW -EXEMPT-	242.7 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.

9.1.2. SAR Test Exclusion Calculations for WiFi SISO (1 Tx) and BT 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	6.5	1813	93.5	3.4	9.8		9 -MEASURE-	>50 mm	>50 mm	12.6 -MEASURE-	6.3 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	16.00	40	6.5	1813	93.5	3.4	9.8		13.1 -MEASURE-	>50 mm	>50 mm	18.3 -MEASURE-	9.1 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1813	93.5	3.4	9.8		14.8 -MEASURE-	>50 mm	>50 mm	20.7 -MEASURE-	10.4 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1813	93.5	3.4	9.8		15.3 -MEASURE-	>50 mm	>50 mm	21.4 -MEASURE-	10.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1813	93.5	3.4	9.8		13.8 -MEASURE-	>50 mm	>50 mm	19.3 -MEASURE-	9.7 -MEASURE-	N/A
WiFi 1	Bluetooth	2441	13.00	20	6.5	1813	93.5	3.4	9.8		4.5 -MEASURE-	>50 mm	>50 mm	6.2 -MEASURE-	3.1 -MEASURE-	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2462	16.00	40	6.5	1911	14.4	3.4	93.5		9 -MEASURE-	>50 mm	4.5 -MEASURE-	12.6 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	16.00	40	6.5	1911	14.4	3.4	93.5		13.1 -MEASURE-	>50 mm	6.5 -MEASURE-	18.3 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1911	14.4	3.4	93.5		14.8 -MEASURE-	>50 mm	7.4 -MEASURE-	20.7 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1911	14.4	3.4	93.5		15.3 -MEASURE-	>50 mm	7.7 -MEASURE-	21.4 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1911	14.4	3.4	93.5		13.8 -MEASURE-	>50 mm	6.9 -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	6.5	1813	93.5	3.4	9.8		<50 mm	1408.6 mW -EXEMPT-	530.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	16.00	40	6.5	1813	93.5	3.4	9.8		<50 mm	1378.6 mW -EXEMPT-	500.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1813	93.5	3.4	9.8		<50 mm	1378.2 mW -EXEMPT-	500.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1813	93.5	3.4	9.8		<50 mm	1375.9 mW -EXEMPT-	497.9 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1813	93.5	3.4	9.8		<50 mm	1375.2 mW -EXEMPT-	497.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Bluetooth	2441	13.00	20	6.5	1813	93.5	3.4	9.8		<50 mm	1409 mW -EXEMPT-	531mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2462	16.00	40	6.5	1911	14.4	3.4	93.5		<50 mm	1506.6 mW -EXEMPT-	<50 mm	<50 mm	530.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	16.00	40	6.5	1911	14.4	3.4	93.5		<50 mm	1476.6 mW -EXEMPT-	<50 mm	<50 mm	500.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1911	14.4	3.4	93.5		<50 mm	1476.2 mW -EXEMPT-	<50 mm	<50 mm	500.2 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1911	14.4	3.4	93.5		<50 mm	1473.9 mW -EXEMPT-	<50 mm	<50 mm	497.9 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1911	14.4	3.4	93.5		<50 mm	1473.2 mW -EXEMPT-	<50 mm	<50 mm	497.2 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.

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	6.5	1813	93.5	3.4	9.8		9 -MEASURE-	>50 mm	>50 mm	12.5 -MEASURE-	6.3 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	13.50	22	6.5	1813	93.5	3.4	9.8		7.2 -MEASURE-	>50 mm	>50 mm	10.1 -MEASURE-	5 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1813	93.5	3.4	9.8		14.8 -MEASURE-	>50 mm	>50 mm	20.7 -MEASURE-	10.4 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1813	93.5	3.4	9.8		15.3 -MEASURE-	>50 mm	>50 mm	21.4 -MEASURE-	10.7 -MEASURE-	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1813	93.5	3.4	9.8		13.8 -MEASURE-	>50 mm	>50 mm	19.3 -MEASURE-	9.7 -MEASURE-	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2457	16.00	40	6.5	1911	14.4	3.4	93.5		9 -MEASURE-	>50 mm	4.5 -MEASURE-	12.5 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	13.50	22	6.5	1911	14.4	3.4	93.5		7.2 -MEASURE-	>50 mm	3.6 -MEASURE-	10.1 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1911	14.4	3.4	93.5		14.8 -MEASURE-	>50 mm	7.4 -MEASURE-	20.7 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1911	14.4	3.4	93.5		15.3 -MEASURE-	>50 mm	7.7 -MEASURE-	21.4 -MEASURE-	>50 mm	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1911	14.4	3.4	93.5		13.8 -MEASURE-	>50 mm	6.9 -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	6.5	1813	93.5	3.4	9.8		<50 mm	1408.7 mW -EXEMPT-	530.7 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.2 GHz	5230	13.50	22	6.5	1813	93.5	3.4	9.8		<50 mm	1378.6 mW -EXEMPT-	500.6 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1813	93.5	3.4	9.8		<50 mm	1378.2 mW -EXEMPT-	500.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1813	93.5	3.4	9.8		<50 mm	1375.9 mW -EXEMPT-	497.9 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1813	93.5	3.4	9.8		<50 mm	1375.2 mW -EXEMPT-	497.2 mW -EXEMPT-	<50 mm	<50 mm	N/A
WiFi 2																
WiFi 2	Wi-Fi 2.4 GHz	2457	16.00	40	6.5	1911	14.4	3.4	93.5		<50 mm	1506.7 mW -EXEMPT-	<50 mm	<50 mm	530.7 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.2 GHz	5230	13.50	22	6.5	1911	14.4	3.4	93.5		<50 mm	1476.6 mW -EXEMPT-	<50 mm	<50 mm	500.6 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	1911	14.4	3.4	93.5		<50 mm	1476.2 mW -EXEMPT-	<50 mm	<50 mm	500.2 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	1911	14.4	3.4	93.5		<50 mm	1473.9 mW -EXEMPT-	<50 mm	<50 mm	497.9 mW -EXEMPT-	N/A
WiFi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	1911	14.4	3.4	93.5		<50 mm	1473.2 mW -EXEMPT-	<50 mm	<50 mm	497.2 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.

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	No	No	No
GSM1900 Prox. On	Yes	Yes	Yes	No	No
W-CDMA Band 2 Prox. Off	Yes	Yes	No	No	No
W-CDMA Band 2 Prox. On	Yes	Yes	Yes	No	No
W-CDMA Band 4 Prox. Off	Yes	Yes	No	No	No
W-CDMA Band 4 Prox. On	Yes	Yes	Yes	No	No
W-CDMA Band 5 Prox. Off	Yes	Yes	Yes	No	Yes
W-CDMA Band 5 Prox. On	Yes	Yes	No	No	No
CDMA BC0 Prox. Off	Yes	Yes	Yes	No	Yes
CDMA BC0 Prox. On	Yes	Yes	No	No	No
CDMA BC1 Prox. Off	Yes	Yes	No	No	No
CDMA BC1 Prox. On	Yes	Yes	Yes	No	No
CDMA BC10 Prox. Off	Yes	Yes	Yes	No	Yes
CDMA BC10 Prox. On	Yes	Yes	No	No	No
CDMA BC15 Prox. Off	Yes	Yes	No	No	No
CDMA BC15 Prox. On	Yes	Yes	Yes	No	No
LTE Band 2 Prox. Off	Yes	Yes	No	No	No
LTE Band 2 Prox. On	Yes	Yes	Yes	No	No
LTE Band 4 Prox. Off	Yes	Yes	No	No	No
LTE Band 4 Prox. On	Yes	Yes	Yes	No	No
LTE Band 5 Prox. Off	Yes	Yes	Yes	No	Yes
LTE Band 5 Prox. On	Yes	Yes	No	No	No
LTE Band 13 Prox. Off	Yes	Yes	Yes	No	Yes
LTE Band 13 Prox. On	Yes	Yes	No	No	No
LTE Band 17 Prox. Off	Yes	Yes	Yes	No	Yes
LTE Band 17 Prox. On	Yes	Yes	No	No	No
LTE Band 25 Prox. Off	Yes	Yes	No	No	No
LTE Band 25 Prox. On	Yes	Yes	Yes	No	No
LTE Band 26 Prox. Off	Yes	Yes	Yes	No	Yes
LTE Band 26 Prox. On	Yes	Yes	No	No	No

Note(s):

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

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[3]	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.

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

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

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.

10.2.1. Facility 1

SAR Room A

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 2450	e'	54.8600	Relative Permittivity (ε_r):	54.86	52.70	4.10	5
		e''	14.6200	Conductivity (σ):	1.99	1.95	2.14	5
	Body 2410	e'	54.9800	Relative Permittivity (ε_r):	54.98	52.76	4.21	5
		e''	14.4600	Conductivity (σ):	1.94	1.91	1.58	5
	Body 2475	e'	54.7900	Relative Permittivity (ε_r):	54.79	52.67	4.03	5
		e''	14.7100	Conductivity (σ):	2.02	1.99	1.98	5
8/26/2013	Body 750	e'	53.2100	Relative Permittivity (ε_r):	53.21	55.55	-4.21	5
		e''	23.2900	Conductivity (σ):	0.97	0.96	0.85	5
	Body 700	e'	53.8300	Relative Permittivity (ε_r):	53.83	55.74	-3.42	5
		e''	23.7200	Conductivity (σ):	0.92	0.96	-3.75	5
	Body 790	e'	52.9600	Relative Permittivity (ε_r):	52.96	55.39	-4.39	5
		e''	23.0300	Conductivity (σ):	1.01	0.97	4.71	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
9/3/2013	Body 750	e'	53.2500	Relative Permittivity (ε_r):	53.25	55.55	-4.13	5
		e''	23.3900	Conductivity (σ):	0.98	0.96	1.28	5
	Body 700	e'	53.8200	Relative Permittivity (ε_r):	53.82	55.74	-3.44	5
		e''	23.8300	Conductivity (σ):	0.93	0.96	-3.31	5
	Body 790	e'	52.8300	Relative Permittivity (ε_r):	52.83	55.39	-4.63	5
		e''	23.0500	Conductivity (σ):	1.01	0.97	4.80	5

Tissue Dielectric Parameter Check Results (continued)

SAR Room B

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 835	e'	55.8400	Relative Permittivity (ϵ_r):	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 (ϵ_r):	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 (ϵ_r):	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
8/26/2013	Body 835	e'	52.7700	Relative Permittivity (ϵ_r):	52.77	55.20	-4.40	5
		e''	21.9000	Conductivity (σ):	1.02	0.97	4.82	5
	Body 820	e'	52.9800	Relative Permittivity (ϵ_r):	52.98	55.28	-4.16	5
		e''	21.9200	Conductivity (σ):	1.00	0.97	3.20	5
	Body 850	e'	52.6300	Relative Permittivity (ϵ_r):	52.63	55.16	-4.58	5
		e''	21.8400	Conductivity (σ):	1.03	0.99	4.57	5
9/3/2013	Body 835	e'	53.4000	Relative Permittivity (ϵ_r):	53.40	55.20	-3.26	5
		e''	21.8400	Conductivity (σ):	1.01	0.97	4.54	5
	Body 820	e'	53.5200	Relative Permittivity (ϵ_r):	53.52	55.28	-3.18	5
		e''	21.8900	Conductivity (σ):	1.00	0.97	3.06	5
	Body 850	e'	53.2400	Relative Permittivity (ϵ_r):	53.24	55.16	-3.48	5
		e''	21.7300	Conductivity (σ):	1.03	0.99	4.04	5

SAR Room C

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 1900	e'	52.99	Relative Permittivity (εr):	52.99	53.30	-0.58	5
		e''	14.23	Conductivity (σ):	1.50	1.52	-1.10	5
	Body 1850	e'	53.19	Relative Permittivity (εr):	53.19	53.30	-0.21	5
		e''	14.14	Conductivity (σ):	1.45	1.52	-4.31	5
	Body 1910	e'	52.93	Relative Permittivity (εr):	52.93	53.30	-0.69	5
		e''	14.24	Conductivity (σ):	1.51	1.52	-0.51	5
8/22/2013	Body 1900	e'	53.2400	Relative Permittivity (ϵ_r):	53.24	53.30	-0.11	5
		e''	14.8200	Conductivity (σ):	1.57	1.52	3.00	5
	Body 1850	e'	53.4400	Relative Permittivity (ϵ_r):	53.44	53.30	0.26	5
		e''	14.6000	Conductivity (σ):	1.50	1.52	-1.19	5
	Body 1910	e'	53.2500	Relative Permittivity (ϵ_r):	53.25	53.30	-0.09	5
		e''	14.8700	Conductivity (σ):	1.58	1.52	3.90	5
8/26/2013	Body 1900	e'	52.76	Relative Permittivity (εr):	52.76	53.3	-1.01	5
		e''	14.01	Conductivity (σ):	1.48	1.52	-2.63	5
	Body 1850	e'	53.09	Relative Permittivity (εr):	53.09	53.3	-0.39	5
		e''	14.05	Conductivity (σ):	1.45	1.52	-4.92	5
	Body 1910	e'	52.66	Relative Permittivity (εr):	52.66	53.3	-1.2	5
		e''	14.06	Conductivity (σ):	1.49	1.52	-1.76	5

Tissue Dielectric Parameter Check Results (continued)

SAR Room D

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/21/2013	Body 835	e'	54.2400	Relative Permittivity (ϵ_r):	54.24	55.20	-1.74	5
		e''	21.4600	Conductivity (σ):	1.00	0.97	2.72	5
	Body 820	e'	54.3700	Relative Permittivity (ϵ_r):	54.37	55.28	-1.64	5
		e''	21.5500	Conductivity (σ):	0.98	0.97	1.46	5
	Body 850	e'	54.0900	Relative Permittivity (ϵ_r):	54.09	55.16	-1.93	5
		e''	21.4500	Conductivity (σ):	1.01	0.99	2.70	5
8/22/2013	Body 1900	e'	53.1400	Relative Permittivity (ϵ_r):	53.14	53.30	-0.30	5
		e''	14.5100	Conductivity (σ):	1.53	1.52	0.85	5
	Body 1850	e'	53.3300	Relative Permittivity (ϵ_r):	53.33	53.30	0.06	5
		e''	14.2800	Conductivity (σ):	1.47	1.52	-3.36	5
	Body 1910	e'	53.1500	Relative Permittivity (ϵ_r):	53.15	53.30	-0.28	5
		e''	14.5500	Conductivity (σ):	1.55	1.52	1.66	5
8/26/2013	Body 835	e'	56.1600	Relative Permittivity (ϵ_r):	56.16	55.20	1.74	5
		e''	20.5100	Conductivity (σ):	0.95	0.97	-1.83	5
	Body 820	e'	56.2500	Relative Permittivity (ϵ_r):	56.25	55.28	1.76	5
		e''	20.6000	Conductivity (σ):	0.94	0.97	-3.02	5
	Body 850	e'	56.0700	Relative Permittivity (ϵ_r):	56.07	55.16	1.66	5
		e''	20.4300	Conductivity (σ):	0.97	0.99	-2.18	5

SAR Room E

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
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
8/22/2013	Body 1750	e'	51.6700	Relative Permittivity (ϵ_r):	51.67	53.44	-3.31	5
		e''	15.2800	Conductivity (σ):	1.49	1.49	0.05	5
	Body 1710	e'	51.8800	Relative Permittivity (ϵ_r):	51.88	53.54	-3.11	5
		e''	15.1600	Conductivity (σ):	1.44	1.46	-1.38	5
	Body 1755	e'	51.6400	Relative Permittivity (ϵ_r):	51.64	53.43	-3.35	5
		e''	15.3000	Conductivity (σ):	1.49	1.49	0.25	5

Tissue Dielectric Parameter Check Results (continued)

SAR Room F

Date Tested	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
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
8/26/2013	Body 750	e'	53.0300	Relative Permittivity (ϵ_r):	53.03	55.55	-4.53	5
		e''	23.2200	Conductivity (σ):	0.97	0.96	0.55	5
	Body 700	e'	53.5700	Relative Permittivity (ϵ_r):	53.57	55.74	-3.89	5
		e''	23.6400	Conductivity (σ):	0.92	0.96	-4.08	5
	Body 790	e'	52.7500	Relative Permittivity (ϵ_r):	52.75	55.39	-4.77	5
		e''	22.9200	Conductivity (σ):	1.01	0.97	4.21	5
9/3/2013	Body 750	e'	53.2500	Relative Permittivity (ϵ_r):	53.25	55.55	-4.13	5
		e''	23.3900	Conductivity (σ):	0.98	0.96	1.28	5
	Body 700	e'	53.8200	Relative Permittivity (ϵ_r):	53.82	55.74	-3.44	5
		e''	23.8300	Conductivity (σ):	0.93	0.96	-3.31	5
	Body 790	e'	52.8300	Relative Permittivity (ϵ_r):	52.83	55.39	-4.63	5
		e''	23.0500	Conductivity (σ):	1.01	0.97	4.80	5

10.2.2. Facility 2

LAB A

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 5180	e'	47.4300	Relative Permittivity (ϵ_r):	47.43	49.05	-3.30	5
		e"	18.3200	Conductivity (σ):	5.28	5.27	0.10	5
	Body 5200	e'	47.4000	Relative Permittivity (ϵ_r):	47.40	49.02	-3.30	5
		e"	18.3500	Conductivity (σ):	5.31	5.29	0.21	5
	Body 5500	e'	46.9200	Relative Permittivity (ϵ_r):	46.92	48.61	-3.48	5
		e"	18.5600	Conductivity (σ):	5.68	5.64	0.56	5
	Body 5800	e'	46.4400	Relative Permittivity (ϵ_r):	46.44	48.20	-3.65	5
		e"	18.8700	Conductivity (σ):	6.09	6.00	1.43	5
	Body 5825	e'	46.4100	Relative Permittivity (ϵ_r):	46.41	48.20	-3.71	5
		e"	18.8900	Conductivity (σ):	6.12	6.00	1.97	5
8/22/2013	Body 5180	e'	48.0200	Relative Permittivity (ϵ_r):	48.02	49.05	-2.09	5
		e"	18.0700	Conductivity (σ):	5.20	5.27	-1.27	5
	Body 5200	e'	47.9000	Relative Permittivity (ϵ_r):	47.90	49.02	-2.28	5
		e"	18.0600	Conductivity (σ):	5.22	5.29	-1.38	5
	Body 5500	e'	47.1800	Relative Permittivity (ϵ_r):	47.18	48.61	-2.95	5
		e"	18.4200	Conductivity (σ):	5.63	5.64	-0.20	5
	Body 5800	e'	46.9100	Relative Permittivity (ϵ_r):	46.91	48.20	-2.68	5
		e"	18.8900	Conductivity (σ):	6.09	6.00	1.53	5
	Body 5825	e'	46.8900	Relative Permittivity (ϵ_r):	46.89	48.20	-2.72	5
		e"	18.9200	Conductivity (σ):	6.13	6.00	2.13	5
8/26/2013	Body 5180	e'	48.0700	Relative Permittivity (ϵ_r):	48.07	49.05	-1.99	5
		e"	18.2000	Conductivity (σ):	5.24	5.27	-0.56	5
	Body 5200	e'	48.0500	Relative Permittivity (ϵ_r):	48.05	49.02	-1.98	5
		e"	18.2200	Conductivity (σ):	5.27	5.29	-0.50	5
	Body 5500	e'	47.5700	Relative Permittivity (ϵ_r):	47.57	48.61	-2.15	5
		e"	18.4400	Conductivity (σ):	5.64	5.64	-0.09	5
	Body 5800	e'	47.1300	Relative Permittivity (ϵ_r):	47.13	48.20	-2.22	5
		e"	18.8100	Conductivity (σ):	6.07	6.00	1.10	5
	Body 5825	e'	47.1100	Relative Permittivity (ϵ_r):	47.11	48.20	-2.26	5
		e"	18.8300	Conductivity (σ):	6.10	6.00	1.65	5
8/30/2013	Body 5180	e'	48.3900	Relative Permittivity (ϵ_r):	48.39	49.05	-1.34	5
		e"	17.8800	Conductivity (σ):	5.15	5.27	-2.31	5
	Body 5200	e'	48.3200	Relative Permittivity (ϵ_r):	48.32	49.02	-1.43	5
		e"	17.8900	Conductivity (σ):	5.17	5.29	-2.31	5
	Body 5500	e'	47.5000	Relative Permittivity (ϵ_r):	47.50	48.61	-2.29	5
		e"	18.1500	Conductivity (σ):	5.55	5.64	-1.66	5
	Body 5800	e'	47.3600	Relative Permittivity (ϵ_r):	47.36	48.20	-1.74	5
		e"	18.7200	Conductivity (σ):	6.04	6.00	0.62	5
	Body 5825	e'	47.3100	Relative Permittivity (ϵ_r):	47.31	48.20	-1.85	5
		e"	18.7000	Conductivity (σ):	6.06	6.00	0.95	5

Tissue Dielectric Parameter Check Results (continued)

LAB B

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/22/2013	Body 2450	e'	51.9800	Relative Permittivity (ϵ_r):	51.98	52.70	-1.37	5
		e"	14.4500	Conductivity (σ):	1.97	1.95	0.95	5
	Body 2410	e'	52.1200	Relative Permittivity (ϵ_r):	52.12	52.76	-1.21	5
		e"	14.3300	Conductivity (σ):	1.92	1.91	0.67	5
	Body 2435	e'	52.0300	Relative Permittivity (ϵ_r):	52.03	52.73	-1.32	5
		e"	14.4000	Conductivity (σ):	1.95	1.93	0.96	5
	Body 2475	e'	51.8800	Relative Permittivity (ϵ_r):	51.88	52.67	-1.50	5
		e"	14.5300	Conductivity (σ):	2.00	1.99	0.73	5
8/26/2013	Body 2450	e'	50.8600	Relative Permittivity (ϵ_r):	50.86	52.70	-3.49	5
		e"	14.5300	Conductivity (σ):	1.98	1.95	1.51	5
	Body 2410	e'	51.0300	Relative Permittivity (ϵ_r):	51.03	52.76	-3.28	5
		e"	14.4300	Conductivity (σ):	1.93	1.91	1.37	5
	Body 2435	e'	50.9300	Relative Permittivity (ϵ_r):	50.93	52.73	-3.41	5
		e"	14.4900	Conductivity (σ):	1.96	1.93	1.59	5
	Body 2475	e'	50.7400	Relative Permittivity (ϵ_r):	50.74	52.67	-3.66	5
		e"	14.6200	Conductivity (σ):	2.01	1.99	1.35	5
8/26/2013	Body 5180	e'	48.5100	Relative Permittivity (ϵ_r):	48.51	49.05	-1.09	5
		e"	17.9200	Conductivity (σ):	5.16	5.27	-2.09	5
	Body 5200	e'	48.5300	Relative Permittivity (ϵ_r):	48.53	49.02	-1.00	5
		e"	17.9300	Conductivity (σ):	5.18	5.29	-2.09	5
	Body 5500	e'	47.9900	Relative Permittivity (ϵ_r):	47.99	48.61	-1.28	5
		e"	18.1000	Conductivity (σ):	5.54	5.64	-1.93	5
	Body 5800	e'	47.6300	Relative Permittivity (ϵ_r):	47.63	48.20	-1.18	5
		e"	18.5100	Conductivity (σ):	5.97	6.00	-0.51	5
	Body 5825	e'	47.6000	Relative Permittivity (ϵ_r):	47.60	48.20	-1.24	5
		e"	18.5000	Conductivity (σ):	5.99	6.00	-0.13	5
8/29/2013	Body 5180	e'	48.0200	Relative Permittivity (ϵ_r):	48.02	49.05	-2.09	5
		e"	18.0600	Conductivity (σ):	5.20	5.27	-1.32	5
	Body 5200	e'	48.0100	Relative Permittivity (ϵ_r):	48.01	49.02	-2.06	5
		e"	18.0700	Conductivity (σ):	5.22	5.29	-1.32	5
	Body 5500	e'	47.4900	Relative Permittivity (ϵ_r):	47.49	48.61	-2.31	5
		e"	18.2800	Conductivity (σ):	5.59	5.64	-0.96	5
	Body 5800	e'	47.0500	Relative Permittivity (ϵ_r):	47.05	48.20	-2.39	5
		e"	18.6800	Conductivity (σ):	6.02	6.00	0.40	5
	Body 5825	e'	47.0100	Relative Permittivity (ϵ_r):	47.01	48.20	-2.47	5
		e"	18.7000	Conductivity (σ):	6.06	6.00	0.95	5

Tissue Dielectric Parameter Check Results (continued)

LAB C

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 5180	e'	48.0220	Relative Permittivity (ϵ_r):	48.02	49.05	-2.09	5
		e"	18.1236	Conductivity (σ):	5.22	5.27	-0.97	5
	Body 5200	e'	48.0220	Relative Permittivity (ϵ_r):	48.02	49.02	-2.04	5
		e"	18.1576	Conductivity (σ):	5.25	5.29	-0.84	5
	Body 5500	e'	47.5128	Relative Permittivity (ϵ_r):	47.51	48.61	-2.26	5
		e"	18.3542	Conductivity (σ):	5.61	5.64	-0.56	5
	Body 5800	e'	47.0673	Relative Permittivity (ϵ_r):	47.07	48.20	-2.35	5
		e"	18.6687	Conductivity (σ):	6.02	6.00	0.34	5
	Body 5825	e'	47.0517	Relative Permittivity (ϵ_r):	47.05	48.20	-2.38	5
		e"	18.7107	Conductivity (σ):	6.06	6.00	1.00	5
8/22/2013	Body 5180	e'	48.3500	Relative Permittivity (ϵ_r):	48.35	49.05	-1.42	5
		e"	17.7500	Conductivity (σ):	5.11	5.27	-3.02	5
	Body 5200	e'	48.3100	Relative Permittivity (ϵ_r):	48.31	49.02	-1.45	5
		e"	17.7500	Conductivity (σ):	5.13	5.29	-3.07	5
	Body 5500	e'	47.7500	Relative Permittivity (ϵ_r):	47.75	48.61	-1.78	5
		e"	18.0000	Conductivity (σ):	5.50	5.64	-2.48	5
	Body 5800	e'	47.4400	Relative Permittivity (ϵ_r):	47.44	48.20	-1.58	5
		e"	18.4500	Conductivity (σ):	5.95	6.00	-0.83	5
	Body 5825	e'	47.4200	Relative Permittivity (ϵ_r):	47.42	48.20	-1.62	5
		e"	18.4600	Conductivity (σ):	5.98	6.00	-0.35	5
8/26/2013	Body 5180	e'	48.0500	Relative Permittivity (ϵ_r):	48.05	49.05	-2.03	5
		e"	17.7400	Conductivity (σ):	5.11	5.27	-3.07	5
	Body 5200	e'	48.0400	Relative Permittivity (ϵ_r):	48.04	49.02	-2.00	5
		e"	17.7600	Conductivity (σ):	5.14	5.29	-3.02	5
	Body 5500	e'	47.5700	Relative Permittivity (ϵ_r):	47.57	48.61	-2.15	5
		e"	17.9700	Conductivity (σ):	5.50	5.64	-2.64	5
	Body 5800	e'	47.1500	Relative Permittivity (ϵ_r):	47.15	48.20	-2.18	5
		e"	18.3600	Conductivity (σ):	5.92	6.00	-1.32	5
	Body 5825	e'	47.1300	Relative Permittivity (ϵ_r):	47.13	48.20	-2.22	5
		e"	18.3800	Conductivity (σ):	5.95	6.00	-0.78	5
8/29/2013	Body 5180	e'	48.0800	Relative Permittivity (ϵ_r):	48.08	49.05	-1.97	5
		e"	17.6400	Conductivity (σ):	5.08	5.27	-3.62	5
	Body 5200	e'	48.0700	Relative Permittivity (ϵ_r):	48.07	49.02	-1.94	5
		e"	17.6500	Conductivity (σ):	5.10	5.29	-3.62	5
	Body 5500	e'	47.5700	Relative Permittivity (ϵ_r):	47.57	48.61	-2.15	5
		e"	17.8700	Conductivity (σ):	5.46	5.64	-3.18	5
	Body 5800	e'	47.1300	Relative Permittivity (ϵ_r):	47.13	48.20	-2.22	5
		e"	18.2700	Conductivity (σ):	5.89	6.00	-1.80	5
	Body 5825	e'	47.0900	Relative Permittivity (ϵ_r):	47.09	48.20	-2.30	5
		e"	18.3000	Conductivity (σ):	5.93	6.00	-1.21	5

Tissue Dielectric Parameter Check Results (continued)

LAB D

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8/19/2013	Body 5180	e'	48.4600	Relative Permittivity (ϵ_r):	48.46	49.05	-1.20	5
		e''	18.2400	Conductivity (σ):	5.25	5.27	-0.34	5
	Body 5200	e'	48.4600	Relative Permittivity (ϵ_r):	48.46	49.02	-1.14	5
		e''	18.2700	Conductivity (σ):	5.28	5.29	-0.23	5
	Body 5500	e'	47.9700	Relative Permittivity (ϵ_r):	47.97	48.61	-1.32	5
		e''	18.4600	Conductivity (σ):	5.65	5.64	0.02	5
	Body 5800	e'	47.4900	Relative Permittivity (ϵ_r):	47.49	48.20	-1.47	5
		e''	18.8100	Conductivity (σ):	6.07	6.00	1.10	5
	Body 5825	e'	47.4900	Relative Permittivity (ϵ_r):	47.49	48.20	-1.47	5
		e''	18.8600	Conductivity (σ):	6.11	6.00	1.81	5
8/22/2013	Body 5180	e'	48.4200	Relative Permittivity (ϵ_r):	48.42	49.05	-1.28	5
		e''	17.9600	Conductivity (σ):	5.17	5.27	-1.87	5
	Body 5200	e'	48.3000	Relative Permittivity (ϵ_r):	48.30	49.02	-1.47	5
		e''	17.9600	Conductivity (σ):	5.19	5.29	-1.92	5
	Body 5500	e'	47.6500	Relative Permittivity (ϵ_r):	47.65	48.61	-1.98	5
		e''	18.3500	Conductivity (σ):	5.61	5.64	-0.58	5
	Body 5800	e'	47.4500	Relative Permittivity (ϵ_r):	47.45	48.20	-1.56	5
		e''	18.8300	Conductivity (σ):	6.07	6.00	1.21	5
	Body 5825	e'	47.4200	Relative Permittivity (ϵ_r):	47.42	48.20	-1.62	5
		e''	18.8600	Conductivity (σ):	6.11	6.00	1.81	5
8/26/2013	Body 5180	e'	47.5600	Relative Permittivity (ϵ_r):	47.56	49.05	-3.03	5
		e''	18.3500	Conductivity (σ):	5.29	5.27	0.26	5
	Body 5200	e'	47.5500	Relative Permittivity (ϵ_r):	47.55	49.02	-3.00	5
		e''	18.3700	Conductivity (σ):	5.31	5.29	0.32	5
	Body 5500	e'	47.0400	Relative Permittivity (ϵ_r):	47.04	48.61	-3.24	5
		e''	18.5500	Conductivity (σ):	5.67	5.64	0.50	5
	Body 5800	e'	46.6200	Relative Permittivity (ϵ_r):	46.62	48.20	-3.28	5
		e''	18.9200	Conductivity (σ):	6.10	6.00	1.69	5
	Body 5825	e'	46.5900	Relative Permittivity (ϵ_r):	46.59	48.20	-3.34	5
		e''	18.9200	Conductivity (σ):	6.13	6.00	2.13	5

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.

11.2. Reference SAR Values for System Performance Check

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

Facility 1

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
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
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

Facility 2

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (mW/g)		
				1g/10g	Head	Body
D2450V2	900	10/5/2012	2450	1g	52.9	51.7
				10g	24.8	24.2
D5GHzV2	1139	10/9/2012	5200	1g	80.1	74.5
				10g	22.9	20.8
			5500	1g	84.3	79.3
				10g	23.9	22.1
			5800	1g	79.0	73.7
				10g	22.5	20.4
D5GHzV2	1072	2/8/2013	5200	1g	77.0	75.1
				10g	21.8	21.0
			5500	1g	80.7	79.4
				10g	22.7	22.0
			5800	1g	72.9	73.3
				10g	20.6	20.3

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.

11.3.1. Facility 1

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				
8/19/2013	D2450v2	748	Body	1g	4.81	4.91	49.10	49.9	-1.60	-2.08	1,2
				10g	2.12	2.24	22.40	23.2	-3.45		
8/26/2013	D750V3	1024	Body	1g	0.895	0.941	9.41	8.71	8.04	-5.14	3,4
				10g	0.608	0.622	6.22	5.71	8.93		
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		
9/3/2013	D750V3	1024	Body	1g	0.876	0.859	8.59	8.71	-1.38	1.94	
				10g	0.595	0.573	5.73	5.71	0.35		

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				
8/19/2013	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	
				10g	0.638	0.595	5.95	6.16	-3.41		
8/26/2013	D835V2	4d117	Body	1g	0.987	0.967	9.67	9.40	2.87	2.03	
				10g	0.661	0.634	6.34	6.16	2.92		
9/3/2013	D835V2	4d117	Body	1g	1.010	0.979	9.79	9.40	4.15	3.07	5,6
				10g	0.678	0.644	6.44	6.16	4.55		

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				
8/19/2013	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		
8/22/2013	D1900V2	5d140	Body	1g	4.21	4.24	42.40	41.5	2.17	-0.71	7,8
				10g	2.11	2.24	22.40	22.0	1.82		
8/26/2013	D1900V2	5d140	Body	1g	4.10	4.08	40.80	41.5	-1.69	0.49	
				10g	2.04	2.15	21.50	22.0	-2.27		

SAR Room D

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				
8/21/2013	D835V2	4d117	Body	1g	0.986	0.961	9.61	9.40	2.23	2.54	9,10
				10g	0.662	0.633	6.33	6.16	2.76		
8/22/2013	D19002	5d140	Body	1g	4.12	4.08	40.80	41.5	-1.69	0.97	11,12
				10g	2.08	2.16	21.60	22.0	-1.82		
8/26/2013	D835V2	4d117	Body	1g	0.948	0.932	9.32	9.40	-0.85	1.69	
				10g	0.636	0.614	6.14	6.16	-0.32		

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				
8/19/2013	D1750V2	1077	Body	1g	4.01	3.66	36.60	37.7	-2.92	8.73	13,14
				10g	2.08	1.96	19.60	20.3	-3.45		
8/22/2013	D1750V2	1077	Body	1g	3.76	3.70	37.00	37.7	-1.86	1.60	
				10g	1.98	1.97	19.70	20.3	-2.96		

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				
8/19/2013	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	15,16
				10g	2.05	2.09	20.90	21.10	-0.95		
8/26/2013	D750V3	1024	Body	1g	0.921	0.897	8.97	8.71	2.99	2.61	
				10g	0.623	0.594	5.94	5.71	4.03		
9/3/2013	D750V3	1024	Body	1g	0.864	0.839	8.39	8.71	-3.67	2.89	17,18
				10g	0.585	0.559	5.59	5.71	-2.10		

11.3.2. Facility 2

LAB 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				
8/19/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	7.29	7.79	77.9	74.5	**4.56**	-6.86	1,2
				10g	1.99	2.18	21.8	20.8	4.81		
8/22/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	7.12	7.51	75.1	74.5	0.81	-5.48	
				10g	1.92	2.10	21.0	20.8	0.96		
8/26/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	7.20	7.65	76.5	74.5	2.68	-6.25	
				10g	1.96	2.14	21.4	20.8	2.88		
8/30/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	6.89	7.23	72.3	74.5	-2.95	-4.93	
				10g	1.86	2.02	20.2	20.8	-2.88		

LAB 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				
8/22/2013	2.4GHz	900	Body	1g	4.95	5.14	51.4	51.7	-0.58	-3.84	
				10g	2.09	2.37	23.7	24.2	-2.07		
8/26/2013	2.4GHz	900	Body	1g	5.14	5.35	53.5	51.7	**3.48**	-4.09	3,4
				10g	2.18	2.46	24.6	24.2	1.65		
8/26/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	7.88	7.72	77.2	74.5	3.62	2.03	
				10g	2.23	2.16	21.6	20.8	3.85		
8/29/2013	D5GHzV2 (5.2GHz)	1139	Body	1g	7.33	7.83	78.3	74.5	**5.10**	-6.82	5,6
				10g	2.04	2.19	21.9	20.8	5.29		

LAB 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				
8/19/2013	D5GHzV2 (5.5GHz)	1072	Body	1g	7.03	7.70	77.0	79.4	-3.02	-9.53	
				10g	1.92	2.15	21.5	22.0	-2.27		
8/19/2013	D5GHzV2 (5.6GHz)	1072	Body	1g	7.51	8.30	83.0	79.4	4.53	-10.52	
				10g	2.03	2.30	23.0	22.0	4.55		
8/22/2013	D5GHzV2 (5.5GHz)	1072	Body	1g	7.13	7.77	77.7	79.4	-2.14	-8.98	
				10g	1.96	2.16	21.6	22.0	-1.82		
8/22/2013	D5GHzV2 (5.6GHz)	1072	Body	1g	7.55	8.18	81.8	79.4	3.02	-8.34	
				10g	2.06	2.28	22.8	22.0	3.64		
8/26/2013	D5GHzV2 (5.5GHz)	1072	Body	1g	6.74	7.34	73.4	79.4	**-7.56**	-8.90	7,8
				10g	1.84	2.03	20.3	22.0	-7.73		
8/26/2013	D5GHzV2 (5.6GHz)	1072	Body	1g	7.47	7.91	79.1	79.4	-0.38	-5.89	
				10g	2.01	2.19	21.9	22.0	-0.45		
8/29/2013	D5GHzV2 (5.5GHz)	1072	Body	1g	7.09	7.41	74.1	79.4	-6.68	-4.51	
				10g	1.90	2.05	20.5	22.0	-6.82		
8/29/2013	D5GHzV2 (5.6GHz)	1072	Body	1g	7.15	7.57	75.7	79.4	-4.66	-5.87	
				10g	1.92	2.10	21.0	22.0	-4.55		

System Performance Check Results (continued)

LAB D

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				
8/19/2013	D5GHzV2 (5.8GHz)	1072	Body	1g	7.89	7.48	74.8	73.3	**2.05**	5.20	9,10
				10g	2.11	2.06	20.6	20.3	1.48		
8/22/2013	D5GHzV2 (5.8GHz)	1072	Body	1g	7.72	7.42	74.2	73.3	1.23	3.89	
				10g	2.06	2.05	20.5	20.3	0.99		
8/26/2013	D5GHzV2 (5.8GHz)	1072	Body	1g	7.86	7.44	74.4	73.3	1.50	5.34	
				10g	2.11	2.05	20.5	20.3	0.99		

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	14	190	836.6	32.50	32.50	0.408	0.408	0.273	0.273	
		Edge 1	14	190	836.6	32.50	32.50	0.563	0.563	0.379	0.379	
		Edge 4	0	190	836.6	32.50	32.50	0.318	0.318	0.170	0.170	
On (First Stage)	GPRS 2 slots	Edge 2	0	190	836.6	24.50	24.50	0.410	0.410	0.226	0.226	
On (Second Stage)	GPRS 2 slots	Rear	0	128	824.2	24.50	24.50	0.918	0.918	0.486	0.486	
				190	836.6	24.50	24.50	0.957	0.957	0.501	0.501	
				251	848.8	24.50	24.50	1.040	**1.040**	0.549	0.549	1
		Edge 1	0	128	824.2	24.50	24.50	0.796	0.796	0.433	0.433	
				190	836.6	24.50	24.50	0.815	0.815	0.452	0.452	
				251	848.8	24.50	24.50	0.847	0.847	0.468	0.468	

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	14	512	1850.2	29.50	29.50	0.792	0.792	0.459	0.459	
				661	1880.0	29.50	29.50	0.802	0.802	0.459	0.459	
				810	1909.8	29.50	29.50	0.785	0.785	0.446	0.446	
		Edge 1	14	512	1850.2	29.50	29.50	1.020	1.020	0.584	0.584	
				661	1880.0	29.50	29.50	1.050	1.050	0.605	0.605	
				810	1909.8	29.50	29.50	1.040	1.040	0.595	0.595	
On (First Stage)	GPRS 2 slots	Edge 2	0	512	1850.2	28.50	28.40	0.906	0.927	0.447	0.457	
				661	1880.0	28.50	28.50	0.982	0.982	0.48	0.480	
				810	1909.8	28.50	28.40	0.990	1.013	0.481	0.492	
On (Second Stage)	GPRS 2 slots	Rear	0	512	1850.2	20.00	20.00	0.950	0.950	0.421	0.421	
				661	1880.0	20.00	20.00	1.010	1.010	0.443	0.443	
				810	1909.8	20.00	19.90	1.050	**1.074**	0.46	0.471	2
		Edge 1	0	512	1850.2	20.00	20.00	0.745	0.745	0.345	0.345	
				661	1880.0	20.00	20.00	0.843	0.843	0.389	0.389	
				810	1909.8	20.00	19.90	0.946	0.968	0.433	0.443	

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

12.3. 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	14	9262	1852.4	23.00	23.00	0.960	0.960	0.541	0.541	
				9400	1880.0	23.00	22.95	0.961	0.972	0.538	0.544	
				9538	1907.6	23.00	22.96	0.942	0.951	0.522	0.527	
		Edge 1	14	9262	1852.4	23.00	23.00	1.060	1.060	0.606	0.606	
				9400	1880.0	23.00	22.95	1.100	1.113	0.623	0.630	
				9538	1907.6	23.00	22.96	1.110	1.120	0.63	0.636	
On (First Stage)	Rel 99 RMC 12.2kbps	Edge 2	0	9262	1852.4	22.00	22.00	0.960	0.960	0.476	0.476	
				9400	1880.0	22.00	22.00	0.995	0.995	0.49	0.490	
				9538	1907.6	22.00	22.00	0.994	0.994	0.486	0.486	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	9262	1852.4	13.50	13.40	1.040	1.064	0.462	0.473	
				9400	1880.0	13.50	13.30	1.050	1.099	0.466	0.488	
				9538	1907.6	13.50	13.50	1.130	**1.130**	0.496	0.496	3
		Edge 1	0	9262	1852.4	13.50	13.40	0.969	0.992	0.451	0.462	
				9400	1880.0	13.50	13.30	0.976	1.022	0.451	0.472	
				9538	1907.6	13.50	13.50	1.070	1.070	0.492	0.492	

12.4. 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	14	1312	1712.4	23.75	23.75	0.787	0.787	0.476	0.476	
				1413	1732.6	23.75	23.75	0.753	0.753	0.449	0.449	
				1513	1752.6	23.75	23.67	0.883	0.899	0.526	0.536	
		Edge 1	14	1312	1712.4	23.75	23.75	0.946	0.946	0.56	0.560	
				1413	1732.6	23.75	23.75	0.976	0.976	0.576	0.576	
				1513	1752.6	23.75	23.67	1.140	1.161	0.662	0.674	
On (First Stage)	Rel 99 RMC 12.2kbps	Edge 2	0	1312	1712.4	23.25	23.18	0.978	0.994	0.48	0.488	
				1413	1732.6	23.25	23.21	1.040	1.050	0.509	0.514	
				1513	1752.6	23.25	23.08	1.090	1.134	0.534	0.555	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	1312	1712.4	13.50	13.50	1.120	1.120	0.494	0.494	
				1413	1732.6	13.50	13.40	1.160	**1.187**	0.515	0.527	
				1513	1752.6	13.50	13.50	1.180	1.180	0.526	0.526	4
		Edge 1	0	1312	1712.4	13.50	13.50	0.888	0.888	0.424	0.424	
				1413	1732.6	13.50	13.40	0.876	0.896	0.415	0.425	
				1513	1752.6	13.50	13.50	0.899	0.899	0.426	0.426	

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

12.5. 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	14	4183	836.6	24.50	24.50	0.694	0.694	0.450	0.450	
		Edge 1	14	4183	836.6	24.50	24.50	0.464	0.464	0.315	0.315	
		Edge 4	0	4183	836.6	24.50	24.50	0.211	0.211	0.107	0.107	
On (First Stage)	Rel 99 RMC 12.2kbps	Edge 2	0	4183	836.6	24.50	24.50	0.684	0.684	0.371	0.371	
On (Second Stage)	Rel 99 RMC 12.2kbps	Rear	0	4132	826.4	18.75	18.75	1.180	**1.180**	0.618	0.618	5
				4183	836.6	18.75	18.75	1.170	1.170	0.603	0.603	
				4233	846.6	18.75	18.75	1.160	1.160	0.611	0.611	
		Edge 1	0	4132	826.4	18.75	18.75	0.929	0.929	0.518	0.518	
				4183	836.6	18.75	18.75	0.945	0.945	0.523	0.523	
				4233	846.6	18.75	18.75	0.957	0.957	0.528	0.528	

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

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	14	384	836.5	24.50	24.50	0.650	0.650	0.424	0.424	
		Edge 1	14	384	836.5	24.50	24.50	0.409	0.409	0.276	0.276	
		Edge 4	0	384	836.5	24.50	24.50	0.128	0.128	0.064	0.064	
On (First Stage)	1xRTT (RC3 SO32)	Edge 2	0	384	836.5	24.50	24.50	0.623	0.623	0.339	0.339	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	1013	824.7	19.00	19.00	1.150	1.150	0.605	0.605	
				384	836.5	19.00	19.00	1.180	1.180	0.608	0.608	
				777	848.3	19.00	19.00	1.180	1.180	0.621	0.621	
		Edge 1	0	1013	824.7	19.00	19.00	0.856	0.856	0.469	0.469	
				384	836.5	19.00	19.00	0.917	0.917	0.506	0.506	
				777	848.3	19.00	19.00	1.000	1.000	0.554	0.554	
Off	1xEVDO (Rel. 0)	Rear	14	384	836.5	24.50	24.00	0.574	0.644	0.371	0.416	
		Edge 1	14	384	836.5	24.50	24.00	0.355	0.398	0.238	0.267	
		Edge 4	0	384	836.5	24.50	24.00	0.112	0.126	0.059	0.066	
On (First Stage)	1xEVDO (Rel. 0)	Edge 2	0	384	836.5	24.50	24.00	0.529	0.594	0.285	0.320	
On (Second Stage)	1xEVDO (Rel. 0)	Rear	0	1013	824.7	19.00	19.00	1.190	1.190	0.616	0.616	
				384	836.5	19.00	19.00	1.190	**1.190**	0.62	0.620	6
				777	848.3	19.00	19.00	1.150	1.150	0.605	0.605	
		Edge 1	0	1013	824.7	19.00	19.00	0.836	0.836	0.46	0.460	
				384	836.5	19.00	19.00	0.932	0.932	0.517	0.517	
				777	848.3	19.00	19.00	1.000	1.000	0.557	0.557	

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

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	14	384+425	836.52+837.75	22.00	22.00	0.322	0.322	0.211	0.211	
		Edge 1	14	384+425	836.52+837.75	22.00	22.00	0.212	0.212	0.141	0.141	
On (First Stage)	1xEVDO (Rev. B) Two Carrier Mini.	Edge 2	0	384+425	836.52+837.75	22.00	22.00	0.366	0.366	0.192	0.192	
On (Second Stage)	1xEVDO (Rev. B) Two Carrier Mini.	Rear	0	1013+31	824.70+825.93	19.00	18.90	1.100	1.126	0.575	0.588	
			0	384+425	836.52+837.75	19.00	19.00	1.100	1.100	0.583	0.583	
			0	736+777	847.08+848.31	19.00	18.90	1.110	1.136	0.587	0.601	
		Edge 1	0	1013+31	824.70+825.93	19.00	18.90	0.949	0.971	0.525	0.537	
			0	384+425	836.52+837.75	19.00	19.00	0.992	0.992	0.552	0.552	
			0	736+777	847.08+848.31	19.00	18.90	1.060	1.085	0.588	0.602	
Off	1xEVDO (Rev. B) Three Carrier Mini.	Rear	14	384+425+466	836.52+837.75+838.98	22.00	22.00	0.330	0.330	0.213	0.213	
		Edge 1	14	384+425+466	836.52+837.75+838.98	22.00	22.00	0.220	0.220	0.146	0.146	
On (First Stage)	1xEVDO (Rev. B) Three Carrier Mini.	Edge 2	0	384+425+466	836.52+837.75+838.98	22.00	22.00	0.352	0.352	0.184	0.184	
On (Second Stage)	1xEVDO (Rev. B) Three Carrier Mini.	Rear	0	1013+31+72	824.70+825.93+827.16	19.00	18.80	1.110	1.162	0.579	0.606	
				384+425+466	836.52+837.75+838.98	19.00	18.98	1.100	1.105	0.575	0.578	
				695+736+777	845.85+847.08+848.31	19.00	18.90	1.110	1.136	0.579	0.592	
		Edge 1	0	1013+31+72	824.70+825.93+827.16	19.00	18.80	0.937	0.981	0.516	0.540	
				384+425+466	836.52+837.75+838.98	19.00	18.98	0.961	0.965	0.536	0.538	
				695+736+777	845.85+847.08+848.31	19.00	18.90	1.040	1.064	0.575	0.588	

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

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	14	25	1851.25	22.75	22.72	0.796	0.802	0.455	0.458	
				600	1880.00	22.75	22.75	0.841	0.841	0.484	0.484	
				1175	1908.75	22.75	22.72	0.906	0.912	0.514	0.518	
		Edge 1	14	25	1851.25	22.75	22.72	0.945	0.952	0.55	0.554	
				600	1880.00	22.75	22.75	1.080	1.080	0.625	0.625	
				1175	1908.75	22.75	22.72	1.100	1.108	0.636	0.640	
On (First Stage)	1xRTT (RC3 SO32)	Edge 2	0	25	1851.25	21.75	21.75	0.918	0.918	0.449	0.449	
				600	1880.00	21.75	21.75	1.010	1.010	0.493	0.493	
				1175	1908.75	21.75	21.75	1.020	1.020	0.494	0.494	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	25	1851.25	13.25	13.25	1.040	1.040	0.458	0.458	
				600	1880.00	13.25	13.09	1.050	1.089	0.46	0.477	
				1175	1908.75	13.25	13.25	1.180	**1.180**	0.512	0.512	7
		Edge 1	0	25	1851.25	13.25	13.25	0.862	0.862	0.401	0.401	
				600	1880.00	13.25	13.09	0.967	1.003	0.444	0.461	
				1175	1908.75	13.25	13.25	1.140	1.140	0.524	0.524	
Off	1xEVDO (Rel. 0)	Rear	14	25	1851.25	22.75	22.70	0.815	0.824	0.464	0.469	
				600	1880.00	22.75	22.72	0.842	0.848	0.478	0.481	
				1175	1908.75	22.75	22.67	0.871	0.887	0.489	0.498	
		Edge 1	14	25	1851.25	22.75	22.70	0.909	0.920	0.523	0.529	
				600	1880.00	22.75	22.72	1.050	1.057	0.598	0.602	
				1175	1908.75	22.75	22.67	1.060	1.080	0.609	0.620	
On (First Stage)	1xEVDO (Rel. 0)	Edge 2	0	25	1851.25	21.75	21.66	0.896	0.915	0.437	0.446	
				600	1880.00	21.75	21.67	0.981	0.999	0.479	0.488	
				1175	1908.75	21.75	21.70	0.960	0.971	0.465	0.470	
On (Second Stage)	1xEVDO (Rel. 0)	Rear	0	25	1851.25	13.25	13.15	0.967	0.990	0.426	0.436	
				600	1880.00	13.25	13.00	1.000	1.059	0.44	0.466	
				1175	1908.75	13.25	13.25	1.060	1.060	0.466	0.466	
		Edge 1	0	25	1851.25	13.25	13.15	0.793	0.811	0.366	0.375	
				600	1880.00	13.25	13.00	0.920	0.975	0.422	0.447	
				1175	1908.75	13.25	13.25	1.070	1.070	0.487	0.487	

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

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	14	580	820.5	25.00	24.87	0.738	0.760	0.477	0.491	
		Edge 1	14	580	820.5	25.00	24.87	0.430	0.443	0.291	0.300	
		Edge 4	0	580	820.5	25.00	24.87	0.190	0.196	0.096	0.099	
On (First Stage)	1xRTT (RC3 SO32)	Edge 2	0	580	820.5	25.00	24.87	0.125	0.129	0.0879	0.091	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	476	817.9	19.25	19.25	1.170	**1.170**	0.601	0.601	9
				580	820.5	19.25	19.19	1.150	1.166	0.604	0.612	
				684	823.1	19.25	19.18	1.150	1.169	0.609	0.619	
		Edge 1	0	476	817.9	19.25	19.25	0.930	0.930	0.512	0.512	
				580	820.5	19.25	19.19	0.885	0.897	0.492	0.499	
				684	823.1	19.25	19.18	0.903	0.918	0.5	0.508	
Off	1xEVDO (Rel. 0)	Rear	14	580	820.5	25.00	24.00	0.606	0.763	0.396	0.499	
		Edge 1	14	580	820.5	25.00	24.00	0.428	0.539	0.294	0.370	
		Edge 4	0	580	820.5	25.00	24.00	0.171	0.215	0.0894	0.113	
On (First Stage)	1xEVDO (Rel. 0)	Edge 2	0	580	820.5	25.00	24.00	0.539	0.679	0.303	0.381	
On (Second Stage)	1xEVDO (Rel. 0)	Rear	0	476	817.9	19.25	19.25	1.120	1.120	0.581	0.581	
				580	820.5	19.25	19.25	1.130	1.130	0.589	0.589	
				684	823.1	19.25	19.22	1.110	1.118	0.584	0.588	
		Edge 1	0	476	817.9	19.25	19.25	0.982	0.982	0.535	0.535	
				580	820.5	19.25	19.25	0.990	0.990	0.542	0.542	
				684	823.1	19.25	19.22	0.972	0.979	0.532	0.536	

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

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	14	25	1711.25	23.75	23.73	0.733	0.736	0.458	0.460	
				450	1732.50	23.75	23.75	0.833	0.833	0.508	0.508	
				875	1753.75	23.75	23.75	0.880	0.880	0.531	0.531	
		Edge 1	14	25	1711.25	23.75	23.73	0.861	0.865	0.518	0.520	
				450	1732.50	23.75	23.75	0.966	0.966	0.58	0.580	
				875	1753.75	23.75	23.75	1.040	1.040	0.622	0.622	
On (First Stage)	1xRTT (RC3 SO32)	Edge 2	0	25	1711.25	23.25	23.25	0.915	0.915	0.45	0.450	
				450	1732.50	23.25	23.25	0.992	0.992	0.485	0.485	
				875	1753.75	23.25	23.25	1.050	1.050	0.512	0.512	
On (Second Stage)	1xRTT (RC3 SO32)	Rear	0	25	1711.25	13.50	13.50	1.190	**1.190**	0.532	0.532	9
				450	1732.50	13.50	13.50	0.879	0.879	0.393	0.393	
				875	1753.75	13.50	13.50	1.120	1.120	0.499	0.499	
		Edge 1	0	25	1711.25	13.50	13.50	0.957	0.957	0.459	0.459	
				450	1732.50	13.50	13.50	0.699	0.699	0.333	0.333	
				875	1753.75	13.50	13.50	0.877	0.877	0.416	0.416	
Off	1xEVDO (Rel. 0)	Rear	14	25	1711.25	23.75	23.65	0.812	0.831	0.499	0.511	
				450	1732.50	23.75	23.75	0.897	0.897	0.541	0.541	
				875	1753.75	23.75	23.65	0.921	0.942	0.549	0.562	
		Edge 1	14	25	1711.25	23.75	23.65	0.961	0.983	0.578	0.591	
				450	1732.50	23.75	23.75	1.060	1.060	0.637	0.637	
				875	1753.75	23.75	23.65	1.100	1.126	0.655	0.670	
On (First Stage)	1xEVDO (Rel. 0)	Edge 2	0	25	1711.25	23.25	23.18	1.060	1.077	0.517	0.525	
				450	1732.50	23.25	23.22	1.130	1.138	0.55	0.554	
				875	1753.75	23.25	23.25	1.140	1.140	0.549	0.549	
On (Second Stage)	1xEVDO (Rel. 0)	Rear	0	25	1711.25	13.50	13.50	1.020	1.020	0.453	0.453	
				450	1732.50	13.50	13.50	0.913	0.913	0.402	0.402	
				875	1753.75	13.50	13.50	1.170	1.170	0.515	0.515	
		Edge 1	0	25	1711.25	13.50	13.50	0.812	0.812	0.39	0.390	
				450	1732.50	13.50	13.50	0.706	0.706	0.338	0.338	
				875	1753.75	13.50	13.50	0.863	0.863	0.409	0.409	

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

12.10. LTE Band 2 (20 MHz Bandwidth)

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	14	18700	1860.0	1	49	23.00	22.90	0.610	0.624	0.371	0.380	
						50	24	22.00	21.80	0.473	0.495	0.287	0.301	
				18900	1880.0	1	49	23.00	22.90	0.672	0.688	0.407	0.416	
						50	24	22.00	21.90	0.516	0.528	0.314	0.321	
						100	0	22.00	21.90	0.521	0.533	0.316	0.323	
				19100	1900.0	1	99	23.00	23.00	0.759	0.759	0.455	0.455	
						50	24	22.00	21.80	0.533	0.558	0.321	0.336	
		Edge 1	14	18700	1860.0	1	49	23.00	22.90	0.970	0.993	0.575	0.588	
						50	24	22.00	21.80	0.658	0.689	0.394	0.413	
				18900	1880.0	1	49	23.00	22.90	1.020	1.044	0.606	0.620	
						50	24	22.00	21.90	0.705	0.721	0.424	0.434	
						100	0	22.00	21.90	0.709	0.726	0.425	0.435	
				19100	1900.0	1	99	23.00	23.00	1.060	1.060	0.633	0.633	
						50	24	22.00	21.80	0.781	0.818	0.464	0.486	
On (First Stage)	QPSK	Edge 2	0	18700	1860.0	1	0	22.00	22.00	1.030	1.030	0.482	0.482	
						50	0	22.00	21.77	1.030	1.086	0.483	0.509	
				18900	1880.0	1	99	22.00	22.00	1.090	1.090	0.516	0.516	
						50	0	21.00	21.00	1.090	1.090	0.514	0.514	
						100	0	22.00	21.80	1.130	1.183	0.528	0.553	
				18900	1880.0	1	99	22.00	22.00	1.100	1.100	0.528	0.528	
						50	49	22.00	21.92	1.170	**1.192**	0.561	0.571	10
On (Second Stage)	QPSK	Rear	0	18700	1860.0	1	0	13.50	13.30	0.990	1.037	0.438	0.459	
						50	24	13.50	13.38	0.982	1.010	0.434	0.446	
				18900	1880.0	1	99	13.50	13.50	1.020	1.020	0.457	0.457	
						50	49	13.50	13.50	1.020	1.020	0.450	0.450	
						100	0	13.50	13.45	1.010	1.022	0.447	0.452	
				19100	1900.0	1	99	13.50	13.50	1.060	1.060	0.462	0.462	
						50	0	13.50	13.27	1.050	1.107	0.463	0.488	
		Edge 1	0	18700	1860.0	1	0	13.50	13.30	0.730	0.764	0.347	0.363	
						50	24	13.50	13.38	0.748	0.769	0.351	0.361	
				18900	1880.0	1	99	13.50	13.50	0.879	0.879	0.409	0.409	
						50	49	13.50	13.50	0.836	0.836	0.395	0.395	
						100	0	13.50	13.45	0.835	0.845	0.390	0.395	
				19100	1900.0	1	99	13.50	13.50	0.903	0.903	0.420	0.420	
						50	0	13.50	13.27	0.844	0.890	0.396	0.418	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.11. LTE Band 4 (20 MHz Bandwidth)

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	14	20050	1720.0	1	99	24.00	24.00	0.893	0.893	0.534	0.534	
						100	0	23.00	22.91	0.679	0.693	0.407	0.416	
				20175	1732.5	1	49	24.00	24.00	0.909	0.909	0.542	0.542	
						50	24	23.00	22.95	0.683	0.691	0.410	0.415	
				20300	1745.0	1	0	24.00	23.90	0.921	0.942	0.547	0.560	
		Edge 1	14	20050	1720.0	1	99	24.00	24.00	1.050	1.050	0.630	0.630	
						50	0	23.00	22.94	0.822	0.833	0.496	0.503	
						100	0	23.00	22.91	0.809	0.826	0.488	0.498	
				20175	1732.5	1	49	24.00	24.00	1.060	1.060	0.638	0.638	
						50	24	23.00	22.95	0.823	0.833	0.493	0.499	
				20300	1745.0	1	0	24.00	23.90	1.070	1.095	0.643	0.658	
						50	0	23.00	22.76	0.834	0.881	0.499	0.527	
On (First Stage)	QPSK	Edge 2	0	20050	1720.0	1	99	23.25	23.25	1.110	1.110	0.538	0.538	
						50	0	23.25	22.94	1.010	1.085	0.494	0.531	
				20175	1732.5	1	49	23.25	23.25	1.120	1.120	0.540	0.540	
						50	24	23.25	22.93	1.040	1.120	0.507	0.546	
				20300	1745.0	1	0	23.25	23.25	1.110	1.110	0.539	0.539	
						50	0	23.25	22.75	1.050	**1.178**	0.510	0.572	
						100	0	23.25	22.94	1.050	1.128	0.512	0.550	
On (Second Stage)	QPSK	Rear	0	20050	1720.0	1	99	13.25	13.25	1.100	1.100	0.485	0.485	
						50	24	13.25	13.25	1.100	1.100	0.485	0.485	
						100	0	13.25	13.25	1.070	1.070	0.476	0.476	
				20175	1732.5	1	49	13.25	13.25	1.130	1.130	0.495	0.495	
						50	49	13.25	13.25	1.140	1.140	0.498	0.498	
				20300	1745.0	1	0	13.25	13.25	1.120	1.120	0.493	0.493	
						50	49	13.25	13.25	1.150	1.150	0.504	0.504	11
		Edge 1	0	20050	1720.0	1	99	13.25	13.25	0.881	0.881	0.422	0.422	
						50	24	13.25	13.25	0.891	0.891	0.427	0.427	
						100	0	13.25	13.25	0.869	0.869	0.417	0.417	
				20175	1732.5	1	49	13.25	13.25	0.907	0.907	0.430	0.430	
						50	49	13.25	13.25	0.934	0.934	0.442	0.442	
				20300	1745.0	1	0	13.25	13.25	0.918	0.918	0.436	0.436	
						50	49	13.25	13.25	0.933	0.933	0.440	0.440	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\underline{\geq}$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.12. LTE Band 5 (10 MHz Bandwidth)

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	14	20450	829.0	1	49	24.00	23.95	0.446	0.451	0.304	0.308	
				20525	836.5	25	12	23.00	22.95	0.367	0.371	0.241	0.244	
		Edge 1	14	20450	829.0	1	49	24.00	23.95	0.342	0.346	0.277	0.280	
				20525	836.5	25	12	23.00	22.95	0.269	0.272	0.178	0.180	
		Edge 4	0	20450	829.0	1	49	24.00	23.95	0.101	0.102	0.051	0.051	
				20525	836.5	25	12	23.00	22.95	0.099	0.100	0.049	0.050	
On (First Stage)	QPSK	Edge 2	0	20450	829.0	1	49	24.00	23.95	0.532	0.538	0.287	0.290	
				20525	836.5	25	12	23.00	22.95	0.435	0.440	0.236	0.239	
On (Second Stage)	QPSK	Rear	0	20450	829.0	1	49	18.75	18.75	1.110	1.110	0.585	0.585	
						25	12	18.75	18.75	1.120	1.120	0.587	0.587	
				20525	836.5	1	49	18.75	18.75	1.110	1.110	0.583	0.583	
						25	12	18.75	18.75	1.130	**1.130**	0.592	0.592	12
						50	0	18.75	18.75	1.110	1.110	0.587	0.587	
				20600	844.0	1	24	18.75	18.75	1.110	1.110	0.580	0.580	
						25	24	18.75	18.75	1.120	1.120	0.590	0.590	
		Edge 1	0	20450	829.0	1	49	18.75	18.75	0.939	0.939	0.494	0.494	
						25	12	18.75	18.75	0.935	0.935	0.493	0.493	
				20525	836.5	1	49	18.75	18.75	1.010	1.010	0.535	0.535	
						25	12	18.75	18.75	0.976	0.976	0.516	0.516	
						50	0	18.75	18.75	0.967	0.967	0.510	0.510	
				20600	844.0	1	24	18.75	18.75	1.020	1.020	0.535	0.535	
						25	24	18.75	18.75	1.010	1.010	0.536	0.536	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.13. LTE Band 13 (10 MHz Bandwidth)

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	14	23230	782.0	1	0	24.00	24.00	0.479	0.479	0.314	0.314	
						25	0	23.00	23.00	0.374	0.374	0.245	0.245	
		Edge 1	14	23230	782.0	1	0	24.00	24.00	0.251	0.251	0.167	0.167	
						25	0	23.00	23.00	0.251	0.251	0.167	0.167	
		Edge 4	0	23230	782.0	1	0	24.00	24.00	0.107	0.107	0.059	0.059	
						25	0	23.00	23.00	0.078	0.078	0.040	0.040	
On (First Stage)	QPSK	Edge 2	0	23230	782.0	1	0	24.00	24.00	0.576	0.576	0.315	0.315	
						25	0	23.00	23.00	0.448	0.448	0.243	0.243	
On (Second Stage)	QPSK	Rear	0	23230	782.0	1	0	19.25	19.13	1.160	**1.192**	0.605	0.622	13
						25	24	19.25	19.21	1.080	1.090	0.560	0.565	
						50	0	19.25	19.12	1.080	1.113	0.557	0.574	
		Edge 1	0	23230	782.0	1	0	19.25	19.13	0.787	0.809	0.415	0.427	
						25	24	19.25	19.21	0.763	0.770	0.398	0.402	
						50	0	19.25	19.12	0.774	0.798	0.404	0.416	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.14. LTE Band 17 (10 MHz Bandwidth)

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	14	23790	710.0	1	24	25.00	24.71	0.283	0.303	0.193	0.206	
						25	0	24.00	24.00	0.267	0.267	0.181	0.181	
		Edge 1	14	23790	710.0	1	24	25.00	24.71	0.169	0.181	0.115	0.123	
						25	0	24.00	24.00	0.160	0.160	0.109	0.109	
		Edge 4	0	23790	710.0	1	24	25.00	24.71	0.118	0.126	0.058	0.062	
						25	0	24.00	24.00	0.112	0.112	0.054	0.054	
On (First Stage)	QPSK	Edge 2	0	23790	710.0	1	24	25.00	24.71	0.169	0.181	0.097	0.103	
						25	0	24.00	24.00	0.164	0.164	0.094	0.094	
On (Second Stage)	QPSK	Rear	0	23790	710.0	1	24	19.00	19.00	**1.170**	**1.170**	0.608	0.608	14
						25	0	19.00	19.00	1.160	1.160	0.604	0.604	
						50	0	19.00	19.00	1.140	1.140	0.592	0.592	
		Edge 1	0	23790	710.0	1	24	19.00	19.00	0.627	0.627	0.324	0.324	
						25	0	19.00	19.00	0.605	0.605	0.315	0.315	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.15. LTE Band 25 (20 MHz Bandwidth)

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	14	26140	1860.0	1	99	22.75	22.70	0.646	0.653	0.384	0.388	
						50	0	21.75	21.69	0.505	0.512	0.301	0.305	
				26365	1882.5	1	49	22.75	22.75	0.701	0.701	0.417	0.417	
						50	24	21.75	21.75	0.556	0.556	0.328	0.328	
						100	0	21.75	21.75	0.548	0.548	0.325	0.325	
				26590	1905.0	1	49	22.75	22.68	0.734	0.746	0.433	0.440	
						50	24	21.75	21.70	0.579	0.586	0.341	0.345	
		Edge 1	14	26140	1860.0	1	99	22.75	22.70	1.030	1.042	0.607	0.614	
						50	0	21.75	21.69	0.592	0.600	0.356	0.361	
				26365	1882.5	1	49	22.75	22.75	1.070	1.070	0.632	0.632	
						50	24	21.75	21.75	0.698	0.698	0.417	0.417	
						100	0	21.75	21.75	0.689	0.689	0.412	0.412	
				26590	1905.0	1	49	22.75	22.68	1.080	1.098	0.638	0.648	
						50	24	21.75	21.70	0.758	0.767	0.453	0.458	
On (First Stage)	QPSK	Edge 2	0	26140	1860.0	1	0	21.75	21.75	1.010	1.010	0.481	0.481	
						50	0	21.75	21.73	0.997	1.002	0.466	0.468	
				26365	1882.5	1	49	21.75	21.75	1.060	1.060	0.505	0.505	
						50	49	21.75	21.75	1.110	1.110	0.518	0.518	
				26590	1905.0	1	49	21.75	21.75	1.120	1.120	0.528	0.528	
						50	24	21.75	21.75	1.160	1.160	0.548	0.548	
						100	0	21.75	21.75	1.180	**1.180**	0.550	0.550	15
On (Second Stage)	QPSK	Rear	0	26140	1860.0	1	0	13.50	13.49	0.941	0.943	0.431	0.432	
						50	49	13.50	13.45	0.950	0.961	0.421	0.426	
				26365	1882.5	1	99	13.50	13.50	1.100	1.100	0.486	0.486	
						50	49	13.50	13.46	1.080	1.090	0.477	0.481	
						100	0	13.50	13.37	1.050	1.082	0.468	0.482	
				26590	1905.0	1	99	13.50	13.40	1.050	1.074	0.470	0.481	
						50	0	13.50	13.29	1.020	1.071	0.459	0.482	
		Edge 1	0	26140	1860.0	1	0	13.50	13.49	0.771	0.773	0.368	0.369	
						50	49	13.50	13.45	0.779	0.788	0.369	0.373	
				26365	1882.5	1	99	13.50	13.50	0.906	0.906	0.425	0.425	
						50	49	13.50	13.46	0.874	0.882	0.412	0.416	
						100	0	13.50	13.37	0.871	0.897	0.410	0.422	
				26590	1905.0	1	99	13.50	13.40	0.920	0.941	0.429	0.439	
						50	0	13.50	13.29	0.880	0.924	0.420	0.441	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are $\geq$ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.16. LTE Band 26 (5 MHz Bandwidth)

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	14	26763	821.3	1	12	23.50	23.50	0.461	0.461	0.305	0.305	
						12	0	22.50	22.50	0.359	0.359	0.237	0.237	
		Edge 1	14	26763	821.3	1	12	23.50	23.50	0.337	0.337	0.227	0.227	
						12	0	22.50	22.50	0.273	0.273	0.183	0.183	
		Edge 4	0	26763	821.3	1	12	23.50	23.50	0.156	0.156	0.077	0.077	
						12	0	22.50	22.50	0.135	0.135	0.067	0.067	
On (First Stage)	QPSK	Edge 2	0	26763	821.3	1	12	23.50	23.50	0.537	0.537	0.290	0.290	
						12	0	22.50	22.50	0.424	0.424	0.230	0.230	
On (Second Stage)	QPSK	Rear	0	26763	821.3	1	12	18.75	18.75	1.080	1.080	0.569	0.569	
						12	0	18.75	18.75	1.120	**1.120**	0.583	0.583	16
						25	0	18.75	18.75	1.090	1.090	0.571	0.571	
		Edge 1	0	26763	821.3	1	12	18.75	18.75	0.916	0.916	0.487	0.487	
						12	0	18.75	18.75	0.930	0.930	0.496	0.496	
						25	0	18.75	18.75	0.923	0.923	0.490	0.490	

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
2. Per KDB 941225 D05 SAR for LTE Devices, SAR test reduction is applied using the following criteria:
   - Testing for Low and High Channel is performed at the highest output power level for 1RB, and 50% RB configuration for that channel.
   - Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are ≥ 0.8 W/kg. Testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation < 1.45 W/kg.
   - Testing for 16-QAM modulation is not required because the reported SAR for QPSK is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of QPSK.
   - Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is < 1.45 W/Kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.

12.17. WiFi DTS Bands

12.17.1. 2.4 GHz Band

BOM #1

Band	Mode	No. of Transmitters	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	
2.4GHz	802.11b	1 Tx	Rear	0	6	2437	16.5	16.5			0.049	0.023	0.049	0.023					
			Edge 3	0	1	2412	16.5	16.4			1.110	0.357	1.136	0.365					
					6	2437	16.5	16.5			0.965	0.311	0.965	0.311					
					11	2462	16.5	16.5			0.899	0.288	0.899	0.288					
			Edge 4	0	6	2437	16.5	16.5			0.167	0.078	0.167	0.078					
			Rear	0	6	2437			16.5	16.5					0.038	0.015	0.038	0.015	
			Edge 2	0	6	2437			16.5	16.5					0.085	0.034	0.085	0.034	
			Edge 3	0	1	2412			16.5	16.4					0.860	0.271	0.880	0.277	
					6	2437			16.5	16.5					0.821	0.259	0.821	0.259	
					11	2462			16.5	16.5					0.760	0.240	0.760	0.240	
	802.11g CDD	2 Tx	Rear	0	6	2437	16.5	16.5	16.5	16.5	0.063	0.029	0.063	0.029	0.043	0.017	0.043	0.017	
			Edge 2	0	6	2437	16.5	16.5	16.5	16.5					0.084	0.034	0.084	0.034	
			Edge 3	0	2	2417	16.5	16.5	16.5	16.4	1.140	0.368	**1.140**	0.368	0.844	0.270	0.864	0.276	17
					6	2437	16.5	16.5	16.5	16.5	1.090	0.353	1.090	0.353	0.837	0.269	0.837	0.269	
					10	2457	16.5	16.5	16.5	16.5	1.110	0.351	1.110	0.351	0.782	0.251	0.782	0.251	
			Edge 4	0	6	2437	16.5	16.5	16.5	16.5	0.188	0.089	0.188	0.089					

BOM #2

Band	Mode	No. of Transmitters	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	
2.4GHz	802.11g CDD	2 Tx	Edge 3	0	2	2417	16.5	16.5	16.5	16.5	0.956	0.308	0.956	0.308	0.637	0.202	0.637	0.202	

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

12.17.2. 5.8 GHz Band

BOM #1

Band	Mode	No. of Transmitters	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	
5.8GHz	802.11a	1 Tx	Rear	0	157	5785	15.5	15.5			0.057	0.023	0.057	0.023					
			Edge 3	0	149	5745	15.5	15.5			0.567	0.175	0.567	0.175					
					157	5785	15.5	15.5			0.677	0.222	0.677	0.222					
					165	5825	15.5	15.5			0.697	0.221	0.697	0.221					
			Edge 4	0	157	5785	15.5	15.5			0.059	0.022	0.059	0.022					
			Rear	0	157	5785			15.5	15.5					0.092	0.032	0.092	0.032	
			Edge 2	0	157	5785			15.5	15.5					0.016	0.00396	0.016	0.004	
			Edge 3	0	149	5745			15.5	15.5					0.609	0.176	0.609	0.176	
					157	5785			15.5	15.5					0.703	0.213	**0.703**	0.213	18
					165	5825			15.5	15.5					0.670	0.199	0.670	0.199	
	802.11a CDD	2 Tx	Rear	0	157	5785	15.5	15.5	15.5	15.5	0.057	0.024	0.057	0.024	0.083	0.030	0.083	0.030	
			Edge 2	0	157	5785	15.5	15.5	15.5	15.5					0.016	0.00375	0.016	0.004	
			Edge 3	0	149	5745	15.5	15.5	15.5	15.5	0.574	0.183	0.574	0.183	0.631	0.190	0.631	0.190	
					157	5785	15.5	15.5	15.5	15.5	0.646	0.205	0.646	0.205	0.701	0.214	0.701	0.214	
					165	5825	15.5	15.5	15.5	15.5	0.675	0.208	0.675	0.208	0.698	0.225	0.698	0.225	
			Edge 4	0	157	5785	15.5	15.5	15.5	15.5	0.073	0.023	0.073	0.023					

BOM #2

Band	Mode	No. of Transmitters	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	
5.8GHz	802.11a	1 Tx	Edge 3	0	157	5785			15.5	15.5					0.686	0.203	0.686	0.203	

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

12.18. WiFi UNII Bands

12.18.1. 5.2 GHz Band

BOM #1

Band	Mode	No. of Transmitters	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	
5.2GHz	802.11a	1 Tx	Rear	0	48	5240	14.0	14.0			0.043	0.017	0.043	0.017					
			Edge 3	0	48	5240	14.0	14.0			0.391	0.131	0.391	0.131					
			Edge 4	0	48	5240	14.0	14.0			0.057	0.017	0.057	0.017					
			Rear	0	48	5240			14.0	14.0					0.063	0.024	0.063	0.024	
			Edge 2	0	48	5240			14.0	14.0					0.026	0.009	0.026	0.009	
			Edge 3	0	48	5240			14.0	14.0					0.583	0.181	0.583	0.181	
	802.11a CDD	2 Tx	Rear	0	48	5240	11.0	11.0	11.0	10.9	0.022	0.006	0.022	0.006	0.038	0.014	0.039	0.014	
			Edge 2	0	48	5240	11.0	11.0	11.0	11.0					0.00914	0.00157	0.00914	0.00157	
			Edge 3	0	48	5240	11.0	11.0	11.0	11.0	0.200	0.064	0.200	0.064	0.223	0.066	0.223	0.066	
			Edge 4	0	48	5240	11.0	11.0	11.0	10.8	0.023	0.007	0.023	0.007					
	802.11n HT40 SISO	1 Tx	Rear	0	46	5230	16.0	16.0			0.059	0.020	0.059	0.020					
			Edge 3	0	46	5230	16.0	16.0			0.659	0.220	0.659	0.220					
			Edge 4	0	46	5230	16.0	16.0			0.087	0.029	0.087	0.029					
			Rear	0	46	5230			16.0	16.0					0.115	0.042	0.115	0.042	
			Edge 2	0	46	5230			16.0	16.0					0.038	0.014	0.038	0.014	
			Edge 3	0	46	5230			16.0	16.0					0.866	0.268	**0.866**	0.268	19
	802.11n HT40 CDD	2 Tx	Rear	0	46	5230	13.5	13.4	13.5	13.4	0.027	0.008	0.028	0.008	0.027	0.010	0.028	0.010	
			Edge 2	0	46	5230	13.5	13.4	13.5	13.4					0.011	0.001	0.011	0.001	
			Edge 3	0	46	5230	13.5	13.4	13.5	13.4	0.463	0.151	0.474	0.155	0.503	0.155	0.515	0.159	
			Edge 4	0	46	5230	13.5	13.4	13.5	13.4	0.031	0.013	0.032	0.013					

BOM #2

Band	Mode	No. of Transmitters	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	
5.2GHz	802.11n HT40 SISO	1 Tx	Edge 3	0	46	5230			16.0	16.0					0.644	0.193	0.644	0.193	

12.18.2. 5.3 GHz Band

BOM #1

Band	Mode	No. of Transmitters	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	
5.3GHz	802.11a	1 Tx	Rear	0	60	5300	16.0	16.0			0.061	0.021	0.061	0.021					
			Edge 3	0	52	5260	16.0	16.0			0.672	0.195	0.672	0.195					
					60	5300	16.0	16.0			0.835	0.269	0.835	0.269					
			Edge 4	0	60	5300	16.0	16.0			0.092	0.033	0.092	0.033					
			Rear	0	60	5300			16.0	16.0					0.058	0.023	0.058	0.023	
			Edge 2	0	60	5300			16.0	16.0					0.039	0.014	0.039	0.014	
			Edge 3	0	52	5260			16.0	16.0					0.885	0.256	0.885	0.256	
					60	5300			16.0	16.0					0.970	0.293	**0.970**	0.293	20
	802.11a CDD	2 Tx	Rear	0	60	5300	16.0	16.0	16.0	16.0	0.050	0.020	0.050	0.020	0.089	0.027	0.089	0.027	
			Edge 2	0	60	5300	16.0	16.0	16.0	16.0					0.036	0.011	0.036	0.011	
			Edge 3	0	52	5260	16.0	16.0	16.0	16.0	0.713	0.213	0.713	0.213	0.706	0.209	0.706	0.209	
					60	5300	16.0	16.0	16.0	16.0	0.762	0.242	0.762	0.242	0.877	0.259	0.877	0.259	
			Edge 4	0	60	5300	16.0	16.0	16.0	16.0	0.113	0.040	0.113	0.040					

BOM #2

Band	Mode	No. of Transmitters	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	
5.3GHz	802.11a	1 Tx	Edge 3	0	60	5300			16.0	16.0					0.841	0.238	0.841	0.238	

12.18.3. 5.5 GHz Band

BOM #1

Band	Mode	No. of Transmitters	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	
5.5GHz	802.11a	1 Tx	Rear	0	136	5680	15.0	15.0			0.047	0.019	0.047	0.019					
			Edge 3	0	104	5520	15.0	15.0			0.639	0.217	0.639	0.217					
					116	5580	15.0	15.0			0.560	0.190	0.560	0.190					
					124	5620	15.0	15.0			0.533	0.178	0.533	0.178					
					136	5680	15.0	15.0			0.526	0.172	0.526	0.172					
			Edge 4	0	136	5680	15.0	15.0			0.066	0.026	0.066	0.026					
			Rear	0	136	5680			15.0	15.0					0.070	0.027	0.070	0.027	
			Edge 2	0	136	5680			15.0	15.0					0.021	0.005	0.021	0.005	
			Edge 3	0	104	5520			15.0	15.0					0.715	0.215	0.715	0.215	
					116	5580			15.0	15.0					0.727	0.221	0.727	0.221	
					124	5620			15.0	15.0					0.722	0.218	0.722	0.218	
					136	5680			15.0	15.0					0.796	0.245	**0.796**	0.245	21
	802.11a CDD	2 Tx	Rear	0	136	5680	15.0	15.0	15.0	15.0	0.050	0.022	0.050	0.022	0.057	0.022	0.057	0.022	
			Edge 2	0	136	5680	15.0	15.0	15.0	15.0					0.049	0.017	0.049	0.017	
			Edge 3	0	104	5520	15.0	15.0	15.0	15.0	0.579	0.193	0.579	0.193	0.605	0.191	0.605	0.191	
					116	5580	15.0	15.0	15.0	15.0	0.559	0.184	0.559	0.184	0.640	0.199	0.640	0.199	
					124	5620	15.0	15.0	15.0	15.0	0.587	0.194	0.587	0.194	0.658	0.203	0.658	0.203	
					136	5680	15.0	15.0	15.0	15.0	0.619	0.210	0.619	0.210	0.670	0.207	0.670	0.207	
			Edge 4	0	136	5680	15.0	15.0	15.0	15.0	0.055	0.022	0.055	0.022					

BOM #2

Band	Mode	No. of Transmitters	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	
5.5GHz	802.11a	1 Tx	Edge 3	0	136	5680			15.0	15.0					0.758	0.236	0.758	0.236	

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

12.19. Bluetooth (DTS Band)

BOM #1

Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		SAR (W/kg)				Plot No.
					WiFi 1		WiFi 1				
					Tune-up Limit	Measured	Measured		Scaled		
							1-g	10-g	1-g	10-g	
GFSK	Rear	0	39	2441	13.0	11.1	0.00855	0.00295	0.013	0.005	
	Edge 3	0	39	2441	13.0	11.1	0.211	0.067	**0.327**	0.104	21
	Edge 4	0	39	2441	13.0	11.1	0.031	0.013	0.048	0.020	

BOM #2

Mode	Test Position	Dist. (mm)	Ch #.	Freq. (MHz)	Power (dBm)		SAR (W/kg)				Plot No.
					WiFi 1		WiFi 1				
					Tune-up Limit	Measured	Measured		Scaled		
							1-g	10-g	1-g	10-g	
GFSK	Edge 3	0	39	2441	13.0	11.1	0.201	0.062	0.311	0.096	

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

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	1.040 W/kg
	CDMA BC0	1.190 W/kg
	CDMA BC10	1.170 W/kg
	W-CDMA Band 5	1.180 W/kg
	LTE Band 5	1.130 W/kg
	LTE Band 26	1.120 W/kg
1900	GSM 1900	1.050 W/kg
	CDMA BC1	1.180 W/kg
	W-CDMA Band 2	1.130 W/kg
	LTE Band 2	1.170 W/kg
	LTE Band 25	1.180 W/kg
1700	CDMA BC15	1.190 W/kg
	W-CDMA Band 4	1.180 W/kg
	LTE Band 4	1.150 W/kg
700	LTE Band 13	1.160 W/kg
	LTE Band 17	1.170 W/kg
2400	WiFi 802.11b/g/n	1.140 W/kg
	Bluetooth	< 0.800 W/kg
5200	WiFi 802.11a/n	0.866 W/kg
5300	WiFi 802.11a/n	0.970 W/kg
5500	WiFi 802.11a/n	0.796 W/kg
5800	WiFi 802.11a/n	< 0.800 W/kg

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		
CDMA BC0	Rear	On	1xEVDO (Rel. 0)	384	836.5	1.190	1.180	1.01	1
CDMA BC1	Rear	On	1xEVDO (Rel. 0)	1175	1908.8	1.180	1.070	1.10	1
CDMA BC15	Rear	On	1xRTT (RC3 SO32)	25	1711.3	1.190	1.140	1.04	1
LTE Band 17	Rear	On	QPSK RB1,24	23790	710.0	1.170	1.060	1.10	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	2 Tx	2	2417	1.140	0.844	1.130	0.825	1.01	1.02	1
5.2GHz	Edge 3	802.11a HT40 SISO	1 Tx	46	5230		0.866		0.836		1.04	1
5.3GHz	Edge 3	802.11a	1 Tx	60	5300		0.970		0.964		1.01	1
5.5GHz	Edge 3	802.11a	1 Tx	136	5680		0.796		0.774		1.03	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.

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

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:

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

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

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	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	GPRS 2 Slots	1909.8	29.50	223	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	W-CDMA 5	846.6	24.50	282	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	W-CDMA 4	1752.6	23.75	237	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	W-CDMA 2	1907.6	23.00	200	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC0	848.31	24.50	282	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	CDMA BC1	1908.75	22.75	188	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	CDMA BC10	823.1	25.00	316	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	CDMA BC15	1753.75	23.75	237	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 2	1900	23.00	200	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 4	1754.3	24.00	251	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 5	844	24.00	251	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	LTE Band 13	782	24.00	251	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	LTE Band 17	710	25.00	316	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	-MEASURE-	N/A
Cellular	LTE Band 25	1905	22.75	188	15.7	16.1	24.8	185.1	64.1		-MEASURE-	-MEASURE-	-MEASURE-	0.400	0.400	N/A
Cellular	LTE Band 26	821.3	23.50	224	15.7	16.1	24.8	185.1	64.1		-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.

14.1.2. Estimated SAR for WiFi and BT

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
Wi-Fi 1 / Bluetooth																
Wi-Fi 1	Wi-Fi 2.4 GHz	2462	16.50	45	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 1	Wi-Fi 5.2 GHz	5230	15.50	35	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 1	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 1	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 1	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 1	Bluetooth	2402	13.00	20	6.5	181.3	93.5	3.4	9.8		-MEASURE-	0.400	0.400	-MEASURE-	-MEASURE-	N/A
Wi-Fi 2																
Wi-Fi 2	Wi-Fi 2.4 GHz	2462	15.50	35	6.5	191.1	14.4	3.4	93.5		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
Wi-Fi 2	Wi-Fi 5.2 GHz	5230	15.50	35	6.5	191.1	14.4	3.4	93.5		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
Wi-Fi 2	Wi-Fi 5.3 GHz	5300	16.50	45	6.5	191.1	14.4	3.4	93.5		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
Wi-Fi 2	Wi-Fi 5.5 GHz	5680	16.50	45	6.5	191.1	14.4	3.4	93.5		-MEASURE-	0.400	-MEASURE-	-MEASURE-	0.400	N/A
Wi-Fi 2	Wi-Fi 5.8 GHz	5825	16.00	40	6.5	191.1	14.4	3.4	93.5		-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.

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

14.2.1. GSM 850 + 2.4GHz Band + BT

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	1.040	0.049				1.089	No
		1.040		0.038			1.078	No
		1.040			0.063		1.103	No
		1.040				0.013	1.053	No
	Edge 2	0.410	0.084				0.494	No
		0.410		0.085			0.495	No
		0.410			0.084		0.494	No
		0.410				0.007	0.417	No
	Edge 4	0.318	0.167				0.485	No
		0.318		0.188			0.506	No
		0.318			0.188		0.506	No
		0.318				0.048	0.366	No

14.2.2. GSM 850 + 5GHz Bands + BT

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	1.040	0.057						0.013	1.110	No
		1.040		0.092					0.013	1.145	No
		1.040			0.083				0.013	1.136	No
		1.040				0.061			0.013	1.114	No
		1.040					0.070		0.013	1.123	No
		1.040						0.089	0.013	1.142	No
	Edge 2	0.410		0.016					0.007	0.433	No
		0.410			0.016				0.007	0.433	No
		0.410					0.039		0.007	0.456	No
		0.410						0.049	0.007	0.466	No
	Edge 4	0.318	0.059						0.048	0.425	No
		0.318			0.073				0.048	0.439	No
		0.318				0.092			0.048	0.458	No
		0.318						0.113	0.048	0.479	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.

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

14.3.1. GSM 1900 + 2.4GHz Band + BT

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	1.074	0.049				1.123	No
		1.074		0.038			1.112	No
		1.074			0.063		1.137	No
		1.074				0.013	1.087	No
	Edge 2	1.013	0.084				1.097	No
		1.013		0.085			1.098	No
		1.013			0.084		1.097	No
		1.013				0.007	1.020	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.3.2. GSM 1900 + 5GHz Bands + BT

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	1.074	0.057						0.013	1.144	No
		1.074		0.092					0.013	1.179	No
		1.074			0.083				0.013	1.170	No
		1.074				0.061			0.013	1.148	No
		1.074					0.070		0.013	1.157	No
		1.074						0.089	0.013	1.176	No
	Edge 2	1.013		0.016					0.007	1.036	No
		1.013			0.016				0.007	1.036	No
		1.013					0.039		0.007	1.059	No
		1.013						0.049	0.007	1.069	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

14.4. Sum of the SAR for W-CDMA Band 2 + WiFi + BT

14.4.1. W-CDMA Band 2 + 2.4GHz Band + BT

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	1.130	0.049				1.179	No
		1.130		0.038			1.168	No
		1.130			0.063		1.193	No
		1.130				0.013	1.143	No
	Edge 2	0.995	0.084				1.079	No
		0.995		0.085			1.080	No
		0.995			0.084		1.079	No
		0.995				0.007	1.002	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.4.2. W-CDMA Band 2 + 5GHz Bands + BT

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	1.130	0.057						0.013	1.200	No
		1.130		0.092					0.013	1.235	No
		1.130			0.083				0.013	1.226	No
		1.130				0.061			0.013	1.204	No
		1.130					0.070		0.013	1.213	No
		1.130						0.089	0.013	1.232	No
	Edge 2	0.995		0.016					0.007	1.018	No
		0.995			0.016				0.007	1.018	No
		0.995					0.039		0.007	1.041	No
		0.995						0.049	0.007	1.051	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

14.5. Sum of the SAR for W-CDMA Band 4 + WiFi + BT

14.5.1. W-CDMA Band 4 + 2.4GHz Band + BT

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	1.187	0.049				1.236	No
		1.187		0.038			1.225	No
		1.187			0.063		1.250	No
		1.187				0.013	1.200	No
	Edge 2	1.134	0.084				1.218	No
		1.134		0.085			1.219	No
		1.134			0.084		1.218	No
		1.134				0.007	1.141	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.5.2. W-CDMA Band 4 + 5GHz Bands + BT

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	1.187	0.057						0.013	1.257	No
		1.187		0.092					0.013	1.292	No
		1.187			0.083				0.013	1.283	No
		1.187				0.061			0.013	1.261	No
		1.187					0.070		0.013	1.270	No
		1.187						0.089	0.013	1.289	No
	Edge 2	1.134		0.016					0.007	1.157	No
		1.134			0.016				0.007	1.157	No
		1.134					0.039		0.007	1.180	No
		1.134						0.049	0.007	1.190	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

14.6. Sum of the SAR for W-CDMA Band 5 + WiFi + BT

14.6.1. W-CDMA Band 5 + 2.4GHz Band + BT

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	1.180	0.049				1.229	No
		1.180		0.038			1.218	No
		1.180			0.063		1.243	No
		1.180				0.013	1.193	No
	Edge 2	0.684	0.084				0.768	No
		0.684		0.085			0.769	No
		0.684			0.084		0.768	No
		0.684				0.007	0.691	No
	Edge 4	0.211	0.167				0.378	No
		0.211		0.188			0.399	No
		0.211			0.188		0.399	No
		0.211				0.048	0.259	No

14.6.2. W-CDMA Band 5 + 5GHz Bands + BT

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	1.180	0.057						0.013	1.250	No
		1.180		0.092					0.013	1.285	No
		1.180			0.083				0.013	1.276	No
		1.180				0.061			0.013	1.254	No
		1.180					0.070		0.013	1.263	No
		1.180						0.089	0.013	1.282	No
	Edge 2	0.684		0.016					0.007	0.707	No
		0.684			0.016				0.007	0.707	No
		0.684					0.039		0.007	0.730	No
		0.684						0.049	0.007	0.740	No
	Edge 4	0.211	0.059						0.048	0.318	No
		0.211			0.073				0.048	0.332	No
		0.211				0.092			0.048	0.351	No
		0.211						0.113	0.048	0.372	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.

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

14.7.1. CDMA BC0 + 2.4GHz Band + BT

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	1.190	0.049				1.239	No
		1.190		0.038			1.228	No
		1.190			0.063		1.253	No
		1.190				0.013	1.203	No
	Edge 2	0.623	0.084				0.707	No
		0.623		0.085			0.708	No
		0.623			0.084		0.707	No
		0.623				0.007	0.630	No
	Edge 4	0.128	0.167				0.295	No
		0.128		0.188			0.316	No
		0.128			0.188		0.316	No
		0.128				0.048	0.176	No

14.7.2. CDMA BC0 + 5GHz Bands + BT

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	1.190	0.057						0.013	1.260	No
		1.190		0.092					0.013	1.295	No
		1.190			0.083				0.013	1.286	No
		1.190				0.061			0.013	1.264	No
		1.190					0.070		0.013	1.273	No
		1.190						0.089	0.013	1.292	No
	Edge 2	0.623		0.016					0.007	0.646	No
		0.623			0.016				0.007	0.646	No
		0.623					0.039		0.007	0.669	No
		0.623						0.049	0.007	0.679	No
	Edge 4	0.128	0.059						0.048	0.235	No
		0.128			0.073				0.048	0.249	No
		0.128				0.092			0.048	0.268	No
		0.128						0.113	0.048	0.289	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.

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

14.8.1. CDMA BC1 + 2.4GHz Band + BT

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	1.180	0.049				1.229	No
		1.180		0.038			1.218	No
		1.180			0.063		1.243	No
		1.180				0.013	1.193	No
	Edge 2	1.020	0.084				1.104	No
		1.020		0.085			1.105	No
		1.020			0.084		1.104	No
		1.020				0.007	1.027	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.8.2. CDMA BC1 + 5GHz Bands + BT

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	1.180	0.057						0.013	1.250	No
		1.180		0.092					0.013	1.285	No
		1.180			0.083				0.013	1.276	No
		1.180				0.061			0.013	1.254	No
		1.180					0.070		0.013	1.263	No
		1.180						0.089	0.013	1.282	No
	Edge 2	1.020		0.016					0.007	1.043	No
		1.020			0.016				0.007	1.043	No
		1.020					0.039		0.007	1.066	No
		1.020						0.049	0.007	1.076	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

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

14.9.1. CDMA BC10 + 2.4GHz Band + BT

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	1.170	0.049				1.219	No
		1.170		0.038			1.208	No
		1.170			0.063		1.233	No
		1.170				0.013	1.183	No
	Edge 2	0.679	0.084				0.763	No
		0.679		0.085			0.764	No
		0.679			0.084		0.763	No
		0.679				0.007	0.686	No
	Edge 4	0.216	0.167				0.383	No
		0.216		0.188			0.404	No
		0.216			0.188		0.404	No
		0.216				0.048	0.264	No

14.9.2. CDMA BC10 + 5GHz Bands + BT

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	1.170	0.057						0.013	1.240	No
		1.170		0.092					0.013	1.275	No
		1.170			0.083				0.013	1.266	No
		1.170				0.061			0.013	1.244	No
		1.170					0.070		0.013	1.253	No
		1.170						0.089	0.013	1.272	No
	Edge 2	0.679		0.016					0.007	0.702	No
		0.679			0.016				0.007	0.702	No
		0.679					0.039		0.007	0.725	No
		0.679						0.049	0.007	0.735	No
	Edge 4	0.216	0.059						0.048	0.323	No
		0.216			0.073				0.048	0.337	No
		0.216				0.092			0.048	0.356	No
		0.216						0.113	0.048	0.377	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.

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

14.10.1. CDMA BC15 + 2.4GHz Band + BT

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	1.190	0.049				1.239	No
		1.190		0.038			1.228	No
		1.190			0.063		1.253	No
		1.190				0.013	1.203	No
	Edge 2	1.140	0.084				1.224	No
		1.140		0.085			1.225	No
		1.140			0.084		1.224	No
		1.140				0.007	1.147	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.10.2. CDMA BC15 + 5GHz Bands + BT

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	1.190	0.057						0.013	1.260	No
		1.190		0.092					0.013	1.295	No
		1.190			0.083				0.013	1.286	No
		1.190				0.061			0.013	1.264	No
		1.190					0.070		0.013	1.273	No
		1.190						0.089	0.013	1.292	No
	Edge 2	1.140		0.016					0.007	1.163	No
		1.140			0.016				0.007	1.163	No
		1.140					0.039		0.007	1.186	No
		1.140						0.049	0.007	1.196	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

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

14.11.1. LTE Band 2 + 2.4GHz Band + BT

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	1.107	0.049				1.156	No
		1.107		0.038			1.145	No
		1.107			0.063		1.170	No
		1.107				0.013	1.120	No
	Edge 2	1.192	0.084				1.276	No
		1.192		0.085			1.277	No
		1.192			0.084		1.276	No
		1.192				0.007	1.199	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.11.2. LTE Band 2 + 5GHz Bands + BT

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	1.107	0.057						0.013	1.177	No
		1.107		0.092					0.013	1.212	No
		1.107			0.083				0.013	1.203	No
		1.107				0.061			0.013	1.181	No
		1.107					0.070		0.013	1.190	No
		1.107						0.089	0.013	1.209	No
	Edge 2	1.192		0.016					0.007	1.215	No
		1.192			0.016				0.007	1.215	No
		1.192					0.039		0.007	1.238	No
		1.192						0.049	0.007	1.248	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

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

14.12.1. LTE Band 4 + 2.4GHz Band + BT

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	1.150	0.049				1.199	No
		1.150		0.038			1.188	No
		1.150			0.063		1.213	No
		1.150				0.013	1.163	No
	Edge 2	1.178	0.084				1.262	No
		1.178		0.085			1.263	No
		1.178			0.084		1.262	No
		1.178				0.007	1.185	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.12.2. LTE Band 4 + 5GHz Bands + BT

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	1.150	0.057						0.013	1.220	No
		1.150		0.092					0.013	1.255	No
		1.150			0.083				0.013	1.246	No
		1.150				0.061			0.013	1.224	No
		1.150					0.070		0.013	1.233	No
		1.150						0.089	0.013	1.252	No
	Edge 2	1.178		0.016					0.007	1.201	No
		1.178			0.016				0.007	1.201	No
		1.178					0.039		0.007	1.224	No
		1.178						0.049	0.007	1.234	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

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

14.13.1. LTE Band 5 + 2.4GHz Band + BT

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	1.140	0.049				1.189	No
		1.140		0.038			1.178	No
		1.140			0.063		1.203	No
		1.140				0.013	1.153	No
	Edge 2	0.583	0.084				0.667	No
		0.583		0.085			0.668	No
		0.583			0.084		0.667	No
		0.583				0.007	0.590	No
	Edge 4	0.102	0.167				0.269	No
		0.102		0.188			0.290	No
		0.102			0.188		0.290	No
		0.102				0.048	0.150	No

14.13.2. LTE Band 5 + 5GHz Bands + BT

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	1.130	0.057						0.013	1.200	No
		1.130		0.092					0.013	1.235	No
		1.130			0.083				0.013	1.226	No
		1.130				0.061			0.013	1.204	No
		1.130					0.070		0.013	1.213	No
		1.130						0.089	0.013	1.232	No
	Edge 2	0.538		0.016					0.007	0.561	No
		0.538			0.016				0.007	0.561	No
		0.538					0.039		0.007	0.584	No
		0.538						0.049	0.007	0.594	No
	Edge 4	0.102	0.059						0.048	0.209	No
		0.102			0.073				0.048	0.223	No
		0.102				0.092			0.048	0.242	No
		0.102						0.113	0.048	0.263	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.

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

14.14.1. LTE Band 13 + 2.4GHz Band + BT

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	1.192	0.049				1.241	No
		1.192		0.038			1.230	No
		1.192			0.063		1.255	No
		1.192				0.013	1.205	No
	Edge 2	0.576	0.084				0.660	No
		0.576		0.085			0.661	No
		0.576			0.084		0.660	No
		0.576				0.007	0.583	No
	Edge 4	0.107	0.167				0.274	No
		0.107		0.188			0.295	No
		0.107			0.188		0.295	No
		0.107				0.048	0.155	No

14.14.2. LTE Band 13 + 5GHz Bands + BT

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	1.192	0.057						0.013	1.262	No
		1.192		0.092					0.013	**1.297**	No
		1.192			0.083				0.013	1.288	No
		1.192				0.061			0.013	1.266	No
		1.192					0.070		0.013	1.275	No
		1.192						0.089	0.013	1.294	No
	Edge 2	0.576		0.016					0.007	0.599	No
		0.576			0.016				0.007	0.599	No
		0.576					0.039		0.007	0.622	No
		0.576						0.049	0.007	0.632	No
	Edge 4	0.107	0.059						0.048	0.214	No
		0.107			0.073				0.048	0.228	No
		0.107				0.092			0.048	0.247	No
		0.107						0.113	0.048	0.268	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.

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

14.15.1. LTE Band 17 + 2.4GHz Band + BT

RF Exposure condition	Test Position	Simultaneous Transmission Scenario					∑ 1-g SAR (mW/g)	SPLSR (Yes/ No)
		LTE Band 17	DTS Band			Bluetooth		
			WiFi 1	WiFi 2	WiFi 1 + 2			
Body	Rear	1.170	0.049				1.219	No
		1.170		0.038			1.208	No
		1.170			0.063		1.233	No
		1.170				0.013	1.183	No
	Edge 2	0.181	0.084				0.265	No
		0.181		0.085			0.266	No
		0.181			0.084		0.265	No
		0.181				0.007	0.188	No
	Edge 4	0.126	0.167				0.293	No
		0.126		0.188			0.314	No
		0.126			0.188		0.314	No
		0.126				0.048	0.174	No

14.15.2. LTE Band 17 + 5GHz Bands + BT

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	1.170	0.057						0.013	1.240	No
		1.170		0.092					0.013	1.275	No
		1.170			0.083				0.013	1.266	No
		1.170				0.061			0.013	1.244	No
		1.170					0.070		0.013	1.253	No
		1.170						0.089	0.013	1.272	No
	Edge 2	0.181		0.016					0.007	0.204	No
		0.181			0.016				0.007	0.204	No
		0.181					0.039		0.007	0.227	No
		0.181						0.049	0.007	0.237	No
	Edge 4	0.126	0.059						0.048	0.233	No
		0.126			0.073				0.048	0.247	No
		0.126				0.092			0.048	0.266	No
		0.126						0.113	0.048	0.287	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.

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

14.16.1. LTE Band 25 + 2.4GHz Band + BT

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	1.090	0.049				1.139	No
		1.090		0.038			1.128	No
		1.090			0.063		1.153	No
		1.090				0.013	1.103	No
	Edge 2	1.180	0.084				1.264	No
		1.180		0.085			1.265	No
		1.180			0.084		1.264	No
		1.180				0.007	1.187	No
	Edge 4	0.400	0.167				0.567	No
		0.400		0.188			0.588	No
		0.400			0.188		0.588	No
		0.400				0.048	0.448	No

14.16.2. LTE Band 25 + 5GHz Bands + BT

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	1.090	0.057						0.013	1.160	No
		1.090		0.092					0.013	1.195	No
		1.090			0.083				0.013	1.186	No
		1.090				0.061			0.013	1.164	No
		1.090					0.070		0.013	1.173	No
		1.090						0.089	0.013	1.192	No
	Edge 2	1.180		0.016					0.007	1.203	No
		1.180			0.016				0.007	1.203	No
		1.180					0.039		0.007	1.226	No
		1.180						0.049	0.007	1.236	No
	Edge 4	0.400	0.059						0.048	0.507	No
		0.400			0.073				0.048	0.521	No
		0.400				0.092			0.048	0.540	No
		0.400						0.113	0.048	0.561	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.

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

14.17.1. LTE Band 26 + 2.4GHz Band + BT

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	1.120	0.049				1.169	No
		1.120		0.038			1.158	No
		1.120			0.063		1.183	No
		1.120				0.013	1.133	No
	Edge 2	0.537	0.084				0.621	No
		0.537		0.085			0.622	No
		0.537			0.084		0.621	No
		0.537				0.007	0.544	No
	Edge 4	0.156	0.167				0.323	No
		0.156		0.188			0.344	No
		0.156			0.188		0.344	No
		0.156				0.048	0.204	No

14.17.2. LTE Band 26 + 5GHz Bands + BT

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	1.120	0.057						0.013	1.190	No
		1.120		0.092					0.013	1.225	No
		1.120			0.083				0.013	1.216	No
		1.120				0.061			0.013	1.194	No
		1.120					0.070		0.013	1.203	No
		1.120						0.089	0.013	1.222	No
	Edge 2	0.537		0.016					0.007	0.560	No
		0.537			0.016				0.007	0.560	No
		0.537					0.039		0.007	0.583	No
		0.537						0.049	0.007	0.593	No
	Edge 4	0.156	0.059						0.048	0.263	No
		0.156			0.073				0.048	0.277	No
		0.156				0.092			0.048	0.296	No
		0.156						0.113	0.048	0.317	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.

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

14.18.1. 5.8GHz Band

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	0.057			0.013	0.070	No
			0.092		0.013	0.105	No
				0.083	0.013	0.096	No
	Edge 2		0.016		0.007	0.023	No
				0.016	0.007	0.023	No
	Edge 3	0.697			0.327	1.024	No
			0.703		0.327	1.030	No
				0.701	0.327	**1.028**	No
	Edge 4	0.059			0.048	0.107	No
					0.048	0.048	No
				0.073	0.048	0.121	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 + BT

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	0.061			0.013	0.074	No
			0.070		0.013	0.083	No
				0.089	0.013	0.102	No
	Edge 2		0.039		0.007	0.046	No
				0.049	0.007	0.056	No
	Edge 3	0.835			0.327	1.162	No
			0.970		0.327	1.297	No
				0.877	0.327	**1.204**	No
	Edge 4	0.092			0.048	0.140	No
					0.048	0.048	No
				0.113	0.048	0.161	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.

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 3686

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

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

15.11. Calibration Certificate for E-Field Probe EX3DV4 - SN 3778

15.12. Calibration Certificate for E-Field Probe EX3DV4 - SN 3720

15.13. Calibration Certificate for E-Field Probe EX3DV4 - SN 3871

15.14. Calibration Certificate for E-Field Probe EX3DV4 - SN 3676

15.15. Calibration Certificate for D750V3 - SN 1024

15.16. Calibration Certificate for D835V2 - SN 4d117

15.17. Calibration Certificate for D1750V2 - SN 1077

15.18. Calibration Certificate for D1900V2 - SN 5d140

15.19. Calibration Certificate for D1900V2 - SN 5d163

15.20. Calibration Certificate for D2450V2 - SN 748

15.21. Calibration Certificate for D2450V2 - SN 900

15.22. Calibration Certificate for D5GHzV2 - SN 1139

15.23. Calibration Certificate for D5GHzV2 - SN 1072

END OF REPORT