FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

GSM/CDMA/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac, ANT+ and NFC

MODEL NUMBER: SM-G770U1

FCC ID: A3LSMG770U

REPORT NUMBER: 4789354138-S1V2

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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	3/3/2020	Initial Issue	--
V2	3/13/2020	Added Hotspot back-off for GSM 850/1900 Revised Maximum tune-up limit for WCDMA B II/IV, LTE B2/ 4/ 5/ 25/ 26/ 30 / 38/ 66/ 71 -Revised Sec.1 & Sec.1-1 & Sec.4.3 & Sec.6.3 & Sec.8 & Sec.9.1 & Sec.9.2 & Sec.9.4 & Sec.10 & Sec.11 & Sec.13 -Revised Appendix B & C & F	Sunghoon Kim

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID		A3LSMG770U			
Model Number		SM-G770U1			
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures			
Exposure Category		SAR Limits (W/Kg)			
		Peak spatial-average (1g of tissue)		Product Specific 10g (10g of tissue)	
General population / Uncontrolled exposure		1.6		4.0	
RF Exposure Conditions		Equipment Class - The Highest Reported SAR (W/kg)			
		PCE	DTS	U-NII	DSS
Head		0.36	0.68	0.26	0.14
Body-worn		1.18	0.13	0.31	< 0.10
Hotspot		1.20	0.60	0.55	< 0.10
Product Specific 10g		2.53	N/A	1.38	N/A
Simultaneous TX	Head	1.18	1.18	1.15	0.60
	Body-worn	1.50	1.43	1.50	1.50
	Hotspot	1.59	1.59	1.59	1.38
	Product Specific 10g	3.85	N/A	3.85	N/A
Date Tested		1/20/2020 to 3/13/2020			
Test Results		Pass			

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

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released By:	Prepared By:
	
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	Sunghoon Kim Test Engineer UL Korea, Ltd. Suwon Laboratory

1.1. The Highest Reported SAR for RF exposure conditions for each bands

Equipment Class	Band	The Highest Reported SAR (W/kg)			
		1g of tissue			10g of tissue
		Head Exposure condition	Body-worn Exposure condition	Hotspot Exposure condition	Product Specific Exposure condition
PCE	GSM 850	0.181	0.351	0.584	N/A
	GSM 1900	0.042	0.342	1.190	N/A
	WCDMA Band II	0.138	0.786	1.124	2.491
	WCDMA Band IV	0.213	0.970	1.054	2.202
	WCDMA Band V	0.271	0.390	0.803	N/A
	CDMA BC0	0.218	0.288	0.381	N/A
	CDMA BC1	0.154	0.754	**1.195**	1.906
	CDMA BC10	**0.362**	0.512	0.445	N/A
	LTE Band 2	N/A	N/A	N/A	N/A
	LTE Band 4	N/A	N/A	N/A	N/A
	LTE Band 5	N/A	N/A	N/A	N/A
	LTE Band 7	0.079	0.480	0.408	N/A
	LTE Band 12	0.203	0.255	0.401	N/A
	LTE Band 13	0.288	0.333	0.598	N/A
	LTE Band 14	0.274	0.367	0.677	N/A
	LTE Band 17	N/A	N/A	N/A	N/A
	LTE Band 25	0.135	0.711	1.016	2.262
	LTE Band 26	0.322	0.401	0.776	N/A
	LTE Band 30	0.104	0.615	0.412	1.317
	LTE Band 38	N/A	N/A	N/A	N/A
	LTE Band 41	0.056	0.297	0.433	N/A
	LTE Band 66	0.208	**1.182**	1.142	**2.526**
	LTE Band 71	0.096	0.158	0.267	N/A
DTS	2.4GHz WLAN	**0.680**	**0.134**	**0.597**	N/A
UNII	5GHz WLAN	**0.255**	**0.309**	**0.546**	**1.384**
DSS	Bluetooth	**0.138**	**0.011**	**0.030**	N/A

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, ANSI C63.26-2015 the following FCC Published RF exposure KDB procedures:

- 248227 D01 802.11 Wi-Fi SAR v02r02
- 447498 D01 General RF Exposure Guidance v06
- 648474 D04 Handset SAR v01r03
- 690783 D01 SAR Listings on Grants v01r03
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 941225 D01 3G SAR Procedures v03r01
- 941225 D05 SAR for LTE Devices v02r05
- 941225 D05A LTE Rel.10 KDB Inquiry Sheet v01r02
- 941225 D06 Hotspot Mode v02r01
- 941225 D07 UMPC Mini Tablet v01r02
- 971168 D01 Power Meas License Digital System v03r01

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

- TCB workshop October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- TCB workshop October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)
- TCB workshop October, 2016; Page 18, RF Exposure Procedures (DUT Holder Perturbations)
- TCB workshop May, 2017; Page 6, RF Exposure Procedures (LTE Test Conditions)
- TCB workshop Nov, 2017; Page 9, RF Exposure Procedures (Uplink CA SAR Test Guidance)
- TCB workshop April, 2018; Page 3, RF Exposure Procedures (LTE DL CA SAR Test Exclusion Update)
- TCB workshop April, 2019 Page 19, RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

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

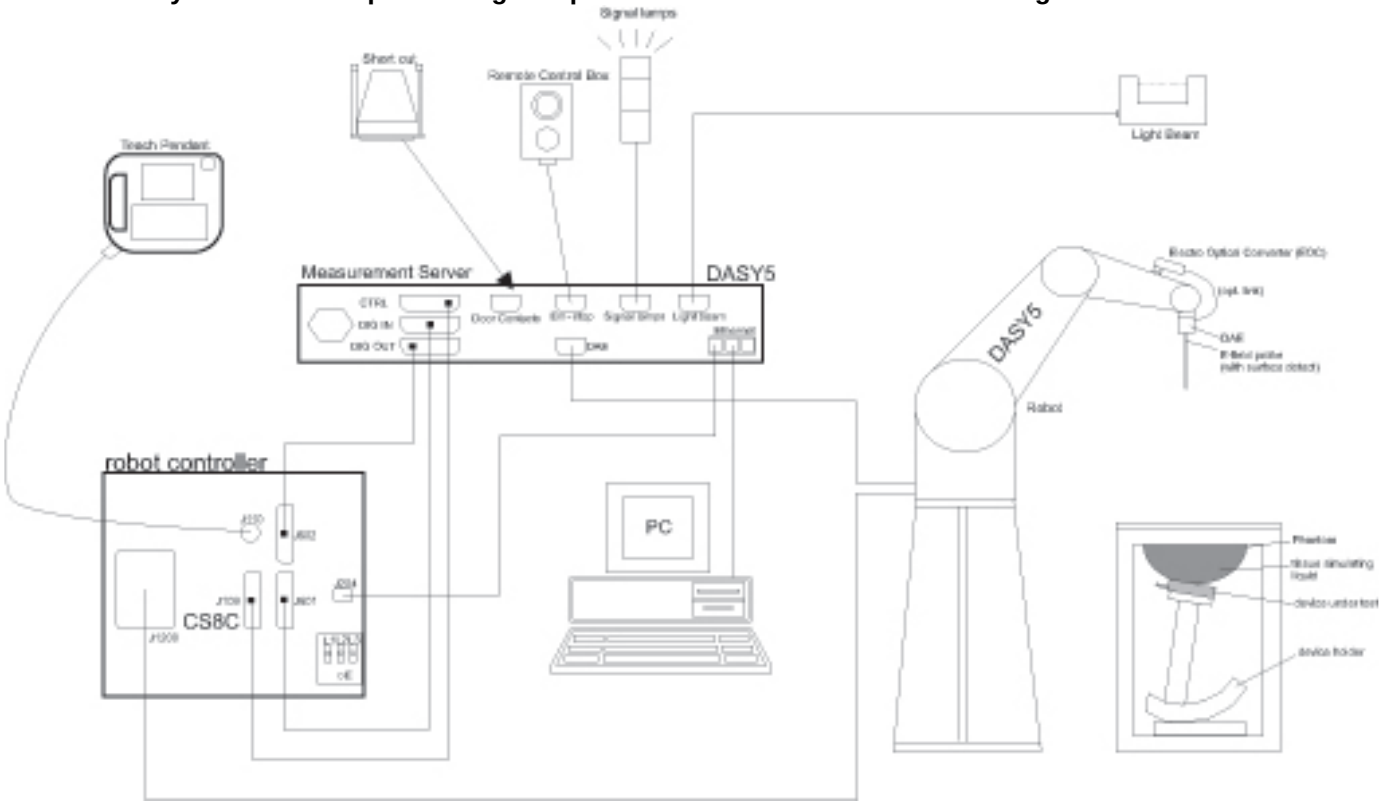
Suwon
SAR 1 Room
SAR 2 Room
SAR 3 Room
SAR 4 Room
SAR 5 Room

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

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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



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

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

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

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEEE Standard 1528 and IEC 62209 standards, whereby 3 dB is a requirement when compliance is assessed in accordance with the ARIB standard (Japan). If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	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

			≤ 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.

4.3. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations, and is traceable to recognized national standards.

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	8-7-2020
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-18-2020
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3424	8-9-2020

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-6-2020
Power Sensor	Agilent	U2000A	MY54260010	8-9-2020
Power Sensor	Agilent	U2000A	MY54260007	8-9-2020
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-8-2020
Directional Coupler	Agilent	772D	MY52180193	8-7-2020
Directional Coupler	Agilent	778D	MY52180432	8-7-2020
Low Pass Filter	MICROLAB	LA-15N	03943	8-7-2020
Low Pass Filter	FILTRON	L14012FL	1410003S	8-7-2020
Low Pass Filter	MICROLAB	LA-60N	03942	8-7-2020
Attenuator	Agilent	8491B/003	MY39269292	8-7-2020
Attenuator	Agilent	8491B/010	MY39269315	8-7-2020
Attenuator	Agilent	8491B/020	MY39269298	8-7-2020
E-Field Probe (SAR1)	SPEAG	EX3DV4	7376	9-27-2020
E-Field Probe (SAR3)	SPEAG	EX3DV4	7314	8-29-2020
E-Field Probe (SAR4)	SPEAG	EX3DV4	7545	9-23-2020
E-Field Probe (SAR5)	SPEAG	EX3DV4	3871	8-29-2020
Data Acquisition Electronics (SAR1)	SPEAG	DAE4	1494	7-18-2020
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	1468	9-20-2020
Data Acquisition Electronics (SAR4)	SPEAG	DAE4	1591	9-11-2020
Data Acquisition Electronics (SAR5)	SPEAG	DAE4	1343	8-27-2020
System Validation Dipole	SPEAG	D750V3	1122	2-19-2020
System Validation Dipole	SPEAG	D835V2	4d194	7-24-2020
System Validation Dipole	SPEAG	D835V2	4d174	1-23-2021
System Validation Dipole	SPEAG	D1750V2	1125	2-16-2020
System Validation Dipole	SPEAG	D1750V2	1125	2-21-2022
System Validation Dipole	SPEAG	D1800V2	2d015	11-19-2021
System Validation Dipole	SPEAG	D1900V2	5d190	10-23-2020
System Validation Dipole	SPEAG	D2300V2	1090	11-5-2020
System Validation Dipole	SPEAG	D2450V2	939	7-25-2021
System Validation Dipole	SPEAG	D2600V2	1097	9-19-2021
System Validation Dipole	SPEAG	D5GHzV2	1209	2-28-2021
Thermometer (SAR1)	Lutron	MHB-382SD	AH.91463	8-8-2020
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-8-2020
Thermometer (SAR4),(SAR5)	Lutron	MHB-382SD	AJ.45903	5-17-2020

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	8-8-2020
Base Station Simulator	R & S	CMW500	150314	8-8-2020
Base Station Simulator	R & S	CMW500	162790	8-9-2020
Wireless Connectivity Tester	R & S	CMW270	100982	8-5-2020
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	8-7-2020

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations.
(D750(SN : 1122), D835(SN : 4d194), D1750(SN : 1125), D1900(SN : 5d190), D2300(SN : 1090))

5. Measurement Uncertainty

Per KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg and the measured 10-g SAR within a frequency band is < 3.75 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval.

5.1. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedures 1, Clause 4.4.2 in IEC Guide 115:2007.

6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Refer to Appendix A.		
Back Cover	☒ The Back Cover is not removable.		
Battery Options	☒ The rechargeable battery is not user accessible		
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) ☒ Mobile Hotspot (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20Mhz)/Ch.151(40Mhz)/Ch.155(80Mhz))))		
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) ☒ Wi-Fi Direct (Wi-Fi 5 GHz : Ch.36 – Ch.48, Ch.149 – Ch.165))		
Test Sample Information	**No.**	**S/N**	**Notes**
	1	R38MC0E0GP	Main Conducted
	2	R38MC0CECEP	Main Conducted
	3	R38MC0CE38V	Main Conducted
	4	R37MC0CE6KN	Wi-Fi & BT Conducted
	5	R38MC0CECLB	SAR
	6	R38MC0CE9GT	SAR
	7	R38MC0CE7XM	SAR
	8	R38MC0CE7RW	SAR
	9	R38MC0CE7VY	SAR
	10	R38MC0CE7LV	SAR
	11	R38MC0CE60N	SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
CDMA	BC0 BC1 BC10	1xRTT (Voice & Data) 1xEV-DO Rel.0 1xEV-DO Rev.A 1xAdvanced		100%
	Does this device support SV-DO (1xRTT-1xEVDO)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 14 FDD Band 17 FDD Band 25 FDD Band 26 FDD Band 30 FDD Band 66 FDD Band 71 TDD Band 38 TDD Band 41 [1]	QPSK 16QAM 64QAM Rel. 14 Carrier Aggregation (2 Uplink and 3 Downlinks)		100% (FDD) 63.3% (TDD, Power class 3) 43.3% (TDD, Power class 2)
	TDD Band 41_2CC			
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20)		SISO mode : 98.9% (802.11b) MIMO mode : 98.7% (802.11g)
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80)		SISO mode: 98.7% (802.11a) 98.6% (802.11n 40MHz BW) MIMO mode: 98.7% (802.11a)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.0 LE		76.9% (DH5)

Notes:

1. For LTE Band 41, This device supports uplink-downlink configuration 0-6. The configuration with the highest duty cycle was used for Power class 3(uplink-downlink configuration 0 at 63.3%). Power class 2 does not support uplink-downlink configuration 0 and 6, therefore the highest available duty cycle was used for Power class 2(uplink-downlink configuration 1 at 43.3%).
2. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.9% and was considered and used for SAR Testing.
3. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.

6.3. Nominal and Maximum Output Power

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

RF Air interface	Antenna	Mode	Time Slots	Max. RF Output Power (dBm)		Reduced. RF Output Power (dBm)	
				Tune-up Limit	Frame Pwr	Tune-up Limit	Frame Pwr
GSM850	Main 1 Ant.	Voice	1	**34.3**	**25.3**	**34.3**	**25.3**
		GPRS	1	**34.3**	**25.3**	**34.3**	**25.3**
		GPRS	2	**33.0**	**27.0**	**31.5**	**25.5**
		GPRS	3	**31.0**	**26.7**	**29.5**	**25.2**
		GPRS	4	**30.0**	**27.0**	**28.0**	**25.0**
		EGPRS	1	**28.5**	**19.5**	**28.5**	**19.5**
		EGPRS	2	**27.0**	**21.0**	**27.0**	**21.0**
		EGPRS	3	**25.5**	**21.2**	**25.5**	**21.2**
		EGPRS	4	**23.5**	**20.5**	**23.5**	**20.5**
GSM1900	Main 1 Ant.	Voice	1	**32.0**	**23.0**	**30.0**	**21.0**
		GPRS	1	**32.0**	**23.0**	**30.0**	**21.0**
		GPRS	2	**28.5**	**22.5**	**27.5**	**21.5**
		GPRS	3	**27.5**	**23.2**	**25.5**	**21.2**
		GPRS	4	**24.5**	**21.5**	**24.5**	**21.5**
		EGPRS	1	**27.5**	**18.5**	**27.5**	**18.5**
		EGPRS	2	**25.5**	**19.5**	**25.5**	**19.5**
		EGPRS	3	**22.5**	**18.2**	**22.5**	**18.2**
		EGPRS	4	**22.0**	**19.0**	**20.5**	**17.5**

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
W-CDMA Band II	Main 1 Ant.	R99	**25.9**	**20.9**
		HSDPA	**25.0**	**19.9**
		HSUPA	**25.0**	**19.9**
		DC-HSDPA	**25.0**	**19.9**
W-CDMA Band IV	Main 1 Ant.	R99	**26.0**	**20.7**
		HSDPA	**24.0**	**19.5**
		HSUPA	**24.0**	**19.5**
		DC-HSDPA	**24.0**	**19.5**
W-CDMA Band V	Main 1 Ant.	R99	**25.2**	
		HSDPA	**24.0**	
		HSUPA	**24.0**	
		DC-HSDPA	**24.0**	
CDMA BC0	Main 1 Ant.	1xRTT	**24.5**	**22.5**
		1xAdvanced	**24.5**	**22.5**
		1xEV-DO Rel.0	**24.5**	**22.5**
		1xEV-DO Rev.A	**24.5**	**22.5**
CDMA BC1	Main 1 Ant.	1xRTT	**26.5**	**21.5**
		1xAdvanced	**26.5**	**21.5**
		1xEV-DO Rel.0	**26.5**	**21.5**
		1xEV-DO Rev.A	**26.5**	**21.5**
CDMA BC10	Main 1 Ant.	1xRTT	**27.0**	**24.0**
		1xAdvanced	**27.0**	**24.0**
		1xEV-DO Rel.0	**27.0**	**24.0**
		1xEV-DO Rev.A	**27.0**	**24.0**

Notes:

1. The device utilizes power reduction under some portable hotspot conditions for SAR compliance. There is power reduction for WWAN bands (GSM 850/1900, WCDMA Band II/IV, CDMA BC0/1/10). The reduced powers were confirmed via conducted power measurements the RF port. Detailed description of the hotspot power reduction mechanism is included in the operational description.
2. WWAN bands (WCDMA Band II/IV, CDMA BC1) has support to proximity sensor back-off function. it is operating during extremity (hand-held) use conditions. And This function is apply to Product Specific 10-g SAR exposure condition. Other Head and Body exposure conditions are performed SAR test at full power. The proximity sensor details explain in SAR report according to Section 6 in KDB 616217.

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
LTE Band 2	Main 1 Ant.	QPSK	**25.9**	**20.7**
LTE Band 4	Main 1 Ant.	QPSK	**25.9**	**20.9**
LTE Band 5	Main 1 Ant.	QPSK	**26.0**	
LTE Band 7	Main 2 Ant.	QPSK	**24.2**	**19.7**
LTE Band 12	Main 1 Ant.	QPSK	**25.5**	
LTE Band 13	Main 1 Ant.	QPSK	**25.4**	
LTE Band 14	Main 1 Ant.	QPSK	**25.4**	
LTE Band 17	Main 1 Ant.	QPSK	**25.4**	
LTE Band 25	Main 1 Ant.	QPSK	**25.9**	**20.7**
LTE Band 26	Main 1 Ant.	QPSK	**26.0**	
LTE Band 30	Main 2 Ant.	QPSK	**24.5**	**19.5**
LTE Band 66	Main 1 Ant.	QPSK	**26.3**	**20.9**
LTE Band 71	Main 1 Ant.	QPSK	**25.7**	
LTE Band 38	Main 2 Ant.	QPSK	**25.3**	**21.5**
LTE Band 41 -Power Class 3-	Main 2 Ant.	QPSK	**25.5**	**21.5**
LTE Band 41 -Power Class 2-	Main 2 Ant.	QPSK	**28.0**	**21.5**
LTE-Uplink 2CA -Band 41-	Main 2 Ant.	QPSK	**25.5**	**21.5**

Notes:

1. The device utilizes power reduction under some portable hotspot conditions for SAR compliance. There is power reduction for WWAN bands (LTE Band 2, 4, ,7, 25, 30, 66, 38, 41). The reduced powers were confirmed via conducted power measurements the RF port. Detailed description of the hotspot power reduction mechanism is included in the operational description.
2. WWAN bands (LTE Band 2, 4, 25, 66) has support to proximity sensor back-off function. it is operating during extremity (hand-held) use conditions. And This function is apply to Product Specific 10-g SAR exposure condition. Other Head and Body exposure conditions are performed SAR test at full power. The proximity sensor details explain in SAR report according to Section 6 in KDB 616217.
3. LTE QPSK configuration has the highest maximum average output power per 3GPP standard.
4. LTE-uplink 2CA are the total combined power of the UL CA.

RF Air interface	Mode	WLAN mode power (dBm)	
		Max. RF Output Power	Reduced. RF Output Power
WiFi 2.4 GHz (Ch.1 - Ch.11)	802.11b	**21.0**	**17.0**
	802.11g	**19.0**	**15.0**
	802.11n HT20	**19.0**	**15.0**
WiFi 2.4 GHz (Ch.12)	802.11b	**9.0**	**9.0**
	802.11g	**9.0**	**9.0**
	802.11n HT20	**9.0**	**9.0**
WiFi 2.4 GHz (Ch.13)	802.11b	**3.0**	**3.0**
	802.11g	**3.0**	**3.0**
	802.11n HT20	**3.0**	**3.0**
WiFi 5 GHz	802.11a	**18.0**	**15.0**
	802.11n HT20	**18.0**	**15.0**
	802.11n HT40	**17.0**	**15.0**
	802.11ac VHT20	**18.0**	**15.0**
	802.11ac VHT40	**17.0**	**15.0**
	802.11ac VHT80	**14.0**	**14.0**
Bluetooth		**10.0**	
Bluetooth-EDR		**9.0**	
Bluetooth-LE_1Mbps, 125/500 kbps		**7.0**	
Bluetooth-LE_2Mbps		**7.0**	

Note(s):

1. This device uses an independent fixed level power reduction mechanism for only Normal WLAN mode operations during RCV operated Detailed descriptions of the power reduction mechanism are included in the operational description.
2. The per stream (antenna) power is the same for SISO and MIMO, but the total MIMO power is 3 dB higher than the individual stream (antenna) power. But this should not impact the simultaneous evaluation because it is already adding the SAR values, per stream (antenna)
3. WLAN mode supports RSDB operation. Detail of RSDB operation scenario is mentioned in Sec.13.

6.4. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 7	Frequency range: 2500 - 2570 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850/ 2510	20825/ 2507.5	20800/ 2505	20775/ 2502.5		
	Mid	21100/ 2535	21100/ 2535	21100/ 2535	21100/ 2535		
	High	21350/ 2560	21375/ 2562.5	21400/ 2565	21425/ 2567.5		
	Band 12	Frequency range: 699 – 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 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		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

Band 14	Frequency range: 788 - 798 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low				23305/ 790.5		
Mid			23330/ 793	23330/ 793		
High				23355/ 795.5		

Band 17	Frequency range: 704 - 716 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low			23780/ 709	23755/ 706.5		
Mid			23790/ 710	23790/ 710		
High			23800/ 711	23825/ 713.5		

Band 25	Frequency range: 1850 - 1915 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7
Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5
High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3

Band 26	Frequency range: 814 - 849 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7
Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5
High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3

Band 30	Frequency range: 2305 - 2315 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low				27685/ 2307.5		
Mid			27710/ 2310	27710/ 2310		
High				27735/ 2312.5		

Band 38	Frequency range: 2570 - 2620 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low	37850/ 2580	37825/ 2577.5	37800/ 2575	37775/ 2572.5		
Mid	38000/ 2595	38000/ 2595	38000/ 2595	38000/ 2595		
High	38150/ 2610	38175/ 2612.5	38200/ 2615	38225/ 2617.5		

Band 41	Frequency range: 2496 - 2690 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low	39750 / 2506.0					
Low-Mid	40185 / 2549.5					
Mid	40620 / 2593.0					
Mid-High	41055 / 2636.5					
High	41490 / 2680.0					

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

Band 66	Frequency range: 1710 - 1780 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7
Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745
High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3

Band 71	Frequency range: 663 - 698 MHz					
	Channel Bandwidth					
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low	133222/ 673	133197/ 670.5	133172/ 668	133147/ 665.5		
Mid	133297/ 680.5	133297/ 680.5	133297/ 680.5	133297/ 680.5		
High	133372/ 688	133397/ 690.5	133422/ 693	133447/ 695.5		

LTE transmitter and antenna implementation

Refer to Appendix A.

Maximum power reduction (MPR)

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

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

MPR Built-in by design

The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values.

A-MPR (additional MPR) was disabled during SAR testing

Power reduction

Yes

Spectrum plots for RB configurations

A properly configured base station simulator was used for the SAR and power measurements; therefore, spectrum plots for each RB allocation and offset configuration are not included in the SAR report.

Notes:

1. Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths. When a device supports Overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE devices.
2. LTE Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
3. SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.5. LTE (TDD) Considerations

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

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

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

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

Calculated Duty Cycle

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

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

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

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

6.6. LTE Carrier Aggregation

DL Inter-Band (2CC Max)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-4A (0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 4			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-5A (0)(1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
CA_2A-7A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 7			Yes	Yes	Yes	Yes	
CA_2A-4A (0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 4			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-12A (0)(1)(2)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
CA_2A-13A (0)(1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 2			Yes	Yes			20 MHz
	Band 13				Yes			
CA_2A-14A (0)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 14			Yes	Yes			
CA_2A-30A (0)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 30			Yes	Yes			
CA_2A-66A (0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-71A (0)(1)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 71			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 71			Yes	Yes			
CA_4A-5A (0)(1)	Band 4			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
CA_4A-7A (0)(1)	Band 4			Yes	Yes			30 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 7			Yes	Yes	Yes	Yes	

DL Inter-Band (2CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_4A-12A (0)(1)(2)(3)(4)(5)	Band 4	Yes	Yes	Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4	Yes	Yes	Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 4			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes		20 MHz
	Band 12			Yes				
CA_4A-13A (0)(1)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 4			Yes	Yes			20 MHz
	Band 13				Yes			
CA_4A-30A (0)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 30			Yes	Yes			
CA_4A-71A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_5A-7A (0)(1)	Band 5	Yes	Yes	Yes	Yes			30 MHz
	Band 7				Yes	Yes	Yes	
	Band 5			Yes	Yes			30 MHz
	Band 7				Yes	Yes	Yes	
CA_5A-30A (0)	Band 5			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_5A-66A (0)	Band 5			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_7A-12A (0)	Band 7			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
CA_7A-66A (0)	Band 7			Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_12A-30A (0)	Band 12			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_12A-66A (0)(1)(2)(3)(4)(5)	Band 12			Yes	Yes			20 MHz
	Band 66	Yes	Yes	Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66	Yes	Yes	Yes	Yes	Yes	Yes	
	Band 12		Yes	Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes				20 MHz
	Band 66			Yes	Yes	Yes		
CA_13A-66A (0)	Band 13			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	

DL Inter-Band (2CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_25A-26A (0)(1)(2)	Band 25		Yes	Yes	Yes	Yes	Yes	35 MHz
	Band 26	Yes	Yes	Yes	Yes	Yes		
	Band 25		Yes	Yes	Yes			20 MHz
	Band 26		Yes	Yes	Yes			
	Band 25			Yes	Yes			20 MHz
	Band 26			Yes	Yes			
CA_25A-41A (0)	Band 25			Yes	Yes	Yes	Yes	40 MHz
	Band 41			Yes	Yes	Yes	Yes	
CA_26A-41A (0)	Band 26			Yes	Yes	Yes		35 MHz
	Band 41			Yes	Yes	Yes	Yes	
CA_66A-71A (0)	Band 66			Yes	Yes	Yes	Yes	40 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_5A-25A (0)	Band 5			Yes	Yes			30 MHz
	Band 25			Yes	Yes	Yes	Yes	
CA_12A-25A (0)	Band 12			Yes	Yes			30 MHz
	Band 25			Yes	Yes	Yes	Yes	
CA_14A-30A (0)	Band 14			Yes	Yes			20 MHz
	Band 30			Yes	Yes			
CA_14A-66A (0)	Band 14			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_30A-66A (0)	Band 30			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	

DL Inter-Band (3CC Max)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-2A-4A (0)(1)(2)	Band 2	2A-2A BCS 0						60 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-2A-5A (0)(1)	Band 2	2A-2A BCS 0						50 MHz
	Band 5			Yes	Yes			
CA_2A-2A-12A (0)	Band 2	2A-2A BCS 0						50 MHz
	Band 12			Yes	Yes			
CA_2A-2A-13A (0)	Band 2	2A-2A BCS 0						50 MHz
	Band 13				Yes			
CA_2A-2A-66A (0)	Band 2	2A-2A BCS 0						60 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-2A-71A (0)	Band 2	2A-2A BCS 0						60 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_2A-4A-4A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4	4A-4A BCS 0						
CA_2A-4A-5A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 5			Yes	Yes			
CA_2A-4A-7A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 7			Yes	Yes	Yes	Yes	
CA_2A-4A-12A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
CA_2A-4A-13A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 13				Yes			
CA_2A-4A-30A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 30			Yes	Yes			
CA_2A-4A-71A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 71			Yes	Yes	Yes	Yes	
CA_2A-5A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-5A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 5			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-7A-7A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 7	7A-7A BCS 1						
CA_2A-7C (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 7	7A-7A BCS 1						
CA_2A-12B (0)	Band 2			Yes	Yes	Yes	Yes	35 MHz
	Band 12	12B BCS 0						
CA_2A-7A-12A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
CA_2A-12A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			

DL Inter-Band (3CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-12A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 12			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-12B (0)	Band 2			Yes	Yes	Yes	Yes	35 MHz
	Band 12	12 BCS 0						
CA_2A-13A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 13			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-66-66A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 66	66A-66A BCS 0						
CA_2A-66A-71A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 71			Yes	Yes	Yes	Yes	
CA_2A-66B (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 66	66B BCS 0						
CA_2A-66C (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 66	66C BCS 0						
CA_4A-4A-5A (0)	Band 4	4A-4A BCS 0						50 MHz
	Band 5			Yes	Yes			
CA_4A-4A-7A (0)(1)	Band 4	4A-4A BCS 1						40 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 4	4A-4A BCS 0						60 MHz
	Band 7			Yes	Yes	Yes	Yes	
CA_4A-4A-12A (0)	Band 4	4A-4A BCS 0						50 MHz
	Band 12			Yes	Yes			
CA_4A-4A-13A (0)	Band 4	4A-4A BCS 0						50 MHz
	Band 13				Yes			
CA_4A-4A-71A (0)	Band 4	4A-4A BCS 0						60 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_4A-5B (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 5	5B BCS 0						
CA_4A-5A-30A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 5			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-7A-7A (0)	Band 4			Yes	Yes	Yes	Yes	60 MHz
	Band 7	7A-7A BCS 1						
CA_4A-7C (0)	Band 4			Yes	Yes	Yes	Yes	60 MHz
	Band 7	7A-7A BCS 1						
CA_4A-7A-12A (0)	Band 4			Yes	Yes			40 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			
CA_4A-12A-30A (0)	Band 4			Yes	Yes	Yes	Yes	40 MHz
	Band 12			Yes	Yes			
	Band 30			Yes	Yes			
CA_4A-12B (0)	Band 4			Yes	Yes	Yes	Yes	35 MHz
	Band 12	12B BCS 0						
CA_5A-5A-66A (0)	Band 5	5A-5A BCS 0						40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_5A-66A-66A (0)	Band 5			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						

DL Inter-Band (3CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_5A-66B (0)	Band 5			Yes	Yes			30 MHz
	Band 66	66B BCS 0						
CA_5A-66C (0)	Band 5			Yes	Yes			50 MHz
	Band 66	66C BCS 0						
CA_5B-66A (0)	Band 5	5B BCS 0						40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_7A-12B (0)	Band 7			Yes	Yes	Yes	Yes	35 MHz
	Band 12	12B BCS 0						
CA_12A-66C (0)	Band 12			Yes	Yes			50 MHz
	Band 66	66C BCS 0						
CA_13A-66A-66A (0)	Band 13			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_13A-66B (0)	Band 13			Yes	Yes			30 MHz
	Band 66	66B BCS 0						
CA_13A-66C (0)	Band 13			Yes	Yes			50 MHz
	Band 66	66C BCS 0						
CA_25A-25A-26A (0)	Band 25	25A-25A BCS 1						45 MHz
	Band 26		Yes	Yes				
CA_25A-41C (0)	Band 25			Yes	Yes	Yes	Yes	60 MHz
	Band 41	41C BCS 1						
CA_26A-41C (0)	Band 26			Yes	Yes	Yes		55 MHz
	Band 41	41C BCS 1						
CA_66A-66A-71A (0)	Band 66	66A-66A BCS 0						60 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_12A-66A-66A (0)	Band 12			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_2A-14A-14A (0)	Band 2	2A-2A BCS 0						50 MHz
	Band 14			Yes	Yes			
CA_2A-2A-30A (0)	Band 2	2A-2A BCS 0						50 MHz
	Band 30			Yes	Yes			
CA_2A-14A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 14			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-14A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 14			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-30A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2C-66A (0)	Band 2	2A-2A BCS 0						60 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_5A-30A-66A (0)	Band 5			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_5B-30A (0)	Band 5	5B BCS 0						30 MHz
	Band 30			Yes	Yes			
CA_12A-30A-66A (0)	Band 12			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	

DL Inter-Band (3CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_14A-30A-66A (0)	Band 14			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_14A-66A-66A (0)	Band 14			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_2A-7A-66A (0)	Band 2			Yes	Yes	Yes	Yes	60 MHz
	Band 7			Yes	Yes	Yes	Yes	
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-2A-14A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 2			Yes	Yes	Yes	Yes	
	Band 14			Yes	Yes			
CA_2A-2A-30A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 2			Yes	Yes	Yes	Yes	
	Band 30			Yes	Yes			
CA_2A-14A-30A (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 14			Yes	Yes			
	Band 30			Yes	Yes			
CA_2A-14A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 14			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_2A-30A-66A (0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_5A-30A-66A (0)	Band 5			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_7A-2A-66A (0)	Band 7			Yes	Yes	Yes	Yes	60 MHz
	Band 2			Yes	Yes	Yes	Yes	
	Band 66			Yes	Yes	Yes	Yes	
CA_12A-30A-66A (0)	Band 12			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_14A-30A-66A (0)	Band 14			Yes	Yes			40 MHz
	Band 30			Yes	Yes			
	Band 66			Yes	Yes	Yes	Yes	
CA_14A-66A-66A (0)	Band 14			Yes	Yes			50 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 66			Yes	Yes	Yes	Yes	
CA_25A-25A-25A (0)	Band 25			Yes	Yes	Yes	Yes	60 MHz
	Band 25			Yes	Yes	Yes	Yes	
	Band 25			Yes	Yes	Yes	Yes	
CA_2C-66A (0)	Band 2	2C BCS 0						60 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_5B-30A (0)	Band 5	5B BCS 0						30 MHz
	Band 30			Yes	Yes			

DL Inter-Band (3CC Max) (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_25A-41C (0)	Band 25			Yes	Yes	Yes	Yes	60 MHz
	Band 41	41C BCS 1						
CA_26A-41C (0)	Band 26			Yes	Yes	Yes		55 MHz
	Band 41	41C BCS 1						
CA_30A-66A-66A (0)	Band 30			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_66C-71A (0)	Band 66	66C BCS 0						60 MHz
	Band 71			Yes	Yes	Yes	Yes	
CA_2A-5B (0)	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 5	5B BCS 0						

DL Inter-Band (Non-Contiguous)

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_2A-2A(0)	Band 2	5,10,15,20	5,10,15,20				40 MHz
CA_4A-4A(0),(1)	Band 4	5,10,15,20	5,10,15,20				40 MHz
	Band 4	5,10	5,10				20 MHz
CA_5A-5A(0),(1)	Band 5	5,10	5,10				20 MHz
	Band 5	3	5				8 MHz
CA_66A-66A(0)	Band 66	5,10,15,20	5,10,15,20				40 MHz
CA_25A-25A(0)(1)	Band 25	5,10	5,10				20 MHz
	Band 25	5,10,15,20	5,10,15,20				40 MHz
CA_41A-41(0),(1)	Band 41	10,15,20	10,15,20				40 MHz
	Band 41	5,10,15,20	5,10,15,20				
CA_25A-25(0),(1)	Band 25	5,10	5,10				20 MHz
	Band 25	5,10,15,20	5,10,15,20				40 MHz
7A-7A(0)(1)(2)(3)	Band 7	5	15				40 MHz
		10	10,15				
		15	15,20				
		20	20				
	Band 7	5,10,15,20	5,10,15,20				40 MHz
	Band 7	10,15,20	5,10				30 MHz
	Band 7	10,15,20	10,15,20				40 MHz
CA_41A-41C (0)	Band 41	5,10,15,20	See CA_41C (1)				60 MHz
		See CA_41C (1)	5,10,15,20				
CA_66A-66C (0)	Band 66	5,10,15,20	See 66C BCS (0)				60 MHz
		See 66C BCS (0)	5,10,15,20				

DL Intra-Band (Contiguous)

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_5B (0)(1)	Band 5	5,10	10				20 MHz
		10	5				
		3	5				8 MHz
		5	3				
CA_12B (0)	Band 12	5	5,10				15 MHz
CA_41C (0),(1),(2),(3)	Band 41	10	20				40 MHz
		15	15,20				
		20	10,15,20				
	Band 41	5,10	20				40 MHz
		15	15,20				
		20	5,10,15,20				
	Band 41	10	15,20				40 MHz
		15	10,15,20				
		20	10,15,20				
	Band 41	10	20				40 MHz
		20	20				
CA_66B(0)	Band 66	5	5,10,15				20 MHz
		10	5,10				
		15	5				
CA_66C(0)	Band 66	5	20				40 MHz
		10	15,20				
		15	10,15,20				
		20	5,10,15,20				
CA_2C (0)	Band 2	5	20				40 MHz
		10	15,20				
		15	10,15,20				
		20	5,10,15,20				
CA_41D (0)	Band 41	10	20	15			60 MHz
		10	15,20	20			
		15	20	10,15			
		15	10,15,20	20			
		20	15,20	10			
		20	10,15,20	15,20			

UL Intra-Band Contiguous

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_41C (0),(1),(2),(3)	Band 41	10	20				40 MHz
		15	15,20				
		20	10,15,20				
	Band 41	5,10	20				40 MHz
		15	15,20				
		20	5,10,15,20				
	Band 41	10	15,20				40 MHz
		15	10,15,20				
		20	10,15,20				
	Band 41	10	20				40 MHz
		20	20				

Note(s):

1. For supported channels, please refer to §6.4.

6.7. Dynamic Antenna tuner testing – For PAG REUSE

This Device applies Qualcomm chipset solution's Dynamic Antenna tuning technology to some 3G / 4G bands. (CDMA BC0/BC1/BC10 and WCDMA BII/BIV/BV and LTE B2/B4/B5/B12/B13/B14/B17/B25/B26/B66/B71) Dynamic Antenna tuning was tested in accordance with the April 2019 FCC TCBC Workshop notes.

Per 2019, April TCBC Workshop document

- SAR is measured according to required procedures with dynamic tuner active allowing device to automatically tune. Auto-tune state determined by device during normal SAR measurement verified and listed alongside the reported SAR results.
- Additional single point SAR (time-sweep) measurements were evaluated for other tuner states to determine that the other configurations would result in equivalent or lower SAR values.
- Single point measurements performed at the peak SAR location of the highest measured SAR configuration for each combination. SAR probe remains stationary throughout the entire series of single point measurements for each combination.
- Total number tuner states divided evenly among each supported band / air interface and exposure condition combination. If any single point SAR measurement result is > 1.2 W/kg for a band / exposure condition combination set, all supported tuner states are evaluated with single point SAR measurements for the combination. Tuner state is established remotely so that the device is not moved for the entire series of single point SAR measurements for the tuner states in each combination.

The following test procedures were followed to demonstrate that the SAR results in Section 9 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuning active to allow the device to automatically to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other impedance matching.

To evaluate all the tuner states, the 80 tuner states were divided among the aggregate band, mode and exposure combinations so that each combination was evaluated for at least 20 tuner states and also so that at least 3 single point SAR measurements were made for every available tuner state. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band / mode / exposure condition, point SAR measurements were made for all 80 states.

This Device supports LTE capabilities with overlapping transmission frequency ranges.

LTE Band 2 (1850 MHz – 1910 MHz) is covered by LTE Band 25 (1850 MHz – 1915 MHz)
LTE Band 4 (1710 MHz – 1755 MHz) is covered by LTE Band 66 (1710 MHz – 1780 MHz)
LTE Band 5 (824 MHz – 849 MHz) is covered by LTE Band 26 (814 MHz – 849 MHz)
LTE Band 17 (704 MHz – 716 MHz) is covered by LTE Band 12 (699 MHz – 716 MHz)

Each both LTE bands share the same transmission path and signal characteristics. The Evaluation of Dynamic antenna tuner was only evaluated for the band with the larger transmission frequency range. We evaluated the dynamic antenna tuning of the body SAR conditions at the higher of the two cases, Hotspot SAR and Body worn SAR. The operational description contains more information about the design and implementation of the dynamic antenna tuning.

Head SAR data

CDMA BC0		CDMA BC1		CDMA BC10		WCDMA Band II	
EVDO		1xRTT		EVDO		RMC	
Test position	Right Touch	Test position	Left Touch	Test position	Right Touch	Test position	Left Touch
Frequency (MHz)	836.5	Frequency (MHz)	1880	Frequency (MHz)	820.5	Frequency (MHz)	1880
Channel	384	Channel	600	Channel	580	Channel	9400
Measured 1g SAR (W/kg)	0.155	Measured 1g SAR (W/kg)	0.121	Measured 1g SAR (W/kg)	0.264	Measured 1g SAR (W/kg)	0.107
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 1)	0.163	Auto-tune (State 27)	0.154	Auto-tune (State 5)	0.352	Auto-tune (State 31)	0.154
State		State		State		State	
0	0.159	1	0.143	1	0.329	3	0.116
1	0.160	9	0.132	5	0.352	6	0.113
9	0.124	11	0.130	11	0.281	9	0.108
14	0.040	15	0.078	13	0.188	13	0.086
16	0.148	18	0.144	16	0.211	18	0.112
20	0.152	25	0.148	20	0.250	22	0.117
25	0.122	27	0.154	26	0.195	25	0.122
30	0.033	30	0.148	28	0.097	30	0.150
32	0.122	34	0.005	32	0.246	34	0.004
36	0.094	36	0.005	36	0.186	38	0.003
40	0.075	38	0.004	40	0.153	42	0.003
44	0.028	40	0.005	44	0.062	48	0.006
50	0.143	48	0.008	51	0.291	50	0.007
57	0.104	52	0.010	55	0.275	55	0.005
59	0.072	55	0.009	59	0.193	59	0.003
61	0.039	59	0.004	63	0.069	64	0.110
65	0.127	67	0.007	65	0.202	67	0.004
69	0.130	70	0.007	69	0.202	71	0.007
74	0.116	75	0.006	74	0.240	74	0.002
76	0.161	77	0.154	78	0.250	79	0.007

Head SAR data_(Continued)

WCDMA Band IV		WCDMA Band V		LTE Band 71		LTE Band 12 (17)	
RMC		RMC		QPSK, 20MHz BW 1RB, 49RB Offset		QPSK, 10MHz BW 1RB, 49RB Offset	
Test position	Left Touch	Test position	Right Touch	Test position	Right Touch	Test position	Right Touch
Frequency (MHz)	1732.6	Frequency (MHz)	836.6	Frequency (MHz)	680.5	Frequency (MHz)	707.5
Channel	1413	Channel	4183	Channel	133297	Channel	23095
Measured 1g SAR (W/kg)	0.156	Measured 1g SAR (W/kg)	0.230	Measured 1g SAR (W/kg)	0.073	Measured 1g SAR (W/kg)	0.162
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 30)	0.186	Auto-tune (State 1)	0.247	Auto-tune (State 42)	0.089	Auto-tune (State 4)	0.193
State		State		State		State	
1	0.099	2	0.241	1	0.015	2	0.183
4	0.095	5	0.233	8	0.018	5	0.193
7	0.096	8	0.210	13	0.001	8	0.191
11	0.091	12	0.109	16	0.007	12	0.103
16	0.087	17	0.183	18	0.008	17	0.058
20	0.104	21	0.200	24	0.003	21	0.085
23	0.119	24	0.188	26	0.001	24	0.077
28	0.181	29	0.069	32	0.040	29	0.010
32	0.005	33	0.163	34	0.056	33	0.150
36	0.005	37	0.122	38	0.075	37	0.110
40	0.004	41	0.084	42	0.089	41	0.075
44	0.000	45	0.032	46	0.017	45	0.031
48	0.008	49	0.220	48	0.011	49	0.104
53	0.006	54	0.187	52	0.019	54	0.138
57	0.004	58	0.137	57	0.007	58	0.113
61	0.001	62	0.060	58	0.005	62	0.028
65	0.081	66	0.165	67	0.012	66	0.148
69	0.088	70	0.167	68	0.016	70	0.148
72	0.091	73	0.183	75	0.013	73	0.059
77	0.091	78	0.168	77	0.007	78	0.146

Head SAR data_(Continued)

LTE Band 13		LTE Band 14		LTE Band 25(2)		LTE Band 26(5)		LTE Band 66(4)	
QPSK, 10MHz BW 1RB, 0RB Offset		QPSK, 10MHz BW 1RB, 0RB Offset		QPSK, 20MHz BW 1RB, 0RB Offset		QPSK, 15MHz BW 1RB, 0RB Offset		QPSK, 20MHz BW 1RB, 0RB Offset	
Test position	Right Touch	Test position	Right Touch	Test position	Left Touch	Test position	Right Touch	Test position	Left Touch
Frequency (MHz)	782	Frequency (MHz)	793	Frequency (MHz)	1882.5	Frequency (MHz)	831.5	Frequency (MHz)	1770
Channel	23230	Channel	23330	Channel	26365	Channel	26865	Channel	132572
Measured 1g SAR (W/kg)	0.243	Measured 1g SAR (W/kg)	0.217	Measured 1g SAR (W/kg)	0.106	Measured 1g SAR (W/kg)	0.263	Measured 1g SAR (W/kg)	0.16
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 8)	0.268	Auto-tune (State 1)	0.272	Auto-tune (State 31)	0.156	Auto-tune (State 5)	0.270	Auto-tune (State 31)	0.208
State		State		State		State		State	
4	0.266	0	0.266	4	0.116	3	0.267	0	0.120
7	0.265	5	0.254	7	0.111	6	0.267	3	0.117
10	0.247	13	0.110	10	0.105	9	0.253	6	0.116
14	0.122	15	0.058	14	0.084	12	0.172	10	0.118
19	0.145	16	0.169	19	0.113	16	0.146	15	0.095
23	0.153	20	0.207	23	0.120	21	0.180	19	0.120
26	0.114	25	0.183	26	0.128	25	0.158	22	0.129
31	0.012	28	0.082	31	0.156	28	0.075	27	0.167
35	0.134	32	0.170	35	0.004	33	0.176	31	0.207
39	0.101	36	0.123	39	0.003	37	0.128	35	0.008
43	0.057	40	0.100	43	0.002	41	0.089	39	0.006
47	0.016	44	0.037	47	0.000	45	0.035	43	0.005
51	0.212	50	0.225	51	0.006	49	0.216	47	0.000
56	0.207	55	0.201	56	0.006	53	0.218	52	0.011
60	0.133	59	0.138	60	0.002	58	0.176	56	0.009
64	0.240	63	0.043	64	0.109	62	0.081	60	0.004
68	0.238	65	0.167	68	0.118	66	0.175	64	0.107
72	0.240	70	0.169	72	0.114	70	0.175	68	0.116
75	0.196	74	0.171	75	0.004	74	0.175	71	0.014
79	0.200	76	0.265	79	0.007	77	0.149	76	0.120

Body SAR data

CDMA BC0		CDMA BC0		CDMA BC1		CDMA BC10	
EVDO		1xRTT		1xRTT		EVDO	
Test position	Rear	Test position	Rear	Test position	Rear	Test position	Rear
Specing	10mm	Specing	15mm	Specing	15mm	Specing	10mm
Frequency (MHz)	836.5	Frequency (MHz)	836.5	Frequency (MHz)	1880	Frequency (MHz)	820.5
Channel	384	Channel	384	Channel	600	Channel	580
Measured 1g SAR (W/kg)	0.309	Measured 1g SAR (W/kg)	0.231	Measured 1g SAR (W/kg)	0.588	Measured 1g SAR (W/kg)	0.373
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 1)	0.447	Auto-tune (State 1)	0.330	Auto-tune (State 31)	0.839	Auto-tune (State 8)	0.604
State		State		State		State	
0	0.443	1	0.330	1	0.782	0	0.510
7	0.380	8	0.276	5	0.775	8	0.604
12	0.175	13	0.109	11	0.718	10	0.550
13	0.140	14	0.083	13	0.652	14	0.249
17	0.323	18	0.274	16	0.671	17	0.286
23	0.314	24	0.248	20	0.749	24	0.337
26	0.226	27	0.151	26	0.829	26	0.137
29	0.100	30	0.061	28	0.839	29	0.105
33	0.331	34	0.191	32	0.048	33	0.423
37	0.254	38	0.159	36	0.051	35	0.341
41	0.177	42	0.099	40	0.050	37	0.327
45	0.068	46	0.034	44	0.023	39	0.286
47	0.035	48	0.291	51	0.071	47	0.056
51	0.359	52	0.264	55	0.059	51	0.493
56	0.314	57	0.204	59	0.042	54	0.489
60	0.143	61	0.089	63	0.011	58	0.424
66	0.323	67	0.289	65	0.629	66	0.421
67	0.373	68	0.330	69	0.680	69	0.287
74	0.323	75	0.289	74	0.036	74	0.426
76	0.420	77	0.254	78	0.056	76	0.519

Body SAR data_(Continued)

CDMA BC10		WCDMA Band II		WCDMA Band IV		WCDMA Band IV	
1xRTT		RMC		RMC		RMC	
Test position	Rear	Test position	Rear	Test position	Edge 3	Test position	Rear
Specing	15mm	Specing	15mm	Specing	10mm	Specing	15mm
Frequency (MHz)	820.5	Frequency (MHz)	1880	Frequency (MHz)	1732.6	Frequency (MHz)	1732.6
Channel	580	Channel	9400	Channel	1413	Channel	1413
Measured 1g SAR (W/kg)	0.433	Measured 1g SAR (W/kg)	0.61	Measured 1g SAR (W/kg)	0.842	Measured 1g SAR (W/kg)	0.654
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 2)	0.538	Auto-tune (State 31)	0.696	Auto-tune (State 30)	1.198	Auto-tune (State 30)	0.949
State		State		State		State	
1	0.474	1	0.599	0	0.609	4	0.485
9	0.536	4	0.602	3	0.643	7	0.495
11	0.470	7	0.593	6	0.654	10	0.511
15	0.167	11	0.565	10	0.681	14	0.543
18	0.320	16	0.516	15	0.759	19	0.492
25	0.279	20	0.579	19	0.650	23	0.549
27	0.185	23	0.602	22	0.704	26	0.660
30	0.067	28	0.695	27	0.967	31	0.782
34	0.306	32	0.036	31	1.005	35	0.028
36	0.259	36	0.038	35	0.042	39	0.022
38	0.261	40	0.038	39	0.034	43	0.011
40	0.241	44	0.016	43	0.021	47	0.002
48	0.410	48	0.052	47	0.006	51	0.042
52	0.443	53	0.053	52	0.059	56	0.034
55	0.440	57	0.044	56	0.053	60	0.011
59	0.349	61	0.016	60	0.023	64	0.433
67	0.405	65	0.477	64	0.573	68	0.453
70	0.377	69	0.514	68	0.599	72	0.444
75	0.411	72	0.575	71	0.076	75	0.043
77	0.413	79	0.059	76	0.604	79	0.053

Body SAR data_(Continued)

WCDMA Band V		LTE Band 71		LTE Band 12 (17)		LTE Band 13	
RMC		QPSK, 20MHz BW 1RB, 49RB Offset		QPSK, 10MHz BW 1RB, 49RB Offset Tune code 2 변경		QPSK, 10MHz BW 1RB, 0RB Offset	
Test position	Rear	Test position	Rear	Test position	Rear	Test position	Rear
Specing	15mm	Specing	10mm	Specing	10mm	Specing	10mm
Frequency (MHz)	836.6	Frequency (MHz)	680.5	Frequency (MHz)	707.5	Frequency (MHz)	782
Channel	4183	Channel	133297	Channel	23095	Channel	23230
Measured 1g SAR (W/kg)	0.682	Measured 1g SAR (W/kg)	0.201	Measured 1g SAR (W/kg)	0.32	Measured 1g SAR (W/kg)	0.504
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 1)	0.923	Auto-tune (State 42)	0.306	Auto-tune (State 8)	0.484	Auto-tune (State 8)	0.722
State		State		State		State	
2	0.923	0	0.067	3	0.447	1	0.635
5	0.899	1	0.068	6	0.483	4	0.716
8	0.843	9	0.047	9	0.480	7	0.722
12	0.437	14	0.004	13	0.191	11	0.579
17	0.660	16	0.028	18	0.225	16	0.308
21	0.727	20	0.029	22	0.213	20	0.404
24	0.687	25	0.017	25	0.153	23	0.406
29	0.242	30	0.001	30	0.020	28	0.139
33	0.682	32	0.142	34	0.300	32	0.500
37	0.527	36	0.223	38	0.254	36	0.372
41	0.369	40	0.274	42	0.161	40	0.300
45	0.147	44	0.155	46	0.062	44	0.120
49	0.815	50	0.070	50	0.343	48	0.539
54	0.726	57	0.028	55	0.361	53	0.594
58	0.539	59	0.012	59	0.218	57	0.546
62	0.217	61	0.004	63	0.043	61	0.274
66	0.663	65	0.027	67	0.264	65	0.307
70	0.669	69	0.028	71	0.268	69	0.310
73	0.650	74	0.141	74	0.037	72	0.639
78	0.670	76	0.068	79	0.262	77	0.311

Body SAR data_(Continued)

LTE Band 14		LTE Band 25(2)		LTE Band 25(2)		LTE Band 26(5)		LTE Band 66(4)	
QPSK, 10MHz BW 1RB, 0RB Offset		QPSK, 20MHz BW 1RB, 0RB Offset		QPSK, 20MHz BW 1RB, 0RB Offset		QPSK, 15MHz BW 1RB, 0RB Offset		QPSK, 20MHz BW 1RB, 0RB Offset	
Test position	Rear	Test position	Edge 3	Test position	Rear	Test position	Rear	Test position	Rear
Specing	10mm	Specing	10mm	Specing	15mm	Specing	10mm	Specing	15mm
Frequency (MHz)	793	Frequency (MHz)	1882.5	Frequency (MHz)	1882.5	Frequency (MHz)	831.5	Frequency (MHz)	1745
Channel	23330	Channel	26365	Channel	26365	Channel	26865	Channel	132322
Measured 1g SAR (W/kg)	0.537	Measured 1g SAR (W/kg)	0.923	Measured 1g SAR (W/kg)	0.560	Measured 1g SAR (W/kg)	0.633	Measured 1g SAR (W/kg)	0.837
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 1)	0.754	Auto-tune (State 31)	1.115	Auto-tune (State 31)	0.675	Auto-tune (State 5)	0.926	Auto-tune (State 28)	1.036
State		State		State		State		State	
0	0.752	1	0.719	0	0.602	4	0.926	2	0.503
1	0.754	4	0.731	3	0.609	7	0.913	5	0.519
9	0.637	7	0.737	6	0.598	10	0.801	8	0.491
14	0.231	11	0.734	10	0.587	14	0.364	12	0.483
16	0.494	16	0.590	15	0.444	19	0.603	17	0.437
20	0.597	20	0.688	19	0.585	23	0.563	21	0.520
25	0.580	23	0.735	22	0.606	26	0.421	24	0.551
30	0.119	28	0.981	27	0.675	31	0.084	29	0.907
32	0.523	32	0.038	31	0.673	34	0.544	33	0.044
36	0.394	36	0.040	35	0.042	39	0.441	37	0.036
40	0.315	40	0.040	39	0.035	43	0.249	41	0.015
44	0.120	44	0.017	43	0.025	47	0.081	45	0.017
50	0.657	48	0.056	47	0.006	51	0.782	49	0.063
57	0.524	53	0.055	52	0.056	56	0.743	54	0.045
59	0.387	57	0.046	56	0.054	60	0.437	58	0.034
61	0.239	61	0.019	60	0.024	64	0.849	62	0.013
65	0.498	65	0.564	64	0.568	68	0.853	66	0.030
69	0.509	69	0.601	68	0.611	72	0.838	70	0.044
74	0.521	72	0.693	71	0.063	75	0.755	73	0.408
76	0.751	79	0.064	76	0.615	79	0.761	78	0.045

Body SAR : single point SAR > 1.2 W/kg

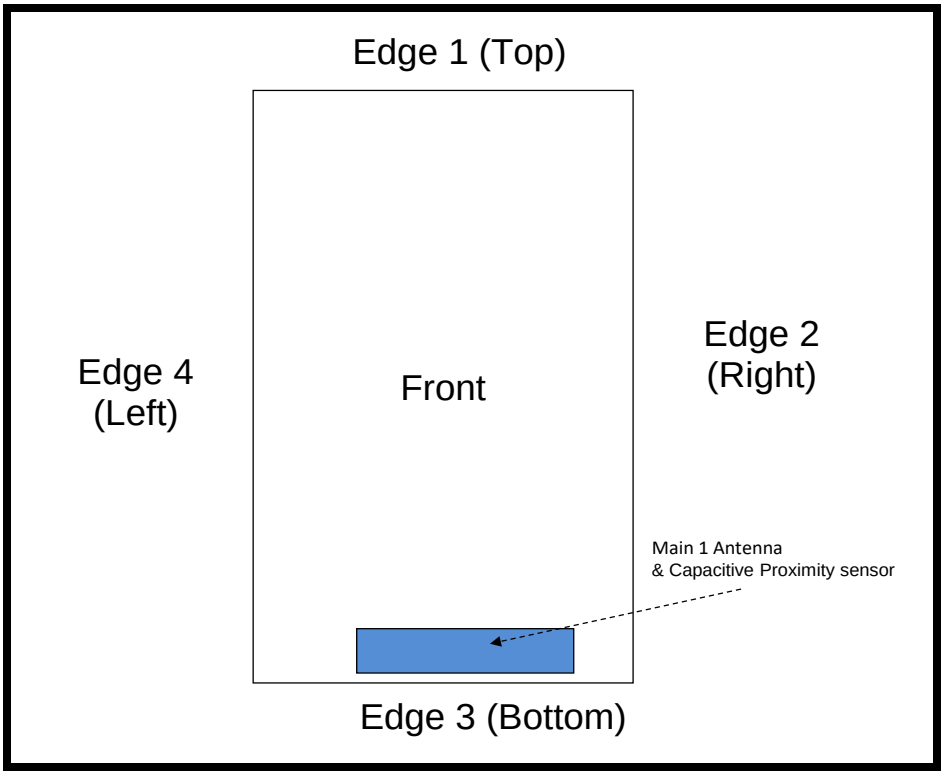
CDMA BC1		WCDMA Band II		LTE Band 66(4)	
EVDO		RMC		QPSK, 20MHz BW 50RB, 0RB Offset	
Test position	Edge 3	Test position	Edge 3	Test position	Edge 3
Specing	10mm	Specing	10mm	Specing	10mm
Frequency (MHz)	1908.75	Frequency (MHz)	1880	Frequency (MHz)	1770
Channel	1175	Channel	9400	Channel	132572
Measured 1g SAR (W/kg)	1.090	Measured 1g SAR (W/kg)	0.915	Measured 1g SAR (W/kg)	0.979
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 31)	1.467	Auto-tune (State 31)	1.224	Auto-tune (State 30)	1.396
State		State		State	
0	0.987	0	0.824	0	0.732
1	0.995	1	0.829	1	0.727
2	1.002	2	0.842	2	0.744
3	1.009	3	0.843	3	0.744
4	1.007	4	0.843	4	0.745
5	1.008	5	0.845	5	0.740
6	1.004	6	0.844	6	0.738
7	1.005	7	0.845	7	0.736
8	1.001	8	0.841	8	0.741
9	1.003	9	0.841	9	0.747
10	0.997	10	0.839	10	0.749
11	0.988	11	0.836	11	0.761
12	0.977	12	0.826	12	0.764
13	0.967	13	0.816	13	0.780
14	0.936	14	0.794	14	0.788
15	0.886	15	0.755	15	0.761
16	0.817	16	0.688	16	0.617
17	0.832	17	0.706	17	0.601
18	0.916	18	0.776	18	0.728
19	0.932	19	0.790	19	0.703
20	0.938	20	0.795	20	0.753
21	0.952	21	0.803	21	0.720

22	0.979	22	0.831	22	0.799
23	0.994	23	0.844	23	0.821
24	0.985	24	0.838	24	0.824
25	1.046	25	0.891	25	0.856
26	1.101	26	0.942	26	0.949
27	1.172	27	1.012	27	1.078
28	1.277	28	1.104	28	1.242
29	1.345	29	1.168	29	1.352
30	1.415	30	1.224	30	1.393
31	1.463	31	1.224	31	1.326
32	0.045	32	0.044	32	0.061
33	0.054	33	0.051	33	0.065
34	0.053	34	0.048	34	0.056
35	0.051	35	0.046	35	0.105
36	0.050	36	0.045	36	0.051
37	0.050	37	0.045	37	0.051
38	0.044	38	0.041	38	0.046
39	0.042	39	0.038	39	0.042
40	0.050	40	0.045	40	0.092
41	0.044	41	0.038	41	0.042
42	0.040	42	0.034	42	0.034
43	0.033	43	0.028	43	0.028
44	0.023	44	0.020	44	0.021
45	0.017	45	0.015	45	0.016
46	0.012	46	0.011	46	0.027
47	0.007	47	0.006	47	0.011
48	0.065	48	0.063	48	0.083
49	0.076	49	0.071	49	0.090
50	0.074	50	0.067	50	0.078
51	0.070	51	0.064	51	0.145
52	0.068	52	0.063	52	0.071
53	0.069	53	0.062	53	0.077
54	0.063	54	0.056	54	0.061
55	0.060	55	0.053	55	0.060
56	0.068	56	0.061	56	0.064
57	0.059	57	0.052	57	0.058
58	0.054	58	0.047	58	0.048
59	0.044	59	0.038	59	0.049
60	0.033	60	0.028	60	0.029
61	0.026	61	0.022	61	0.044

62	0.018	62	0.016	62	0.017
63	0.012	63	0.010	63	0.012
64	0.931	64	0.765	64	0.660
65	0.791	65	0.648	65	0.560
66	0.040	66	0.035	66	0.081
67	0.058	67	0.051	67	0.121
68	0.992	68	0.814	68	0.677
69	0.838	69	0.692	69	0.618
70	0.054	70	0.050	70	0.063
71	0.077	71	0.071	71	0.087
72	0.968	72	0.787	72	0.663
73	0.776	73	0.644	73	1.121
74	0.033	74	0.033	74	0.092
75	0.051	75	0.048	75	0.048
76	1.008	76	0.816	76	1.384
77	0.843	77	0.696	77	1.207
78	0.054	78	0.050	78	0.123
79	0.078	79	0.071	79	0.100

6.8. Proximity Sensor feature

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

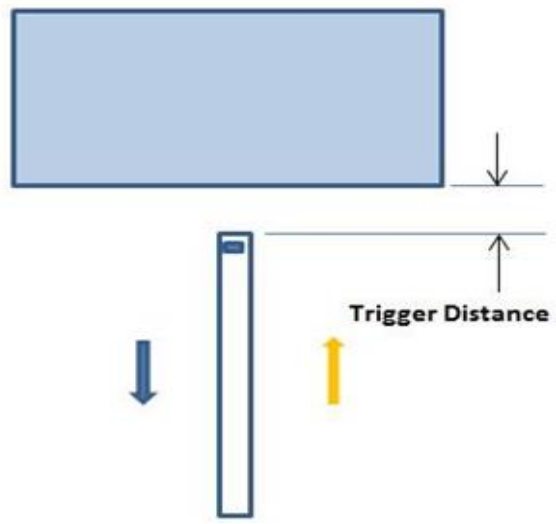


6.8.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

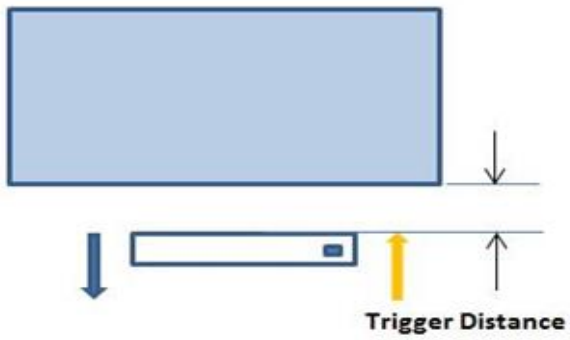
Rear, Front and Edge 3 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger distance for resuming full power.

The DUT featured a visual indicator on its display that showed the status of the proximity sensor (Triggered or not triggered). This was used to determine the status of the sensor during the proximity sensor assessment as monitoring the output power directly was not practical without affecting the measurement.

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



Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Edge 3



Proximity Sensor Trigger Distance Assessment
KDB 616217 §6.2, Rear, Front

LEGEND

Direction of DUT travel for determination of power reduction triggering point

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

Summary of Trigger Distances

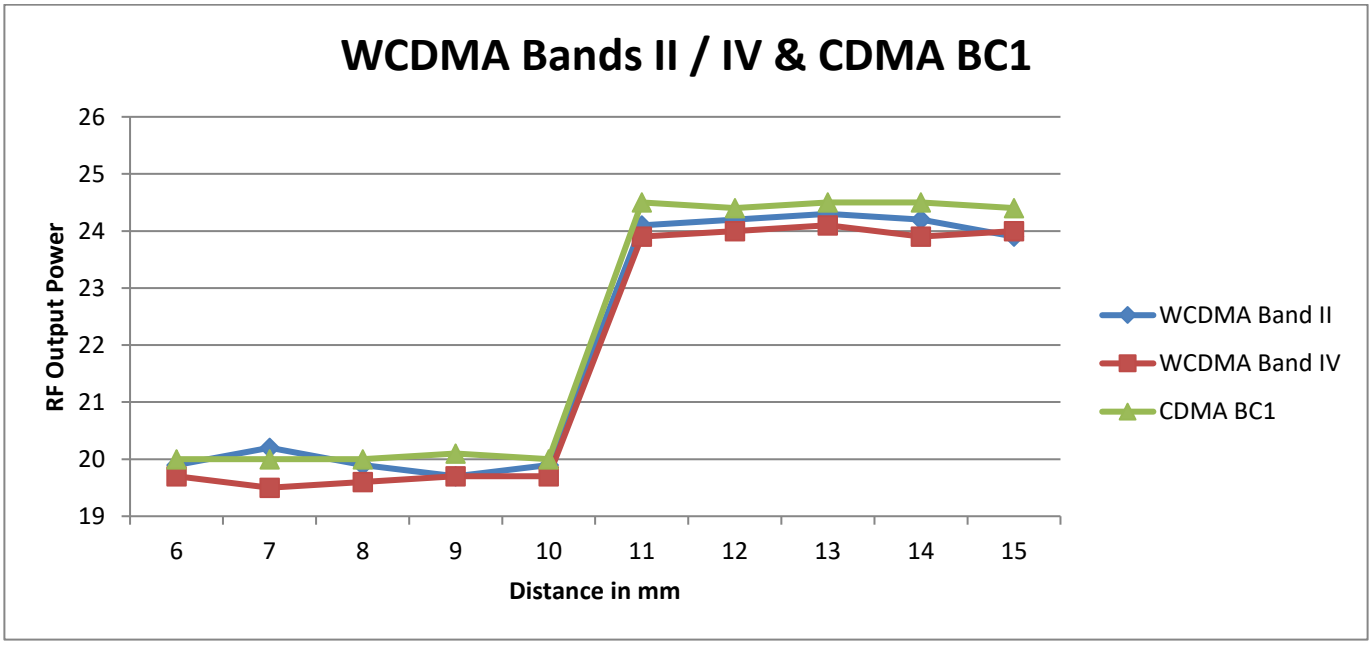
Tissue simulating liquid	Antenna	Trigger distance - Front		Trigger distance - Rear		Trigger distance – Edge 3	
		Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
1750 Head	Main 1 Ant.	8 mm	8 mm	10 mm	10 mm	12 mm	12 mm
1900 Head	Main 1 Ant.	8 mm	8 mm	10 mm	10 mm	12 mm	12 mm

Proximity Sensor Triggering Distance Measurement Results

WCDMA Bands II / IV & CDMA BC1

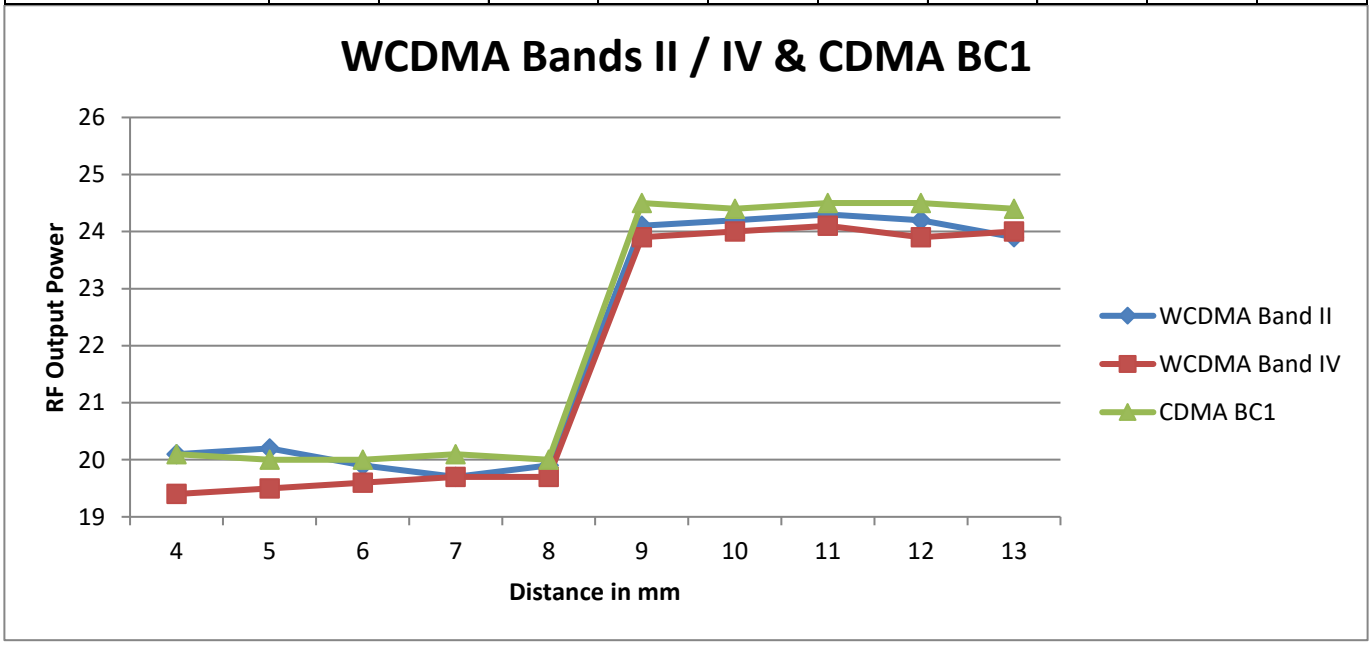
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	6	7	8	9	10	11	12	13	14	15
WCDMA Band II	19.9	20.2	19.9	19.7	19.9	24.1	24.2	24.3	24.2	23.9
WCDMA Band IV	19.7	19.5	19.6	19.7	19.7	23.9	24.0	24.1	23.9	24.0
CDMA BC1	20.0	20.0	20.0	20.1	20.0	24.5	24.4	24.5	24.5	24.4



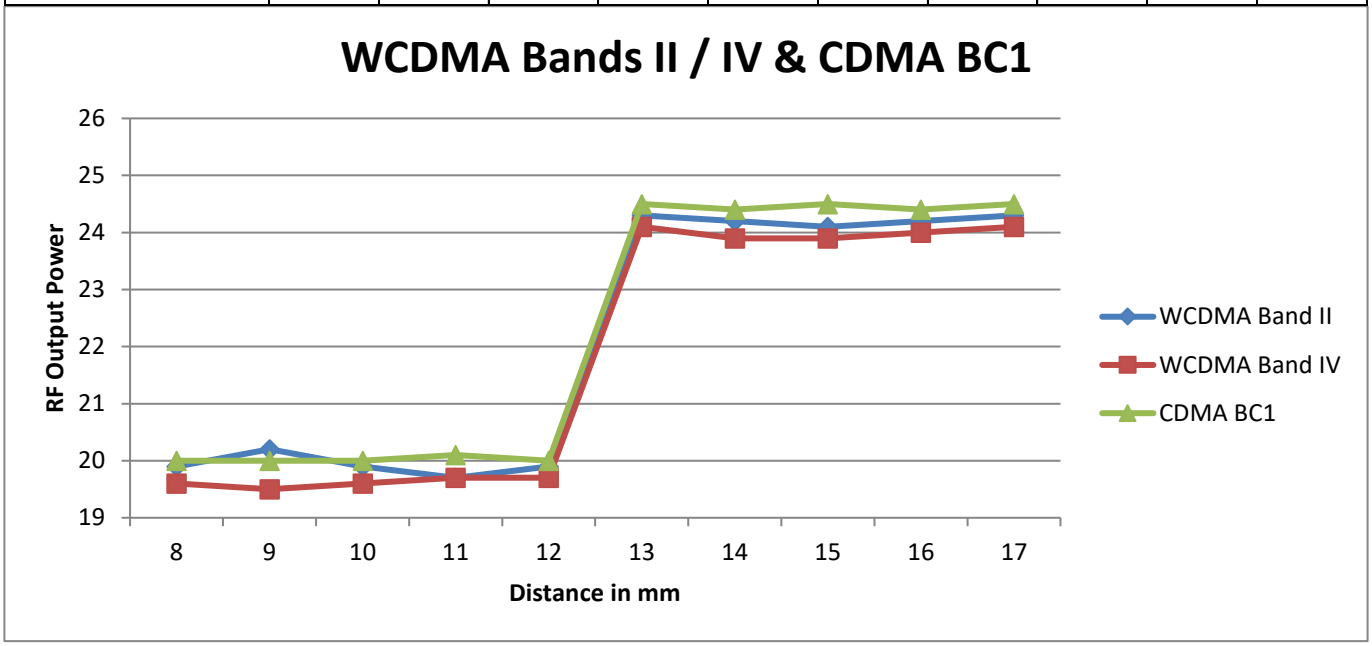
Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	4	5	6	7	8	9	10	11	12	13
WCDMA Band II	20.1	20.2	19.9	19.7	19.9	24.1	24.2	24.3	24.2	23.9
WCDMA Band IV	19.4	19.5	19.6	19.7	19.7	23.9	24.0	24.1	23.9	24.0
CDMA BC1	20.1	20.0	20.0	20.1	20.0	24.5	24.4	24.5	24.5	24.4



Edge 3, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

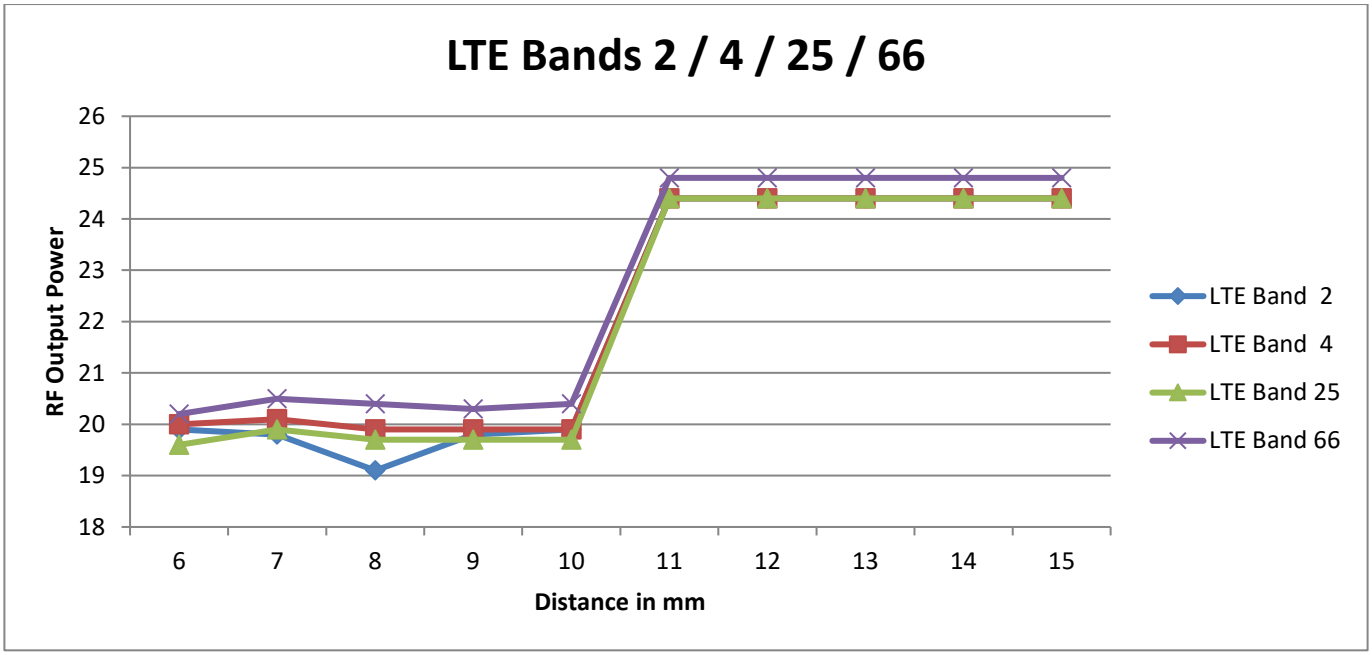
Distance to DUT vs. Output Power in dBm										
Distance (mm)	8	9	10	11	12	13	14	15	16	17
WCDMA Band II	19.9	20.2	19.9	19.7	19.9	24.3	24.2	24.1	24.2	24.3
WCDMA Band IV	19.6	19.5	19.6	19.7	19.7	24.1	23.9	23.9	24.0	24.1
CDMA BC1	20.0	20.0	20.0	20.1	20.0	24.5	24.4	24.5	24.4	24.5



LTE Bands 2 / 4 / 25 / 66

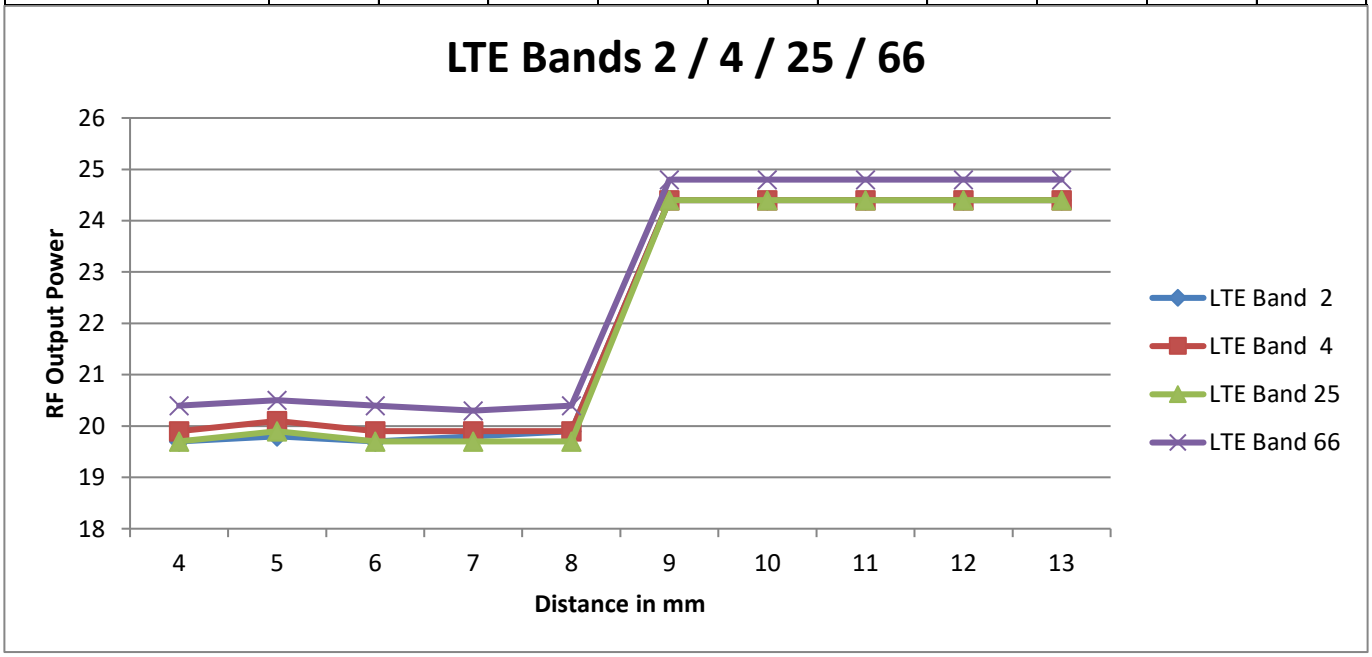
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	6	7	8	9	10	11	12	13	14	15
LTE Band 2	19.9	19.8	19.1	19.8	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 4	20.0	20.1	19.9	19.9	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 25	19.6	19.9	19.7	19.7	19.7	24.4	24.4	24.4	24.4	24.4
LTE Band 66	20.2	20.5	20.4	20.3	20.4	24.8	24.8	24.8	24.8	24.8



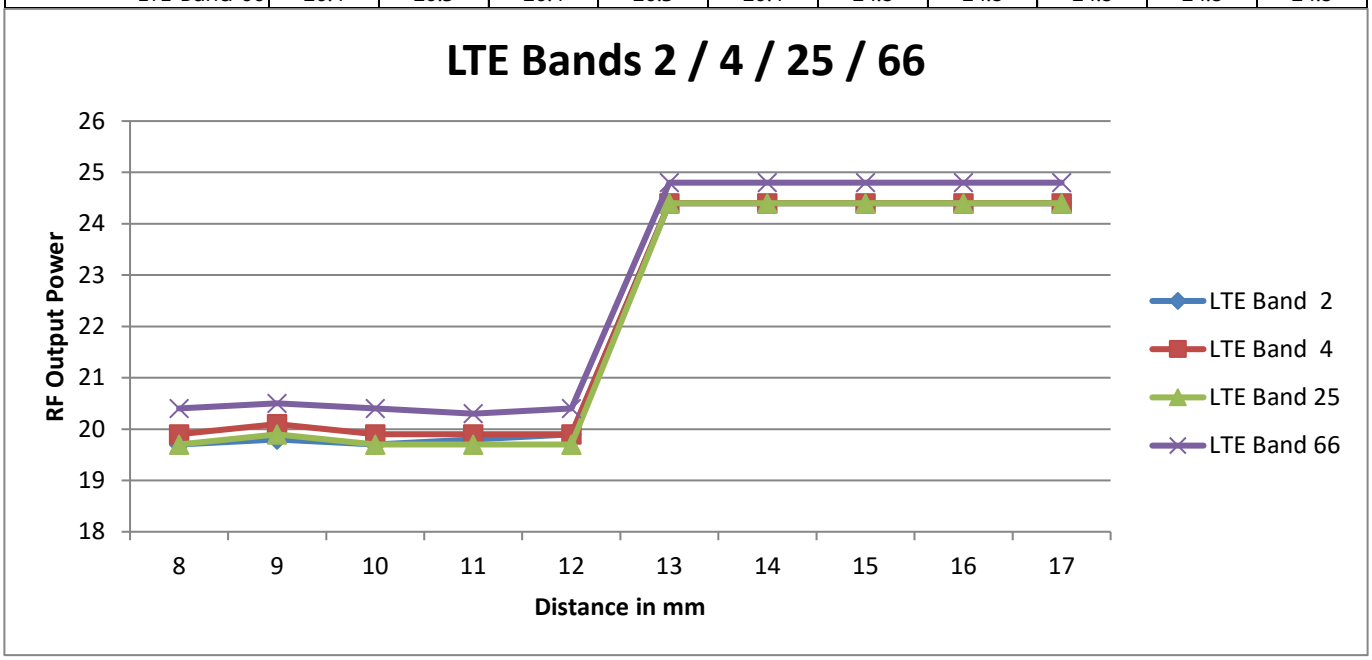
Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	4	5	6	7	8	9	10	11	12	13
LTE Band 2	19.7	19.8	19.7	19.8	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 4	19.9	20.1	19.9	19.9	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 25	19.7	19.9	19.7	19.7	19.7	24.4	24.4	24.4	24.4	24.4
LTE Band 66	20.4	20.5	20.4	20.3	20.4	24.8	24.8	24.8	24.8	24.8



Edge 3, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	8	9	10	11	12	13	14	15	16	17
LTE Band 2	19.7	19.8	19.7	19.8	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 4	19.9	20.1	19.9	19.9	19.9	24.4	24.4	24.4	24.4	24.4
LTE Band 25	19.7	19.9	19.7	19.7	19.7	24.4	24.4	24.4	24.4	24.4
LTE Band 66	20.4	20.5	20.4	20.3	20.4	24.8	24.8	24.8	24.8	24.8



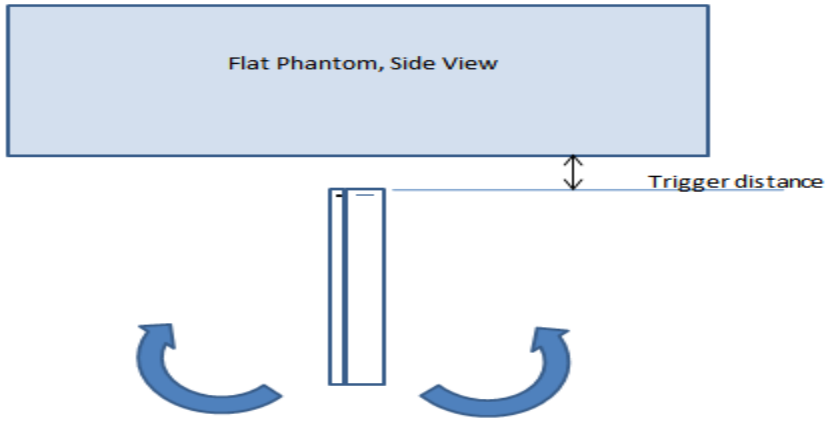
6.8.2. Proximity Sensor Coverage (KDB 616217 §6.3)

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

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

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Edge 3 parallel to the base of the flat phantom for each band.

The EUT was rotated about Edge 3 for angles up to +/- 45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up to +/- 45°.



Proximity sensor tilt angle assessment (Edge 3) KDB 616217 §6.4

Summary of Tablet Tilt Angle Influence to Proximity Sensor Triggering (Edge 3)

Band (MHz)	Minimum trigger distance measured according to KDB 616217 §6.2	Minimum distance at which power reduction was maintained over +/-45°	Power reduction status										
			-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
1750	12 mm	12 mm	On	On	On	On	On	On	On	On	On	On	On
1900	12 mm	12 mm	On	On	On	On	On	On	On	On	On	On	On

6.8.4. Resulting test positions for SAR measurements

Wireless technologies	DUT Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for SAR
WWAN	Rear	10 mm	N/A	N/A	9 mm
	Front	8 mm	N/A	N/A	7 mm
	Edge 3	12 mm	N/A	12 mm	11 mm

7. RF Exposure Conditions (Test Configurations)

Refer to Appendix A for the specific details of the antenna-to-antenna and antenna-to-edge(s) distances.

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	Main 1 Ant. & Main 2 Ant.	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body	Main 1 Ant. & Main 2 Ant.	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	Main 1 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	1
				Edge 2 (Right)	< 25 mm	Yes	
				Edge 3 (Bottom)	< 25 mm	Yes	
				Edge 4 (Left)	< 25 mm	Yes	
	Hotspot	Main 2 Ant.	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	1
				Edge 2 (Right)	> 25 mm	No	1
				Edge 3 (Bottom)	< 25 mm	Yes	
				Edge 4 (Left)	< 25 mm	Yes	
	Product Specific 10-g	Main 1 Ant. & Main 2 Ant.	0 mm	Rear	Refer to notes 2 & 3		
				Front			
				Edge 1 (Top)			
				Edge 2 (Right)			
				Edge 3 (Bottom)			
				Edge 4 (Left)			
WLAN & BT	Head	WiFi/BT Ant.1 & WiFi Ant.2	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body		15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot		10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	< 25 mm	Yes	
				Edge 2 (Right)	> 25 mm	No	1
				Edge 3 (Bottom)	> 25 mm	No	1
				Edge 4 (Left)	< 25 mm	Yes	
	Product Specific 10-g		0 mm	Rear	Refer to notes 2 & 4		
				Front			
				Edge 1 (Top)			
				Edge 2 (Right)			
				Edge 3 (Bottom)			
				Edge 4 (Left)			

Notes:

1. SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
2. For Phablet devices: When hotspot mode applies, Product specific 10-g SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg.
3. For Phablet devices : When hotspot mode applies and power reduction applies to hotspot mode, Product specific 10-g SAR is required for each test position that has and adjusted SAR to maximum power that is > 1.2 W/kg.
4. For Phablet devices: When hotspot mode is not supported, Product specific 10-g SAR is required for all surfaces and edges with an antenna located at ≤ 25mm from that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions.

8. Dielectric Property Measurements & System Check

8.1 Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.
Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head		Body	
	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95
3000	38.5	2.40	52.0	2.73
5000	36.2	4.45	49.3	5.07
5100	36.1	4.55	49.1	5.18
5200	36.0	4.66	49.0	5.30
5300	35.9	4.76	48.9	5.42
5400	35.8	4.86	48.7	5.53
5500	35.6	4.96	48.6	5.65
5600	35.5	5.07	48.5	5.77
5700	35.4	5.17	48.3	5.88
5800	35.3	5.27	48.2	6.00

SAR test were performed in All RF exposure conditions using Head tissue according to TCB workshop note of April. 2019.

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:
SAR 1 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
1-20-2020	Head 835	e'	42.3300	Relative Permittivity (ε_r):	42.33	41.50	2.00	5
		e"	19.5300	Conductivity (σ):	0.91	0.90	0.75	5
	Head 820	e'	42.5100	Relative Permittivity (ε_r):	42.51	41.60	2.18	5
		e"	19.5800	Conductivity (σ):	0.89	0.90	-0.64	5
	Head 850	e'	42.1700	Relative Permittivity (ε_r):	42.17	41.50	1.61	5
		e"	19.5000	Conductivity (σ):	0.92	0.92	0.72	5
2-4-2020	Head 835	e'	42.8300	Relative Permittivity (ε_r):	42.83	41.50	3.20	5
		e"	19.0900	Conductivity (σ):	0.89	0.90	-1.52	5
	Head 820	e'	42.9800	Relative Permittivity (ε_r):	42.98	41.60	3.31	5
		e"	19.2000	Conductivity (σ):	0.88	0.90	-2.57	5
	Head 850	e'	42.6300	Relative Permittivity (ε_r):	42.63	41.50	2.72	5
		e"	18.9400	Conductivity (σ):	0.90	0.92	-2.17	5
2-7-2020	Head 835	e'	40.8600	Relative Permittivity (ε_r):	40.86	41.50	-1.54	5
		e"	19.7600	Conductivity (σ):	0.92	0.90	1.94	5
	Head 820	e'	41.0500	Relative Permittivity (ε_r):	41.05	41.60	-1.33	5
		e"	19.8000	Conductivity (σ):	0.90	0.90	0.48	5
	Head 850	e'	40.6700	Relative Permittivity (ε_r):	40.67	41.50	-2.00	5
		e"	19.7300	Conductivity (σ):	0.93	0.92	1.91	5
2-13-2020	Head 835	e'	41.1300	Relative Permittivity (ε_r):	41.13	41.50	-0.89	5
		e"	20.0800	Conductivity (σ):	0.93	0.90	3.59	5
	Head 820	e'	41.1300	Relative Permittivity (ε_r):	41.13	41.60	-1.14	5
		e"	20.3300	Conductivity (σ):	0.93	0.90	3.17	5
	Head 850	e'	41.1200	Relative Permittivity (ε_r):	41.12	41.50	-0.92	5
		e"	19.8500	Conductivity (σ):	0.94	0.92	2.53	5
2-13-2020	Head 1900	e'	39.6400	Relative Permittivity (ε_r):	39.64	40.00	-0.90	5
		e"	13.7300	Conductivity (σ):	1.45	1.40	3.61	5
	Head 1850	e'	39.6600	Relative Permittivity (ε_r):	39.66	40.00	-0.85	5
		e"	13.7400	Conductivity (σ):	1.41	1.40	0.96	5
	Head 1910	e'	39.6300	Relative Permittivity (ε_r):	39.63	40.00	-0.92	5
		e"	13.7300	Conductivity (σ):	1.46	1.40	4.15	5
2-14-2020	Head 2250	e'	39.6800	Relative Permittivity (ε_r):	39.68	39.56	0.30	5
		e"	13.0300	Conductivity (σ):	1.63	1.62	0.64	5
	Head 2300	e'	39.5700	Relative Permittivity (ε_r):	39.57	39.47	0.25	5
		e"	13.0500	Conductivity (σ):	1.67	1.66	0.31	5
	Head 2350	e'	39.5100	Relative Permittivity (ε_r):	39.51	39.38	0.32	5
		e"	13.0500	Conductivity (σ):	1.71	1.71	-0.15	5
2-18-2020	Head 835	e'	42.3600	Relative Permittivity (ε_r):	42.36	41.50	2.07	5
		e"	19.4000	Conductivity (σ):	0.90	0.90	0.08	5
	Head 820	e'	42.3700	Relative Permittivity (ε_r):	42.37	41.60	1.84	5
		e"	19.6200	Conductivity (σ):	0.89	0.90	-0.43	5
	Head 850	e'	42.3500	Relative Permittivity (ε_r):	42.35	41.50	2.05	5
		e"	19.1900	Conductivity (σ):	0.91	0.92	-0.88	5
2-20-2020	Head 835	e'	42.4300	Relative Permittivity (ε_r):	42.43	41.50	2.24	5
		e"	19.9300	Conductivity (σ):	0.93	0.90	2.81	5
	Head 820	e'	42.4300	Relative Permittivity (ε_r):	42.43	41.60	1.99	5
		e"	20.1600	Conductivity (σ):	0.92	0.90	2.31	5
	Head 850	e'	42.4200	Relative Permittivity (ε_r):	42.42	41.50	2.22	5
		e"	19.7000	Conductivity (σ):	0.93	0.92	1.76	5

SAR 1 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
3-11-2020	Head 835	e'	41.0200	Relative Permittivity (ϵ_r):	41.02	41.50	-1.16	5
		e"	19.5800	Conductivity (σ):	0.91	0.90	1.01	5
	Head 820	e'	41.0400	Relative Permittivity (ϵ_r):	41.04	41.60	-1.35	5
		e"	19.8200	Conductivity (σ):	0.90	0.90	0.58	5
	Head 850	e'	40.9900	Relative Permittivity (ϵ_r):	40.99	41.50	-1.23	5
		e"	19.3600	Conductivity (σ):	0.92	0.92	0.00	5
3-11-2020	Head 1750	e'	39.2200	Relative Permittivity (ϵ_r):	42.83	41.50	3.20	5
		e"	13.6800	Conductivity (σ):	0.89	0.90	-1.52	5
	Head 1710	e'	39.2800	Relative Permittivity (ϵ_r):	42.98	41.60	3.31	5
		e"	13.7800	Conductivity (σ):	0.88	0.90	-2.57	5
	Head 1755	e'	39.2200	Relative Permittivity (ϵ_r):	42.63	41.50	2.72	5
		e"	13.6700	Conductivity (σ):	0.90	0.92	-2.17	5
3-11-2020	Head 1900	e'	39.0100	Relative Permittivity (ϵ_r):	40.86	41.50	-1.54	5
		e"	13.4300	Conductivity (σ):	0.92	0.90	1.94	5
	Head 1850	e'	39.0900	Relative Permittivity (ϵ_r):	41.05	41.60	-1.33	5
		e"	13.5000	Conductivity (σ):	0.90	0.90	0.48	5
	Head 1910	e'	38.9900	Relative Permittivity (ϵ_r):	40.67	41.50	-2.00	5
		e"	13.4200	Conductivity (σ):	0.93	0.92	1.91	5
3-12-2020	Head 2250	e'	38.9500	Relative Permittivity (ϵ_r):	41.13	41.50	-0.89	5
		e"	13.1800	Conductivity (σ):	0.93	0.90	3.59	5
	Head 2300	e'	38.8800	Relative Permittivity (ϵ_r):	41.13	41.60	-1.14	5
		e"	13.1600	Conductivity (σ):	0.93	0.90	3.17	5
	Head 2350	e'	38.8300	Relative Permittivity (ϵ_r):	41.12	41.50	-0.92	5
		e"	13.1600	Conductivity (σ):	0.94	0.92	2.53	5

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
2-5-2020	Head 750	e'	41.3500	Relative Permittivity (ϵ_r):	41.35	41.96	-1.46	5
		e''	21.2700	Conductivity (σ):	0.89	0.89	-0.68	5
	Head 700	e'	41.6400	Relative Permittivity (ϵ_r):	41.64	42.22	-1.37	5
		e''	22.6300	Conductivity (σ):	0.88	0.89	-0.95	5
	Head 795	e'	41.3200	Relative Permittivity (ϵ_r):	41.32	41.73	-0.98	5
		e''	20.5000	Conductivity (σ):	0.91	0.90	1.08	5
2-10-2020	Head 680	e'	42.2100	Relative Permittivity (ϵ_r):	42.21	42.32	-0.26	5
		e''	22.7700	Conductivity (σ):	0.86	0.89	-3.01	5
	Head 750	e'	41.9200	Relative Permittivity (ϵ_r):	41.92	41.96	-0.10	5
		e''	21.2900	Conductivity (σ):	0.89	0.89	-0.59	5
	Head 795	e'	41.7500	Relative Permittivity (ϵ_r):	41.75	41.73	0.05	5
		e''	20.4200	Conductivity (σ):	0.90	0.90	0.68	5
2-10-2020	Head 835	e'	41.6300	Relative Permittivity (ϵ_r):	41.63	41.50	0.31	5
		e''	19.8000	Conductivity (σ):	0.92	0.90	2.14	5
	Head 820	e'	41.6900	Relative Permittivity (ϵ_r):	41.69	41.60	0.21	5
		e''	20.0200	Conductivity (σ):	0.91	0.90	1.60	5
	Head 850	e'	41.5900	Relative Permittivity (ϵ_r):	41.59	41.50	0.22	5
		e''	19.5600	Conductivity (σ):	0.92	0.92	1.03	5
2-10-2020	Head 1750	e'	39.3100	Relative Permittivity (ϵ_r):	39.31	40.08	-1.93	5
		e''	14.0300	Conductivity (σ):	1.37	1.37	-0.28	5
	Head 1710	e'	39.3800	Relative Permittivity (ϵ_r):	39.38	40.15	-1.91	5
		e''	14.1300	Conductivity (σ):	1.34	1.35	-0.22	5
	Head 1755	e'	39.3100	Relative Permittivity (ϵ_r):	39.31	40.08	-1.91	5
		e''	14.0100	Conductivity (σ):	1.37	1.37	-0.34	5
2-10-2020	Head 1900	e'	39.2000	Relative Permittivity (ϵ_r):	39.20	40.00	-2.00	5
		e''	13.7700	Conductivity (σ):	1.45	1.40	3.91	5
	Head 1850	e'	39.2600	Relative Permittivity (ϵ_r):	39.26	40.00	-1.85	5
		e''	13.7800	Conductivity (σ):	1.42	1.40	1.25	5
	Head 1910	e'	39.1900	Relative Permittivity (ϵ_r):	39.19	40.00	-2.03	5
		e''	13.7600	Conductivity (σ):	1.46	1.40	4.38	5
2-12-2020	Head 1750	e'	40.2900	Relative Permittivity (ϵ_r):	40.29	40.08	0.51	5
		e''	14.0700	Conductivity (σ):	1.37	1.37	0.01	5
	Head 1710	e'	40.3400	Relative Permittivity (ϵ_r):	40.34	40.15	0.48	5
		e''	14.2100	Conductivity (σ):	1.35	1.35	0.35	5
	Head 1755	e'	40.2800	Relative Permittivity (ϵ_r):	40.28	40.08	0.51	5
		e''	14.0500	Conductivity (σ):	1.37	1.37	-0.05	5
2-12-2020	Head 1900	e'	39.3300	Relative Permittivity (ϵ_r):	39.33	40.00	-1.68	5
		e''	13.3800	Conductivity (σ):	1.41	1.40	0.97	5
	Head 1850	e'	39.3800	Relative Permittivity (ϵ_r):	39.38	40.00	-1.55	5
		e''	13.4800	Conductivity (σ):	1.39	1.40	-0.95	5
	Head 1910	e'	39.3200	Relative Permittivity (ϵ_r):	39.32	40.00	-1.70	5
		e''	13.3600	Conductivity (σ):	1.42	1.40	1.35	5
2-13-2020	Head 835	e'	40.5500	Relative Permittivity (ϵ_r):	40.55	41.50	-2.29	5
		e''	19.9100	Conductivity (σ):	0.92	0.90	2.71	5
	Head 820	e'	40.5700	Relative Permittivity (ϵ_r):	40.57	41.60	-2.48	5
		e''	20.1600	Conductivity (σ):	0.92	0.90	2.31	5
	Head 850	e'	40.5500	Relative Permittivity (ϵ_r):	40.55	41.50	-2.29	5
		e''	19.6700	Conductivity (σ):	0.93	0.92	1.60	5
2-17-2020	Head 1750	e'	40.8400	Relative Permittivity (ϵ_r):	40.84	40.08	1.88	5
		e''	14.4300	Conductivity (σ):	1.40	1.37	2.57	5
	Head 1710	e'	40.9500	Relative Permittivity (ϵ_r):	40.95	40.15	2.00	5
		e''	14.7300	Conductivity (σ):	1.40	1.35	4.02	5
	Head 1800	e'	40.6400	Relative Permittivity (ϵ_r):	40.64	40.00	1.60	5
		e''	14.3800	Conductivity (σ):	1.44	1.40	2.80	5
2-24-2020	Head 1900	e'	39.0700	Relative Permittivity (ϵ_r):	39.07	40.00	-2.33	5
		e''	13.5900	Conductivity (σ):	1.44	1.40	2.55	5
	Head 1850	e'	39.1800	Relative Permittivity (ϵ_r):	39.18	40.00	-2.05	5
		e''	13.6600	Conductivity (σ):	1.41	1.40	0.37	5
	Head 1910	e'	39.0500	Relative Permittivity (ϵ_r):	39.05	40.00	-2.38	5
		e''	13.5900	Conductivity (σ):	1.44	1.40	3.09	5
3-12-2020	Head 1900	e'	39.5000	Relative Permittivity (ϵ_r):	39.50	40.00	-1.25	5
		e''	13.6500	Conductivity (σ):	1.44	1.40	3.00	5
	Head 1850	e'	39.5900	Relative Permittivity (ϵ_r):	39.59	40.00	-1.02	5
		e''	13.6900	Conductivity (σ):	1.41	1.40	0.59	5
	Head 1910	e'	39.4700	Relative Permittivity (ϵ_r):	39.47	40.00	-1.33	5
		e''	13.6400	Conductivity (σ):	1.45	1.40	3.47	5

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
1-20-2020	Head 2450	e'	40.0500	Relative Permittivity (ε_r):	40.05	39.20	2.17	5
		e"	13.3000	Conductivity (σ):	1.81	1.80	0.66	5
	Head 2400	e'	40.1200	Relative Permittivity (ε_r):	40.12	39.30	2.10	5
		e"	13.2800	Conductivity (σ):	1.77	1.75	1.17	5
	Head 2480	e'	40.0000	Relative Permittivity (ε_r):	40.00	39.16	2.14	5
		e"	13.3300	Conductivity (σ):	1.84	1.83	0.31	5
1-28-2020	Head 2450	e'	39.0600	Relative Permittivity (ε_r):	39.06	39.20	-0.36	5
		e"	13.2400	Conductivity (σ):	1.80	1.80	0.20	5
	Head 2400	e'	39.1000	Relative Permittivity (ε_r):	39.10	39.30	-0.50	5
		e"	13.2100	Conductivity (σ):	1.76	1.75	0.64	5
	Head 2480	e'	39.0200	Relative Permittivity (ε_r):	39.02	39.16	-0.36	5
		e"	13.2900	Conductivity (σ):	1.83	1.83	0.01	5
1-30-2020	Head 1750	e'	40.1400	Relative Permittivity (ε_r):	40.14	40.08	0.14	5
		e"	13.7200	Conductivity (σ):	1.34	1.37	-2.48	5
	Head 1710	e'	40.2300	Relative Permittivity (ε_r):	40.23	40.15	0.21	5
		e"	13.8400	Conductivity (σ):	1.32	1.35	-2.26	5
	Head 1755	e'	40.1200	Relative Permittivity (ε_r):	40.12	40.08	0.11	5
		e"	13.7000	Conductivity (σ):	1.34	1.37	-2.54	5
1-30-2020	Head 1900	e'	39.3700	Relative Permittivity (ε_r):	39.37	40.00	-1.58	5
		e"	13.3300	Conductivity (σ):	1.41	1.40	0.59	5
	Head 1850	e'	39.7100	Relative Permittivity (ε_r):	39.71	40.00	-0.72	5
		e"	13.4700	Conductivity (σ):	1.39	1.40	-1.03	5
	Head 1910	e'	39.2900	Relative Permittivity (ε_r):	39.29	40.00	-1.78	5
		e"	13.3000	Conductivity (σ):	1.41	1.40	0.89	5
2-3-2020	Head 1900	e'	40.8900	Relative Permittivity (ε_r):	40.89	40.00	2.23	5
		e"	13.5200	Conductivity (σ):	1.43	1.40	2.02	5
	Head 1850	e'	40.9600	Relative Permittivity (ε_r):	40.96	40.00	2.40	5
		e"	13.5500	Conductivity (σ):	1.39	1.40	-0.44	5
	Head 1910	e'	40.8700	Relative Permittivity (ε_r):	40.87	40.00	2.17	5
		e"	13.5200	Conductivity (σ):	1.44	1.40	2.56	5
2-6-2020	Head 1750	e'	39.8800	Relative Permittivity (ε_r):	39.88	40.08	-0.51	5
		e"	13.9400	Conductivity (σ):	1.36	1.37	-0.92	5
	Head 1710	e'	39.9200	Relative Permittivity (ε_r):	39.92	40.15	-0.56	5
		e"	13.9800	Conductivity (σ):	1.33	1.35	-1.28	5
	Head 1755	e'	39.8800	Relative Permittivity (ε_r):	39.88	40.08	-0.49	5
		e"	13.9300	Conductivity (σ):	1.36	1.37	-0.91	5
2-6-2020	Head 1900	e'	39.6300	Relative Permittivity (ε_r):	39.63	40.00	-0.92	5
		e"	13.7900	Conductivity (σ):	1.46	1.40	4.06	5
	Head 1850	e'	39.7300	Relative Permittivity (ε_r):	39.73	40.00	-0.68	5
		e"	13.8200	Conductivity (σ):	1.42	1.40	1.54	5
	Head 1910	e'	39.6100	Relative Permittivity (ε_r):	39.61	40.00	-0.98	5
		e"	13.7800	Conductivity (σ):	1.46	1.40	4.53	5
2-15-2020	Head 2600	e'	39.3700	Relative Permittivity (ε_r):	39.37	39.01	0.92	5
		e"	13.6200	Conductivity (σ):	1.97	1.96	0.35	5
	Head 2500	e'	39.7000	Relative Permittivity (ε_r):	39.70	39.14	1.44	5
		e"	13.3800	Conductivity (σ):	1.86	1.85	0.32	5
	Head 2700	e'	39.0300	Relative Permittivity (ε_r):	39.03	38.88	0.37	5
		e"	13.8200	Conductivity (σ):	2.07	2.07	0.22	5
2-19-2020	Head 2600	e'	38.3700	Relative Permittivity (ε_r):	38.37	39.01	-1.64	5
		e"	13.7600	Conductivity (σ):	1.99	1.96	1.38	5
	Head 2500	e'	38.6000	Relative Permittivity (ε_r):	38.60	39.14	-1.37	5
		e"	13.4500	Conductivity (σ):	1.87	1.85	0.84	5
	Head 2700	e'	38.1400	Relative Permittivity (ε_r):	38.14	38.88	-1.92	5
		e"	14.0300	Conductivity (σ):	2.11	2.07	1.74	5
3-12-2020	Head 2450	e'	39.7200	Relative Permittivity (ε_r):	39.72	39.20	1.33	5
		e"	13.6900	Conductivity (σ):	1.86	1.80	3.61	5
	Head 2400	e'	39.8700	Relative Permittivity (ε_r):	39.87	39.30	1.46	5
		e"	13.5600	Conductivity (σ):	1.81	1.75	3.31	5
	Head 2480	e'	39.6300	Relative Permittivity (ε_r):	39.63	39.16	1.19	5
		e"	13.7700	Conductivity (σ):	1.90	1.83	3.62	5

SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
1-22-2020	Head 5250	e'	36.6400	Relative Permittivity (ϵ_r):	36.64	35.93	1.97	5
		e''	15.9800	Conductivity (σ):	4.66	4.70	-0.79	5
	Head 5260	e'	36.6200	Relative Permittivity (ϵ_r):	36.62	35.92	1.94	5
		e''	15.9900	Conductivity (σ):	4.68	4.71	-0.76	5
	Head 5600	e'	36.1400	Relative Permittivity (ϵ_r):	36.14	35.53	1.71	5
		e''	16.2700	Conductivity (σ):	5.07	5.06	0.12	5
	Head 5750	e'	35.9000	Relative Permittivity (ϵ_r):	35.90	35.36	1.52	5
		e''	16.4100	Conductivity (σ):	5.25	5.21	0.63	5
	Head 5825	e'	35.7900	Relative Permittivity (ϵ_r):	35.79	35.30	1.39	5
		e''	16.4700	Conductivity (σ):	5.33	5.27	1.22	5
1-28-2020	Head 5250	e'	36.5100	Relative Permittivity (ϵ_r):	36.51	35.93	1.61	5
		e''	15.8900	Conductivity (σ):	4.64	4.70	-1.35	5
	Head 5260	e'	36.4800	Relative Permittivity (ϵ_r):	36.48	35.92	1.55	5
		e''	15.8900	Conductivity (σ):	4.65	4.71	-1.38	5
	Head 5600	e'	35.9700	Relative Permittivity (ϵ_r):	35.97	35.53	1.23	5
		e''	16.1300	Conductivity (σ):	5.02	5.06	-0.75	5
	Head 5750	e'	35.7400	Relative Permittivity (ϵ_r):	35.74	35.36	1.07	5
		e''	16.2400	Conductivity (σ):	5.19	5.21	-0.41	5
	Head 5825	e'	35.6300	Relative Permittivity (ϵ_r):	35.63	35.30	0.93	5
		e''	16.3000	Conductivity (σ):	5.28	5.27	0.18	5

8.2 System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

System Performance Check Measurement Conditions:

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1 GHz) and 15 mm (below 1 GHz) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 15 mm was aligned with the dipole.
  For 5 GHz band - The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7x7x7 (below 3 GHz) and/or 8x8x7 (above 3 GHz) fine cube was chosen for the cube.
- Distance between probe sensors and phantom surface was set to 2.5 mm.
  For 5 GHz band - Distance between probe sensors and phantom surface was set to 1.4 mm
- The dipole input power (forward power) was 100 mW.
- The results are normalized to 1 W input power.

Reference Target SAR Values

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

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (W/kg)	
				1g/10g	Head
D750V3	1122	2-19-2018	750	1g	8.22
				10g	5.35
D835V2	4d174	1-23-2019	835	1g	9.28
				10g	6.04
D835V2	4d194	7-24-2018	835	1g	9.36
				10g	6.02
D1750V2	1125	2-16-2018	1750	1g	36.50
				10g	19.30
D1750V2	1125	2-21-2020	1750	1g	36.50
				10g	19.20
D1800V2	2d015	11-19-2019	1800	1g	38.50
				10g	20.00
D1900V2	5d190	10-23-2018	1900	1g	39.10
				10g	20.40
D2300V2	1090	11-5-2018	2300	1g	48.80
				10g	23.40
D2450V2	939	7-25-2019	2450	1g	53.20
				10g	25.10
D2600V2	1097	9-19-2019	2600	1g	57.30
				10g	25.70
D5GHzV2	1209	2-28-2019	5250	1g	78.70
				10g	22.60
			5600	1g	83.70
				10g	23.90
			5750	1g	80.30
				10g	23.00

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations
(D750(SN : 1122), D835(SN : 4d194), D1750(SN : 1125), D1900(SN : 5d190), D2300(SN : 1090))

System Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

SAR 1 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
1-20-2020	D835V2	4d174	Head	1g	0.98	9.81	9.28	5.71	1, 2
				10g	0.65	6.46	6.04	6.95	
2-4-2020	D835V2	4d174	Head	1g	0.97	9.71	9.28	4.63	
				10g	0.64	6.41	6.04	6.13	
2-7-2020	D835V2	4d174	Head	1g	0.96	9.63	9.28	3.77	
				10g	0.64	6.35	6.04	5.13	
2-13-2020	D835V2	4d194	Head	1g	0.92	9.22	9.36	-1.50	
				10g	0.60	5.95	6.02	-1.16	
2-13-2020	D1900V2	5d190	Head	1g	3.67	36.70	39.10	-6.14	
				10g	1.91	19.10	20.40	-6.37	
2-14-2020	D2300V2	1090	Head	1g	4.62	46.20	48.80	-5.33	3, 4
				10g	2.21	22.10	23.40	-5.56	
2-18-2020	D835V2	4d194	Head	1g	0.93	9.29	9.36	-0.75	
				10g	0.61	6.14	6.02	1.99	
2-20-2020	D835V2	4d194	Head	1g	0.96	9.58	9.36	2.35	
				10g	0.63	6.30	6.02	4.65	
3-11-2020	D835V2	4d174	Head	1g	0.92	9.2	9.59	-3.96	
				10g	0.61	6.1	6.24	-2.88	
3-11-2020	D1750V2	1125	Head	1g	3.42	34.2	36.50	-6.30	5, 6
				10g	1.83	18.3	19.20	-4.69	
3-11-2020	D1900V2	5d190	Head	1g	3.70	37.0	39.10	-5.37	
				10g	1.92	19.2	20.40	-5.88	
3-12-2020	D2300V2	1090	Head	1g	4.52	45.2	48.80	-7.38	7, 8
				10g	2.17	21.7	23.40	-7.26	

SAR 3 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
2-5-2020	D750V3	1122	Head	1g	0.81	8.12	8.22	-1.22	9, 10
				10g	0.54	5.39	5.35	0.75	
2-10-2020	D750V3	1122	Head	1g	0.83	8.29	8.22	0.85	
				10g	0.56	5.59	5.35	4.49	
2-10-2020	D835V2	4d174	Head	1g	0.95	9.47	9.28	2.05	
				10g	0.63	6.33	6.04	4.80	
2-10-2020	D1750V2	1125	Head	1g	3.46	34.60	36.50	-5.21	11, 12
				10g	1.86	18.60	19.30	-3.63	
2-10-2020	D1900V2	5d190	Head	1g	3.63	36.30	39.10	-7.16	13, 14
				10g	1.90	19.00	20.40	-6.86	
2-12-2020	D1900V2	5d190	Head	1g	3.87	38.70	39.10	-1.02	
				10g	2.01	20.10	20.40	-1.47	
2-12-2020	D1750V2	1125	Head	1g	3.48	34.80	36.50	-4.66	
				10g	1.86	18.60	19.30	-3.63	
2-13-2020	D835V2	4d194	Head	1g	0.95	9.54	9.36	1.92	
				10g	0.63	6.32	6.02	4.98	
2-17-2020	D1800V2	2d015	Head	1g	3.86	38.60	38.50	0.26	15, 16
				10g	2.04	20.40	20.00	2.00	
2-24-2020	D1900V2	5d190	Head	1g	3.97	39.70	39.10	1.53	
				10g	2.07	20.70	20.40	1.47	
3-12-2020	D1900V2	5d190	Head	1g	3.91	39.1	39.10	0.00	
				10g	2.04	20.4	20.40	0.00	

SAR 4 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
1-20-2020	D2450V2	939	Head	1g	5.34	53.40	53.20	0.38	
				10g	2.47	24.70	25.10	-1.59	
1-28-2020	D2450V2	939	Head	1g	5.27	52.70	53.20	-0.94	
				10g	2.44	24.40	25.10	-2.79	
1-30-2020	D1750V2	1125	Head	1g	3.77	37.70	36.50	3.29	
				10g	2.02	20.20	19.30	4.66	
1-30-2020	D1900V2	5d190	Head	1g	3.74	37.40	39.10	-4.35	
				10g	1.93	19.30	20.40	-5.39	
2-3-2020	D1900V2	5d190	Head	1g	3.70	37.00	39.10	-5.37	
				10g	1.91	19.10	20.40	-6.37	
2-6-2020	D1750V2	1125	Head	1g	3.63	36.30	36.50	-0.55	
				10g	1.94	19.40	19.30	0.52	
2-6-2020	D1900V2	5d190	Head	1g	4.04	40.40	39.10	3.32	
				10g	2.09	20.90	20.40	2.45	
2-15-2020	D2600V2	1097	Head	1g	6.01	60.10	57.30	4.89	
				10g	2.62	26.20	25.70	1.95	
2-19-2020	D2600V2	1097	Head	1g	6.05	60.50	57.30	5.58	17, 18
				10g	2.61	26.10	25.70	1.56	
3-12-2020	D2450V2	939	Head	1g	5.14	51.4	53.20	-3.38	19, 20
				10g	2.32	23.2	25.10	-7.57	

SAR 5 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
1-22-2020	D5GHzV2 (5250)	1209	Head	1g	7.62	76.2	78.70	-3.18	
				10g	2.15	21.5	22.60	-4.87	
1-28-2020	D5GHzV2 (5250)	1209	Head	1g	7.46	74.6	78.70	-5.21	21, 22
				10g	2.09	20.9	22.60	-7.52	
1-28-2020	D5GHzV2 (5600)	1209	Head	1g	8.10	81.0	83.70	-3.23	
				10g	2.24	22.4	23.90	-6.28	
1-28-2020	D5GHzV2 (5750)	1209	Head	1g	7.76	77.6	80.30	-3.36	
				10g	2.14	21.4	23.00	-6.96	

9. Conducted Output Power Measurements

9.1 GSM

Per KDB 941225 D01 3G SAR Procedures:

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

GSM850 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)				Reduced Average Power (dBm) -Hotspot back-off-			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	33.2	24.2	34.3	25.3	33.2	24.2	34.3	25.3
			190	836.6	33.1	24.1			33.1	24.1		
			251	848.8	33.6	24.6			33.6	24.6		
GPRS (GMSK)	CS1	1	128	824.2	33.2	24.2	34.3	25.3	33.2	24.2	34.3	25.3
			190	836.6	33.4	24.4			33.4	24.4		
			251	848.8	33.8	24.8			33.8	24.8		
		2	128	824.2	31.5	25.5	33.0	27.0	30.3	24.3	31.5	**25.5**
			190	836.6	30.7	24.7			30.4	24.3		
			251	848.8	30.8	24.8			30.5	24.5		
		3	128	824.2	29.1	24.9	31.0	26.7	27.7	23.5	29.5	25.2
			190	836.6	29.2	24.9			27.8	23.6		
			251	848.8	29.0	24.8			27.9	23.7		
		4	128	824.2	27.7	24.7	30.0	**27.0**	26.4	23.4	28.0	25.0
			190	836.6	28.1	25.1			26.9	23.9		
			251	848.8	28.3	25.3			27.1	24.1		
EGPRS (8PSK)	MCS5	1	128	824.2	26.6	17.6	28.5	19.5	26.6	17.6	28.5	19.5
			190	836.6	26.3	17.2			26.3	17.2		
			251	848.8	26.4	17.4			26.4	17.4		
		2	128	824.2	24.7	18.7	27.0	21.0	24.7	18.7	27.0	21.0
			190	836.6	24.7	18.7			24.7	18.7		
			251	848.8	24.8	18.7			24.8	18.7		
		3	128	824.2	23.3	19.1	25.5	21.2	23.3	19.1	25.5	21.2
			190	836.6	24.0	19.8			24.0	19.8		
			251	848.8	23.9	19.7			23.9	19.7		
		4	128	824.2	21.4	18.4	23.5	20.5	21.4	18.4	23.5	20.5
			190	836.6	21.2	18.2			21.2	18.2		
			251	848.8	22.4	19.4			22.4	19.4		

Notes:

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

- GMSK (GPRS) mode with 4 time slots for Max power, 2 time slots for Reduced power based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)				Reduced Average Power (dBm) -Hotspot back-off-			
					Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	30.7	21.7	32.0	23.0	28.6	19.6	30.0	21.0
			661	1880.0	31.3	22.3			28.9	19.9		
			810	1909.8	31.6	22.6			29.1	20.1		
GPRS (GMSK)	CS1	1	512	1850.2	30.6	21.6	32.0	23.0	28.5	19.4	30.0	21.0
			661	1880.0	30.6	21.6			28.0	18.9		
			810	1909.8	31.1	22.1			28.2	19.1		
		2	512	1850.2	27.2	21.1	28.5	22.5	25.3	19.2	27.5	21.5
			661	1880.0	28.0	22.0			25.7	19.7		
			810	1909.8	27.5	21.4			26.1	20.1		
		3	512	1850.2	25.0	20.8	27.5	**23.2**	23.1	18.8	25.5	21.2
			661	1880.0	25.3	21.1			23.7	19.4		
			810	1909.8	25.6	21.3			23.9	19.7		
		4	512	1850.2	23.5	20.5	24.5	21.5	23.5	20.5	24.5	**21.5**
			661	1880.0	23.3	20.3			23.3	20.3		
			810	1909.8	23.8	20.8			23.8	20.8		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.3	16.3	27.5	18.5	25.3	16.3	27.5	18.5
			661	1880.0	27.1	18.1			27.1	18.1		
			810	1909.8	27.3	18.3			27.3	18.3		
		2	512	1850.2	23.0	17.0	25.5	19.5	23.0	17.0	25.5	19.5
			661	1880.0	24.9	18.8			24.9	18.8		
			810	1909.8	25.3	19.3			25.3	19.3		
		3	512	1850.2	21.8	17.6	22.5	18.2	21.8	17.6	22.5	18.2
			661	1880.0	22.0	17.8			22.0	17.8		
			810	1909.8	22.3	18.0			22.3	18.0		
		4	512	1850.2	20.3	17.3	22.0	19.0	18.7	15.7	20.5	17.5
			661	1880.0	20.7	17.7			19.3	16.3		
			810	1909.8	21.1	18.1			19.4	16.4		

Notes:

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

- GMSK (GPRS) mode with 3 time slots for Max power, 4 time slots for Reduced power based on the Tune-up Procedure. Refer to §6.3.
- SAR is not required for EGPRS (8PSK) mode because the maximum output power and tune-up limit is ≤ 1/4dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2W/kg.

9.2 W-CDMA

Release 99 Setup Procedures used to establish the test signals

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

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

HSDPA Setup Procedures used to establish the test signals

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

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	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			

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

The following 5 Sub-tests were completed according to Release 6 procedures in table C,11.1.3 of 3GPP TS 34.121-1 v13.
A summary of these settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	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	E-DPDCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

DC-HSDPA Setup Procedures used to establish the test signals

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	Processes	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.		

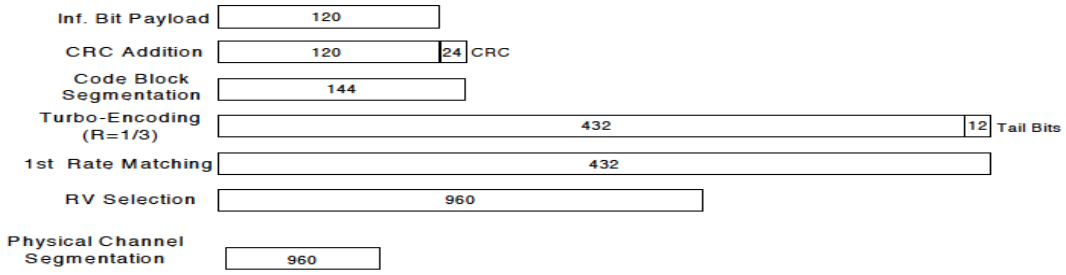


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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-Set 12			
	Power Control Algorithm	Algorithm2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	11/15	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			

HSPA+

HSPA+ is only support to down link. Therefore, the RF conducted power is not measured.

W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot back-off			Reduced Average Power (dBm) Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.4	N/A	25.9	19.8	N/A	20.9	19.8	N/A	20.9
		9400	1880.0	24.8			20.0			20.0		
		9538	1907.6	24.8			20.1			20.1		
HSDPA	Subtest 1	9262	1852.4	23.4	0	25.0	18.8	0	19.9	18.8	0	19.9
		9400	1880.0	23.8			19.0			19.0		
		9538	1907.6	23.8			19.1			19.1		
	Subtest 2	9262	1852.4	23.4	0	25.0	18.8	0	19.9	18.8	0	19.9
		9400	1880.0	23.7			18.9			19.0		
		9538	1907.6	23.7			19.1			19.1		
	Subtest 3	9262	1852.4	22.9	0.5	24.5	18.3	0.5	19.4	18.3	0.5	19.4
		9400	1880.0	23.3			18.5			18.5		
		9538	1907.6	23.2			18.6			18.6		
	Subtest 4	9262	1852.4	22.9	0.5	24.5	18.3	0.5	19.4	18.3	0.5	19.4
		9400	1880.0	23.3			18.5			18.5		
		9538	1907.6	23.2			18.6			18.6		
HSUPA	Subtest 1	9262	1852.4	23.4	0	25.0	18.8	0	19.9	18.8	0	19.9
		9400	1880.0	23.8			19.0			19.0		
		9538	1907.6	23.6			19.0			19.0		
	Subtest 2	9262	1852.4	21.4	2	23.0	16.8	2	17.9	16.8	2	17.9
		9400	1880.0	21.7			16.9			17.0		
		9538	1907.6	21.6			17.0			17.0		
	Subtest 3	9262	1852.4	21.8	1	24.0	16.8	1	18.9	16.8	1	18.9
		9400	1880.0	21.7			16.9			17.0		
		9538	1907.6	21.6			17.0			17.0		
	Subtest 4	9262	1852.4	21.4	2	23.0	16.8	2	17.9	16.8	2	17.9
		9400	1880.0	21.7			16.9			16.9		
		9538	1907.6	21.6			17.0			17.0		
	Subtest 5	9262	1852.4	23.0	0	25.0	18.3	0	19.9	18.3	0	19.9
		9400	1880.0	23.3			18.5			18.5		
		9538	1907.6	23.2			18.6			18.6		
DC-HSDPA	Subtest 1	9262	1852.4	23.4	0	25.0	18.8	0	19.9	18.8	0	19.9
		9400	1880.0	23.8			19.0			19.0		
		9538	1907.6	23.8			19.1			19.1		
	Subtest 2	9262	1852.4	23.4	0	25.0	18.8	0	19.9	18.8	0	19.9
		9400	1880.0	23.8			19.0			19.0		
		9538	1907.6	23.7			19.1			19.1		
	Subtest 3	9262	1852.4	22.9	0.5	24.5	18.3	0.5	19.4	18.3	0.5	19.4
		9400	1880.0	23.3			18.5			18.5		
		9538	1907.6	23.2			18.6			18.6		
	Subtest 4	9262	1852.4	22.9	0.5	24.5	18.3	0.5	19.4	18.3	0.5	19.4
		9400	1880.0	23.3			18.5			18.5		
		9538	1907.6	23.3			18.6			18.6		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot back-off			Reduced Average Power (dBm) Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	24.2	N/A	26.0	19.6	N/A	20.7	19.7	N/A	20.7
		1413	1732.6	24.6			19.7			19.8		
		1513	1752.6	24.7			19.9			20.0		
HSDPA	Subtest 1	1312	1712.4	23.2	0	24.0	18.6	0	19.5	18.6	0	19.5
		1413	1732.6	23.4			18.7			18.7		
		1513	1752.6	23.7			19.0			19.0		
	Subtest 2	1312	1712.4	23.2	0	24.0	18.6	0	19.5	18.6	0	19.5
		1413	1732.6	23.4			18.7			18.7		
		1513	1752.6	23.6			18.9			18.9		
	Subtest 3	1312	1712.4	22.7	0.5	23.5	18.1	0.5	19.0	18.1	0.5	19.0
		1413	1732.6	22.9			18.2			18.2		
		1513	1752.6	23.1			18.4			18.4		
	Subtest 4	1312	1712.4	22.7	0.5	23.5	18.1	0.5	19.0	18.1	0.5	19.0
		1413	1732.6	22.9			18.2			18.2		
		1513	1752.6	23.1			18.5			18.5		
HSUPA	Subtest 1	1312	1712.4	23.2	0	24.0	18.6	0	19.5	18.6	0	19.5
		1413	1732.6	23.3			18.7			18.7		
		1513	1752.6	23.6			18.9			18.9		
	Subtest 2	1312	1712.4	21.1	2	22.0	16.6	2	17.5	16.6	2	17.5
		1413	1732.6	21.4			16.7			16.7		
		1513	1752.6	21.6			16.9			16.9		
	Subtest 3	1312	1712.4	20.6	1	23.0	16.1	1	18.5	16.1	1	18.5
		1413	1732.6	20.8			16.2			16.2		
		1513	1752.6	21.0			16.4			16.4		
	Subtest 4	1312	1712.4	21.1	2	22.0	16.6	2	17.5	16.6	2	17.5
		1413	1732.6	21.3			16.7			16.7		
		1513	1752.6	21.5			16.9			16.9		
	Subtest 5	1312	1712.4	22.7	0	24.0	18.2	0	19.5	18.2	0	19.5
		1413	1732.6	22.9			18.3			18.3		
		1513	1752.6	23.1			18.5			18.5		
DC-HSDPA	Subtest 1	1312	1712.4	23.1	0	24.0	18.6	0	19.5	18.6	0	19.5
		1413	1732.6	23.4			18.7			18.7		
		1513	1752.6	23.6			19.0			19.0		
	Subtest 2	1312	1712.4	23.2	0	24.0	18.7	0	19.5	18.7	0	19.5
		1413	1732.6	23.4			18.7			18.7		
		1513	1752.6	23.6			18.9			18.9		
	Subtest 3	1312	1712.4	22.7	0.5	23.5	18.1	0.5	19.0	18.2	0.5	19.0
		1413	1732.6	22.9			18.2			18.2		
		1513	1752.6	23.1			18.4			18.4		
	Subtest 4	1312	1712.4	22.7	0.5	23.5	18.2	0.5	19.0	18.2	0.5	19.0
		1413	1732.6	22.9			18.2			18.2		
		1513	1752.6	23.1			18.4			18.5		

W-CDMA Band V Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.5	N/A	25.2
		4183	836.6	24.5		
		4233	846.6	24.5		
HSDPA	Subtest 1	4132	826.4	23.5	0	24.0
		4183	836.6	23.5		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	23.5	0	24.0
		4183	836.6	23.5		
		4233	846.6	23.5		
	Subtest 3	4132	826.4	23.0	0.5	23.5
		4183	836.6	23.0		
		4233	846.6	23.0		
	Subtest 4	4132	826.4	23.0	0.5	23.5
		4183	836.6	23.0		
		4233	846.6	23.0		
HSUPA	Subtest 1	4132	826.4	23.5	0	24.0
		4183	836.6	23.5		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	21.5	2	22.0
		4183	836.6	21.5		
		4233	846.6	21.5		
	Subtest 3	4132	826.4	22.5	1	23.0
		4183	836.6	22.5		
		4233	846.6	22.5		
	Subtest 4	4132	826.4	21.5	2	22.0
		4183	836.6	21.5		
		4233	846.6	21.4		
	Subtest 5	4132	826.4	23.1	0	24.0
		4183	836.6	23.0		
		4233	846.6	23.1		
DC-HSDPA	Subtest 1	4132	826.4	23.5	0	24.0
		4183	836.6	23.5		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	23.5	0	24.0
		4183	836.6	23.5		
		4233	846.6	23.5		
	Subtest 3	4132	826.4	23.0	0.5	23.5
		4183	836.6	23.0		
		4233	846.6	23.0		
	Subtest 4	4132	826.4	23.0	0.5	23.5
		4183	836.6	23.0		
		4233	846.6	23.0		

9.3 CDMA

1x Advanced Setup Procedures used to establish the test signals

Call box setup procedure

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

CDMA BC0 Measured Results

Mode		Channel	Freq. (MHz)	Maximum Average Power (dBm)		Reduced Average Power (dBm) Hotspot back-off	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	1013	824.70	23.6	24.5	21.5	22.5
		384	836.52	23.5		21.5	
		777	848.31	23.5		21.6	
	RC3, SO55 (Loopback)	1013	824.70	23.7		21.5	
		384	836.52	23.6		21.5	
		777	848.31	23.6		21.6	
	RC3, SO32 (+F-SCH)	1013	824.70	23.6		21.6	
		384	836.52	23.5		21.6	
		777	848.31	23.6		21.6	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	1013	824.70	23.5	24.5	21.4	22.5
		384	836.52	23.4		21.3	
		777	848.31	23.5		21.4	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	1013	824.70	23.6	24.5	21.6	22.5
		384	836.52	23.5		21.6	
		777	848.31	23.6		21.6	
1xEv-Do Rev. A	307.2K, QPSK/ ACK channel is transmitted at all the slots	1013	824.70	23.2	24.5	21.4	22.5
		384	836.52	23.0		21.4	
		777	848.31	23.4		21.4	

CDMA BC1 Measured Results

Mode		Channel	Freq. (MHz)	Maximum Average Power (dBm)		Reduced Average Power (dBm) Hotspot back-off		Reduced Average Power (dBm) Proximity sensor back-off	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	25	1851.25	25.4	26.5	20.7	21.5	20.7	21.5
		600	1880.00	25.5		20.8		20.9	
		1175	1908.75	25.5		21.0		21.0	
	RC3, SO55 (Loopback)	25	1851.25	25.4		20.8		20.7	
		600	1880.00	25.5		20.9		20.9	
		1175	1908.75	25.5		21.0		20.9	
	RC3, SO32 (+F-SCH)	25	1851.25	25.4		20.8		20.7	
		600	1880.00	25.4		20.9		20.9	
		1175	1908.75	25.5		21.0		20.9	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	25	1851.25	25.3	26.5	20.8	21.5	20.8	21.5
		600	1880.00	25.4		20.9		20.9	
		1175	1908.75	25.5		21.0		21.0	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	25	1851.25	25.3	26.5	20.8	21.5	20.7	21.5
		600	1880.00	25.4		21.0		20.9	
		1175	1908.75	25.5		21.1		21.0	
1xEv-Do Rev. A	307.2K, QPSK/ ACK channel is transmitted at all the slots	25	1851.25	25.1	26.5	20.6	21.5	20.5	21.5
		600	1880.00	25.2		20.7		20.2	
		1175	1908.75	25.4		20.8		20.8	

CDMA BC10 Measured Results

Mode		Channel	Freq. (MHz)	Maximum Average Power (dBm)		Reduced Average Power (dBm) Hotspot back-off	
				Measured Pwr	Tune-up Limit	Measured Pwr	Tune-up Limit
1xRTT	RC1, SO55 (Loopback)	476	817.9	26.2	27.0	23.2	24.0
		580	820.5	26.2		23.2	
		684	823.1	26.2		23.2	
	RC3, SO55 (Loopback)	476	817.9	26.3		23.2	
		580	820.5	26.3		23.3	
		684	823.1	26.2		23.2	
	RC3, SO32 (+F-SCH)	476	817.9	26.3		23.2	
		580	820.5	26.3		23.3	
		684	823.1	26.2		23.2	
1xAdvanced	Fwd11/Rvs8 SO75 (Loopback)	476	817.9	26.1	27.0	23.1	24.0
		580	820.5	26.1		23.1	
		684	823.1	26.0		23.1	
1xEv-Do Rel. 0	307.2 kbps (2 slot, QPSK)	476	817.9	26.2	27.0	23.2	24.0
		580	820.5	26.2		23.2	
		684	823.1	26.2		23.2	
1xEv-Do Rev. A	307.2K, QPSK/ ACK channel is transmitted at all the slots	476	817.9	25.7	27.0	23.1	24.0
		580	820.5	25.6		23.0	
		684	823.1	25.6		23.1	

9.4 LTE

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

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

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

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3
256 QAM	≥ 1						≤ 5

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

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

Network Signalling value	Requirements (subclause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	N/A

Maximum Output Power (Tune-up Limit) for LTE

According to April 2015 TCB workshop, SAR test exclusion can be applied for testing overlapping LTE bands as follows :

a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band to qualify for the SAR test exclusion.
b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.

- LTE Band 2 (1850 – 1910 MHz) is covered by LTE Band 25 (1850 – 1915 MHz)
- LTE Band 5 (824 – 849 MHz) is covered by LTE Band 26 (814 – 849 MHz)
- LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz)
- LTE Band 17 (704 – 716 MHz) is covered by LTE Band 12 (699 – 716 MHz)
- LTE Band 38 (2570 – 2620 MHz) is covered by LTE Band 41 (2496 – 2690 MHz)

Maximum bandwidth does not support at least three non-overlapping channels in certain channel bandwidths.

When a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing per KDB 941225 D05 SAR for LTE Devices.

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

SAR measurement is not required for Higher order modulations . When the highest maximum output power for Higher order modulations are ≤ 0.5 dB higher than the QPSK or when the reported SAR for QPSK configuration is ≤ 1.45 W/kg.

1. Max power Results

LTE Band 7 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				20850	21100	21350		
				2510 MHz	2535 MHz	2560 MHz		
20 MHz	QPSK	1	0	23.8	23.5	23.7	0.0	24.2
		1	49	23.5	23.4	23.6	0.0	24.2
		1	99	23.5	23.4	23.7	0.0	24.2
		50	0	22.6	22.5	22.7	1.0	23.2
		50	24	22.8	22.5	22.7	1.0	23.2
		50	50	22.6	22.4	22.6	1.0	23.2
		100	0	22.6	22.4	22.6	1.0	23.2
	16QAM	1	0	23.0	23.0	23.0	1.0	23.2
		1	49	22.9	22.9	22.9	1.0	23.2
		1	99	22.9	22.9	22.9	1.0	23.2
		50	0	21.6	21.5	21.7	2.0	22.2
		50	24	21.6	21.5	21.7	2.0	22.2
		50	50	21.6	21.4	21.6	2.0	22.2
		100	0	21.6	21.5	21.6	2.0	22.2
	64QAM	1	0	21.8	21.8	22.2	2.0	22.2
		1	49	21.8	21.8	22.2	2.0	22.2
		1	99	21.7	21.8	22.2	2.0	22.2
		50	0	20.7	20.6	20.7	3.0	21.2
		50	24	20.7	20.6	20.7	3.0	21.2
		50	50	20.6	20.5	20.7	3.0	21.2
		100	0	20.7	20.5	20.7	3.0	21.2
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20825	21100	21375		
				2507.5 MHz	2535 MHz	2562.5 MHz		
15 MHz	QPSK	1	0	23.6	23.5	23.7	0.0	24.2
		1	37	23.5	23.4	23.5	0.0	24.2
		1	74	23.6	23.5	23.6	0.0	24.2
		36	0	22.7	22.5	22.8	1.0	23.2
		36	20	22.7	22.5	22.8	1.0	23.2
		36	39	22.7	22.4	22.8	1.0	23.2
		75	0	22.7	22.5	22.8	1.0	23.2
	16QAM	1	0	23.0	22.8	22.5	1.0	23.2
		1	37	22.9	22.7	22.5	1.0	23.2
		1	74	22.9	22.7	22.5	1.0	23.2
		36	0	21.7	21.4	21.7	2.0	22.2
		36	20	21.7	21.4	21.7	2.0	22.2
		36	39	21.7	21.4	21.7	2.0	22.2
		75	0	21.7	21.4	21.7	2.0	22.2
	64QAM	1	0	21.8	22.0	22.0	2.0	22.2
		1	37	21.7	22.0	21.9	2.0	22.2
		1	74	21.7	22.0	21.9	2.0	22.2
		36	0	20.7	20.5	20.8	3.0	21.2
		36	20	20.7	20.5	20.8	3.0	21.2
		36	39	20.7	20.4	20.8	3.0	21.2
		75	0	20.7	20.5	20.8	3.0	21.2

LTE Band 7 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20800	21100	21400		
				2505 MHz	2535 MHz	2565 MHz		
10 MHz	QPSK	1	0	23.4	23.2	23.4	0.0	24.2
		1	25	23.4	23.1	23.4	0.0	24.2
		1	49	23.3	23.2	23.5	0.0	24.2
		25	0	22.5	22.3	22.5	1.0	23.2
		25	12	22.4	22.2	22.5	1.0	23.2
		25	25	22.4	22.2	22.5	1.0	23.2
		50	0	22.4	22.2	22.4	1.0	23.2
	16QAM	1	0	22.3	22.5	22.4	1.0	23.2
		1	25	22.1	22.4	22.4	1.0	23.2
		1	49	22.2	22.5	22.4	1.0	23.2
		25	0	21.5	21.3	21.5	2.0	22.2
		25	12	21.5	21.3	21.5	2.0	22.2
		25	25	21.4	21.3	21.5	2.0	22.2
		50	0	21.4	21.3	21.5	2.0	22.2
	64QAM	1	0	21.6	21.5	21.7	2.0	22.2
		1	25	21.6	21.5	21.8	2.0	22.2
		1	49	21.5	21.4	21.7	2.0	22.2
		25	0	20.6	20.4	20.6	3.0	21.2
		25	12	20.6	20.4	20.6	3.0	21.2
		25	25	20.5	20.3	20.5	3.0	21.2
		50	0	20.5	20.3	20.5	3.0	21.2
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20775	21100	21425		
				2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	23.4	23.3	23.4	0.0	24.2
		1	12	23.5	23.4	23.5	0.0	24.2
		1	24	23.5	23.3	23.6	0.0	24.2
		12	0	22.5	22.3	22.4	1.0	23.2
		12	7	22.6	22.3	22.6	1.0	23.2
		12	13	22.5	22.3	22.6	1.0	23.2
		25	0	22.5	22.3	22.5	1.0	23.2
	16QAM	1	0	22.5	22.4	22.8	1.0	23.2
		1	12	22.6	22.4	22.9	1.0	23.2
		1	24	22.6	22.5	22.9	1.0	23.2
		12	0	21.6	21.4	21.5	2.0	22.2
		12	7	21.7	21.4	21.7	2.0	22.2
		12	13	21.6	21.4	21.7	2.0	22.2
		25	0	21.5	21.3	21.5	2.0	22.2
	64QAM	1	0	21.3	21.6	21.6	2.0	22.2
		1	12	21.4	21.6	21.7	2.0	22.2
		1	24	21.4	21.6	21.7	2.0	22.2
		12	0	20.6	20.3	20.5	3.0	21.2
		12	7	20.6	20.3	20.7	3.0	21.2
		12	13	20.6	20.3	20.7	3.0	21.2
		25	0	20.6	20.3	20.5	3.0	21.2

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0	[redacted]	24.3	[redacted]	0.0	25.5
		1	25		24.2		0.0	25.5
		1	49		24.5		0.0	25.5
		25	0		23.5		1.0	24.5
		25	12		23.5		1.0	24.5
		25	25		23.5		1.0	24.5
		50	0		23.5		1.0	24.5
	16QAM	1	0		23.3		1.0	24.5
		1	25		23.4		1.0	24.5
		1	49		23.4		1.0	24.5
		25	0		22.6		2.0	23.5
		25	12		22.6		2.0	23.5
		25	25		22.6		2.0	23.5
		50	0		22.5		2.0	23.5
	64QAM	1	0		22.7		2.0	23.5
		1	25		22.5		2.0	23.5
		1	49		22.7		2.0	23.5
		25	0		21.6		3.0	22.5
		25	12		21.6		3.0	22.5
		25	25		21.6		3.0	22.5
		50	0		21.5		3.0	22.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	24.1	24.3	24.5	0.0	25.5
		1	12	24.3	24.5	24.4	0.0	25.5
		1	24	24.3	24.5	24.5	0.0	25.5
		12	0	23.3	23.4	23.4	1.0	24.5
		12	7	23.4	23.5	23.5	1.0	24.5
		12	13	23.4	23.5	23.5	1.0	24.5
		25	0	23.4	23.5	23.4	1.0	24.5
	16QAM	1	0	23.7	23.4	23.5	1.0	24.5
		1	12	23.8	23.5	23.6	1.0	24.5
		1	24	23.8	23.5	23.6	1.0	24.5
		12	0	22.4	22.4	22.5	2.0	23.5
		12	7	22.5	22.5	22.5	2.0	23.5
		12	13	22.5	22.5	22.5	2.0	23.5
		25	0	22.4	22.4	22.4	2.0	23.5
	64QAM	1	0	22.5	22.5	22.3	2.0	23.5
		1	12	22.6	22.6	22.4	2.0	23.5
		1	24	22.6	22.7	22.4	2.0	23.5
		12	0	21.2	21.5	21.5	3.0	22.5
		12	7	21.4	21.5	21.5	3.0	22.5
		12	13	21.3	21.5	21.5	3.0	22.5
		25	0	21.3	21.4	21.4	3.0	22.5

LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	24.2	24.3	24.4	0.0	25.5
		1	8	24.3	24.4	24.5	0.0	25.5
		1	14	24.3	24.4	24.5	0.0	25.5
		8	0	23.3	23.5	23.5	1.0	24.5
		8	4	23.4	23.6	23.5	1.0	24.5
		8	7	23.4	23.6	23.6	1.0	24.5
		15	0	23.4	23.5	23.5	1.0	24.5
	16QAM	1	0	23.5	23.3	23.2	1.0	24.5
		1	8	23.6	23.4	23.3	1.0	24.5
		1	14	23.6	23.4	23.3	1.0	24.5
		8	0	22.4	22.4	22.5	2.0	23.5
		8	4	22.5	22.5	22.6	2.0	23.5
		8	7	22.5	22.6	22.7	2.0	23.5
		15	0	22.4	22.4	22.5	2.0	23.5
	64QAM	1	0	22.2	22.5	22.7	2.0	23.5
		1	8	22.4	22.6	22.7	2.0	23.5
		1	14	22.4	22.6	22.7	2.0	23.5
		8	0	21.4	21.4	21.5	3.0	22.5
		8	4	21.5	21.5	21.5	3.0	22.5
		8	7	21.5	21.5	21.6	3.0	22.5
		15	0	21.4	21.5	21.5	3.0	22.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	24.2	24.3	24.3	0.0	25.5
		1	3	24.3	24.5	24.5	0.0	25.5
		1	5	24.3	24.4	24.4	0.0	25.5
		3	0	24.0	24.2	24.2	0.0	25.5
		3	1	24.2	24.4	24.3	0.0	25.5
		3	3	24.1	24.4	24.3	0.0	25.5
		6	0	23.3	23.5	23.5	1.0	24.5
	16QAM	1	0	23.2	23.6	23.3	1.0	24.5
		1	3	23.4	23.7	23.4	1.0	24.5
		1	5	23.3	23.7	23.4	1.0	24.5
		3	0	23.1	23.4	23.4	1.0	24.5
		3	1	23.3	23.5	23.5	1.0	24.5
		3	3	23.2	23.5	23.5	1.0	24.5
		6	0	22.4	22.3	22.6	2.0	23.5
	64QAM	1	0	22.5	22.4	22.5	2.0	23.5
		1	3	22.7	22.5	22.7	2.0	23.5
		1	5	22.5	22.4	22.6	2.0	23.5
		3	0	22.4	22.4	22.3	2.0	23.5
		3	1	22.6	22.5	22.3	2.0	23.5
		3	3	22.6	22.5	22.4	2.0	23.5
		6	0	21.3	21.7	21.5	3.0	22.5

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					23230			
					782 MHz			
10 MHz	QPSK	1	0		24.7		0.0	25.4
		1	25		24.4		0.0	25.4
		1	49		24.5		0.0	25.4
		25	0		23.5		1.0	24.4
		25	12		23.5		1.0	24.4
		25	25		23.5		1.0	24.4
		50	0		23.5		1.0	24.4
	16QAM	1	0		23.3		1.0	24.4
		1	25		23.1		1.0	24.4
		1	49		23.2		1.0	24.4
		25	0		22.4		2.0	23.4
		25	12		22.5		2.0	23.4
		25	25		22.5		2.0	23.4
		50	0		22.4		2.0	23.4
	64QAM	1	0		22.7		2.0	23.4
		1	25		22.6		2.0	23.4
		1	49		22.7		2.0	23.4
		25	0		21.5		3.0	22.4
		25	12		21.6		3.0	22.4
		25	25		21.5		3.0	22.4
		50	0		21.5		3.0	22.4

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23205	23230	23255		
				779.5 MHz	782 MHz	784.5 MHz		
5 MHz	QPSK	1	0		24.6		0.0	25.4
		1	12		24.6		0.0	25.4
		1	24		24.6		0.0	25.4
		12	0		23.5		1.0	24.4
		12	7		23.5		1.0	24.4
		12	13		23.5		1.0	24.4
		25	0		23.5		1.0	24.4
	16QAM	1	0		23.5		1.0	24.4
		1	12		23.6		1.0	24.4
		1	24		23.5		1.0	24.4
		12	0		22.5		2.0	23.4
		12	7		22.5		2.0	23.4
		12	13		22.5		2.0	23.4
		25	0		22.4		2.0	23.4
	64QAM	1	0		22.3		2.0	23.4
		1	12		22.4		2.0	23.4
		1	24		22.3		2.0	23.4
		12	0		21.5		3.0	22.4
		12	7		21.5		3.0	22.4
		12	13		21.5		3.0	22.4
		25	0		21.4		3.0	22.4

LTE Band 14 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				[redacted]	23330	[redacted]		
					793 MHz			
10 MHz	QPSK	1	0		24.4		0.0	25.4
		1	25		24.3		0.0	25.4
		1	49		24.3		0.0	25.4
		25	0		23.5		1.0	24.4
		25	12		23.5		1.0	24.4
		25	25		23.5		1.0	24.4
		50	0		23.5		1.0	24.4
	16QAM	1	0		23.4		1.0	24.4
		1	25		23.3		1.0	24.4
		1	49		23.3		1.0	24.4
		25	0		22.5		2.0	23.4
		25	12		22.5		2.0	23.4
		25	25		22.5		2.0	23.4
		50	0		22.4		2.0	23.4
	64QAM	1	0		22.6		2.0	23.4
		1	25		22.5		2.0	23.4
		1	49		22.6		2.0	23.4
		25	0		21.5		3.0	22.4
		25	12		21.5		3.0	22.4
		25	25		21.5		3.0	22.4
		50	0		21.5		3.0	22.4

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23305	23330	23355		
				790.5 MHz	793 MHz	795.5 MHz		
5 MHz	QPSK	1	0		24.4		0.0	25.4
		1	12		24.6		0.0	25.4
		1	24		24.6		0.0	25.4
		12	0		23.4		1.0	24.4
		12	7		23.5		1.0	24.4
		12	13		23.6		1.0	24.4
		25	0		23.5		1.0	24.4
	16QAM	1	0		23.5		1.0	24.4
		1	12		23.6		1.0	24.4
		1	24		23.7		1.0	24.4
		12	0		22.5		2.0	23.4
		12	7		22.6		2.0	23.4
		12	13		22.6		2.0	23.4
		25	0		22.4		2.0	23.4
	64QAM	1	0		22.3		2.0	23.4
		1	12		22.4		2.0	23.4
		1	24		22.4		2.0	23.4
		12	0		21.5		3.0	22.4
		12	7		21.5		3.0	22.4
		12	13		21.6		3.0	22.4
		25	0		21.4		3.0	22.4

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	24.5	24.9	24.8	0.0	25.9
		1	49	24.6	24.7	24.7	0.0	25.9
		1	99	24.6	24.8	24.8	0.0	25.9
		50	0	23.7	23.9	23.8	1.0	24.9
		50	24	23.7	23.9	23.8	1.0	24.9
		50	50	23.7	23.9	23.8	1.0	24.9
		100	0	23.7	23.9	23.8	1.0	24.9
	16QAM	1	0	24.2	24.2	24.2	1.0	24.9
		1	49	24.2	24.2	23.9	1.0	24.9
		1	99	24.2	24.3	24.0	1.0	24.9
		50	0	22.7	22.9	22.8	2.0	23.9
		50	24	22.8	22.9	22.8	2.0	23.9
		50	50	22.8	22.9	22.8	2.0	23.9
		100	0	22.7	22.9	22.8	2.0	23.9
	64QAM	1	0	23.1	23.2	23.2	2.0	23.9
		1	49	23.0	23.2	22.9	2.0	23.9
		1	99	23.0	23.2	22.8	2.0	23.9
		50	0	21.8	22.0	21.9	3.0	22.9
		50	24	21.8	22.1	21.9	3.0	22.9
		50	50	21.8	22.1	21.9	3.0	22.9
		100	0	21.8	22.0	21.8	3.0	22.9
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	24.7	24.9	24.9	0.0	25.9
		1	37	24.7	24.7	24.7	0.0	25.9
		1	74	24.7	24.9	24.4	0.0	25.9
		36	0	23.7	23.9	23.9	1.0	24.9
		36	20	23.8	23.9	23.9	1.0	24.9
		36	39	23.8	23.9	23.9	1.0	24.9
		75	0	23.8	23.9	23.8	1.0	24.9
	16QAM	1	0	24.1	24.2	23.7	1.0	24.9
		1	37	24.1	24.1	23.5	1.0	24.9
		1	74	24.1	24.2	23.5	1.0	24.9
		36	0	22.7	22.8	22.8	2.0	23.9
		36	20	22.8	22.9	22.8	2.0	23.9
		36	39	22.8	22.9	22.9	2.0	23.9
		75	0	22.8	22.9	22.8	2.0	23.9
	64QAM	1	0	22.8	23.0	23.1	2.0	23.9
		1	37	22.9	23.1	22.8	2.0	23.9
		1	74	22.8	23.0	22.5	2.0	23.9
		36	0	21.8	21.9	21.8	3.0	22.9
		36	20	21.8	21.9	21.9	3.0	22.9
		36	39	21.8	21.9	21.9	3.0	22.9
		75	0	21.8	21.9	21.8	3.0	22.9

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	24.5	24.6	24.5	0.0	25.9
		1	25	24.4	24.3	24.3	0.0	25.9
		1	49	24.4	24.5	24.4	0.0	25.9
		25	0	23.5	23.7	23.5	1.0	24.9
		25	12	23.5	23.7	23.6	1.0	24.9
		25	25	23.5	23.7	23.6	1.0	24.9
		50	0	23.5	23.7	23.6	1.0	24.9
	16QAM	1	0	23.8	23.6	23.3	1.0	24.9
		1	25	23.9	23.4	23.3	1.0	24.9
		1	49	23.8	23.6	23.3	1.0	24.9
		25	0	22.6	22.8	22.6	2.0	23.9
		25	12	22.6	22.8	22.6	2.0	23.9
		25	25	22.6	22.8	22.6	2.0	23.9
		50	0	22.6	22.8	22.6	2.0	23.9
	64QAM	1	0	22.6	22.9	22.7	2.0	23.9
		1	25	22.5	22.9	22.6	2.0	23.9
		1	49	22.6	22.7	22.5	2.0	23.9
		25	0	21.6	21.8	21.6	3.0	22.9
		25	12	21.7	21.8	21.7	3.0	22.9
		25	25	21.6	21.8	21.7	3.0	22.9
		50	0	21.6	21.8	21.6	3.0	22.9

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	24.4	24.5	24.5	0.0	25.9
		1	12	24.5	24.7	24.7	0.0	25.9
		1	24	24.5	24.7	24.4	0.0	25.9
		12	0	23.5	23.6	23.5	1.0	24.9
		12	7	23.6	23.7	23.6	1.0	24.9
		12	13	23.6	23.7	23.7	1.0	24.9
		25	0	23.6	23.7	23.6	1.0	24.9
	16QAM	1	0	24.0	23.7	23.6	1.0	24.9
		1	12	24.1	23.8	23.7	1.0	24.9
		1	24	24.1	23.8	23.7	1.0	24.9
		12	0	22.7	22.7	22.6	2.0	23.9
		12	7	22.8	22.8	22.7	2.0	23.9
		12	13	22.7	22.8	22.8	2.0	23.9
		25	0	22.6	22.7	22.6	2.0	23.9
	64QAM	1	0	22.8	22.8	22.4	2.0	23.9
		1	12	22.9	23.0	22.4	2.0	23.9
		1	24	22.9	23.0	22.2	2.0	23.9
		12	0	21.5	21.8	21.6	3.0	22.9
		12	7	21.6	21.8	21.6	3.0	22.9
		12	13	21.6	21.9	21.5	3.0	22.9
		25	0	21.6	21.8	21.6	3.0	22.9

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	24.4	24.4	24.5	0.0	25.9
		1	8	24.5	24.6	24.6	0.0	25.9
		1	14	24.4	24.6	24.3	0.0	25.9
		8	0	23.5	23.6	23.6	1.0	24.9
		8	4	23.6	23.7	23.7	1.0	24.9
		8	7	23.6	23.7	23.8	1.0	24.9
		15	0	23.5	23.7	23.7	1.0	24.9
	16QAM	1	0	23.8	23.6	23.3	1.0	24.9
		1	8	23.9	23.7	23.4	1.0	24.9
		1	14	23.9	23.7	23.4	1.0	24.9
		8	0	22.6	22.7	22.7	2.0	23.9
		8	4	22.7	22.7	22.7	2.0	23.9
		8	7	22.7	22.8	22.8	2.0	23.9
		15	0	22.6	22.7	22.6	2.0	23.9
	64QAM	1	0	22.6	22.7	22.7	2.0	23.9
		1	8	22.7	22.9	22.6	2.0	23.9
		1	14	22.7	22.9	22.6	2.0	23.9
		8	0	21.6	21.6	21.5	3.0	22.9
		8	4	21.6	21.7	21.5	3.0	22.9
		8	7	21.7	21.7	21.5	3.0	22.9
		15	0	21.6	21.8	21.4	3.0	22.9
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	24.3	24.5	24.6	0.0	25.9
		1	3	24.4	24.6	24.5	0.0	25.9
		1	5	24.3	24.5	24.2	0.0	25.9
		3	0	24.3	24.6	24.3	0.0	25.9
		3	1	24.4	24.6	24.4	0.0	25.9
		3	3	24.4	24.6	24.3	0.0	25.9
		6	0	23.4	23.6	23.6	1.0	24.9
	16QAM	1	0	23.5	23.9	23.4	1.0	24.9
		1	3	23.6	24.0	23.5	1.0	24.9
		1	5	23.6	24.0	23.4	1.0	24.9
		3	0	23.6	23.9	23.6	1.0	24.9
		3	1	23.6	23.9	23.6	1.0	24.9
		3	3	23.6	23.9	23.6	1.0	24.9
		6	0	22.6	22.5	22.7	2.0	23.9
	64QAM	1	0	22.9	22.7	22.5	2.0	23.9
		1	3	23.0	22.8	22.5	2.0	23.9
		1	5	22.9	22.7	22.4	2.0	23.9
		3	0	22.9	22.8	22.1	2.0	23.9
		3	1	23.0	22.9	22.2	2.0	23.9
		3	3	22.9	22.9	22.2	2.0	23.9
		6	0	21.5	21.9	21.4	3.0	22.9

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26765	26865	26965		
				821.5 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0		25.1		0.0	26.0
		1	37		24.8		0.0	26.0
		1	74		24.8		0.0	26.0
		36	0		24.1		1.0	25.0
		36	20		24.1		1.0	25.0
		36	39		24.0		1.0	25.0
		75	0		24.0		1.0	25.0
	16QAM	1	0		23.8		1.0	25.0
		1	37		23.7		1.0	25.0
		1	74		23.7		1.0	25.0
		36	0		23.0		2.0	24.0
		36	20		23.0		2.0	24.0
		36	39		22.9		2.0	24.0
		75	0		22.9		2.0	24.0
	64QAM	1	0		23.4		2.0	24.0
		1	37		23.2		2.0	24.0
		1	74		23.3		2.0	24.0
		36	0		22.0		3.0	23.0
		36	20		21.9		3.0	23.0
		36	39		21.9		3.0	23.0
		75	0		22.0		3.0	23.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26740	26865	26990		
				819 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	25.1	25.0	24.8	0.0	26.0
		1	25	24.9	25.0	24.6	0.0	26.0
		1	49	24.9	24.9	24.7	0.0	26.0
		25	0	23.9	23.8	23.7	1.0	25.0
		25	12	23.9	23.8	23.7	1.0	25.0
		25	25	23.9	23.8	23.7	1.0	25.0
		50	0	23.9	23.8	23.7	1.0	25.0
	16QAM	1	0	23.8	24.2	23.8	1.0	25.0
		1	25	23.8	24.1	23.7	1.0	25.0
		1	49	23.7	24.0	23.6	1.0	25.0
		25	0	22.8	22.7	22.8	2.0	24.0
		25	12	22.9	22.8	22.8	2.0	24.0
		25	25	22.8	22.7	22.8	2.0	24.0
		50	0	22.8	22.7	22.7	2.0	24.0
	64QAM	1	0	22.9	23.0	23.1	2.0	24.0
		1	25	22.9	22.7	22.9	2.0	24.0
		1	49	22.6	22.8	22.6	2.0	24.0
		25	0	21.9	21.8	21.7	3.0	23.0
		25	12	21.9	21.9	21.8	3.0	23.0
		25	25	21.8	21.8	21.7	3.0	23.0
		50	0	21.9	21.8	21.7	3.0	23.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26715	26865	27015		
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.9	24.9	24.7	0.0	26.0
		1	12	25.0	24.9	24.7	0.0	26.0
		1	24	24.9	24.9	24.7	0.0	26.0
		12	0	23.9	23.8	23.7	1.0	25.0
		12	7	24.0	23.8	23.8	1.0	25.0
		12	13	23.9	23.8	23.7	1.0	25.0
		25	0	23.9	23.8	23.6	1.0	25.0
	16QAM	1	0	23.9	23.9	24.1	1.0	25.0
		1	12	23.9	23.9	24.2	1.0	25.0
		1	24	24.0	23.9	24.1	1.0	25.0
		12	0	22.8	22.7	22.7	2.0	24.0
		12	7	22.9	22.8	22.8	2.0	24.0
		12	13	22.9	22.8	22.8	2.0	24.0
		25	0	22.8	22.7	22.7	2.0	24.0
	64QAM	1	0	22.9	23.0	22.6	2.0	24.0
		1	12	23.0	23.0	22.4	2.0	24.0
		1	24	22.8	23.0	22.2	2.0	24.0
		12	0	21.8	21.8	21.7	3.0	23.0
		12	7	21.9	21.8	21.7	3.0	23.0
		12	13	21.8	21.8	21.5	3.0	23.0
		25	0	21.8	21.8	21.6	3.0	23.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26705	26865	27025		
				815.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.8	24.8	24.8	0.0	26.0
		1	8	24.9	24.8	24.7	0.0	26.0
		1	14	24.8	24.9	24.7	0.0	26.0
		8	0	24.0	23.8	23.8	1.0	25.0
		8	4	24.1	23.9	23.8	1.0	25.0
		8	7	24.1	24.0	23.8	1.0	25.0
		15	0	23.9	23.8	23.7	1.0	25.0
	16QAM	1	0	23.8	23.6	24.0	1.0	25.0
		1	8	23.8	23.6	23.9	1.0	25.0
		1	14	23.8	23.6	23.9	1.0	25.0
		8	0	22.9	22.9	22.8	2.0	24.0
		8	4	23.0	22.8	22.8	2.0	24.0
		8	7	23.0	22.9	22.8	2.0	24.0
		15	0	22.8	22.7	22.7	2.0	24.0
	64QAM	1	0	22.8	22.9	22.9	2.0	24.0
		1	8	22.9	22.9	22.7	2.0	24.0
		1	14	22.9	22.9	22.6	2.0	24.0
		8	0	21.9	21.7	21.6	3.0	23.0
		8	4	22.0	21.7	21.6	3.0	23.0
		8	7	22.0	21.7	21.5	3.0	23.0
		15	0	21.9	21.8	21.5	3.0	23.0

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26697	26865	27033		
				814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.9	24.8	24.7	0.0	26.0
		1	3	25.0	24.8	24.7	0.0	26.0
		1	5	24.9	24.7	24.7	0.0	26.0
		3	0	24.7	24.6	24.5	0.0	26.0
		3	1	24.7	24.6	24.5	0.0	26.0
		3	3	24.7	24.7	24.5	0.0	26.0
		6	0	24.1	23.9	23.8	1.0	25.0
	16QAM	1	0	24.1	23.7	23.7	1.0	25.0
		1	3	24.2	23.7	23.7	1.0	25.0
		1	5	24.1	23.7	23.6	1.0	25.0
		3	0	23.8	23.8	23.6	1.0	25.0
		3	1	23.8	23.8	23.6	1.0	25.0
		3	3	23.8	23.8	23.6	1.0	25.0
		6	0	22.8	22.9	22.8	2.0	24.0
	64QAM	1	0	23.0	22.8	22.5	2.0	24.0
		1	3	23.2	22.9	22.6	2.0	24.0
		1	5	23.1	22.8	22.5	2.0	24.0
		3	0	23.0	22.7	22.3	2.0	24.0
		3	1	23.0	22.8	22.3	2.0	24.0
		3	3	23.0	22.8	22.3	2.0	24.0
		6	0	21.8	22.0	21.5	3.0	23.0

LTE Band 30 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
					27710			
					2310 MHz			
10 MHz	QPSK	1	0		23.0		0.0	24.5
		1	25		22.9		0.0	24.5
		1	49		22.7		0.0	24.5
		25	0		22.2		1.0	23.5
		25	12		22.2		1.0	23.5
		25	25		22.1		1.0	23.5
		50	0		22.2		1.0	23.5
	16QAM	1	0		22.5		1.0	23.5
		1	25		22.3		1.0	23.5
		1	49		22.1		1.0	23.5
		25	0		21.3		2.0	22.5
		25	12		21.3		2.0	22.5
		25	25		21.2		2.0	22.5
		50	0		21.2		2.0	22.5
	64QAM	1	0		21.2		2.0	22.5
		1	25		21.2		2.0	22.5
		1	49		20.3		2.0	22.5
		25	0		20.1		3.0	21.5
		25	12		20.1		3.0	21.5
		25	25		19.7		3.0	21.5
		50	0		19.9		3.0	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				27685	27710	27735		
				2307.5 MHz	2310 MHz	2312.5 MHz		
5 MHz	QPSK	1	0		23.2		0.0	24.5
		1	12		23.2		0.0	24.5
		1	24		23.1		0.0	24.5
		12	0		22.2		1.0	23.5
		12	7		22.2		1.0	23.5
		12	13		22.2		1.0	23.5
		25	0		22.2		1.0	23.5
	16QAM	1	0		22.3		1.0	23.5
		1	12		22.4		1.0	23.5
		1	24		22.2		1.0	23.5
		12	0		21.3		2.0	22.5
		12	7		21.3		2.0	22.5
		12	13		21.3		2.0	22.5
		25	0		21.3		2.0	22.5
	64QAM	1	0		21.4		2.0	22.5
		1	12		21.4		2.0	22.5
		1	24		20.8		2.0	22.5
		12	0		20.1		3.0	21.5
		12	7		20.1		3.0	21.5
		12	13		20.1		3.0	21.5
		25	0		20.1		3.0	21.5

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	24.6	24.8	25.2	0.0	26.3
		1	49	24.6	24.8	25.0	0.0	26.3
		1	99	24.7	25.0	24.9	0.0	26.3
		50	0	23.7	24.0	24.1	1.0	25.3
		50	24	23.7	24.0	24.0	1.0	25.3
		50	50	23.6	23.9	24.0	1.0	25.3
		100	0	23.7	24.0	24.0	1.0	25.3
	16QAM	1	0	23.9	24.3	24.4	1.0	25.3
		1	49	23.9	24.3	24.3	1.0	25.3
		1	99	24.0	24.3	24.2	1.0	25.3
		50	0	22.7	23.0	23.1	2.0	24.3
		50	24	22.7	23.0	23.0	2.0	24.3
		50	50	22.6	22.9	23.0	2.0	24.3
		100	0	22.7	23.0	23.0	2.0	24.3
	64QAM	1	0	22.9	23.2	23.4	2.0	24.3
		1	49	22.9	23.2	23.2	2.0	24.3
		1	99	23.1	23.3	23.3	2.0	24.3
		50	0	21.8	22.2	22.2	3.0	23.3
		50	24	21.8	22.1	22.1	3.0	23.3
		50	50	21.8	22.1	22.1	3.0	23.3
		100	0	21.8	22.1	22.1	3.0	23.3
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	24.6	24.9	25.2	0.0	26.3
		1	37	24.4	24.9	25.1	0.0	26.3
		1	74	24.7	24.9	25.0	0.0	26.3
		36	0	23.8	24.1	24.2	1.0	25.3
		36	20	23.8	24.0	24.2	1.0	25.3
		36	39	23.7	24.0	24.1	1.0	25.3
		75	0	23.8	24.0	24.2	1.0	25.3
	16QAM	1	0	23.4	24.3	24.4	1.0	25.3
		1	37	23.4	24.1	24.1	1.0	25.3
		1	74	23.6	24.2	24.2	1.0	25.3
		36	0	22.8	23.1	23.1	2.0	24.3
		36	20	22.7	23.0	23.1	2.0	24.3
		36	39	22.7	23.0	23.0	2.0	24.3
		75	0	22.7	23.0	23.1	2.0	24.3
	64QAM	1	0	22.7	23.0	23.4	2.0	24.3
		1	37	22.6	23.3	23.1	2.0	24.3
		1	74	22.8	22.9	23.2	2.0	24.3
		36	0	21.8	22.0	22.2	3.0	23.3
		36	20	21.8	22.0	22.1	3.0	23.3
		36	39	21.7	21.9	22.1	3.0	23.3
		75	0	21.7	22.0	22.1	3.0	23.3

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	24.3	24.7	24.9	0.0	26.3
		1	25	24.2	24.8	24.8	0.0	26.3
		1	49	24.4	24.7	24.8	0.0	26.3
		25	0	23.4	23.8	23.9	1.0	25.3
		25	12	23.4	23.8	23.9	1.0	25.3
		25	25	23.4	23.7	23.9	1.0	25.3
		50	0	23.4	23.8	23.9	1.0	25.3
	16QAM	1	0	23.3	23.7	24.1	1.0	25.3
		1	25	23.2	23.7	24.1	1.0	25.3
		1	49	23.4	23.6	24.1	1.0	25.3
		25	0	22.5	22.9	22.9	2.0	24.3
		25	12	22.5	22.8	22.9	2.0	24.3
		25	25	22.5	22.8	22.9	2.0	24.3
		50	0	22.5	22.8	22.9	2.0	24.3
	64QAM	1	0	22.4	23.0	23.1	2.0	24.3
		1	25	22.5	22.7	22.9	2.0	24.3
		1	49	22.4	22.9	23.1	2.0	24.3
		25	0	21.5	21.9	22.0	3.0	23.3
		25	12	21.5	21.9	22.0	3.0	23.3
		25	25	21.5	21.9	21.9	3.0	23.3
		50	0	21.5	21.8	21.9	3.0	23.3
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	24.3	24.6	24.9	0.0	26.3
		1	12	24.4	24.8	25.0	0.0	26.3
		1	24	24.5	24.8	25.0	0.0	26.3
		12	0	23.3	23.7	23.9	1.0	25.3
		12	7	23.4	23.8	23.9	1.0	25.3
		12	13	23.4	23.8	23.9	1.0	25.3
		25	0	23.4	23.7	23.9	1.0	25.3
	16QAM	1	0	23.7	23.7	24.0	1.0	25.3
		1	12	23.8	23.8	24.0	1.0	25.3
		1	24	23.9	23.9	24.1	1.0	25.3
		12	0	22.5	22.8	22.9	2.0	24.3
		12	7	22.6	22.9	23.0	2.0	24.3
		12	13	22.6	22.9	23.0	2.0	24.3
		25	0	22.5	22.7	22.9	2.0	24.3
	64QAM	1	0	22.5	22.6	23.1	2.0	24.3
		1	12	22.7	22.7	23.2	2.0	24.3
		1	24	22.7	22.8	23.2	2.0	24.3
		12	0	21.5	21.8	21.8	3.0	23.3
		12	7	21.6	21.8	21.9	3.0	23.3
		12	13	21.6	21.9	21.9	3.0	23.3
		25	0	21.5	21.8	21.9	3.0	23.3

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	24.4	24.6	24.7	0.0	26.3
		1	8	24.4	24.6	24.8	0.0	26.3
		1	14	24.4	24.7	24.8	0.0	26.3
		8	0	23.5	23.7	23.9	1.0	25.3
		8	4	23.5	23.8	23.9	1.0	25.3
		8	7	23.6	23.8	24.0	1.0	25.3
		15	0	23.4	23.7	23.9	1.0	25.3
	16QAM	1	0	23.6	23.7	23.6	1.0	25.3
		1	8	23.6	23.7	23.7	1.0	25.3
		1	14	23.7	23.7	23.7	1.0	25.3
		8	0	22.5	22.8	22.9	2.0	24.3
		8	4	22.5	22.8	23.0	2.0	24.3
		8	7	22.5	22.9	23.1	2.0	24.3
		15	0	22.5	22.7	22.9	2.0	24.3
	64QAM	1	0	22.5	22.8	23.0	2.0	24.3
		1	8	22.6	22.9	23.0	2.0	24.3
		1	14	22.7	22.9	23.1	2.0	24.3
		8	0	21.5	21.8	21.8	3.0	23.3
		8	4	21.5	21.9	21.8	3.0	23.3
		8	7	21.5	21.9	21.9	3.0	23.3
		15	0	21.4	21.8	22.0	3.0	23.3

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	24.2	24.6	24.8	0.0	26.3
		1	3	24.3	24.7	24.8	0.0	26.3
		1	5	24.3	24.7	24.8	0.0	26.3
		3	0	24.1	24.5	24.8	0.0	26.3
		3	1	24.2	24.7	24.8	0.0	26.3
		3	3	24.2	24.7	24.8	0.0	26.3
		6	0	23.4	23.6	23.8	1.0	25.3
	16QAM	1	0	23.1	23.7	24.1	1.0	25.3
		1	3	23.3	23.8	24.2	1.0	25.3
		1	5	23.2	23.7	24.1	1.0	25.3
		3	0	23.4	23.7	24.0	1.0	25.3
		3	1	23.4	23.8	24.0	1.0	25.3
		3	3	23.5	23.8	24.0	1.0	25.3
		6	0	22.5	22.8	22.7	2.0	24.3
	64QAM	1	0	22.5	22.8	22.9	2.0	24.3
		1	3	22.7	22.9	23.0	2.0	24.3
		1	5	22.6	22.8	23.0	2.0	24.3
		3	0	22.6	22.8	22.8	2.0	24.3
		3	1	22.6	22.9	22.9	2.0	24.3
		3	3	22.6	22.9	22.9	2.0	24.3
		6	0	21.3	22.0	21.9	3.0	23.3

LTE Band 71 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				133222	133297	133372		
				673 MHz	680.5 MHz	688 MHz		
20 MHz	QPSK	1	0		24.4		0.0	25.7
		1	49		24.5		0.0	25.7
		1	99		24.3		0.0	25.7
		50	0		23.4		1.0	24.7
		50	24		23.5		1.0	24.7
		50	50		23.4		1.0	24.7
		100	0		23.5		1.0	24.7
	16QAM	1	0		23.8		1.0	24.7
		1	49		23.7		1.0	24.7
		1	99		23.6		1.0	24.7
		50	0		22.3		2.0	23.7
		50	24		22.4		2.0	23.7
		50	50		22.3		2.0	23.7
		100	0		22.4		2.0	23.7
	64QAM	1	0		22.6		2.0	23.7
		1	49		22.7		2.0	23.7
		1	99		22.6		2.0	23.7
		50	0		21.4		3.0	22.7
		50	24		21.5		3.0	22.7
		50	50		21.5		3.0	22.7
		100	0		21.5		3.0	22.7

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133197	133297	133397		
				670.5 MHz	680.5 MHz	690.5 MHz		
15 MHz	QPSK	1	0		24.4		0.0	25.7
		1	37		24.3		0.0	25.7
		1	74		23.9		0.0	25.7
		36	0		23.5		1.0	24.7
		36	20		23.6		1.0	24.7
		36	39		23.6		1.0	24.7
		75	0		23.5		1.0	24.7
	16QAM	1	0		23.3		1.0	24.7
		1	37		23.1		1.0	24.7
		1	74		23.2		1.0	24.7
		36	0		22.4		2.0	23.7
		36	20		22.5		2.0	23.7
		36	39		22.5		2.0	23.7
		75	0		22.5		2.0	23.7
	64QAM	1	0		22.9		2.0	23.7
		1	37		22.8		2.0	23.7
		1	74		22.5		2.0	23.7
		36	0		21.4		3.0	22.7
		36	20		21.5		3.0	22.7
		36	39		21.5		3.0	22.7
		75	0		21.5		3.0	22.7

LTE Band 71 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133172	133297	133422		
				668 MHz	680.5 MHz	693 MHz		
10 MHz	QPSK	1	0	24.3	24.3	24.2	0.0	25.7
		1	25	24.0	24.0	24.2	0.0	25.7
		1	49	24.2	24.1	24.0	0.0	25.7
		25	0	23.2	23.2	23.1	1.0	24.7
		25	12	23.2	23.2	23.1	1.0	24.7
		25	25	23.2	23.2	23.1	1.0	24.7
		50	0	23.2	23.2	23.1	1.0	24.7
	16QAM	1	0	23.4	23.2	23.0	1.0	24.7
		1	25	23.5	23.0	22.7	1.0	24.7
		1	49	23.5	23.1	22.7	1.0	24.7
		25	0	22.2	22.3	22.1	2.0	23.7
		25	12	22.2	22.3	22.1	2.0	23.7
		25	25	22.2	22.3	22.1	2.0	23.7
		50	0	22.2	22.2	22.0	2.0	23.7
	64QAM	1	0	22.3	22.5	22.2	2.0	23.7
		1	25	22.4	22.4	22.3	2.0	23.7
		1	49	22.3	22.5	22.0	2.0	23.7
		25	0	21.2	21.3	21.1	3.0	22.7
		25	12	21.3	21.3	21.1	3.0	22.7
		25	25	21.3	21.3	21.1	3.0	22.7
		50	0	21.2	21.3	21.1	3.0	22.7
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				133147	133297	133447		
				665.5 MHz	680.5 MHz	695.5 MHz		
5 MHz	QPSK	1	0	24.2	24.2	24.0	0.0	25.7
		1	12	24.3	24.3	24.1	0.0	25.7
		1	24	24.3	24.3	24.1	0.0	25.7
		12	0	23.1	23.2	23.0	1.0	24.7
		12	7	23.3	23.3	23.1	1.0	24.7
		12	13	23.3	23.3	23.1	1.0	24.7
		25	0	23.2	23.3	23.1	1.0	24.7
	16QAM	1	0	23.2	23.6	23.1	1.0	24.7
		1	12	23.2	23.7	23.1	1.0	24.7
		1	24	23.4	23.7	23.1	1.0	24.7
		12	0	22.1	22.3	22.0	2.0	23.7
		12	7	22.2	22.4	22.1	2.0	23.7
		12	13	22.3	22.4	22.1	2.0	23.7
		25	0	22.2	22.3	22.0	2.0	23.7
	64QAM	1	0	22.0	22.4	22.2	2.0	23.7
		1	12	22.1	22.5	22.2	2.0	23.7
		1	24	22.2	22.5	22.3	2.0	23.7
		12	0	21.1	21.2	21.1	3.0	22.7
		12	7	21.3	21.3	21.1	3.0	22.7
		12	13	21.3	21.3	21.2	3.0	22.7
		25	0	21.2	21.3	21.1	3.0	22.7

2. Reduced power Results

LTE Band 7 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				20850	21100	21350		
				2510 MHz	2535 MHz	2560 MHz		
20 MHz	QPSK	1	0	19.1	18.9	19.1	0.0	19.7
		1	49	19.1	18.8	19.1	0.0	19.7
		1	99	19.0	18.8	19.1	0.0	19.7
		50	0	19.1	18.9	19.2	0.0	19.7
		50	24	19.2	18.9	19.2	0.0	19.7
		50	50	19.1	18.9	19.1	0.0	19.7
		100	0	19.1	18.9	19.2	0.0	19.7
	16QAM	1	0	19.6	19.4	19.4	0.0	19.7
		1	49	19.5	19.3	19.4	0.0	19.7
		1	99	19.5	19.3	19.5	0.0	19.7
		50	0	19.1	18.9	19.2	0.0	19.7
		50	24	19.1	18.9	19.2	0.0	19.7
		50	50	19.1	18.9	19.2	0.0	19.7
		100	0	19.1	18.9	19.2	0.0	19.7
	64QAM	1	0	19.4	19.3	19.4	0.0	19.7
		1	49	19.3	19.2	19.4	0.0	19.7
		1	99	19.3	19.2	19.4	0.0	19.7
		50	0	19.1	19.0	19.2	0.0	19.7
		50	24	19.1	19.0	19.2	0.0	19.7
		50	50	19.1	19.0	19.1	0.0	19.7
		100	0	19.1	19.0	19.2	0.0	19.7
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20825	21100	21375		
				2507.5 MHz	2535 MHz	2562.5 MHz		
15 MHz	QPSK	1	0	19.1	19.0	19.2	0.0	19.7
		1	37	19.0	18.8	19.1	0.0	19.7
		1	74	19.1	18.8	19.2	0.0	19.7
		36	0	19.1	19.0	19.2	0.0	19.7
		36	20	19.1	19.0	19.2	0.0	19.7
		36	39	19.1	18.9	19.2	0.0	19.7
		75	0	19.1	18.9	19.2	0.0	19.7
	16QAM	1	0	19.6	18.9	19.6	0.0	19.7
		1	37	19.4	18.8	19.4	0.0	19.7
		1	74	19.5	18.9	19.6	0.0	19.7
		36	0	19.1	19.0	19.3	0.0	19.7
		36	20	19.1	19.0	19.3	0.0	19.7
		36	39	19.1	18.9	19.3	0.0	19.7
		75	0	19.2	19.0	19.2	0.0	19.7
	64QAM	1	0	19.5	19.2	19.4	0.0	19.7
		1	37	19.5	19.1	19.3	0.0	19.7
		1	74	19.6	19.2	19.3	0.0	19.7
		36	0	19.1	19.0	19.3	0.0	19.7
		36	20	19.1	19.0	19.3	0.0	19.7
		36	39	19.1	18.9	19.3	0.0	19.7
		75	0	19.1	18.9	19.2	0.0	19.7

LTE Band 7 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20800	21100	21400		
				2505 MHz	2535 MHz	2565 MHz		
10 MHz	QPSK	1	0	18.8	18.7	18.9	0.0	19.7
		1	25	18.7	18.5	18.9	0.0	19.7
		1	49	18.8	18.7	19.0	0.0	19.7
		25	0	19.0	18.8	19.0	0.0	19.7
		25	12	19.0	18.8	19.0	0.0	19.7
		25	25	18.9	18.8	19.0	0.0	19.7
		50	0	19.0	18.8	19.0	0.0	19.7
	16QAM	1	0	19.4	18.9	18.9	0.0	19.7
		1	25	19.3	18.7	19.0	0.0	19.7
		1	49	19.2	18.8	19.0	0.0	19.7
		25	0	19.1	18.9	19.1	0.0	19.7
		25	12	19.0	18.9	19.1	0.0	19.7
		25	25	19.0	18.9	19.1	0.0	19.7
		50	0	19.0	18.8	19.0	0.0	19.7
	64QAM	1	0	19.1	19.1	19.2	0.0	19.7
		1	25	19.0	18.8	19.1	0.0	19.7
		1	49	19.0	18.9	19.1	0.0	19.7
		25	0	19.1	18.9	19.0	0.0	19.7
		25	12	19.1	19.0	19.1	0.0	19.7
		25	25	19.0	19.0	19.0	0.0	19.7
		50	0	19.0	19.1	19.0	0.0	19.7

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20775	21100	21425		
				2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	18.9	18.7	18.9	0.0	19.7
		1	12	19.0	18.8	19.1	0.0	19.7
		1	24	19.0	18.8	19.1	0.0	19.7
		12	0	19.0	18.8	19.0	0.0	19.7
		12	7	19.1	18.9	19.1	0.0	19.7
		12	13	19.1	18.9	19.1	0.0	19.7
		25	0	19.1	18.8	19.1	0.0	19.7
	16QAM	1	0	19.2	19.3	19.1	0.0	19.7
		1	12	19.3	19.4	19.2	0.0	19.7
		1	24	19.3	19.4	19.3	0.0	19.7
		12	0	19.1	19.0	19.1	0.0	19.7
		12	7	19.2	19.0	19.2	0.0	19.7
		12	13	19.2	19.0	19.2	0.0	19.7
		25	0	19.1	18.9	19.0	0.0	19.7
	64QAM	1	0	18.9	19.2	19.3	0.0	19.7
		1	12	19.0	19.2	19.4	0.0	19.7
		1	24	19.0	19.2	19.4	0.0	19.7
		12	0	19.1	18.8	19.1	0.0	19.7
		12	7	19.2	18.9	19.2	0.0	19.7
		12	13	19.2	18.9	19.2	0.0	19.7
		25	0	19.1	18.9	19.1	0.0	19.7

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590			26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz			1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	20.2	20.3	20.2	0.0	20.7	20.1	20.3	20.2	0.0	20.7
		1	49	20.1	20.2	20.2	0.0	20.7	20.2	20.2	20.2	0.0	20.7
		1	99	20.2	20.3	20.1	0.0	20.7	20.1	20.3	20.2	0.0	20.7
		50	0	20.2	20.3	20.2	0.0	20.7	20.2	20.3	20.2	0.0	20.7
		50	24	20.2	20.4	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		50	50	20.2	20.4	20.2	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		100	0	20.2	20.3	20.2	0.0	20.7	20.2	20.4	20.3	0.0	20.7
	16QAM	1	0	20.7	20.6	20.3	0.0	20.7	20.7	20.4	20.4	0.0	20.7
		1	49	20.6	20.5	20.5	0.0	20.7	20.6	20.4	20.4	0.0	20.7
		1	99	20.6	20.6	20.5	0.0	20.7	20.6	20.5	20.6	0.0	20.7
		50	0	20.2	20.3	20.3	0.0	20.7	20.2	20.3	20.3	0.0	20.7
		50	24	20.2	20.4	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		50	50	20.2	20.4	20.3	0.0	20.7	20.2	20.4	20.3	0.0	20.7
		100	0	20.2	20.4	20.3	0.0	20.7	20.2	20.4	20.3	0.0	20.7
	64QAM	1	0	20.3	20.6	20.3	0.0	20.7	20.7	20.6	20.4	0.0	20.7
		1	49	20.1	20.6	20.5	0.0	20.7	20.7	20.6	20.5	0.0	20.7
		1	99	20.2	20.6	20.7	0.0	20.7	20.7	20.3	20.7	0.0	20.7
		50	0	20.2	20.4	20.3	0.0	20.7	20.2	20.4	20.3	0.0	20.7
		50	24	20.3	20.5	20.4	0.0	20.7	20.3	20.5	20.4	0.0	20.7
		50	50	20.3	20.5	20.3	0.0	20.7	20.3	20.5	20.3	0.0	20.7
		100	0	20.2	20.5	20.3	0.0	20.7	20.2	20.5	20.3	0.0	20.7
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615			26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz			1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	20.1	20.4	20.3	0.0	20.7	20.1	20.3	20.3	0.0	20.7
		1	37	20.0	20.2	20.0	0.0	20.7	20.1	20.3	20.1	0.0	20.7
		1	74	20.2	20.2	20.1	0.0	20.7	20.2	20.3	20.2	0.0	20.7
		36	0	20.1	20.3	20.2	0.0	20.7	20.1	20.3	20.2	0.0	20.7
		36	20	20.2	20.3	20.2	0.0	20.7	20.2	20.4	20.3	0.0	20.7
		36	39	20.2	20.3	20.2	0.0	20.7	20.2	20.3	20.3	0.0	20.7
		75	0	20.2	20.3	20.2	0.0	20.7	20.2	20.3	20.2	0.0	20.7
	16QAM	1	0	20.6	20.6	20.2	0.0	20.7	20.6	20.7	20.3	0.0	20.7
		1	37	20.6	20.5	20.0	0.0	20.7	20.6	20.7	20.0	0.0	20.7
		1	74	20.6	20.6	20.2	0.0	20.7	20.6	20.7	20.2	0.0	20.7
		36	0	20.2	20.3	20.2	0.0	20.7	20.2	20.3	20.2	0.0	20.7
		36	20	20.2	20.3	20.2	0.0	20.7	20.2	20.4	20.3	0.0	20.7
		36	39	20.3	20.3	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		75	0	20.2	20.3	20.2	0.0	20.7	20.2	20.3	20.2	0.0	20.7
	64QAM	1	0	20.3	20.5	20.6	0.0	20.7	20.3	20.3	20.6	0.0	20.7
		1	37	20.3	20.5	20.4	0.0	20.7	20.3	20.3	20.4	0.0	20.7
		1	74	20.4	20.5	20.6	0.0	20.7	20.4	20.3	20.6	0.0	20.7
		36	0	20.2	20.3	20.3	0.0	20.7	20.2	20.3	20.3	0.0	20.7
		36	20	20.3	20.4	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		36	39	20.3	20.4	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7
		75	0	20.3	20.4	20.3	0.0	20.7	20.3	20.4	20.3	0.0	20.7

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640			26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz			1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	19.9	20.0	20.0	0.0	20.7	20.0	19.9	20.0	0.0	20.7
		1	25	19.9	20.0	19.8	0.0	20.7	20.0	20.0	20.0	0.0	20.7
		1	49	20.0	20.0	19.9	0.0	20.7	20.0	20.0	20.1	0.0	20.7
		25	0	20.0	20.1	20.0	0.0	20.7	20.0	20.1	20.1	0.0	20.7
		25	12	20.0	20.1	20.0	0.0	20.7	20.0	20.2	20.0	0.0	20.7
		25	25	20.0	20.1	20.0	0.0	20.7	20.0	20.1	20.1	0.0	20.7
		50	0	20.0	20.1	20.0	0.0	20.7	20.0	20.1	20.0	0.0	20.7
	16QAM	1	0	20.4	20.1	20.0	0.0	20.7	20.4	20.3	20.0	0.0	20.7
		1	25	20.4	20.2	20.0	0.0	20.7	20.5	20.2	19.8	0.0	20.7
		1	49	20.3	20.2	20.0	0.0	20.7	20.4	20.1	20.1	0.0	20.7
		25	0	20.0	20.3	20.0	0.0	20.7	20.1	20.2	20.1	0.0	20.7
		25	12	20.1	20.3	20.1	0.0	20.7	20.1	20.3	20.1	0.0	20.7
		25	25	20.1	20.3	20.1	0.0	20.7	20.1	20.3	20.1	0.0	20.7
		50	0	20.1	20.2	20.1	0.0	20.7	20.1	20.2	20.1	0.0	20.7
	64QAM	1	0	20.1	20.4	20.4	0.0	20.7	20.1	20.4	20.4	0.0	20.7
		1	25	20.2	20.1	20.3	0.0	20.7	20.2	20.1	20.3	0.0	20.7
		1	49	20.2	20.4	20.5	0.0	20.7	20.2	20.4	20.5	0.0	20.7
		25	0	20.1	20.3	20.1	0.0	20.7	20.1	20.3	20.1	0.0	20.7
		25	12	20.2	20.3	20.1	0.0	20.7	20.2	20.3	20.1	0.0	20.7
		25	25	20.1	20.3	20.2	0.0	20.7	20.1	20.3	20.2	0.0	20.7
		50	0	20.1	20.3	20.1	0.0	20.7	20.1	20.3	20.1	0.0	20.7

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26065	26365	26665			26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz			1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	19.9	20.1	19.8	0.0	20.7	19.9	20.0	20.0	0.0	20.7
		1	12	20.0	20.2	19.9	0.0	20.7	19.9	20.1	20.0	0.0	20.7
		1	24	20.0	20.2	20.0	0.0	20.7	20.0	20.2	20.1	0.0	20.7
		12	0	20.0	20.1	20.0	0.0	20.7	20.0	20.1	20.0	0.0	20.7
		12	7	20.1	20.1	20.0	0.0	20.7	20.0	20.1	20.1	0.0	20.7
		12	13	20.1	20.2	20.1	0.0	20.7	20.0	20.2	20.1	0.0	20.7
		25	0	20.0	20.1	20.1	0.0	20.7	20.0	20.2	20.1	0.0	20.7
	16QAM	1	0	20.2	20.2	20.5	0.0	20.7	20.5	20.2	20.2	0.0	20.7
		1	12	20.2	20.4	20.6	0.0	20.7	20.6	20.3	20.3	0.0	20.7
		1	24	20.2	20.4	20.7	0.0	20.7	20.6	20.4	20.4	0.0	20.7
		12	0	20.0	20.2	20.1	0.0	20.7	20.2	20.2	20.1	0.0	20.7
		12	7	20.2	20.2	20.2	0.0	20.7	20.2	20.2	20.2	0.0	20.7
		12	13	20.1	20.3	20.3	0.0	20.7	20.2	20.3	20.3	0.0	20.7
		25	0	20.0	20.2	20.1	0.0	20.7	20.1	20.1	20.1	0.0	20.7
	64QAM	1	0	20.3	20.4	20.0	0.0	20.7	20.3	20.4	20.0	0.0	20.7
		1	12	20.4	20.5	20.2	0.0	20.7	20.4	20.5	20.2	0.0	20.7
		1	24	20.4	20.6	20.2	0.0	20.7	20.4	20.6	20.2	0.0	20.7
		12	0	20.0	20.2	20.1	0.0	20.7	20.0	20.2	20.1	0.0	20.7
		12	7	20.0	20.3	20.2	0.0	20.7	20.0	20.3	20.2	0.0	20.7
		12	13	20.1	20.3	20.2	0.0	20.7	20.1	20.3	20.2	0.0	20.7
		25	0	20.0	20.3	20.1	0.0	20.7	20.0	20.3	20.1	0.0	20.7

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675			26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz			1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	19.8	19.9	19.9	0.0	20.7	19.9	19.9	19.9	0.0	20.7
		1	8	19.9	20.0	20.0	0.0	20.7	20.0	20.0	20.0	0.0	20.7
		1	14	19.9	20.1	20.1	0.0	20.7	20.0	20.0	20.0	0.0	20.7
		8	0	19.9	20.1	20.0	0.0	20.7	20.0	20.0	20.0	0.0	20.7
		8	4	20.0	20.1	20.1	0.0	20.7	20.0	20.1	20.1	0.0	20.7
		8	7	20.0	20.2	20.1	0.0	20.7	20.0	20.2	20.2	0.0	20.7
		15	0	20.0	20.1	20.1	0.0	20.7	20.0	20.2	20.1	0.0	20.7
	16QAM	1	0	20.0	20.0	20.4	0.0	20.7	20.3	20.1	19.9	0.0	20.7
		1	8	20.0	20.1	20.5	0.0	20.7	20.4	20.2	20.1	0.0	20.7
		1	14	20.1	20.1	20.6	0.0	20.7	20.4	20.3	20.1	0.0	20.7
		8	0	20.0	20.2	20.2	0.0	20.7	20.1	20.1	20.2	0.0	20.7
		8	4	20.1	20.3	20.2	0.0	20.7	20.1	20.2	20.3	0.0	20.7
		8	7	20.1	20.3	20.3	0.0	20.7	20.2	20.3	20.3	0.0	20.7
		15	0	20.0	20.3	20.2	0.0	20.7	20.0	20.1	20.2	0.0	20.7
	64QAM	1	0	20.1	20.3	20.3	0.0	20.7	20.1	20.3	20.3	0.0	20.7
		1	8	20.2	20.4	20.5	0.0	20.7	20.2	20.4	20.5	0.0	20.7
		1	14	20.1	20.4	20.5	0.0	20.7	20.1	20.4	20.5	0.0	20.7
		8	0	20.1	20.1	20.2	0.0	20.7	20.1	20.1	20.2	0.0	20.7
		8	4	20.1	20.2	20.2	0.0	20.7	20.1	20.2	20.2	0.0	20.7
		8	7	20.1	20.3	20.3	0.0	20.7	20.1	20.3	20.3	0.0	20.7
		15	0	20.1	20.3	20.1	0.0	20.7	20.1	20.3	20.1	0.0	20.7

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683			26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz			1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	19.7	19.9	20.0	0.0	20.7	19.7	20.0	19.9	0.0	20.7
		1	3	19.9	20.0	20.1	0.0	20.7	19.8	20.1	20.0	0.0	20.7
		1	5	19.8	20.0	20.0	0.0	20.7	19.8	20.0	20.0	0.0	20.7
		3	0	19.8	20.0	20.0	0.0	20.7	19.8	20.0	20.1	0.0	20.7
		3	1	19.9	20.1	20.1	0.0	20.7	19.9	20.0	20.1	0.0	20.7
		3	3	19.9	20.1	20.1	0.0	20.7	19.9	20.1	20.1	0.0	20.7
		6	0	19.9	20.1	20.0	0.0	20.7	19.9	20.0	20.0	0.0	20.7
	16QAM	1	0	20.2	20.1	20.2	0.0	20.7	19.9	20.3	20.4	0.0	20.7
		1	3	20.4	20.2	20.3	0.0	20.7	20.1	20.3	20.6	0.0	20.7
		1	5	20.3	20.2	20.3	0.0	20.7	20.1	20.3	20.5	0.0	20.7
		3	0	20.2	20.3	20.2	0.0	20.7	20.2	20.2	20.4	0.0	20.7
		3	1	20.2	20.4	20.3	0.0	20.7	20.2	20.3	20.4	0.0	20.7
		3	3	20.3	20.4	20.3	0.0	20.7	20.2	20.3	20.4	0.0	20.7
		6	0	19.9	20.3	20.2	0.0	20.7	20.1	20.2	20.0	0.0	20.7
	64QAM	1	0	20.1	20.3	20.5	0.0	20.7	20.1	20.3	20.5	0.0	20.7
		1	3	20.2	20.4	20.6	0.0	20.7	20.2	20.4	20.6	0.0	20.7
		1	5	20.1	20.3	20.6	0.0	20.7	20.1	20.3	20.6	0.0	20.7
		3	0	20.1	20.1	20.5	0.0	20.7	20.1	20.1	20.5	0.0	20.7
		3	1	20.2	20.2	20.5	0.0	20.7	20.2	20.2	20.5	0.0	20.7
		3	3	20.2	20.2	20.5	0.0	20.7	20.2	20.2	20.5	0.0	20.7
		6	0	20.3	20.2	20.1	0.0	20.7	20.3	20.2	20.1	0.0	20.7

LTE Band 30 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off			MPR	Tune-up Limit
				Measured Pwr (dBm)				
					27710			
					2310 MHz			
10 MHz	QPSK	1	0		18.8		0.0	19.5
		1	25		18.5		0.0	19.5
		1	49		18.5		0.0	19.5
		25	0		18.8		0.0	19.5
		25	12		18.5		0.0	19.5
		25	25		18.5		0.0	19.5
		50	0		18.6		0.0	19.5
	16QAM	1	0		18.5		0.0	19.5
		1	25		18.3		0.0	19.5
		1	49		18.5		0.0	19.5
		25	0		18.7		0.0	19.5
		25	12		18.7		0.0	19.5
		25	25		18.6		0.0	19.5
		50	0		18.6		0.0	19.5
	64QAM	1	0		18.8		0.0	19.5
		1	25		18.6		0.0	19.5
		1	49		18.7		0.0	19.5
		25	0		18.6		0.0	19.5
		25	12		18.6		0.0	19.5
		25	25		18.6		0.0	19.5
		50	0		18.6		0.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				27685	27710	27735		
				2307.5 MHz	2310 MHz	2312.5 MHz		
5 MHz	QPSK	1	0		18.5		0.0	19.5
		1	12		18.5		0.0	19.5
		1	24		18.5		0.0	19.5
		12	0		18.6		0.0	19.5
		12	7		18.6		0.0	19.5
		12	13		18.6		0.0	19.5
		25	0		18.7		0.0	19.5
	16QAM	1	0		18.5		0.0	19.5
		1	12		18.6		0.0	19.5
		1	24		18.5		0.0	19.5
		12	0		18.8		0.0	19.5
		12	7		18.8		0.0	19.5
		12	13		18.8		0.0	19.5
		25	0		18.7		0.0	19.5
	64QAM	1	0		18.5		0.0	19.5
		1	12		18.5		0.0	19.5
		1	24		18.5		0.0	19.5
		12	0		18.7		0.0	19.5
		12	7		18.7		0.0	19.5
		12	13		18.6		0.0	19.5
		25	0		18.6		0.0	19.5

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572			132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	19.9	19.9	20.3	0.0	20.9	19.8	20.0	20.3	0.0	20.9
		1	49	19.9	20.0	20.1	0.0	20.9	19.9	20.1	20.1	0.0	20.9
		1	99	20.0	20.0	20.0	0.0	20.9	20.0	20.0	20.0	0.0	20.9
		50	0	20.0	20.2	20.2	0.0	20.9	20.1	20.2	20.2	0.0	20.9
		50	24	20.0	20.1	20.2	0.0	20.9	20.0	20.2	20.2	0.0	20.9
		50	50	20.0	20.1	20.2	0.0	20.9	20.0	20.1	20.1	0.0	20.9
		100	0	20.0	20.1	20.2	0.0	20.9	20.0	20.1	20.2	0.0	20.9
	16QAM	1	0	20.4	20.5	20.7	0.0	20.9	20.3	20.6	20.8	0.0	20.9
		1	49	20.5	20.6	20.6	0.0	20.9	20.3	20.6	20.6	0.0	20.9
		1	99	20.5	20.5	20.6	0.0	20.9	20.5	20.7	20.5	0.0	20.9
		50	0	20.0	20.2	20.3	0.0	20.9	20.0	20.2	20.2	0.0	20.9
		50	24	20.0	20.1	20.3	0.0	20.9	20.0	20.2	20.2	0.0	20.9
		50	50	20.0	20.1	20.2	0.0	20.9	19.9	20.1	20.2	0.0	20.9
		100	0	20.0	20.1	20.3	0.0	20.9	20.0	20.1	20.2	0.0	20.9
	64QAM	1	0	20.1	20.4	20.6	0.0	20.9	20.1	20.4	20.5	0.0	20.9
		1	49	20.2	20.5	20.5	0.0	20.9	20.2	20.5	20.7	0.0	20.9
		1	99	20.3	20.4	20.7	0.0	20.9	20.3	20.4	20.7	0.0	20.9
		50	0	20.0	20.2	20.3	0.0	20.9	20.0	20.2	20.2	0.0	20.9
		50	24	20.0	20.2	20.3	0.0	20.9	20.0	20.2	20.2	0.0	20.9
		50	50	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.2	0.0	20.9
		100	0	20.0	20.1	20.2	0.0	20.9	20.0	20.1	20.2	0.0	20.9
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597			132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	19.9	20.1	20.3	0.0	20.9	19.9	20.2	20.2	0.0	20.9
		1	37	19.8	19.8	20.0	0.0	20.9	19.9	20.0	19.9	0.0	20.9
		1	74	19.8	20.0	20.1	0.0	20.9	19.9	20.1	20.0	0.0	20.9
		36	0	20.0	20.1	20.3	0.0	20.9	20.0	20.1	20.3	0.0	20.9
		36	20	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.2	0.0	20.9
		36	39	19.9	20.1	20.1	0.0	20.9	19.9	20.0	20.2	0.0	20.9
		75	0	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.2	0.0	20.9
	16QAM	1	0	20.0	20.6	20.7	0.0	20.9	20.4	20.7	20.3	0.0	20.9
		1	37	19.7	20.4	20.5	0.0	20.9	20.3	20.4	20.1	0.0	20.9
		1	74	19.8	20.4	20.5	0.0	20.9	20.3	20.5	20.1	0.0	20.9
		36	0	20.0	20.2	20.2	0.0	20.9	20.0	20.1	20.3	0.0	20.9
		36	20	20.0	20.2	20.2	0.0	20.9	20.0	20.1	20.2	0.0	20.9
		36	39	19.9	20.1	20.1	0.0	20.9	19.9	20.0	20.2	0.0	20.9
		75	0	20.0	20.1	20.2	0.0	20.9	20.0	20.1	20.2	0.0	20.9
	64QAM	1	0	20.2	20.3	20.5	0.0	20.9	20.5	20.5	20.5	0.0	20.9
		1	37	20.2	20.2	20.7	0.0	20.9	20.4	20.3	20.3	0.0	20.9
		1	74	20.2	20.2	20.7	0.0	20.9	20.5	20.4	20.2	0.0	20.9
		36	0	19.9	20.2	20.2	0.0	20.9	20.0	20.1	20.3	0.0	20.9
		36	20	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.3	0.0	20.9
		36	39	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.3	0.0	20.9
		75	0	19.9	20.1	20.2	0.0	20.9	20.0	20.1	20.2	0.0	20.9

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	19.7	19.9	19.9	0.0	20.9	19.6	19.8	20.0	0.0	20.9
		1	25	19.8	19.8	19.9	0.0	20.9	19.4	19.6	20.0	0.0	20.9
		1	49	19.7	19.8	20.0	0.0	20.9	19.6	19.9	20.0	0.0	20.9
		25	0	19.8	20.0	20.1	0.0	20.9	19.7	20.0	20.1	0.0	20.9
		25	12	19.8	19.9	20.1	0.0	20.9	19.7	19.9	20.0	0.0	20.9
		25	25	19.7	19.9	20.0	0.0	20.9	19.7	19.9	20.0	0.0	20.9
		50	0	19.8	19.9	20.1	0.0	20.9	19.7	19.9	20.0	0.0	20.9
	16QAM	1	0	20.0	19.9	20.0	0.0	20.9	19.7	19.9	20.4	0.0	20.9
		1	25	20.0	19.9	19.8	0.0	20.9	19.6	19.7	20.5	0.0	20.9
		1	49	20.1	20.0	20.1	0.0	20.9	19.7	19.8	20.4	0.0	20.9
		25	0	19.8	20.1	20.2	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		25	12	19.8	20.1	20.1	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		25	25	19.8	20.0	20.0	0.0	20.9	19.8	19.9	20.1	0.0	20.9
		50	0	19.8	20.0	20.1	0.0	20.9	19.8	19.9	20.1	0.0	20.9
	64QAM	1	0	19.9	20.2	20.3	0.0	20.9	19.8	20.1	20.2	0.0	20.9
		1	25	19.8	19.9	20.4	0.0	20.9	19.9	20.1	20.2	0.0	20.9
		1	49	19.8	20.1	20.4	0.0	20.9	19.8	20.2	20.1	0.0	20.9
		25	0	19.8	20.1	20.1	0.0	20.9	19.8	20.0	20.2	0.0	20.9
		25	12	19.8	20.0	20.2	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		25	25	19.8	20.0	20.1	0.0	20.9	19.8	19.9	20.1	0.0	20.9
		50	0	19.8	19.9	20.1	0.0	20.9	19.7	19.9	20.1	0.0	20.9
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647			131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	19.7	19.8	20.0	0.0	20.9	19.6	19.8	20.0	0.0	20.9
		1	12	19.8	19.9	20.1	0.0	20.9	19.6	19.9	20.1	0.0	20.9
		1	24	19.8	19.9	20.1	0.0	20.9	19.7	20.0	20.1	0.0	20.9
		12	0	19.7	19.9	20.0	0.0	20.9	19.7	19.9	20.0	0.0	20.9
		12	7	19.8	19.9	20.1	0.0	20.9	19.8	19.9	20.1	0.0	20.9
		12	13	19.8	20.0	20.1	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		25	0	19.8	20.0	20.1	0.0	20.9	19.8	19.9	20.0	0.0	20.9
	16QAM	1	0	19.8	20.4	20.2	0.0	20.9	20.1	20.0	20.2	0.0	20.9
		1	12	19.9	20.5	20.2	0.0	20.9	20.3	20.1	20.3	0.0	20.9
		1	24	20.0	20.5	20.3	0.0	20.9	20.3	20.1	20.4	0.0	20.9
		12	0	19.8	20.1	20.1	0.0	20.9	19.8	19.9	20.1	0.0	20.9
		12	7	19.9	20.1	20.2	0.0	20.9	19.9	20.0	20.2	0.0	20.9
		12	13	19.9	20.1	20.2	0.0	20.9	19.9	20.1	20.2	0.0	20.9
		25	0	19.8	20.0	20.0	0.0	20.9	19.8	19.9	20.1	0.0	20.9
	64QAM	1	0	19.9	20.2	20.0	0.0	20.9	19.8	19.8	20.3	0.0	20.9
		1	12	20.1	20.2	20.0	0.0	20.9	19.9	19.9	20.4	0.0	20.9
		1	24	20.1	20.3	20.1	0.0	20.9	20.0	19.9	20.4	0.0	20.9
		12	0	19.6	20.0	20.1	0.0	20.9	19.7	19.9	19.9	0.0	20.9
		12	7	19.8	20.0	20.1	0.0	20.9	19.8	20.0	20.0	0.0	20.9
		12	13	19.7	20.1	20.2	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		25	0	19.7	19.9	20.1	0.0	20.9	19.7	19.8	20.0	0.0	20.9

LTE Band 66 Measured Results (Continued)

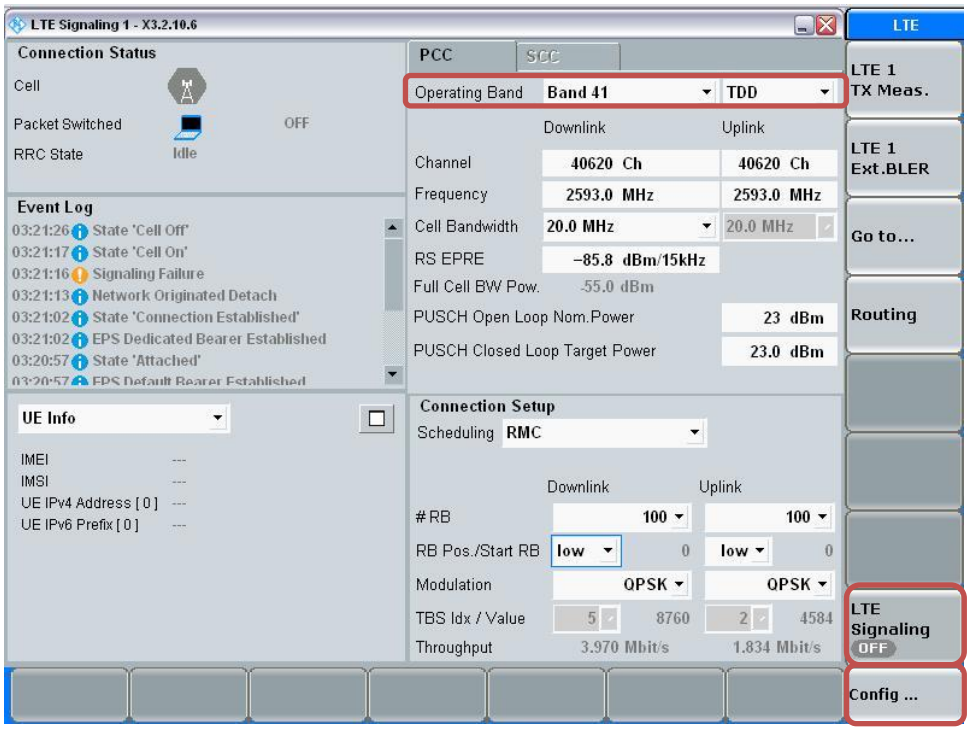
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	19.6	19.8	20.0	0.0	20.9	19.6	19.8	19.9	0.0	20.9
		1	8	19.6	19.8	20.0	0.0	20.9	19.7	19.8	19.9	0.0	20.9
		1	14	19.6	19.9	20.0	0.0	20.9	19.7	19.8	20.0	0.0	20.9
		8	0	19.7	19.9	20.0	0.0	20.9	19.7	19.8	20.0	0.0	20.9
		8	4	19.8	19.9	20.0	0.0	20.9	19.7	19.9	20.0	0.0	20.9
		8	7	19.8	20.0	20.0	0.0	20.9	19.7	19.9	20.0	0.0	20.9
		15	0	19.8	20.0	20.0	0.0	20.9	19.7	19.9	20.0	0.0	20.9
	16QAM	1	0	19.7	19.8	20.4	0.0	20.9	20.0	20.0	19.9	0.0	20.9
		1	8	19.7	19.9	20.4	0.0	20.9	20.0	20.0	20.0	0.0	20.9
		1	14	19.8	19.9	20.5	0.0	20.9	20.1	20.0	20.0	0.0	20.9
		8	0	19.7	20.0	20.1	0.0	20.9	19.7	19.9	20.1	0.0	20.9
		8	4	19.8	20.1	20.1	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		8	7	19.8	20.1	20.2	0.0	20.9	19.8	20.0	20.1	0.0	20.9
		15	0	19.7	20.0	20.1	0.0	20.9	19.8	19.9	20.0	0.0	20.9
	64QAM	1	0	19.7	20.1	20.3	0.0	20.9	19.8	20.1	20.1	0.0	20.9
		1	8	19.8	20.1	20.4	0.0	20.9	19.8	20.2	20.1	0.0	20.9
		1	14	19.9	20.2	20.4	0.0	20.9	19.9	20.2	20.2	0.0	20.9
		8	0	19.7	19.9	20.1	0.0	20.9	19.6	19.9	20.0	0.0	20.9
		8	4	19.8	19.9	20.1	0.0	20.9	19.6	20.0	20.1	0.0	20.9
		8	7	19.8	20.0	20.1	0.0	20.9	19.7	20.0	20.0	0.0	20.9
		15	0	19.8	20.0	20.0	0.0	20.9	19.7	19.9	20.1	0.0	20.9
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665			131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	19.5	19.7	20.0	0.0	20.9	19.5	19.7	19.8	0.0	20.9
		1	3	19.6	19.8	20.0	0.0	20.9	19.6	19.8	19.9	0.0	20.9
		1	5	19.6	19.7	20.0	0.0	20.9	19.6	19.8	19.9	0.0	20.9
		3	0	19.6	19.7	19.9	0.0	20.9	19.5	19.7	19.9	0.0	20.9
		3	1	19.6	19.8	20.0	0.0	20.9	19.6	19.9	19.9	0.0	20.9
		3	3	19.6	19.8	20.0	0.0	20.9	19.6	19.8	19.9	0.0	20.9
		6	0	19.7	19.8	20.0	0.0	20.9	19.6	19.7	20.0	0.0	20.9
	16QAM	1	0	19.9	19.8	20.1	0.0	20.9	19.7	20.2	20.0	0.0	20.9
		1	3	20.0	20.0	20.3	0.0	20.9	19.8	20.3	20.1	0.0	20.9
		1	5	20.0	19.9	20.2	0.0	20.9	19.7	20.2	20.0	0.0	20.9
		3	0	19.8	20.0	20.1	0.0	20.9	19.6	20.0	20.2	0.0	20.9
		3	1	19.9	20.1	20.2	0.0	20.9	19.7	20.1	20.2	0.0	20.9
		3	3	19.9	20.1	20.2	0.0	20.9	19.7	20.1	20.2	0.0	20.9
		6	0	19.6	20.0	20.2	0.0	20.9	19.8	19.7	20.2	0.0	20.9
	64QAM	1	0	19.9	19.9	20.1	0.0	20.9	19.9	19.9	20.1	0.0	20.9
		1	3	20.1	20.1	20.3	0.0	20.9	20.1	20.0	20.2	0.0	20.9
		1	5	20.0	20.0	20.2	0.0	20.9	20.0	19.9	20.2	0.0	20.9
		3	0	19.9	20.0	20.0	0.0	20.9	19.9	19.9	19.9	0.0	20.9
		3	1	20.0	20.1	20.0	0.0	20.9	20.0	20.0	20.0	0.0	20.9
		3	3	20.0	20.1	20.0	0.0	20.9	19.9	20.0	20.0	0.0	20.9
		6	0	19.6	20.2	20.1	0.0	20.9	19.6	20.1	20.0	0.0	20.9

LTE Band TDD Measured Results

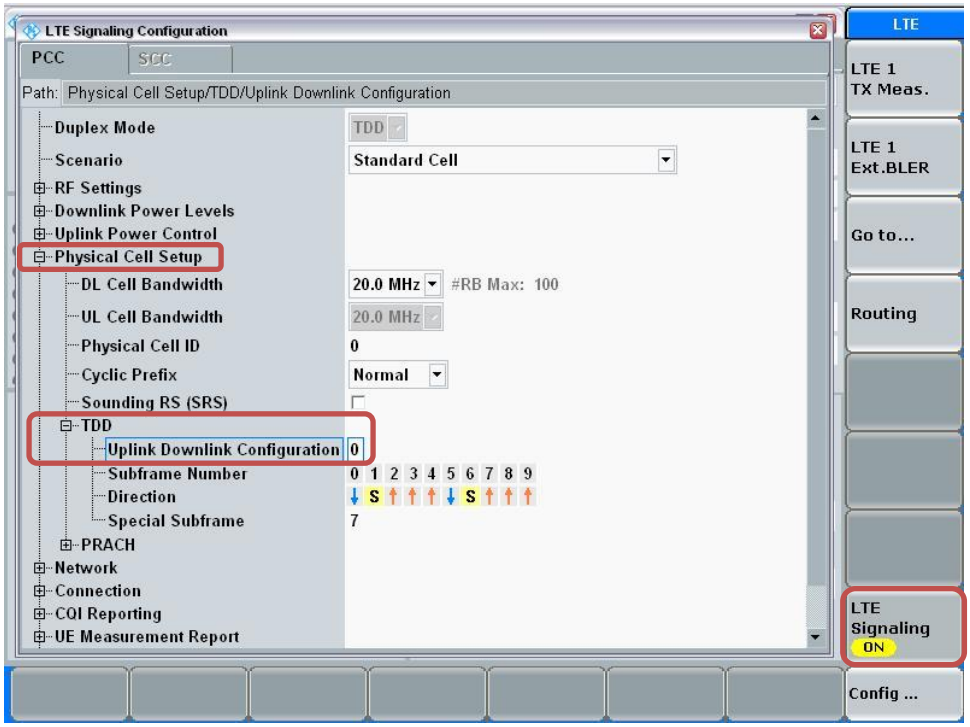
Procedure used to establish SAR test signal for LTE TDD Band

Set to CMW-500 with following parameters:

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

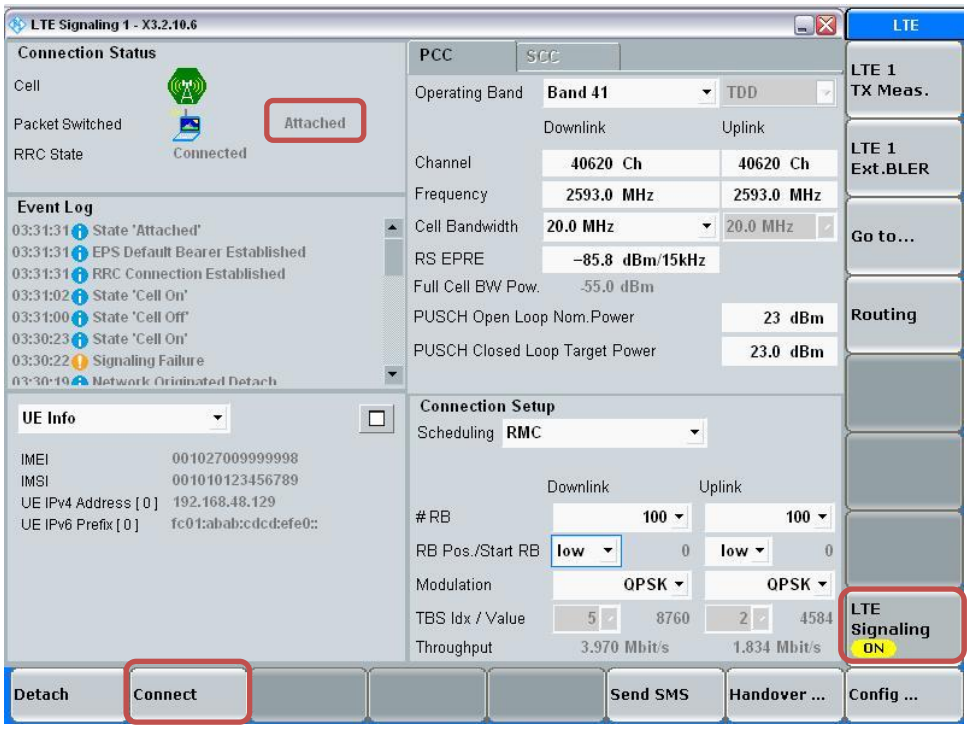


- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
- Turn the cell on using “ON | OFF” key



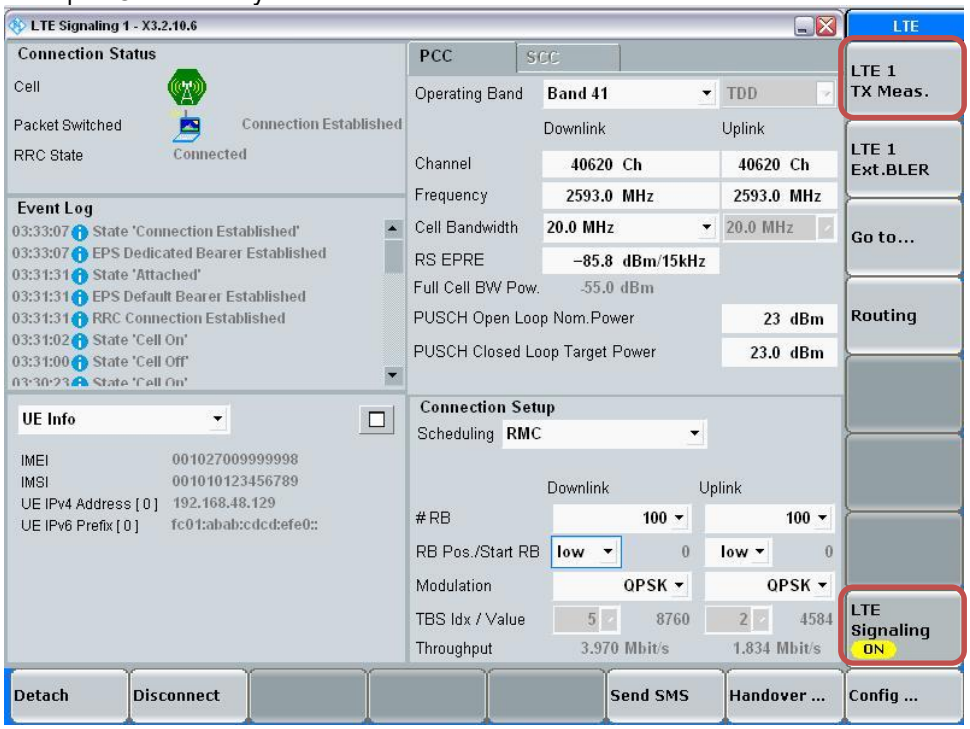
Connect to EUT

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

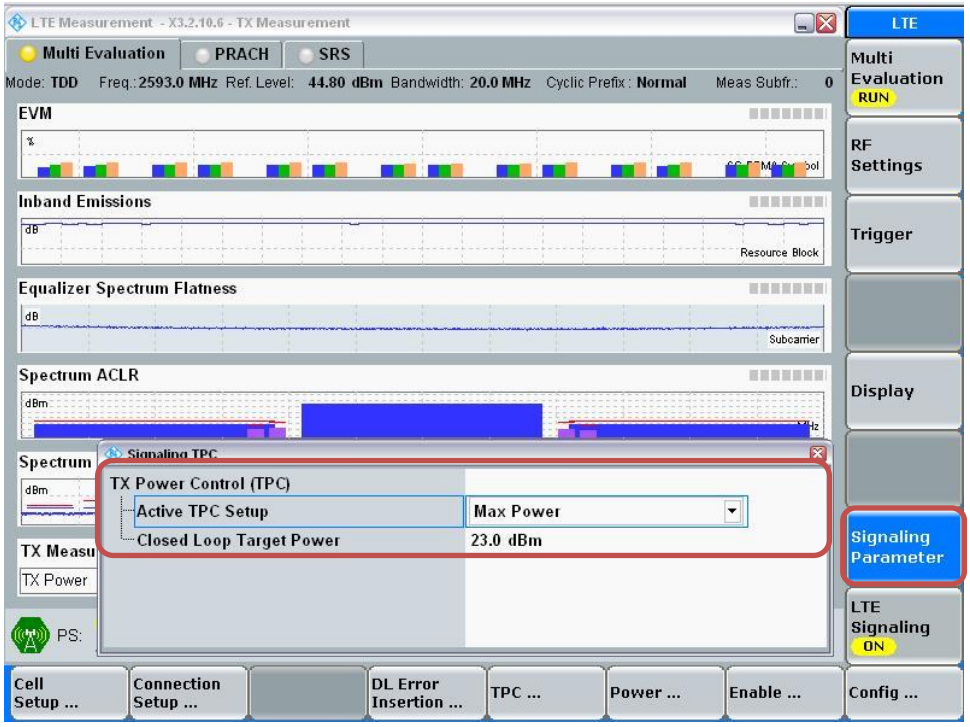


Max Power Setting

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

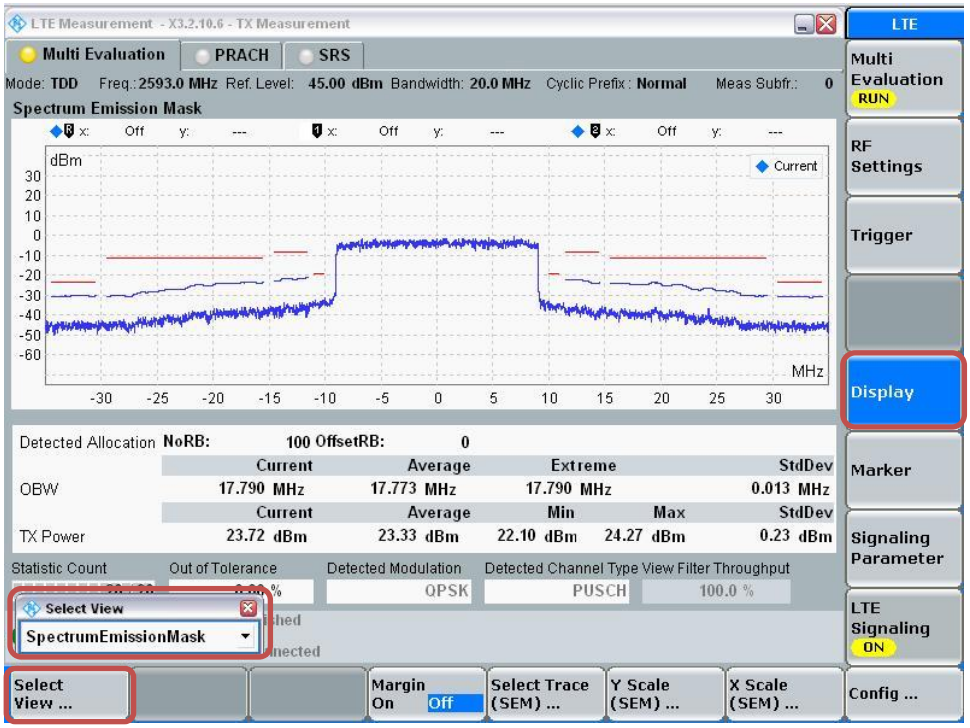


- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



View TX Power

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



1. Max power Results

LTE Band 41 – Power Class 3 - Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	24.7	24.2	24.4	24.5	24.2	0.0	25.5
		1	49	24.6	24.2	24.5	24.4	24.1	0.0	25.5
		1	99	24.7	24.1	24.4	24.2	24.2	0.0	25.5
		50	0	23.5	23.2	23.3	23.5	23.2	1.0	24.5
		50	24	23.5	23.2	23.4	23.5	23.3	1.0	24.5
		50	50	23.5	23.2	23.4	23.4	23.3	1.0	24.5
		100	0	23.5	23.2	23.4	23.5	23.3	1.0	24.5
	16QAM	1	0	23.7	23.2	23.3	23.6	23.2	1.0	24.5
		1	49	23.6	23.2	23.3	23.5	23.2	1.0	24.5
		1	99	23.6	23.1	23.3	23.3	23.1	1.0	24.5
		50	0	22.5	22.2	22.3	22.6	22.2	2.0	23.5
		50	24	22.6	22.2	22.4	22.5	22.2	2.0	23.5
		50	50	22.5	22.1	22.4	22.4	22.2	2.0	23.5
		100	0	22.5	22.2	22.3	22.4	22.2	2.0	23.5
	64QAM	1	0	22.0	22.6	22.1	22.7	22.3	2.0	23.5
		1	49	22.1	22.5	22.2	22.6	22.1	2.0	23.5
		1	99	22.4	22.5	22.2	22.3	21.7	2.0	23.5
		50	0	21.1	21.1	21.3	21.5	21.1	3.0	22.5
		50	24	21.3	21.1	21.3	21.4	20.9	3.0	22.5
		50	50	21.4	21.1	21.4	21.3	20.5	3.0	22.5
		100	0	21.3	21.1	21.3	21.4	20.7	3.0	22.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	24.4	24.3	24.3	24.4	24.1	0.0	25.5
		1	37	24.2	24.3	24.1	24.2	23.9	0.0	25.5
		1	74	24.3	24.2	24.3	24.2	24.2	0.0	25.5
		36	0	23.5	23.2	23.3	23.5	23.2	1.0	24.5
		36	20	23.5	23.2	23.4	23.5	23.2	1.0	24.5
		36	39	23.5	23.2	23.4	23.4	23.2	1.0	24.5
		75	0	23.5	23.2	23.4	23.5	23.2	1.0	24.5
	16QAM	1	0	23.5	23.2	23.3	23.4	23.1	1.0	24.5
		1	37	23.2	22.9	23.2	23.1	22.9	1.0	24.5
		1	74	23.3	23.0	23.3	23.2	23.2	1.0	24.5
		36	0	22.5	22.2	22.4	22.5	22.2	2.0	23.5
		36	20	22.5	22.2	22.4	22.5	22.2	2.0	23.5
		36	39	22.5	22.2	22.4	22.4	22.2	2.0	23.5
		75	0	22.5	22.2	22.4	22.5	22.2	2.0	23.5
	64QAM	1	0	21.7	21.7	22.5	22.5	21.4	2.0	23.5
		1	37	21.8	21.5	22.3	22.3	21.3	2.0	23.5
		1	74	22.0	21.7	22.5	22.2	21.0	2.0	23.5
		36	0	21.0	21.2	21.3	21.4	21.0	3.0	22.5
		36	20	21.2	21.2	21.4	21.4	20.8	3.0	22.5
		36	39	21.2	21.2	21.4	21.3	20.7	3.0	22.5
		75	0	21.2	21.1	21.4	21.4	20.7	3.0	22.5

LTE Band 41 – Power Class 3 - Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	24.4	23.9	24.0	24.2	24.0	0.0	25.5
		1	25	24.2	23.7	23.8	24.1	23.9	0.0	25.5
		1	49	24.2	23.9	24.0	24.2	23.9	0.0	25.5
		25	0	23.5	23.1	23.2	23.4	23.2	1.0	24.5
		25	12	23.4	23.1	23.2	23.3	23.1	1.0	24.5
		25	25	23.4	23.1	23.2	23.3	23.1	1.0	24.5
		50	0	23.4	23.1	23.2	23.3	23.1	1.0	24.5
	16QAM	1	0	23.5	23.0	23.1	23.2	23.0	1.0	24.5
		1	25	23.4	22.9	23.0	23.3	22.9	1.0	24.5
		1	49	23.5	22.9	23.0	23.3	22.9	1.0	24.5
		25	0	22.4	22.1	22.2	22.4	22.1	2.0	23.5
		25	12	22.4	22.1	22.2	22.3	22.1	2.0	23.5
		25	25	22.4	22.0	22.1	22.3	22.1	2.0	23.5
		50	0	22.4	22.0	22.2	22.3	22.1	2.0	23.5
	64QAM	1	0	21.9	21.5	22.4	22.2	21.3	2.0	23.5
		1	25	22.0	21.3	22.3	22.0	21.3	2.0	23.5
		1	49	22.1	21.5	22.4	22.1	21.1	2.0	23.5
		25	0	21.1	21.0	21.1	21.2	21.0	3.0	22.5
		25	12	21.1	21.0	21.1	21.2	20.9	3.0	22.5
		25	25	21.1	21.0	21.1	21.1	20.7	3.0	22.5
		50	0	21.2	21.0	21.1	21.2	20.7	3.0	22.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	24.2	24.0	24.1	24.1	24.0	0.0	25.5
		1	12	24.2	24.1	24.1	24.1	24.0	0.0	25.5
		1	24	24.2	24.1	24.1	24.1	24.0	0.0	25.5
		12	0	23.3	23.1	23.1	23.3	23.1	1.0	24.5
		12	7	23.4	23.1	23.2	23.3	23.1	1.0	24.5
		12	13	23.3	23.1	23.2	23.3	23.1	1.0	24.5
		25	0	23.4	23.1	23.2	23.3	23.1	1.0	24.5
	16QAM	1	0	23.2	23.0	23.2	23.1	23.0	1.0	24.5
		1	12	23.2	23.0	23.2	23.1	23.0	1.0	24.5
		1	24	23.2	23.0	23.3	23.1	23.0	1.0	24.5
		12	0	22.3	22.0	22.1	22.3	22.0	2.0	23.5
		12	7	22.4	22.0	22.2	22.3	22.0	2.0	23.5
		12	13	22.3	22.0	22.2	22.3	22.1	2.0	23.5
		25	0	22.3	22.1	22.2	22.3	22.1	2.0	23.5
	64QAM	1	0	21.5	22.4	22.2	21.9	22.2	2.0	23.5
		1	12	21.5	22.4	22.3	21.9	22.2	2.0	23.5
		1	24	21.5	22.4	22.3	21.9	22.1	2.0	23.5
		12	0	21.2	21.1	21.0	21.2	21.0	3.0	22.5
		12	7	21.2	21.1	21.1	21.2	21.0	3.0	22.5
		12	13	21.2	21.1	21.1	21.2	20.9	3.0	22.5
		25	0	21.2	21.0	21.0	21.2	20.8	3.0	22.5

LTE Band 41 – Power Class 2 - Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	26.5	27.3	27.5	27.2	26.4	0.0	28.0
		1	49	26.5	27.3	27.6	27.1	26.1	0.0	28.0
		1	99	26.8	27.3	27.5	27.1	25.6	0.0	28.0
		50	0	25.4	26.4	26.5	26.3	25.4	1.0	27.0
		50	24	25.6	26.4	26.6	26.2	25.1	1.0	27.0
		50	50	25.7	26.3	26.6	26.1	24.8	1.0	27.0
		100	0	25.5	26.4	26.6	26.1	25.0	1.0	27.0
	16QAM	1	0	25.8	26.7	26.6	26.5	25.5	1.0	27.0
		1	49	25.9	26.7	26.6	26.5	25.3	1.0	27.0
		1	99	26.2	26.6	26.6	26.4	24.8	1.0	27.0
		50	0	24.6	25.4	25.5	25.4	24.5	2.0	26.0
		50	24	24.7	25.4	25.6	25.4	24.3	2.0	26.0
		50	50	24.8	25.3	25.6	25.3	24.0	2.0	26.0
		100	0	24.7	25.4	25.5	25.2	24.2	2.0	26.0
	64QAM	1	0	24.1	25.2	25.1	24.9	23.8	2.5	25.5
		1	49	24.2	25.3	25.0	24.8	23.5	2.5	25.5
		1	99	24.5	25.4	25.0	24.8	23.1	2.5	25.5
		50	0	22.6	24.0	24.1	23.5	22.8	3.5	24.5
		50	24	22.8	24.1	24.1	23.5	22.6	3.5	24.5
		50	50	22.8	24.1	24.0	23.4	22.2	3.5	24.5
		100	0	22.7	24.0	23.9	23.3	22.5	3.5	24.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	26.5	27.3	27.5	27.2	26.4	0.0	28.0
		1	37	26.5	27.1	27.5	27.2	26.1	0.0	28.0
		1	74	26.7	27.2	27.5	27.1	25.7	0.0	28.0
		36	0	25.5	26.4	26.5	26.3	25.4	1.0	27.0
		36	20	25.6	26.4	26.6	26.2	25.2	1.0	27.0
		36	39	25.6	26.4	26.6	26.2	25.0	1.0	27.0
		75	0	25.5	26.4	26.6	26.1	25.1	1.0	27.0
	16QAM	1	0	25.8	26.6	26.9	26.5	25.6	1.0	27.0
		1	37	25.8	26.4	26.8	26.4	25.4	1.0	27.0
		1	74	26.0	26.5	26.9	26.4	25.0	1.0	27.0
		36	0	24.6	25.4	25.5	25.4	24.6	2.0	26.0
		36	20	24.8	25.4	25.6	25.4	24.4	2.0	26.0
		36	39	24.8	25.3	25.5	25.3	24.2	2.0	26.0
		75	0	24.7	25.4	25.6	25.3	24.3	2.0	26.0
	64QAM	1	0	23.5	24.7	25.5	24.2	23.5	2.5	25.5
		1	37	23.5	25.1	25.5	24.1	23.3	2.5	25.5
		1	74	23.7	25.1	25.4	24.1	23.0	2.5	25.5
		36	0	22.7	24.0	24.1	23.5	22.7	3.5	24.5
		36	20	22.8	24.0	24.1	23.5	22.5	3.5	24.5
		36	39	22.9	24.0	24.1	23.5	22.3	3.5	24.5
		75	0	22.7	24.0	24.0	23.4	22.4	3.5	24.5

LTE Band 41 – Power Class 2 - Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	26.5	27.1	27.2	27.1	26.4	0.0	28.0
		1	25	26.5	27.0	27.3	27.0	26.2	0.0	28.0
		1	49	26.6	27.1	27.2	27.1	25.9	0.0	28.0
		25	0	25.5	26.3	26.4	26.3	25.4	1.0	27.0
		25	12	25.6	26.3	26.4	26.2	25.3	1.0	27.0
		25	25	25.6	26.2	26.3	26.2	25.1	1.0	27.0
		50	0	25.5	26.2	26.3	26.2	25.1	1.0	27.0
	16QAM	1	0	25.8	26.4	26.6	26.5	25.5	1.0	27.0
		1	25	25.9	26.3	26.7	26.5	25.4	1.0	27.0
		1	49	26.0	26.4	26.6	26.4	25.2	1.0	27.0
		25	0	24.6	25.3	25.4	25.3	24.5	2.0	26.0
		25	12	24.8	25.3	25.3	25.3	24.5	2.0	26.0
		25	25	24.8	25.3	25.4	25.2	24.3	2.0	26.0
		50	0	24.7	25.3	25.3	25.3	24.4	2.0	26.0
	64QAM	1	0	23.4	24.9	25.3	24.1	23.6	2.5	25.5
		1	25	23.5	25.2	25.4	24.1	23.5	2.5	25.5
		1	49	23.6	25.2	25.3	24.1	23.2	2.5	25.5
		25	0	22.7	24.0	24.0	23.4	22.6	3.5	24.5
		25	12	22.8	24.0	24.0	23.4	22.5	3.5	24.5
		25	25	22.8	24.0	23.9	23.4	22.3	3.5	24.5
		50	0	22.7	24.0	23.9	23.3	22.4	3.5	24.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	26.4	27.1	27.3	27.1	26.4	0.0	28.0
		1	12	26.5	27.2	27.3	27.1	26.3	0.0	28.0
		1	24	26.5	27.2	27.2	27.1	26.2	0.0	28.0
		12	0	25.6	26.3	26.4	26.2	25.4	1.0	27.0
		12	7	25.6	26.3	26.4	26.3	25.4	1.0	27.0
		12	13	25.7	26.3	26.4	26.3	25.3	1.0	27.0
		25	0	25.5	26.3	26.3	26.2	25.2	1.0	27.0
	16QAM	1	0	25.7	26.5	26.7	26.3	25.5	1.0	27.0
		1	12	25.7	26.5	26.7	26.3	25.5	1.0	27.0
		1	24	25.8	26.4	26.7	26.3	25.4	1.0	27.0
		12	0	24.7	25.3	25.5	25.3	24.5	2.0	26.0
		12	7	24.8	25.3	25.5	25.3	24.5	2.0	26.0
		12	13	24.8	25.3	25.5	25.3	24.4	2.0	26.0
		25	0	24.7	25.3	25.4	25.3	24.4	2.0	26.0
	64QAM	1	0	24.2	24.9	25.2	24.8	23.4	2.5	25.5
		1	12	24.2	25.1	25.3	24.9	23.4	2.5	25.5
		1	24	24.3	25.1	25.2	24.9	23.2	2.5	25.5
		12	0	22.8	24.1	24.0	23.6	22.6	3.5	24.5
		12	7	22.9	24.1	24.0	23.6	22.6	3.5	24.5
		12	13	22.9	24.1	24.0	23.6	22.6	3.5	24.5
		25	0	22.7	24.0	23.9	23.4	22.5	3.5	24.5

2. Reduced power Results

LTE Band 41 – Power Class 3 - Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	21.0	20.7	20.9	20.9	20.8	0.0	21.5
		1	49	20.9	20.6	20.9	20.8	20.6	0.0	21.5
		1	99	21.1	20.6	20.9	20.6	20.8	0.0	21.5
		50	0	20.9	20.7	20.7	20.9	20.7	0.0	21.5
		50	24	21.0	20.7	20.8	20.9	20.7	0.0	21.5
		50	50	20.9	20.7	20.8	20.8	20.7	0.0	21.5
		100	0	20.9	20.7	20.8	20.8	20.7	0.0	21.5
	16QAM	1	0	21.1	20.7	20.9	21.0	20.5	0.0	21.5
		1	49	21.0	20.6	21.0	21.0	20.5	0.0	21.5
		1	99	21.0	20.6	21.0	20.7	20.6	0.0	21.5
		50	0	21.0	20.7	20.8	20.9	20.7	0.0	21.5
		50	24	21.0	20.7	20.9	20.9	20.7	0.0	21.5
		50	50	20.9	20.6	20.8	20.8	20.7	0.0	21.5
		100	0	20.9	20.7	20.8	20.9	20.7	0.0	21.5
	64QAM	1	0	20.9	20.9	20.7	21.4	20.6	0.0	21.5
		1	49	21.4	20.8	20.7	21.2	20.6	0.0	21.5
		1	99	21.3	20.8	20.7	21.0	20.7	0.0	21.5
		50	0	20.9	20.7	20.8	21.0	20.6	0.0	21.5
		50	24	20.9	20.7	20.9	20.9	20.7	0.0	21.5
		50	50	20.9	20.6	20.9	20.8	20.6	0.0	21.5
		100	0	20.9	20.7	20.9	20.9	20.7	0.0	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	21.0	20.5	20.8	20.9	20.8	0.0	21.5
		1	37	21.0	20.3	20.9	20.6	20.8	0.0	21.5
		1	74	20.9	20.4	20.8	20.6	20.8	0.0	21.5
		36	0	20.9	20.6	20.8	20.9	20.7	0.0	21.5
		36	20	21.0	20.7	20.8	20.9	20.7	0.0	21.5
		36	39	20.9	20.6	20.8	20.8	20.7	0.0	21.5
		75	0	21.0	20.6	20.8	20.9	20.7	0.0	21.5
	16QAM	1	0	21.0	20.5	20.7	21.1	20.7	0.0	21.5
		1	37	20.7	20.3	20.5	21.0	20.7	0.0	21.5
		1	74	20.9	20.4	20.7	20.8	20.6	0.0	21.5
		36	0	21.0	20.6	20.7	21.0	20.8	0.0	21.5
		36	20	21.0	20.6	20.8	21.0	20.8	0.0	21.5
		36	39	21.0	20.6	20.8	20.9	20.8	0.0	21.5
		75	0	20.9	20.7	20.8	20.9	20.8	0.0	21.5
	64QAM	1	0	20.7	20.5	21.0	20.7	20.4	0.0	21.5
		1	37	20.6	20.3	20.9	20.6	20.2	0.0	21.5
		1	74	20.5	20.4	21.1	20.4	20.4	0.0	21.5
		36	0	21.0	20.6	20.9	21.0	20.5	0.0	21.5
		36	20	21.0	20.7	20.9	21.0	20.6	0.0	21.5
		36	39	21.0	20.6	20.9	20.9	20.6	0.0	21.5
		75	0	20.9	20.7	20.9	20.9	20.6	0.0	21.5

LTE Band 41 – Power Class 3 - Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	20.7	20.3	20.6	20.6	20.4	0.0	21.5
		1	25	20.6	20.1	20.5	20.4	20.3	0.0	21.5
		1	49	20.6	20.3	20.6	20.5	20.3	0.0	21.5
		25	0	20.8	20.5	20.7	20.8	20.5	0.0	21.5
		25	12	20.8	20.5	20.6	20.7	20.5	0.0	21.5
		25	25	20.7	20.5	20.7	20.7	20.4	0.0	21.5
		50	0	20.7	20.5	20.6	20.7	20.4	0.0	21.5
	16QAM	1	0	20.9	20.3	20.4	20.8	20.4	0.0	21.5
		1	25	20.7	20.1	20.3	20.7	20.3	0.0	21.5
		1	49	20.8	20.2	20.4	20.8	20.3	0.0	21.5
		25	0	20.8	20.5	20.6	20.8	20.5	0.0	21.5
		25	12	20.7	20.5	20.6	20.7	20.5	0.0	21.5
		25	25	20.7	20.5	20.6	20.7	20.4	0.0	21.5
		50	0	20.7	20.5	20.6	20.7	20.5	0.0	21.5
	64QAM	1	0	20.4	20.5	20.8	20.3	20.4	0.0	21.5
		1	25	20.2	20.2	20.6	20.2	20.1	0.0	21.5
		1	49	20.2	20.4	20.8	20.2	20.2	0.0	21.5
		25	0	20.8	20.5	20.6	20.8	20.4	0.0	21.5
		25	12	20.7	20.4	20.6	20.7	20.4	0.0	21.5
		25	25	20.7	20.4	20.6	20.7	20.3	0.0	21.5
		50	0	20.7	20.5	20.6	20.7	20.4	0.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	20.5	20.4	20.5	20.6	20.4	0.0	21.5
		1	12	20.5	20.5	20.6	20.6	20.4	0.0	21.5
		1	24	20.5	20.4	20.6	20.6	20.4	0.0	21.5
		12	0	20.7	20.5	20.6	20.7	20.4	0.0	21.5
		12	7	20.7	20.5	20.7	20.7	20.4	0.0	21.5
		12	13	20.7	20.5	20.7	20.7	20.5	0.0	21.5
		25	0	20.7	20.5	20.6	20.7	20.5	0.0	21.5
	16QAM	1	0	20.6	20.4	20.6	20.6	20.4	0.0	21.5
		1	12	20.6	20.4	20.7	20.7	20.4	0.0	21.5
		1	24	20.6	20.4	20.7	20.6	20.4	0.0	21.5
		12	0	20.8	20.5	20.6	20.7	20.4	0.0	21.5
		12	7	20.8	20.5	20.8	20.7	20.4	0.0	21.5
		12	13	20.8	20.4	20.7	20.7	20.5	0.0	21.5
		25	0	20.7	20.5	20.7	20.7	20.4	0.0	21.5
	64QAM	1	0	21.1	20.2	20.8	21.1	20.1	0.0	21.5
		1	12	21.1	20.3	20.8	21.1	20.1	0.0	21.5
		1	24	21.1	20.2	20.8	21.1	20.1	0.0	21.5
		12	0	20.9	20.5	20.6	20.8	20.4	0.0	21.5
		12	7	20.9	20.5	20.6	20.8	20.4	0.0	21.5
		12	13	20.8	20.5	20.6	20.8	20.4	0.0	21.5
		25	0	20.7	20.6	20.6	20.7	20.5	0.0	21.5

LTE Band 41 – Power Class 2 - Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	21.0	20.7	20.7	20.7	20.3	0.0	21.5
		1	49	20.9	20.6	20.8	20.6	20.2	0.0	21.5
		1	99	20.9	20.6	20.8	20.4	20.3	0.0	21.5
		50	0	21.0	20.7	20.7	20.8	20.3	0.0	21.5
		50	24	21.0	20.7	20.8	20.7	20.3	0.0	21.5
		50	50	20.9	20.6	20.8	20.6	20.3	0.0	21.5
		100	0	20.9	20.6	20.8	20.7	20.3	0.0	21.5
	16QAM	1	0	21.4	20.9	20.8	21.1	20.5	0.0	21.5
		1	49	21.2	20.9	20.9	21.0	20.5	0.0	21.5
		1	99	21.3	20.9	20.8	20.8	20.6	0.0	21.5
		50	0	21.0	20.6	20.7	20.8	20.2	0.0	21.5
		50	24	21.0	20.6	20.8	20.7	20.3	0.0	21.5
		50	50	20.9	20.5	20.8	20.6	20.3	0.0	21.5
		100	0	20.9	20.6	20.8	20.7	20.3	0.0	21.5
	64QAM	1	0	21.5	21.1	20.8	21.3	20.7	0.0	21.5
		1	49	21.3	21.0	20.9	21.2	20.7	0.0	21.5
		1	99	21.3	21.0	20.9	20.9	20.8	0.0	21.5
		50	0	20.9	20.8	20.8	20.8	20.3	0.0	21.5
		50	24	20.9	20.8	20.8	20.7	20.3	0.0	21.5
		50	50	20.9	20.7	20.9	20.6	20.3	0.0	21.5
		100	0	20.9	20.7	20.8	20.7	20.3	0.0	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	21.0	20.6	20.8	20.8	20.1	0.0	21.5
		1	37	20.8	20.4	20.8	20.6	20.0	0.0	21.5
		1	74	20.9	20.5	20.8	20.5	20.2	0.0	21.5
		36	0	21.0	20.7	20.8	20.7	20.2	0.0	21.5
		36	20	21.0	20.7	20.8	20.7	20.3	0.0	21.5
		36	39	20.9	20.7	20.8	20.6	20.2	0.0	21.5
		75	0	21.0	20.7	20.8	20.7	20.3	0.0	21.5
	16QAM	1	0	21.3	20.8	21.1	21.1	20.4	0.0	21.5
		1	37	21.1	20.7	21.1	20.8	20.3	0.0	21.5
		1	74	21.2	20.8	21.1	20.7	20.5	0.0	21.5
		36	0	21.0	20.7	20.7	20.7	20.2	0.0	21.5
		36	20	21.0	20.7	20.8	20.7	20.3	0.0	21.5
		36	39	21.0	20.6	20.8	20.7	20.3	0.0	21.5
		75	0	20.9	20.7	20.8	20.7	20.2	0.0	21.5
	64QAM	1	0	20.8	20.8	21.3	20.6	20.4	0.0	21.5
		1	37	20.6	20.6	21.2	20.4	20.3	0.0	21.5
		1	74	20.7	20.7	21.3	20.3	20.4	0.0	21.5
		36	0	21.1	20.7	20.9	20.8	20.3	0.0	21.5
		36	20	21.1	20.7	20.9	20.8	20.3	0.0	21.5
		36	39	21.0	20.6	20.9	20.7	20.3	0.0	21.5
		75	0	21.0	20.7	20.9	20.7	20.3	0.0	21.5

LTE Band 41 – Power Class 2 - Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	20.8	20.4	20.6	20.4	20.0	0.0	21.5
		1	25	20.7	20.4	20.5	20.4	19.9	0.0	21.5
		1	49	20.7	20.4	20.6	20.4	19.9	0.0	21.5
		25	0	20.9	20.6	20.7	20.6	20.2	0.0	21.5
		25	12	20.8	20.6	20.6	20.5	20.1	0.0	21.5
		25	25	20.8	20.5	20.6	20.5	20.1	0.0	21.5
		50	0	20.8	20.6	20.6	20.5	20.1	0.0	21.5
	16QAM	1	0	21.1	20.7	20.9	20.9	20.3	0.0	21.5
		1	25	21.0	20.7	21.0	20.8	20.3	0.0	21.5
		1	49	21.1	20.6	20.9	20.8	20.2	0.0	21.5
		25	0	20.9	20.6	20.7	20.6	20.2	0.0	21.5
		25	12	20.8	20.6	20.6	20.6	20.1	0.0	21.5
		25	25	20.8	20.5	20.6	20.5	20.1	0.0	21.5
		50	0	20.8	20.5	20.6	20.5	20.1	0.0	21.5
	64QAM	1	0	20.6	20.8	21.1	20.3	20.4	0.0	21.5
		1	25	20.5	20.7	21.1	20.2	20.4	0.0	21.5
		1	49	20.5	20.7	21.1	20.2	20.2	0.0	21.5
		25	0	20.8	20.6	20.7	20.6	20.1	0.0	21.5
		25	12	20.8	20.5	20.7	20.6	20.1	0.0	21.5
		25	25	20.7	20.5	20.6	20.5	20.0	0.0	21.5
		50	0	20.7	20.5	20.6	20.5	20.1	0.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	20.8	20.6	20.6	20.5	20.1	0.0	21.5
		1	12	20.8	20.5	20.6	20.5	20.1	0.0	21.5
		1	24	20.8	20.6	20.6	20.5	20.0	0.0	21.5
		12	0	20.9	20.6	20.7	20.6	20.2	0.0	21.5
		12	7	20.9	20.6	20.7	20.6	20.2	0.0	21.5
		12	13	20.9	20.6	20.7	20.6	20.1	0.0	21.5
		25	0	20.9	20.6	20.7	20.6	20.2	0.0	21.5
	16QAM	1	0	21.2	20.8	20.9	20.9	20.4	0.0	21.5
		1	12	21.2	20.8	20.9	20.9	20.3	0.0	21.5
		1	24	21.2	20.8	20.9	20.9	20.3	0.0	21.5
		12	0	21.0	20.7	20.7	20.7	20.3	0.0	21.5
		12	7	21.0	20.7	20.7	20.7	20.2	0.0	21.5
		12	13	21.0	20.6	20.7	20.7	20.2	0.0	21.5
		25	0	20.9	20.6	20.7	20.6	20.2	0.0	21.5
	64QAM	1	0	20.9	20.9	21.2	20.6	20.5	0.0	21.5
		1	12	20.9	20.9	21.2	20.6	20.5	0.0	21.5
		1	24	20.9	20.9	21.2	20.6	20.4	0.0	21.5
		12	0	20.8	20.6	20.8	20.6	20.2	0.0	21.5
		12	7	20.8	20.6	20.8	20.6	20.2	0.0	21.5
		12	13	20.8	20.6	20.8	20.6	20.1	0.0	21.5
		25	0	20.8	20.5	20.7	20.6	20.1	0.0	21.5

9.4.1 LTE Rel. 11 Carrier Aggregation

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

For inter-band carrier aggregation with uplink assigned to one E-UTRA band (Table 5.6A-1), the requirement in subclause 6.2.3 apply.

For inter-band carrier aggregation with one component carrier per operating band and the uplink active in two E-UTRA bands, the requirements in subclause 6.2.3 apply for each uplink component carrier.

For inter-band contiguous carrier aggregation the allowed Maximum Power Reduction (MPR) for the maximum output power applicable to the DUT in the table below. In case the modulation format is different on different component carriers the MPR is determined by the rules applied to higher order of those modulations.

Modulation	CA bandwidth Class B and C / Smallest Component Carrier Transmission Bandwidth Configuration				MPR (dB)
	25 RB	50 RB	75 RB	100 RB	
QPSK	> 8 and ≤ 25	> 12 and ≤ 50	> 16 and ≤ 75	> 18 and ≤ 100	≤ 1
QPSK	> 25	> 50	> 75	> 100	≤ 2
16 QAM	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 8 and ≤ 25	> 12 and ≤ 50	> 16 and ≤ 75	> 18 and ≤ 100	≤ 2
16 QAM	> 25	> 50	> 75	> 100	≤ 3
64 QAM	≤ 8 and allocation wholly contained within a single CC	≤ 12 and allocation wholly contained within a single CC	≤ 16 and allocation wholly contained within a single CC	≤ 18 and allocation wholly contained within a single CC	≤ 2
64 QAM	> 8 or allocation extends across two CC's	> 12 or allocation extends across two CC's	> 16 or allocation extends across two CC's	> 18 or allocation extends across two CC's	≤ 3

For PUCCH and SRS transmissions, the allowed MPR is according to that specified for PUSCH QPSK modulation for the corresponding transmission bandwidth.

For intra-band contiguous carrier aggregation bandwidth class C with non-contiguous resource allocation, the allowed Maximum Power Reduction (MPR) for the maximum output power in Table 6.2.2A-1 is specified as follows

$$MPR = CEIL\ \{\min(M_A, M_{IMS}), 0.5\}$$

Where M_A is defined as follows

$$M_A = \begin{cases} 8.2 & ;0 \le A < 0.025 \\ 9.2 - 40A & ;0.025 \le A < 0.05 \\ 8 - 16A & ;0.05 \le A < 0.25 \\ 4.83 - 3.33A & ;0.25 \le A \le 0.4 \\ 3.83 - 0.83A & ;0.4 \le A \le 1 \end{cases}$$

and M_{IMS} is defined as follows

$$M_{IMS} = \begin{cases} 4.5 & ; \Delta_{IMS} < 1.5 * BW_{Channel\_CA} \\ 6.0 & ; 1.5 * BW_{Channel\_CA} \le \Delta_{IMS} < BW_{Channel\_CA}/2 + \Delta f_{ooB} \\ M_A & ; \Delta_{IMS} \ge BW_{Channel\_CA}/2 + \Delta f_{ooB} \end{cases}$$

Where

$A = N_{RB\_alloc} / N_{RB\_agg}$

$\Delta_{IMS} = \max(\left| F_{C\_agg} - (3*F_{agg\_alloc\_low} - 2*F_{agg\_alloc\_high}) \right|, \left| F_{C\_agg} - (3*F_{agg\_alloc\_high} - 2*F_{agg\_alloc\_low}) \right|)$

$CEIL\{M_A, 0.5\}$ means rounding upwards to closest 0.5dB, i.e. MPR ∈ [3.0, 3.5, 4.0, 4.5, 5.0, 5.5, 6.0, 6.5, 7.0, 7.5, 8.0, 8.5]

For intra-band carrier aggregation, the MPR is evaluated per slot and given by the maximum value taken over the transmission(s) on all component carriers within the slot; the maximum MPR over the two slots is then applied for the entire subframe.

For intra-band non-contiguous carrier aggregation with one uplink carrier on the PCC, the requirements in the subclause 6.2.3 apply. For intra-band non-contiguous aggregation with two uplink carriers the MPR is defined tfor those E-UTRA bands where maximum possible $W_{GAP} \le 42.2$ MHz as follows

$$MPR = CEIL\{M_A, 0.5\}$$

Where M_N is defined as follows

$$M_N = \begin{cases} -0.125N + 18.25 & ; 2 \le N \le 50 \\ -0.0333\ N + 13.67 & ; 50 < N \le 200 \end{cases}$$

Where $N = N_{RB\_alloc}$ is the number of allocated resource blocks.

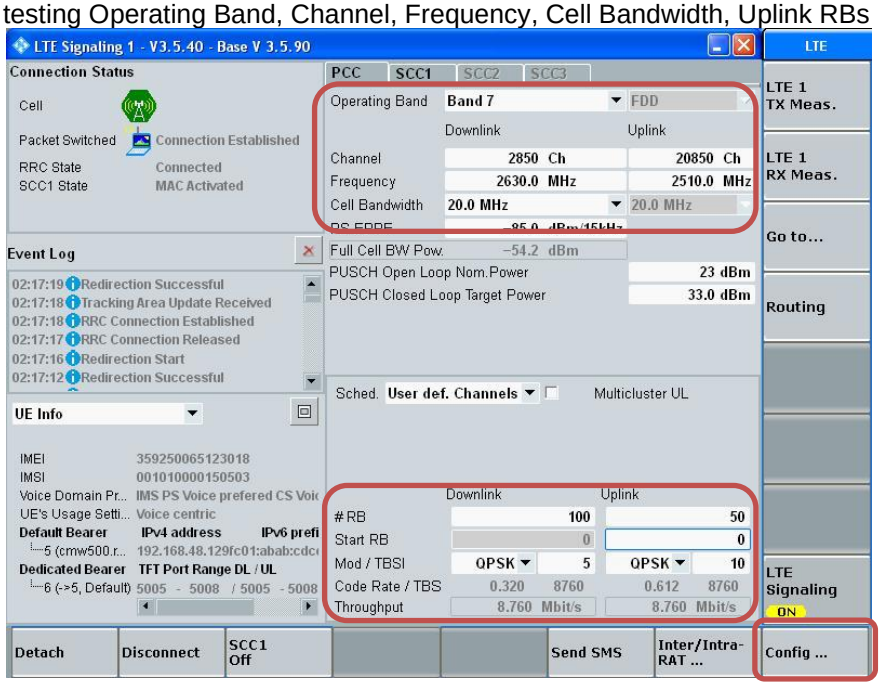
For the UE maximum output power modified by MPR, the power limits specified in subclause 6.2.5A apply.

LTE Carrier Aggregation Test Signal Set-up Procedure

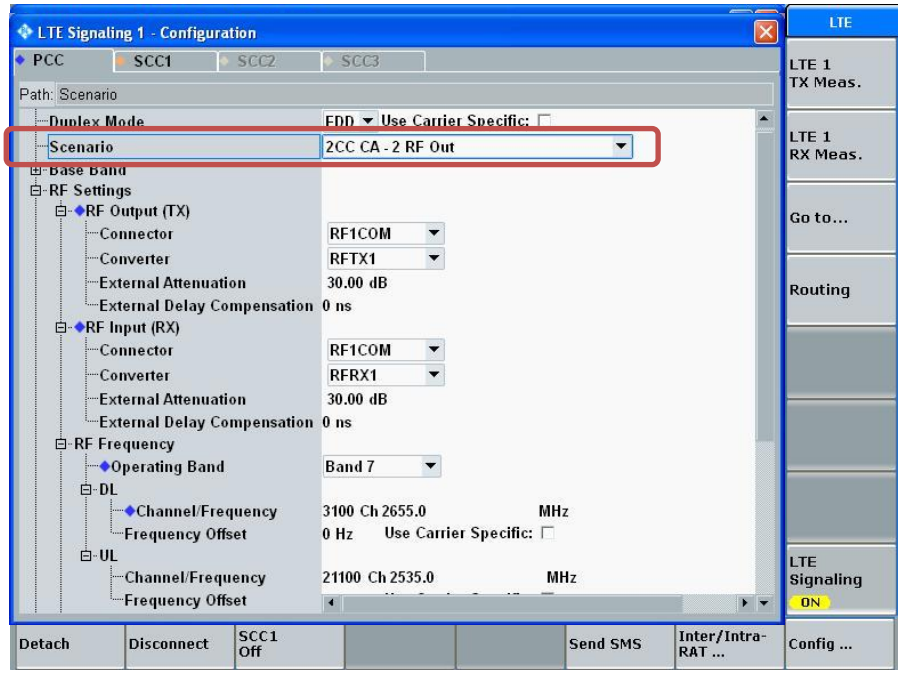
(Use normal LTE set-up procedure in addition with the following steps)

Set to CMW-500 with following parameters:

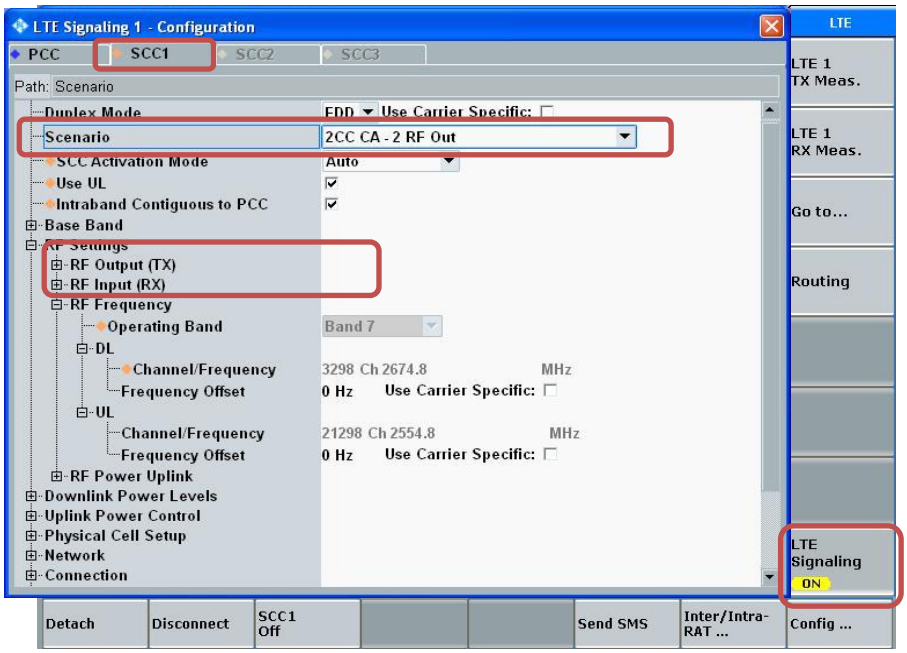
- PCC tab:
  - Select the testing Operating Band, Channel, Frequency, Cell Bandwidth, Uplink RBs



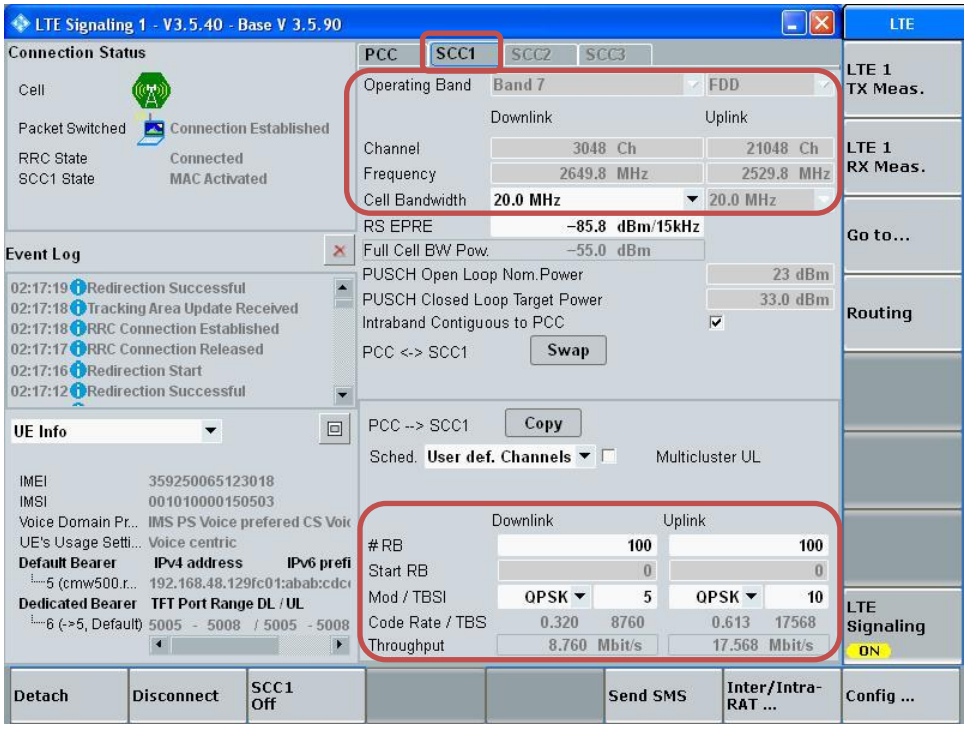
- Go to “Config….”
- Go to “Scenario”
- Set to “2CC CA – 2 RF Out”



- Select “SCC1” tab
- Go to “Scenario”
- Set to “2CC CA – 2 RF Out”
- Enable “Use UL”
- Enable “Intraband Contiguous to PCC”
- Select “LTE Signaling” button

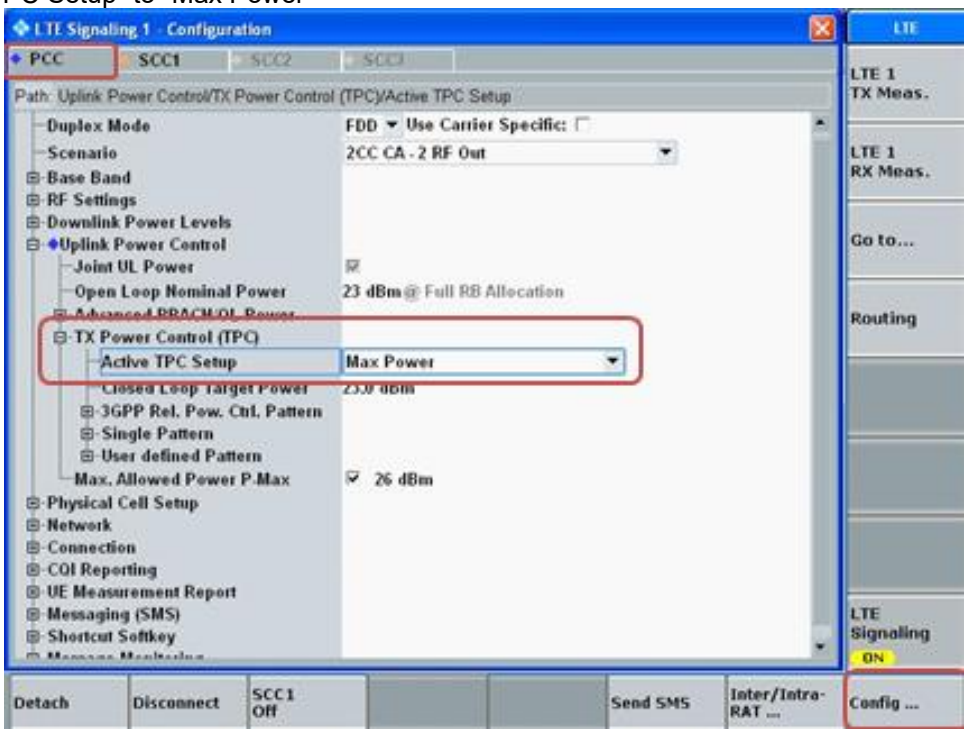


- Select “SCC1” tab
  - Select the testing Cell Bandwidth, Uplink RBs

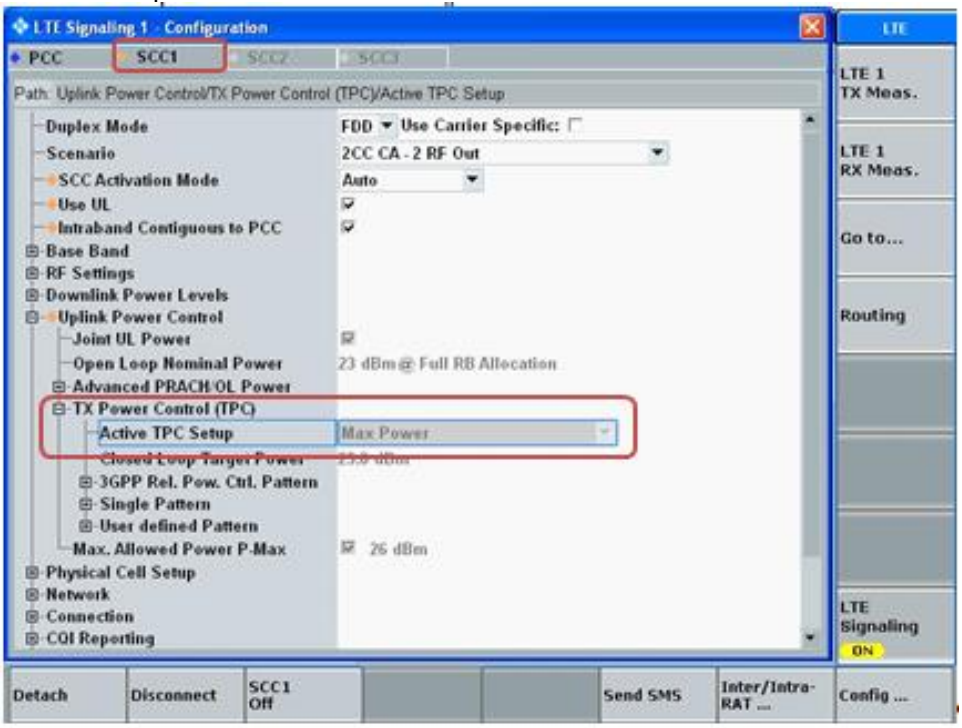


Max Power Setting

- Select “Config …” button
- Select PCC tab
- Set “Active TPC Setup” to “Max Power”

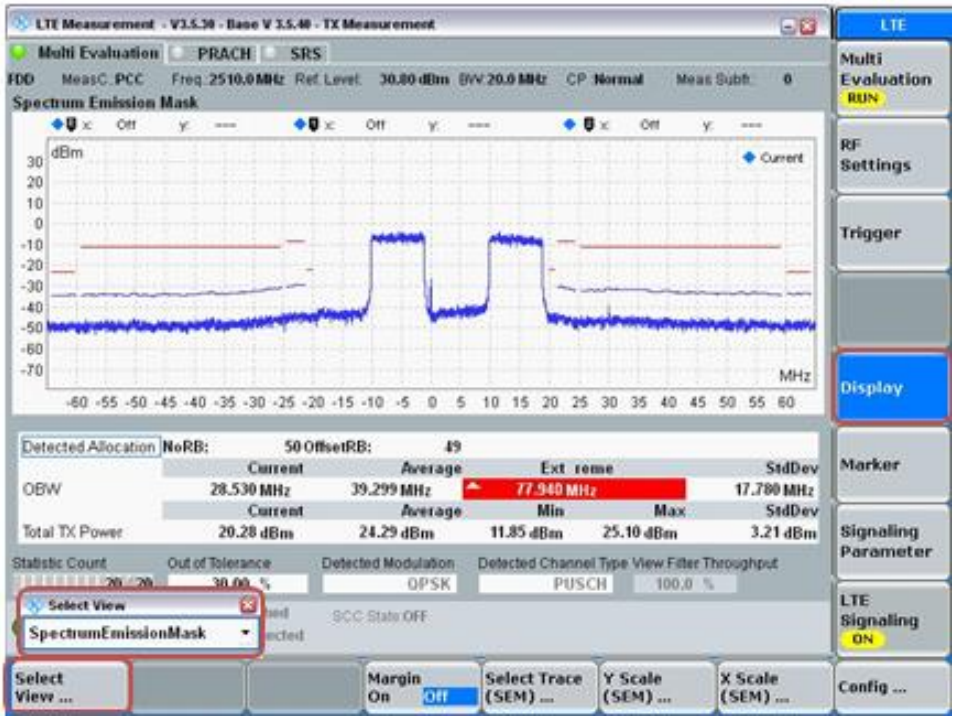


- Select SCC1 tab
- Verify that “Active TPC Setup” is set to “Max Power”



View TX Power

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



LTE Carrier Aggregation Up Link Combinations;

Maximum Output Power (Tune-up Limit) for LTE UL Carrier Aggregation

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

UL CA power measurements were performed with QPSK modulation based on the worst-case standalone SAR. The tune-up limits are provided in table below.

The UL CA mode power measurements represent the total power across both carriers. Measurements were made for all supported PCC bandwidths using the channel/RB combination resulting in the highest standalone output power at the least MPR (0 dB). SCCs were set to use configurations similar to the PCC to establish conservative or worst case equivalent SAR test conditions (highest maximum power with MPR of 0 dB).

The standalone power measurement is the power for the PCC in the non-CA mode (i.e. single carrier power). In all cases the UL CA target power is equal to the standalone power, which is in accordance with the tune-up limits in table below.

According to November 2017 TCB workshop, Uplink CA SAR Test Guidance as follows:

a) When the maximum output for UL CA is ≤ standalone LTE mode (without CA)
   - PCC is configured according to the highest standalone SAR configuration tested
   - SCC and subsequent CCs are configured according to procedures used for power measurement and parameters (BW, RB etc.) similar to that used for the PCC.

b) When the Reported SAR for UL CA configuration, described above, is > 1.2 W/kg, UL CA SAR is also required for all required test channels(PCC based).

c) UL CA SAR is also required for standalone SAR configurations > 1.2 W/kg when they are scaled to the UL CA power level.

SAR measurement is not required for the 16QAM and 64QAM. When the highest maximum output power for 16QAM and 64QAM is ≤ ½ dB higher than the QPSK or when the reported SAR for the QPSK configuration is ≤ 1.45 W/kg.

LTE-uplink 2CA Band 41 for SAR testing

E-UTRA CA configurations	RF exposure conditions	Bands		UL																	LTE Rel.8 Tune-up Limit (dBm)
		PCC	SCC	PCC						SCC						MPR	PCC+SCC				
		1st	2nd	Mod	RB	Offset	BW	Freq	Ch	Mod	RB	Offset	BW	Freq	Ch		Aggregated BW	Tune-Up Limit	CA power (total PCC+SCC)	3GPP Rel.#	
CA_41C (0),(1),(2,(3))	Head & Body-worn	41C	41C	QPSK	1	99	20	2506.0	39750	QPSK	1	0	20	2525.8	39948	0	40	25.5	25.3	14	25.5
						0		2549.5	40185			99		2529.7	39987	0	40		25.3	14	
						0		2593.0	40620			99		2573.2	40422	0	40		25.1	14	
						0		2636.5	41055			99		2616.7	40857	0	40		25.3	14	
						0		2680.0	41490			99		2660.2	41292	0	40		25.2	14	
	Hotspot	41C	41C	QPSK	1	99	20	2506.0	39750	QPSK	1	0	20	2525.8	39948	0	40	21.5	21.2	14	21.5
						0		2549.5	40185			99		2529.7	39987	0	40		21.3	14	
						0		2593.0	40620			99		2573.2	40422	0	40		21.0	14	
						0		2636.5	41055			99		2616.7	40857	0	40		21.3	14	
						0		2680.0	41490			99		2660.2	41292	0	40		21.3	14	

Note(s):

Standalone output power & SAR are reference from Sec.9.3 & Sec.10.16.

LTE Carrier Aggregation Down Link Combinations;

The DL CA power measurement conditions for various CC's combinations were determined according LTE DL CA SAR Test Exclusion guidance in TCB workshop note (April 2018). Only yellow highlighted cells need power measurement. The following power measurements were performed with a single carrier uplink; CA for this particular project only supports one (1) uplink and up to three (3) downlinks.

LTE Release 10 Carrier Aggregation

Index	2CC	Restriction	Completely Covered by	Reverse
2CC #1	2A-2A	3CC #1		x
2CC #2	2A-4A	3CC #9		o
2CC #3	2A-5A	3CC #16		o
2CC #4	2A-7A	3CC #18		o
2CC #5	2A-12A	3CC #22		o
2CC #6	2A-13A	3CC #25		o
2CC #7	2A-14A	3CC #26		o
2CC #8	2A-30A	3CC #28		o
2CC #9	2A-66A	3CC #29		o
2CC #10	2A-71A	3CC #8		o
2CC #11	4A-4A	3CC #34		x
2CC #12	4A-5A	3CC #34		o
2CC #13	4A-7A	3CC #41		o
2CC #14	4A-12A	3CC #36		o
2CC #15	4A-13A	3CC #37		o
2CC #16	4A-30A	3CC #44		o
2CC #17	4A-71A	3CC #38		o
2CC #18	5A-5A	3CC #46		x
2CC #19	5A-7A			o
2CC #20	5A-30A	3CC #40		o
2CC #21	5A-66A	3CC #46		o
2CC #22	5B	3CC #21		x
2CC #23	7A-7A	3CC #41		o
2CC #24	7A-12A	3CC #20		o
2CC #25	7A-66A	3CC #53		o
2CC #26	12A-30A	3CC #22		o
2CC #27	12A-66A	3CC #55		o
2CC #28	12B	3CC #45		x
2CC #29	13A-66A	3CC #58		o
2CC #30	25A-25A	3CC #63		x
2CC #31	25A-26A	3CC #63		o
2CC #32	25A-41A			x
2CC #33	26A-41A			x
2CC #34	41A-41A			x
2CC #35	41C	3CC #67		x
2CC #36	66A-66A	3CC #62		x
2CC #37	66A-71A	3CC #69		o
2CC #38	66B	3CC #32		x
2CC #39	66C	3CC #50		x
2CC #40	2C	3CC #31		x
2CC #41	5A-25A			o
2CC #42	12A-25A			o
2CC #43	14A-30A	3CC #61		o
2CC #44	14A-66A	3CC #62		o
2CC #45	30A-66A	3CC #66		o

Index	3CC	Restriction	Completely Covered by	Reverse
3CC #1	2A-2A-4A			o
3CC #2	2A-2A-5A			o
3CC #3	2A-2A-12A			o
3CC #4	2A-2A-13A			o
3CC #5	2A-2A-14A			o
3CC #6	2A-2A-30A			o
3CC #7	2A-2A-66A			o
3CC #8	2A-2A-71A			o
3CC #9	2A-4A-4A			o
3CC #10	2A-4A-5A			o
3CC #11	2A-4A-7A			o
3CC #12	2A-4A-12A			o
3CC #13	2A-4A-13A			o
3CC #14	2A-4A-30A			o
3CC #15	2A-4A-71A			o
3CC #16	2A-5A-30A			o
3CC #17	2A-5A-66A			o
3CC #18	2A-7A-7A			o
3CC #19	2A-7C			o
3CC #20	2A-7A-12A			o
3CC #21	2A-5B			o
3CC #22	2A-12A-30A			o
3CC #23	2A-12A-66A			o
3CC #24	2A-12B			o
3CC #25	2A-13A-66A			o
3CC #26	2A-14A-30A			o
3CC #27	2A-14A-66A			o
3CC #28	2A-30A-66A			o
3CC #29	2A-66A-66A			o
3CC #30	2A-66A-71A			o
3CC #31	2C-66A			o
3CC #32	2A-66B			o
3CC #33	2A-66C			o
3CC #34	4A-4A-5A			o
3CC #35	4A-4A-7A			o
3CC #36	4A-4A-12A			o
3CC #37	4A-4A-13A			o
3CC #38	4A-4A-71A			o
3CC #39	4A-5B			o
3CC #40	4A-5A-30A			o
3CC #41	4A-7A-7A			o
3CC #42	4A-7C			o
3CC #43	4A-7A-12A			o
3CC #44	4A-12A-30A			o
3CC #45	4A-12B			o

Index	3CC	Restriction	Completely Covered by	Reverse
3CC #46	5A-5A-66A			o
3CC #47	5A-30A-66A			o
3CC #48	5A-66A-66A			o
3CC #49	5A-66B			o
3CC #50	5A-66C			o
3CC #51	5B-30A			o
3CC #52	5B-66A			o
3CC #53	7A-2A-66A			o
3CC #54	7A-12B			o
3CC #55	12A-66A-66A			o
3CC #56	12A-66C			o
3CC #57	12-30A-66A			o
3CC #58	13A-66A-66A			o
3CC #59	13A-66B			o
3CC #60	13A-66C			o
3CC #61	14A-30A-66A			o
3CC #62	14A-66A-66A			o
3CC #63	25A-25A-26A			o
3CC #64	25A-41C			o
3CC #65	26A-41C			o
3CC #66	30A-66A-66A			o
3CC #67	41A-41C			x
3CC #68	41D			x
3CC #69	66A-66A-71A			o
3CC #70	66A-66C			o
3CC #71	66C-71A			o

Note:

Only yellow highlight cells need power measurement according to LTE DL CA SAR test Exclusion in TCB workshop (April.2018).

DL CA output power results

E-UTRA CA configutation (BCS)	Bands			UL					DL									LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta
	PCC	SCC1	SCC2	PCC					PCC			SCC1			SCC2					
	1st	2nd	3rd	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)			
5A-7A	5A	7A		QPSK	10	20525	836.5	1/0	10	2525	881.5	20	3100	2655				24.9	24.8	-0.01
	7A	5A		QPSK	20	20850	2510	1/0	20	2850	2630	10	2525	881.5				23.8	23.9	0.10
5A-25A	5A	25A		QPSK	10	20525	836.5	1/0	10	2525	881.5	20	8365	1962.5				24.9	24.8	-0.04
	25A	5A		QPSK	20	26365	1882.5	1/0	20	8365	1962.5	10	2525	881.5				24.9	24.9	0.01
5A-30A	5A	30A		QPSK	10	20525	836.5	1/0	10	2525	880.5	10	9820	2355				24.9	24.8	-0.01
	30A	5A		QPSK	10	27710	2310	1/0	10	9820	2355	10	2525	881.5				23.0	23.0	-0.06
12A-25A	12A	25A		QPSK	10	23095	707.5	1/49	10	5095	737.5	20	8365	1962.5				24.5	24.4	-0.08
	25A	12A		QPSK	20	26365	1882.5	1/0	20	8365	1962.5	10	5095	737.5				24.9	24.9	-0.01
25A-41A	25A	41A		QPSK	20	26365	1882.5	1/0	20	8365	1962.5	20	40620	2593				24.9	24.9	0.02
26A-41A	26A	41A		QPSK	15	26865	831.5	1/0	15	8865	876.5	20	2593	40620				25.1	25.1	0.02
2A-2A-4A	2A	2A	4A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	20	2175	2132.5	24.7	24.5	-0.19
	4A	2A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	20	900	1960	20	1100	1980	24.7	24.6	-0.13
2A-2A-5A	2A	2A	5A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	10	2525	881.5	24.7	24.5	-0.15
	5A	2A	2A	QPSK	10	20525	836.5	1/0	10	2525	881.5	20	900	1960	20	1100	1980	24.9	24.7	-0.20
2A-2A-12A	2A	2A	12A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	10	5095	737.5	24.7	24.7	-0.01
	12A	2A	2A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	900	1960	20	1100	1980	24.5	24.5	0.02
2A-2A-13A	2A	2A	13A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	10	5230	751	24.7	24.5	-0.16
	13A	2A	2A	QPSK	10	23230	782	1/0	10	5230	751	20	900	1960	20	1100	1980	24.7	24.6	-0.07
2A-2A-14A	2A	2A	14A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	10	5330	763	24.7	24.7	-0.03
	14A	2A	2A	QPSK	10	23330	793	1/0	10	5330	763	20	900	1960	20	1100	1980	24.4	24.3	-0.05
2A-2A-30A	2A	2A	30A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	10	9820	2355	24.7	24.7	0.05
	30A	2A	2A	QPSK	10	27710	2310	1/0	10	9820	2355	20	900	1960	20	1100	1980	23.0	23.0	-0.03
2A-2A-66A	2A	2A	66A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	20	66786	2145	24.7	24.6	-0.08
	66A	2A	2A	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	20	1100	1980	25.2	25.0	-0.22
2A-2A-71A	2A	2A	71A	QPSK	20	18900	1880	1/0	20	900	1960	20	1100	1980	20	68761	634.5	24.7	24.6	-0.11
	71A	2A	2A	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	900	1960	20	1100	1980	24.5	24.5	0.01
2A-4A-4A	2A	4A	4A	QPSK	20	18900	1880	1/0	20	900	1960	20	2300	2145	20	2050	2120	24.7	24.7	0.05
	4A	4A	2A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	20	900	1960	24.9	24.8	-0.02
2A-4A-5A	2A	4A	5A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	10	2525	881.5	24.7	24.7	0.01
	4A	5A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	2525	881.5	20	900	1960	24.7	24.7	-0.01
	5A	2A	4A	QPSK	10	20525	836.5	1/0	10	2525	881.5	20	900	1960	20	2175	2132.5	24.9	24.9	0.05
2A-4A-7A	2A	4A	7A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	20	3100	2655	24.7	24.8	0.09
	4A	7A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	20	3100	2655	20	900	1960	24.7	24.8	0.10
	7A	2A	4A	QPSK	20	20850	2510	1/0	20	2850	2630	20	900	1960	20	2175	2132.5	23.8	23.8	-0.02
2A-4A-12A	2A	4A	12A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	10	5095	737.5	24.7	24.7	0.04
	4A	12A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	5095	737.5	20	900	1960	24.7	24.8	0.03
	12A	2A	4A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	900	1960	20	2175	2132.5	24.5	24.5	-0.05
2A-4A-13A	2A	4A	13A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	10	5230	751	24.7	24.8	0.10
	4A	13A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	5230	751	20	900	1960	24.7	24.9	0.13
	13A	2A	4A	QPSK	10	23230	782	1/0	10	5230	751	20	900	1960	20	2175	2132.5	24.7	24.6	-0.04
2A-4A-30A	2A	4A	30A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	10	9820	2355	24.7	24.6	-0.12
	4A	30A	2A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	9820	2355	20	900	1960	24.7	24.7	-0.01
	30A	2A	4A	QPSK	10	27710	2310	1/0	10	9820	2355	20	900	1960	20	2175	2132.5	23.0	23.0	0.00
2A-4A-71A	2A	4A	71A	QPSK	20	18900	1880	1/0	20	900	1960	20	2175	2132.5	20	68761	634.5	24.7	24.7	0.06
	4A	71A	2A	QPSK	20	20300	1745	1/99	20	2300	2145	20	68761	634.5	20	900	1960	24.7	24.8	0.10
	71A	2A	4A	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	900	1960	20	2175	2132.5	24.5	24.5	0.02
2A-5A-30A	2A	5A	30A	QPSK	20	18900	1880	1/0	20	900	1960	10	2525	881.5	10	9820	2355	24.7	24.5	-0.18
	5A	30A	2A	QPSK	10	20525	836.5	1/0	10	2525	881.5	10	9820	2355	20	900	1960	24.9	24.7	-0.13
	30A	2A	5A	QPSK	10	27710	2310	1/0	10	9820	2355	20	900	1960	10	2525	881.5	23.0	22.9	-0.14
2A-5A-66A	2A	5A	66A	QPSK	20	18900	1880	1/0	20	900	1960	10	2525	881.5	20	66786	2145	24.7	24.6	-0.04
	5A	66A	2A	QPSK	10	20525	836.5	1/0	10	2525	881.5	20	66786	2145	20	900	1960	24.9	24.9	0.06
	66A	2A	5A	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	10	2525	881.5	25.2	25.2	0.01
2A-7A-7A	2A	7A	7A	QPSK	20	18900	1880	1/0	20	900	1960	20	3100	2655	20	3350	2680	24.7	24.6	-0.09
	7A	7A	2A	QPSK	20	20850	2510	1/0	20	2850	2630	20	3350	2680	20	900	1960	23.8	23.9	0.11
2A-7A-12A	2A	7A	12A	QPSK	20	18900	1880	1/0	20	900	1960	20	3100	2655	10	5095	737.5	24.7	24.5	-0.20
	7A	12A	2A	QPSK	20	20850	2510	1/0	20	2850	2630	10	5095	737.5	20	900	1960	23.8	23.9	0.10
	12A	2A	7A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	900	1960	20	3100	2655	24.5	24.4	-0.11
2A-12A-30A	2A	12A	30A	QPSK	20	18900	1880	1/0	20	900	1960	10	5095	737.5	10	9820	2355	24.7	24.5	-0.17
	12A	30A	2A	QPSK	10	23095	707.5	1/49	10	5095	737.5	10	9820	2355	20	900	1960	24.5	24.4	-0.10
	30A	2A	12A	QPSK	10	27710	2310	1/0	10	9820	2355	20	900	1960	10	5095	737.5	23.0	23.1	0.02
2A-12A-66A	2A	12A	66A	QPSK	20	18900	1880	1/0	20	900	1960	10	5095	737.5	20	66786	2145	24.7	24.7	0.05
	12A	66A	2A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	66786	2145	20	900	1960	24.5	24.6	0.10
	66A	2A	12A	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	10	5095	737.5	25.2	25.2	0.04
2A-13A-66A	2A	13A	66A	QPSK	20	18900	1880	1/0	20	900	1960	10	5230	751	20	66786	2145	24.7	24.7	-0.03
	13A	66A	2A	QPSK	10	23230	782	1/0	10	5230	751	20	66786	2145	20	900	1960	24.7	24.8	0.15
	66A	2A	13A	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	10	5230	751	25.2	25.2	-0.01
2A-14A-30A	2A	14A	30A	QPSK	20	18900	1880	1/0	20	900	1960	10	763	5330	10	9820	2355	24.7	24.7	0.05
	14A	30A	2A	QPSK	10	23330	793	1/0	10	5330	763	10	9820	2355	20	900	1960	24.4	24.4	-0.04
	30A	2A	14A	QPSK	10	27710	2310	1/0	10	9820	2355	20	900	1960	10	763	5330	23.0	23.1	0.02

Note:

1_Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.

2_When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

DL CA output power results (Continued)

E-UTRA CA configuation (BCS)	Bands			UL					DL									LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta
	PCC	SCC1	SCC2	PCC					PCC			SCC1			SCC2					
	1st	2nd	3rd	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)			
2A-14A-66A	2A	14A	66A	QPSK	20	18900	1880	1/0	20	900	1960	10	763	5330	20	66786	2145	24.7	24.7	0.05
	14A	66A	2A	QPSK	10	23330	793	1/0	10	5330	763	20	66786	2145	20	900	1960	24.4	24.4	-0.02
	66A	2A	14A	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	10	763	5330	25.2	25.3	0.09
2A-66A-66A	2A	66A	66A	QPSK	20	18900	1880	1/0	20	900	1960	20	66786	2145	20	67036	2170	24.7	24.8	0.18
	66A	66A	2A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	20	900	1960	25.2	25.2	0.02
2A-66A-71A	2A	66A	71A	QPSK	20	18900	1880	1/0	20	900	1960	20	66786	2145	20	68761	634.5	24.7	24.7	-0.01
	66A	71A	2A	QPSK	20	132572	1770	1/0	20	67036	2170	20	68761	634.5	20	900	1960	25.2	25.2	0.01
	71A	2A	66A	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	900	1960	20	66786	2145	24.5	24.5	0.08
4A-4A-5A	4A	4A	5A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	10	2525	881.5	24.9	24.8	-0.03
	5A	4A	4A	QPSK	10	20525	836.5	1/0	10	2525	881.5	20	2300	2145	20	2050	2120	24.9	24.6	-0.22
4A-4A-7A	4A	4A	7A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	20	3100	2655	24.9	24.8	-0.02
	7A	4A	4A	QPSK	20	20850	2510	1/0	20	2850	2630	20	2300	2145	20	2050	2120	23.8	23.8	0.04
4A-4A-12A	4A	4A	12A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	10	5095	737.5	24.9	24.9	0.06
	12A	4A	4A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	2300	2145	20	2050	2120	24.5	24.5	0.00
4A-4A-13A	4A	4A	13A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	10	5230	751	24.9	25.0	0.14
	13A	4A	4A	QPSK	10	23230	782	1/0	10	5230	751	20	2300	2145	20	2050	2120	24.7	24.5	-0.15
4A-4A-71A	4A	4A	71A	QPSK	20	20300	1745	1/99	20	2300	2145	20	2050	2120	20	68761	634.5	24.9	25.0	0.11
	71A	4A	4A	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	2300	2145	20	2050	2120	24.5	24.5	0.05
4A-5A-30A	4A	5A	30A	QPSK	20	20175	1745	1/99	20	2300	2145	10	2525	881.5	10	9820	2355	24.7	24.7	-0.06
	5A	30A	4A	QPSK	10	20525	836.5	1/0	10	2525	881.5	10	9820	2355	20	2300	2145	24.9	24.8	-0.10
	30A	4A	5A	QPSK	10	27710	2310	1/0	10	9820	2355	20	2300	2145	10	2525	881.5	23.0	22.9	-0.10
4A-7A-7A	4A	7A	7A	QPSK	20	20300	1745	1/99	20	2300	2145	20	3100	2655	20	3350	2680	24.9	24.9	0.03
	7A	7A	4A	QPSK	20	20850	2510	1/0	20	2850	2630	20	3350	2680	20	2175	2132.5	23.8	23.9	0.14
4A-7A-12A	4A	7A	12A	QPSK	20	20175	1745	1/99	20	2300	2145	20	3100	2655	10	5095	737.5	24.7	24.7	-0.06
	7A	12A	4A	QPSK	20	20850	2510	1/0	20	2850	2630	10	5095	737.5	20	2175	2132.5	23.8	23.8	0.03
	12A	4A	7A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	2175	2132.5	20	3100	2655	24.5	24.5	-0.03
4A-12A-30A	4A	12A	30A	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	5095	737.5	10	9820	2355	24.7	24.7	-0.01
	12A	30A	4A	QPSK	10	23095	707.5	1/49	10	5095	737.5	10	9820	2355	20	2175	2132.5	24.5	24.6	0.08
	30A	4A	12A	QPSK	10	27710	2310	1/0	10	9820	2355	20	2175	2132.5	10	5095	737.5	23.0	23.0	-0.04
5A-5A-66A	5A	5A	66A	QPSK	10	20600	844	1/0	10	2600	889	10	2450	874	20	66786	2145	24.8	24.8	0.08
	66A	5A	5A	QPSK	20	132572	1770	1/0	20	67036	2170	10	2600	889	10	2450	874	25.2	25.1	-0.03
5A-66A-66A	5A	66A	66A	QPSK	10	20525	836.5	1/0	10	2525	881.5	20	66786	2145	20	67036	2170	24.9	25.0	0.11
	66A	66A	5A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	10	2525	881.5	25.2	25.1	-0.04
12A-66A-66A	12A	66A	66A	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	66786	2145	20	67036	2170	24.5	24.6	0.10
	66A	66A	12A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	10	5095	737.5	25.2	25.1	-0.07
13A-66A-66A	13A	66A	66A	QPSK	10	23230	782	1/0	10	5230	751	20	66786	2145	20	67036	2170	24.7	24.8	0.12
	66A	66A	13A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	10	5230	751	25.2	25.3	0.12
25A-25A-26A	25A	25A	26A	QPSK	20	26365	1882.5	1/0	20	8365	1962.5	20	8590	1985	5	8865	876.5	24.9	24.9	0.05
	26A	25A	25A	QPSK	5	26715	816.5	1/12	5	8715	861.5	20	8365	1962.5	20	8590	1985	25.0	25.1	0.09
66A-66A-71A	66A	66A	71A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	20	68761	634.5	25.2	25.2	0.06
	71A	66A	66A	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	66786	2145	20	67036	2170	24.5	24.5	0.04
2A-7C	2A	7C	7C	QPSK	20	18900	1880	1/0	20	900	1960	20	2902	2635.2	20	3298	2674.8	24.7	24.7	0.04
	7C	7C	2A	QPSK	20	20850	2510	1/0	20	2850	2630	20	3048	2649.8	20	900	1960	23.8	23.8	0.02
2A-5B	2A	5B	5B	QPSK	20	18900	1880	1/0	20	900	1960	10	2600	889	10	2501	879.1	24.7	24.5	-0.17
	5B	5B	2A	QPSK	10	20600	844	1/0	10	2600	889	10	2501	879.1	20	900	1960	24.8	24.7	-0.06
2A-12B	2A	12B	12B	QPSK	20	18900	1880	1/0	20	900	1960	10	5130	741	5	5058	733.8	24.7	24.5	-0.18
	12B	12B	2A	QPSK	10	23130	711	1/25	10	5130	741	5	5058	733.8	20	900	1960	24.6	24.5	-0.05
2A-66B	2A	66B	66B	QPSK	20	18900	1880	1/0	20	900	1960	15	66786	2145	5	66879	2154.3	24.7	24.7	-0.01
	66B	66B	2A	QPSK	15	132597	1772.5	1/0	15	67061	2172.5	5	66968	2163.2	20	900	1960	25.2	25.3	0.14
2A-66C	2A	66C	66C	QPSK	20	18900	1880	1/0	20	900	1960	20	66786	2145	20	66984	2164.8	24.7	24.6	-0.13
	66C	66C	2A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	20	900	1960	25.2	25.3	0.08
4A-5B	4A	5B	5B	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	2600	889	10	2501	879.1	24.7	24.8	0.03
	5B	5B	4A	QPSK	10	20600	844	1/0	10	2600	889	10	2501	879.1	20	2175	2132.5	24.8	24.8	0.05
4A-7C	4A	7C	7C	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	20	2902	2635.2	20	3298	2674.8	24.7	24.7	-0.03
	7C	7C	4A	QPSK	20	20850	2510	1/0	20	2850	2630	20	3048	2649.8	20	2175	2132.5	23.8	23.8	0.06
4A-12B	4A	12B	12B	QPSK	20	20175	1732.5	1/99	20	2175	2132.5	10	5130	741	5	5058	733.8	24.7	24.7	-0.04
	12B	12B	4A	QPSK	10	23130	711	1/25	10	5130	741	5	5058	733.8	20	2175	2132.5	24.6	24.6	0.06
5A-66B	5A	66B	66B	QPSK	10	20525	836.5	1/0	10	2525	881.5	15	67061	2172.5	5	66968	2163.2	24.5	24.6	0.07
	66B	66B	5A	QPSK	15	132597	1772.5	1/0	15	67061	2172.5	5	66858	2152.5	10	2525	881.5	25.2	25.3	0.13
5A-66C	5A	66C	66C	QPSK	10	20525	836.5	1/0	10	2525	880.5	20	66786	2145	20	66984	2164.8	24.5	24.6	0.09
	66C	66C	5A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	10	2525	881.5	25.2	25.1	-0.06
5B-66A	5B	5B	66A	QPSK	10	20600	844	1/0	10	2600	889	10	2501	879.1	20	66786	2145	24.8	24.8	0.06
	66A	5B	5B	QPSK	20	132572	1770	1/0	20	67036	2170	10	2600	889	10	2501	879.1	25.2	25.2	0.01
7A-12B	7A	12B	12B	QPSK	20	20850	2510	1/0	20	2850	2630	10	5130	741	5	5058	733.8	23.8	23.8	0.05
	12B	12B	7A	QPSK	10	23130	711	1/25	10	5130	741	5	5058	733.8	20	3100	2655	24.6	24.7	0.12
12A-66C	12A	66C	66C	QPSK	10	23095	707.5	1/49	10	5095	737.5	20	66786	2145	20	66984	2164.8	24.5	24.5	-0.02
	66C	66C	12A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	10	5095	737.5	25.2	25.1	-0.06
13A-66B	13A	66B	66B	QPSK	10	23230	782	1/0	10	5230	751	15	67061	2172.5	5	66986	2163.2	24.7	24.7	0.02
	66B	66B	13A	QPSK	15	132597	1772.5	1/0	15	67061	2172.5	5	66858	2152.5	10	5230	751	25.2	25.3	0.13

Note:

1_Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.

2_When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

DL CA output power results (Continued)

E-UTRA CA configutation (BCS)	Bands			UL					DL									LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta
	PCC	SCC1	SCC2	PCC					PCC			SCC1			SCC2					
	1st	2nd	3rd	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)			
13A-66C	13A	66C	66C	QPSK	10	23230	782	1/0	10	5230	751	20	66786	2145	20	66984	2164.8	24.7	24.8	0.14
	66C	66C	13A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	10	5230	751	25.2	25.1	-0.10
2C-66A	2C	2C	66A	QPSK	20	18900	1880	1/0	20	900	1960	20	1098	1979.8	20	66786	2145	24.7	24.7	-0.02
	66A	2C	2C	QPSK	20	132572	1770	1/0	20	67036	2170	20	900	1960	20	1098	1979.8	25.2	25.2	0.07
5A-30A-66A	5A	30A	66A	QPSK	10	20525	836.5	1/0	10	2525	881.5	10	9820	2355	20	66786	2145	24.9	24.9	0.08
	30A	66A	5A	QPSK	10	27710	2310	1/0	10	9820	2355	20	66786	2145	10	2525	881.5	23.0	22.9	-0.10
	66A	5A	30A	QPSK	20	132572	1770	1/0	20	67036	2170	10	2525	881.5	10	9820	2355	25.2	25.3	0.17
5B-30A	5B	5B	30A	QPSK	10	20600	844	1/0	10	2600	889	10	2501	879.1	10	9820	2355	24.8	24.7	-0.05
	30A	5B	5B	QPSK	10	27710	2310	1/0	10	9820	2355	10	2600	889	10	2501	879.1	23.0	22.9	-0.13
7A-2A-66A	7A	2A	66A	QPSK	20	20850	2510	1/0	20	2850	2630	20	900	1960	20	66786	2145	23.8	23.9	0.13
	2A	66A	7A	QPSK	20	18900	1880	1/0	20	900	1960	20	66786	2145	20	3100	2655	24.7	24.7	-0.01
	66A	7A	2A	QPSK	20	132572	1770	1/0	20	67036	2170	20	3100	2655	20	900	1960	25.2	25.2	-0.01
12A-30A-66A	12A	30A	66A	QPSK	10	23095	707.5	1/49	10	5095	737.5	10	9820	2355	20	66786	2145	24.5	24.5	-0.01
	30A	66A	12A	QPSK	10	27710	2310	1/0	10	9820	2355	20	66786	2145	10	5095	737.5	23.0	22.9	-0.18
	66A	12A	30A	QPSK	20	132572	1770	1/0	20	67036	2170	10	5095	737.5	10	9820	2355	25.2	25.2	0.07
14A-30A-66A	14A	30A	66A	QPSK	10	23330	793	1/0	10	5330	763	10	9820	2355	20	66786	2145	24.4	24.4	0.03
	30A	66A	14A	QPSK	10	27710	2310	1/0	10	9820	2355	20	66786	2145	10	763	5330	23.0	23.0	-0.08
	66A	14A	30A	QPSK	20	132572	1770	1/0	20	67036	2170	10	763	5330	10	9820	2355	25.2	25.3	0.15
14A-66A-66A	14A	66A	66A	QPSK	10	23330	793	1/0	10	5330	763	20	66786	2145	20	67036	2170	24.4	24.3	-0.11
	66A	66A	14A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	10	763	5330	25.2	25.3	0.12
30A-66A-66A	30A	66A	66A	QPSK	10	27710	2310	1/0	10	9820	2355	20	66536	2120	20	67036	2170	23.0	23.1	0.03
	66A	66A	30A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66536	2120	10	27710	2310	25.2	25.3	0.15
25A-41C	25A	41C	41C	QPSK	20	26365	1882.5	1/0	20	8365	1962.5	20	40620	2593	20	40818	2612.8	24.9	24.9	0.01
	41C	41C	25A	QPSK	20	39750	2506	1/99	20	39750	2506	20	2525.8	39948	20	8365	1962.5	24.7	24.7	-0.06
26A-41C	26A	41C	41C	QPSK	15	26865	831.5	1/0	15	8865	876.5	20	40620	2593	20	40818	2612.8	25.1	25.2	0.03
	41C	41C	26A	QPSK	20	39750	2506	1/99	20	39750	2506	20	2525.8	39948	15	8865	876.5	24.7	24.9	0.16
66C-71A	66C	66C	71A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	20	68761	634.5	25.2	25.2	-0.02
	71A	66C	66C	QPSK	20	133297	680.5	1/49	20	68761	634.5	20	66786	2145	20	66588	2125.2	24.5	24.4	-0.06
41A-41A	41A	41A		QPSK	20	39750	2506	1/99	20	39750	2506	20	2680	41490				24.7	24.8	0.06
41D	41D	41D	41D	QPSK	20	39750	2506	1/99	20	39750	2506	20	39948	2525.8	20	40146	2545.6	24.7	24.8	0.03
41A-41C	41A	41C	41C	QPSK	20	39750	2506	1/99	20	39750	2506	20	40620	2593	20	40818	2612.8	24.7	24.7	0.00
	41C	41C	41A	QPSK	20	39750	2506	1/99	20	39750	2506	20	39948	2525.8	20	40620	2593	24.7	24.9	0.16
66A-66C	66A	66C	66C	QPSK	20	132572	1770	1/0	20	67036	2170	20	66786	2145	20	66588	2125.2	25.2	24.9	-0.23
	66C	66C	66A	QPSK	20	132572	1770	1/0	20	67036	2170	20	66838	2150.2	20	66536	2120	25.2	25.0	-0.22

Note:

1_Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.

2_When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

9.5 Wi-Fi 2.4 GHz (DTS Band)

When the RCV is active in a held-to-ear user scenario, the output power level is reduced. The maximum allowed output powers in all conditions are included in the maximum power document.

Refer to Operational Description for WLAN explanation.

Measured Results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.1	802.11b	1 Mbps	1	2412.0	20.2	21.0	Yes	16.3	17.0	Yes
			6	2437.0	20.4			16.4		
			11	2462.0	20.5			16.3		
			12	2467.0	8.6	9.0	No	8.6	9.0	No
			13	2472.0	2.5	3.0		2.5	3.0	
	802.11g	6 Mbps	1	2412.0	Not Required	19.0	No	Not Required	15.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0			9.0	
			13	2472.0		3.0			3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	19.0	No	Not Required	15.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0			9.0	
			13	2472.0		3.0			3.0	

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.2	802.11b	1 Mbps	1	2412.0	19.8	21.0	Yes	16.5	17.0	Yes
			6	2437.0	19.8			16.3		
			11	2462.0	20.1			16.4		
			12	2467.0	8.6	9.0	No	8.6	9.0	No
			13	2472.0	2.9	3.0		2.9	3.0	
	802.11g	6 Mbps	1	2412.0	Not Required	19.0	No	Not Required	15.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0			9.0	
			13	2472.0		3.0			3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	19.0	No	Not Required	15.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0			9.0	
			13	2472.0		3.0			3.0	

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
WiFi MIMO Ant.1	802.11g	6 Mbps	1	2412.0	18.5	19.0	No
			6	2437.0	18.6		
			11	2462.0	18.5		
			12	2467.0	8.7	9.0	
			13	2472.0	2.3	3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	19.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
WiFi MIMO Ant.2	802.11g	6 Mbps	1	2412.0	18.2	19.0	No
			6	2437.0	18.3		
			11	2462.0	18.2		
			12	2467.0	7.9	9.0	
			13	2472.0	1.9	3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	19.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	

Note(s):

1. SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
2. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
3. 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. Refer to §6.3.
4. MIMO DTS SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

When the RCV is active in a held-to-ear user scenario, the output power level is reduced. The maximum allowed output powers in all conditions are included in the maximum power document.

Refer to Operational Description for WLAN explanation.

Measured Results of WiFi SISO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	16.9	18.0	Yes	Not Required	15.0	No
				56	5280.0	16.8			Not Required		
				60	5300.0	16.8			Not Required		
				64	5320.0	16.7			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	18.0	No	Not Required	15.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	17.0	No	14.5	15.0	Yes
				62	5310.0	Not Required			14.2		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	18.0	No	Not Required	15.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	17.0	No	Not Required	15.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	14.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	16.8	18.0	Yes	Not Required	15.0	No
				120	5600.0	16.6			Not Required		
				124	5620.0	16.9			Not Required		
				144	5720.0	17.0			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	18.0	No	Not Required	15.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	17.0	No	14.5	15.0	Yes
				118	5590.0	Not Required			14.3		
				126	5630.0	Not Required			14.3		
				142	5710.0	Not Required			14.4		
		802.11ac (VHT20)	6.5 Mbps	100	5500.0	Not Required	18.0	No	Not Required	15.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	17.0	No	Not Required	15.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	14.0	No	Not Required	14.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	17.7	18.0	Yes	Not Required	15.0	No
				157	5785.0	17.5			Not Required		
				165	5825.0	17.5			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No	Not Required	15.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No	14.3	15.0	Yes
				159	5795.0	Not Required			14.3		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No	Not Required	15.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No	Not Required	15.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	14.0	No	Not Required	14.0	No

Measured Results of WiFi SISO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	17.1	18.0	Yes	Not Required	15.0	No
				56	5280.0	16.9			Not Required		
				60	5300.0	16.9			Not Required		
				64	5320.0	17.1			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	18.0	No	Not Required	15.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	17.0	No	14.5	15.0	Yes
				62	5310.0	Not Required			14.6		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	18.0	No	Not Required	15.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	17.0	No	Not Required	15.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	14.0	No	Not Required	14.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	16.9	18.0	Yes	Not Required	15.0	No
				120	5600.0	16.9			Not Required		
				124	5620.0	16.9			Not Required		
				144	5720.0	16.9			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	18.0	No	Not Required	15.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	17.0	No	14.8	15.0	Yes
				118	5590.0	Not Required			14.3		
				126	5630.0	Not Required			14.3		
				142	5710.0	Not Required			14.9		
		802.11ac (VHT20)	6.5 Mbps	100	5500.0	Not Required	18.0	No	Not Required	15.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	17.0	No	Not Required	15.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	14.0	No	Not Required	14.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	17.8	18.0	Yes	Not Required	15.0	No
				157	5785.0	17.7			Not Required		
				165	5825.0	17.8			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No	Not Required	15.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No	14.6	15.0	Yes
				159	5795.0	Not Required			14.7		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No	Not Required	15.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No	Not Required	15.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	14.0	No	Not Required	14.0	No

Measured Results of WiFi MIMO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
MIMO Ant.1	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	16.8	18.0	Yes
				157	5785.0	16.6		
				165	5825.0	16.5		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No
				159	5795.0	Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No
				159	5795.0	Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	14.0	No

Measured Results of WiFi MIMO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
MIMO Ant.2	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	17.9	18.0	Yes
				157	5785.0	17.8		
				165	5825.0	17.9		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No
				159	5795.0	Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	18.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	17.0	No
				159	5795.0	Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	14.0	No

Note(s):

1. For “Not required”, SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band.
2. When the same transmission mode configurations have the same maximum output power on the same channel for the 802.11 a/g/n/ac/ax modes, the channel in the lower order/sequence 802.11 mode (i.e. a, g, n ac then ax) is selected.
3. When the specified maximum output power is the same for both UNII band I and UNII band 2A, begin SAR measurement in UNII band 2A; and if the highest *reported* SAR for UNII band 2A is
   - ≤ 1.2 W/kg, SAR is not required for UNII band I
   - > 1.2 W/kg, both bands should be tested independently for SAR.
4. MIMO UNII-3 SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

9.7 Bluetooth

Measured Results

Band (GHz)	Mode	Ch #	Freq. (MHz)	Maximum Average Power (dBm)	
				Meas Pwr	Tune-up Limit
2.4	GFSK	0	2402	9.3	10.0
		39	2441	9.5	
		78	2480	8.9	
	EDR, 8-DPSK	0	2402	8.3	9.0
		39	2441	8.3	
		78	2480	7.8	
	LE, GFSK-1M, 125/500 kbps	0	2402	6.7	7.0
		19	2440	7.0	
		39	2480	6.6	
	LE, GFSK-2M	0	2402	6.3	7.0
		19	2440	6.6	
		39	2480	6.1	

Note(s):

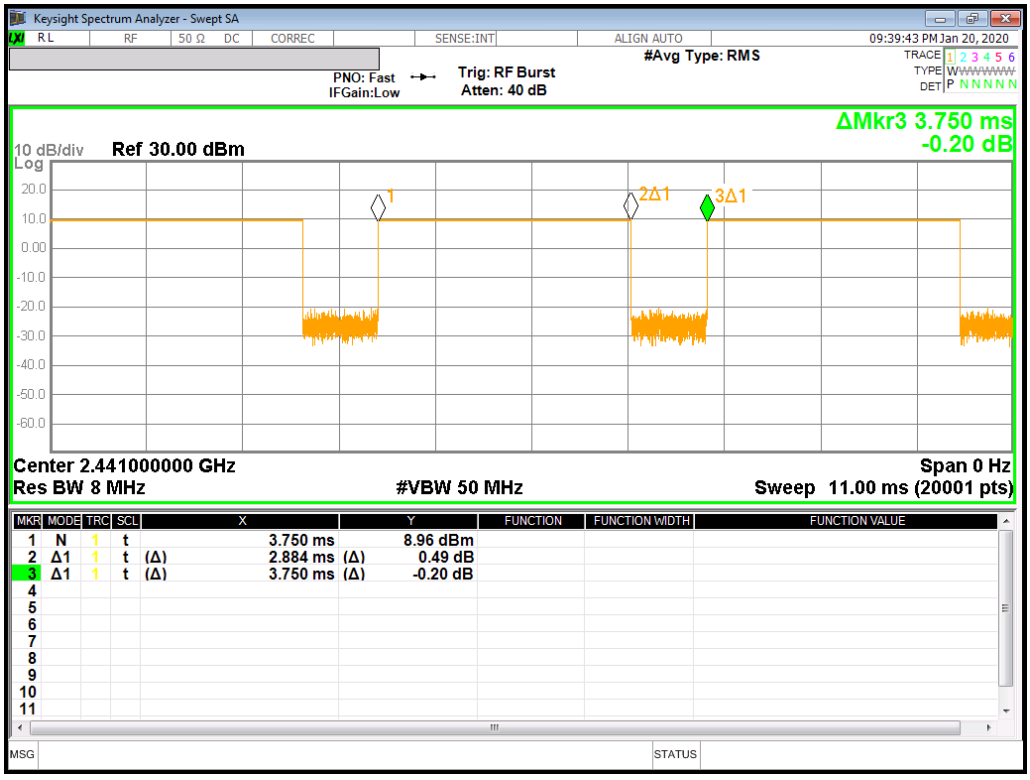
SAR test is evaluated at GFSK mode in Bluetooth

Duty Factor Measured Results

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

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

- Reported SAR(W/kg) for WWAN= Measured SAR *Tune-up Scaling Factor
- Reported SAR(W/kg) for Wi-Fi and Bluetooth= Measured SAR * Tune-up scaling factor * Duty Cycle scaling factor
- Duty Cycle scaling factor = 1 / Duty cycle (%)

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 648474 D04 Handset SAR:

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

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.
When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25mm From that surface or edge in direct contact with a flat phantom, to address interactive hand use exposure conditions. When hotspot mode applies, 10-g extremity SAR is required only for the surfaces and edges with hotspot mode 1-g reported SAR > 1.2 W/kg; However, when power reduction applies to hotspot mode the measured SAR must be scaled to the maximum output power, Including tolerance, allowed for phablet modes to compare with the 1.2 W/kg SAR test reduction threshold.

Additional 1-g SAR testing at 5 mm is not required when hotspot mode 10-g extremity SAR is not required for the surfaces and edges; since all 1-g reported SAR < 1.2 W/kg.

KDB 941225 D01 SAR test for 3G devices:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11:

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

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

- ≤ 0.4 W/kg, further SAR measurement is not required for the other test positions in that exposure configuration and wireless mode combination within the frequency band or aggregated band. DSSS and OFDM configurations are considered separately according to the required SAR procedures.
- > 0.4 W/kg, SAR is repeated using the same wireless mode test configuration tested in the *initial test position* to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the *reported* SAR is ≤ 0.8 W/kg or all required test positions are tested.
  - For subsequent test positions with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested.
  - When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the *initial test position* and subsequent test positions, when the *reported* SAR is > 0.8 W/kg, measure the SAR for these positions/configurations on the subsequent next highest measured output power channel(s) until the *reported* SAR is ≤ 1.2 W/kg or all required test channels are considered.
  - The additional power measurements required for this step should be limited to those necessary for identifying subsequent highest output power channels to apply the test reduction.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

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

10.1 GSM 850

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	GPRS 4 Slot	Off	0	Left Touch	251	848.8	30.0	28.3	0.087	0.129	
					Left Tilt	251	848.8	30.0	28.3	0.062	0.091	
					Right Touch	251	848.8	30.0	28.3	0.122	0.181	1
					Right Tilt	251	848.8	30.0	28.3	0.063	0.093	
	Body-worn	GPRS 4 Slot	Off	15	Rear	251	848.8	30.0	28.3	0.237	0.351	2
					Front	251	848.8	30.0	28.3	0.191	0.283	
	Hotspot	GPRS 2 Slot	On	10	Rear	190	836.6	31.5	30.4	0.450	0.584	3
					Front	190	836.6	31.5	30.4	0.319	0.414	
					Edge 2	190	836.6	31.5	30.4	0.157	0.204	
					Edge 3	190	836.6	31.5	30.4	0.290	0.377	
					Edge 4	190	836.6	31.5	30.4	0.059	0.077	

10.2 GSM 1900

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	GPRS 3 Slot	Off	0	Left Touch	810	1909.8	27.5	25.6	0.027	0.042	4
					Left Tilt	810	1909.8	27.5	25.6	0.010	0.015	
					Right Touch	810	1909.8	27.5	25.6	0.021	0.032	
					Right Tilt	810	1909.8	27.5	25.6	0.019	0.029	
	Body-worn	GPRS 3 Slot	Off	15	Rear	810	1909.8	27.5	25.6	0.165	0.256	
					Front	810	1909.8	27.5	25.6	0.220	0.342	5
	Hotspot	GPRS 4 Slot	On	10	Rear	810	1909.8	24.5	23.8	0.578	0.679	
					Front	810	1909.8	24.5	23.8	0.536	0.630	
					Edge 2	810	1909.8	24.5	23.8	0.086	0.100	
					Edge 3	512	1850.2	24.5	23.5	0.954	1.190	6
						661	1880.0	24.5	23.3	0.711	0.937	
						810	1909.8	24.5	23.8	0.891	1.047	
					Edge 4	810	1909.8	24.5	23.8	0.082	0.096	

10.3 W-CDMA Band II

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	9400	1880.0	25.9	24.8	0.107	0.138	7
					Left Tilt	9400	1880.0	25.9	24.8	0.070	0.090	
					Right Touch	9400	1880.0	25.9	24.8	0.060	0.077	
					Rightt Tilt	9400	1880.0	25.9	24.8	0.072	0.093	
	Body-worn	Rel 99 RMC	Off	15	Rear	9400	1880.0	25.9	24.8	0.610	0.786	8
					Front	9400	1880.0	25.9	24.8	0.520	0.670	
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	20.9	20.0	0.375	0.461	
					Front	9400	1880.0	20.9	20.0	0.323	0.397	
					Edge 2	9400	1880.0	20.9	20.0	0.059	0.073	
					Edge 3	9262	1852.4	20.9	19.8	0.793	1.018	
						9400	1880.0	20.9	20.0	0.915	1.124	9
						9538	1907.6	20.9	20.1	0.919	1.101	
					Edge 4	9400	1880.0	20.9	20.0	0.058	0.071	
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	9	Rear	9400	1880.0	25.9	24.8	0.701	0.903	
				7	Front	9400	1880.0	25.9	24.8	0.874	1.126	
				11	Edge 3	9400	1880.0	25.9	24.8	1.220	1.572	
			On	0	Rear	9400	1880.0	20.9	20.0	0.852	1.044	
				0	Front	9400	1880.0	20.9	20.0	0.901	1.104	
				0	Edge 3	9262	1852.4	20.9	19.8	1.830	2.352	
						9400	1880.0	20.9	20.0	1.990	2.438	
						9538	1907.6	20.9	20.1	2.090	2.491	10

10.4 W-CDMA Band IV

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	1413	1732.6	26.0	24.6	0.156	0.213	11
					Left Tilt	1413	1732.6	26.0	24.6	0.069	0.094	
					Right Touch	1413	1732.6	26.0	24.6	0.117	0.160	
					Rightt Tilt	1413	1732.6	26.0	24.6	0.083	0.114	
	Body-worn	Rel 99 RMC	Off	15	Rear	1312	1712.4	26.0	24.2	0.637	0.970	12
						1413	1732.6	26.0	24.6	0.654	0.893	
						1513	1752.6	26.0	24.7	0.613	0.834	
					Front	1413	1732.6	26.0	24.6	0.570	0.778	
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.7	19.7	0.465	0.582	
					Front	1413	1732.6	20.7	19.7	0.434	0.543	
					Edge 2	1413	1732.6	20.7	19.7	0.088	0.110	
					Edge 3	1312	1712.4	20.7	19.6	0.722	0.923	
						1413	1732.6	20.7	19.7	0.842	1.054	13
						1513	1752.6	20.7	19.9	0.826	0.982	
					Edge 4	1413	1732.6	20.7	19.7	0.115	0.144	
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	9	Rear	1413	1732.6	26.0	24.6	0.799	1.091	
				7	Front	1413	1732.6	26.0	24.6	0.986	1.346	
				11	Edge 3	1413	1732.6	26.0	24.6	0.999	1.364	
			On	0	Rear	1413	1732.6	20.7	19.8	0.923	1.148	
				0	Front	1413	1732.6	20.7	19.8	1.130	1.406	
				0	Edge 3	1312	1712.4	20.7	19.7	1.730	2.198	
						1413	1732.6	20.7	19.8	1.770	2.202	14
						1513	1752.6	20.7	20.0	1.840	2.182	

10.5 W-CDMA Band V

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	N/A	0	Left Touch	4183	836.6	25.2	24.5	0.168	0.198	
					Left Tilt	4183	836.6	25.2	24.5	0.123	0.145	
					Right Touch	4183	836.6	25.2	24.5	0.230	0.271	15
					Rightt Tilt	4183	836.6	25.2	24.5	0.134	0.158	
	Body-worn	Rel 99 RMC	N/A	15	Rear	4183	836.6	25.2	24.5	0.331	0.390	16
					Front	4183	836.6	25.2	24.5	0.254	0.299	
	Hotspot	Rel 99 RMC	N/A	10	Rear	4132	826.4	25.2	24.5	0.651	0.758	
						4183	836.6	25.2	24.5	0.682	0.803	17
						4233	846.6	25.2	24.5	0.624	0.731	
					Front	4183	836.6	25.2	24.5	0.461	0.543	
					Edge 2	4183	836.6	25.2	24.5	0.253	0.298	
					Edge 3	4183	836.6	25.2	24.5	0.425	0.501	
					Edge 4	4183	836.6	25.2	24.5	0.105	0.124	

10.6 CDMA BC0

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	1xRTT (RC3 SO55)	Off	0	Left Touch	384	836.5	24.5	23.6	0.108	0.133	
					Left Tilt	384	836.5	24.5	23.6	0.075	0.092	
					Right Touch	384	836.5	24.5	23.6	0.158	0.195	
					Rightt Tilt	384	836.5	24.5	23.6	0.084	0.103	
		1xEVDO (Rev.A)	Off	0	Left Touch	384	836.5	24.5	23.0	0.101	0.142	
					Left Tilt	384	836.5	24.5	23.0	0.062	0.087	
					Right Touch	384	836.5	24.5	23.0	0.155	0.218	18
					Rightt Tilt	384	836.5	24.5	23.0	0.082	0.115	
	Body-worn	1xRTT (RC3 SO32)	Off	15	Rear	384	836.5	24.5	23.5	0.231	0.288	19
					Front	384	836.5	24.5	23.5	0.208	0.259	
	Hotspot	1xEVDO (Rev.0)	On	10	Rear	384	836.5	22.5	21.6	0.309	0.381	20
					Front	384	836.5	22.5	21.6	0.223	0.275	
					Edge 2	384	836.5	22.5	21.6	0.145	0.179	
					Edge 3	384	836.5	22.5	21.6	0.160	0.197	
					Edge 4	384	836.5	22.5	21.6	0.043	0.053	

10.7 CDMA BC1

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	1xRTT (RC3 SO55)	Off	0	Left Touch	600	1880.0	26.5	25.5	0.121	0.154	21
					Left Tilt	600	1880.0	26.5	25.5	0.083	0.105	
					Right Touch	600	1880.0	26.5	25.5	0.086	0.110	
					Rightt Tilt	600	1880.0	26.5	25.5	0.071	0.090	
		1xEVDO (Rev.A)	Off	0	Left Touch	600	1880.0	26.5	25.2	0.053	0.072	
					Left Tilt	600	1880.0	26.5	25.2	0.043	0.057	
					Right Touch	600	1880.0	26.5	25.2	0.080	0.107	
					Rightt Tilt	600	1880.0	26.5	25.2	0.064	0.086	
	Body-worn	1xRTT (RC3 SO32)	Off	15	Rear	600	1880.0	26.5	25.4	0.588	0.754	22
					Front	600	1880.0	26.5	25.4	0.543	0.696	
	Hotspot	1xEVDO (Rev.0)	On	10	Rear	600	1880.0	21.5	21.0	0.407	0.459	
					Front	600	1880.0	21.5	21.0	0.407	0.459	
					Edge 2	600	1880.0	21.5	21.0	0.066	0.074	
					Edge 3	25	1851.3	21.5	20.8	0.924	1.083	
						600	1880.0	21.5	21.0	1.060	1.195	23
						1175	1908.8	21.5	21.1	1.090	1.184	
					Edge 4	600	1880.0	21.5	21.0	0.062	0.070	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	1xEVDO (Rev.0)	Off	9	Rear	600	1880.0	26.5	25.4	0.698	0.893	
				7	Front	600	1880.0	26.5	25.4	1.000	1.279	
				11	Edge 3	600	1880.0	26.5	25.4	1.490	1.906	24
			On	0	Rear	600	1880.0	21.5	20.9	0.938	1.084	
					Front	600	1880.0	21.5	20.9	1.090	1.260	
					Edge 3	600	1880.0	21.5	20.9	1.470	1.699	

10.8 CDMA BC10

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	1xRTT (RC3 SO55)	Off	0	Left Touch	580	820.5	27.0	26.3	0.172	0.204	
					Left Tilt	580	820.5	27.0	26.3	0.130	0.155	
					Right Touch	580	820.5	27.0	26.3	0.256	0.304	
					Rightt Tilt	580	820.5	27.0	26.3	0.134	0.159	
		1xEVDO (Rev.A)	Off	0	Left Touch	580	820.5	27.0	25.6	0.207	0.284	
					Left Tilt	580	820.5	27.0	25.6	0.144	0.197	
					Right Touch	580	820.5	27.0	25.6	0.264	0.362	25
					Rightt Tilt	580	820.5	27.0	25.6	0.144	0.197	
	Body-worn	1xRTT (RC3 SO32)	Off	15	Rear	580	820.5	27.0	26.3	0.433	0.512	26
					Front	580	820.5	27.0	26.3	0.350	0.414	
	Hotspot	1xEVDO (Rev.0)	On	10	Rear	580	820.5	24.0	23.2	0.373	0.445	27
					Front	580	820.5	24.0	23.2	0.280	0.334	
					Edge 2	580	820.5	24.0	23.2	0.192	0.229	
					Edge 3	580	820.5	24.0	23.2	0.212	0.253	
					Edge 4	580	820.5	24.0	23.2	0.082	0.098	

10.9 LTE Band 7 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	20850	2510.0	1	0	24.2	23.8	0.072	0.079	28
								50	24	23.2	22.8	0.062	0.069	
					Left Tilt	20850	2510.0	1	0	24.2	23.8	0.028	0.031	
								50	24	23.2	22.8	0.025	0.027	
					Right Touch	20850	2510.0	1	0	24.2	23.8	0.047	0.052	
								50	24	23.2	22.8	0.038	0.043	
					Right Tilt	20850	2510.0	1	0	24.2	23.8	0.057	0.063	
								50	24	23.2	22.8	0.053	0.059	
	Body-worn	QPSK	Off	15	Rear	20850	2510.0	1	0	24.2	23.8	0.436	0.480	29
								50	24	23.2	22.8	0.400	0.443	
					Front	20850	2510.0	1	0	24.2	23.8	0.323	0.356	
								50	24	23.2	22.8	0.293	0.325	
	Hotspot	QPSK	On	10	Rear	20850	2510.0	1	0	19.7	19.1	0.297	0.340	
								50	24	19.7	19.2	0.331	0.373	
					Front	20850	2510.0	1	0	19.7	19.1	0.208	0.238	
								50	24	19.7	19.2	0.236	0.266	
					Edge 3	20850	2510.0	1	0	19.7	19.1	0.315	0.360	
								50	24	19.7	19.2	0.362	0.408	30
					Edge 4	20850	2510.0	1	0	19.7	19.1	0.120	0.137	
								50	24	19.7	19.2	0.136	0.153	

10.10 LTE Band 12 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23095	707.5	1	49	25.5	24.5	0.120	0.151	
								25	0	24.5	23.5	0.099	0.123	
					Left Tilt	23095	707.5	1	49	25.5	24.5	0.074	0.092	
								25	0	24.5	23.5	0.059	0.074	
					Right Touch	23095	707.5	1	49	25.5	24.5	0.162	0.203	31
								25	0	24.5	23.5	0.129	0.161	
					Right Tilt	23095	707.5	1	49	25.5	24.5	0.072	0.090	
								25	0	24.5	23.5	0.059	0.073	
	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	49	25.5	24.5	0.203	0.255	32
								25	0	24.5	23.5	0.164	0.204	
					Front	23095	707.5	1	49	25.5	24.5	0.196	0.246	
								25	0	24.5	23.5	0.155	0.193	
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	49	25.5	24.5	0.320	0.401	33
								25	0	24.5	23.5	0.249	0.310	
					Front	23095	707.5	1	49	25.5	24.5	0.223	0.280	
								25	0	24.5	23.5	0.163	0.203	
					Edge 2	23095	707.5	1	49	25.5	24.5	0.236	0.296	
								25	0	24.5	23.5	0.202	0.252	
					Edge 3	23095	707.5	1	49	25.5	24.5	0.177	0.222	
								25	0	24.5	23.5	0.130	0.162	
					Edge 4	23095	707.5	1	49	25.5	24.5	0.126	0.158	
								25	0	24.5	23.5	0.116	0.145	

10.11 LTE Band 13 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23230	782.0	1	0	25.4	24.7	0.173	0.205	
								25	0	24.4	23.5	0.129	0.157	
					Left Tilt	23230	782.0	1	0	25.4	24.7	0.129	0.153	
								25	0	24.4	23.5	0.094	0.115	
					Right Touch	23230	782.0	1	0	25.4	24.7	0.243	0.288	34
								25	0	24.4	23.5	0.183	0.223	
					Right Tilt	23230	782.0	1	0	25.4	24.7	0.129	0.153	
								25	0	24.4	23.5	0.095	0.115	
	Body-worn	QPSK	N/A	15	Rear	23230	782.0	1	0	25.4	24.7	0.278	0.330	
								25	0	24.4	23.5	0.220	0.268	
					Front	23230	782.0	1	0	25.4	24.7	0.281	0.333	35
								25	0	24.4	23.5	0.202	0.246	
	Hotspot	QPSK	N/A	10	Rear	23230	782.0	1	0	25.4	24.7	0.504	0.598	36
								25	0	24.4	23.5	0.398	0.485	
					Front	23230	782.0	1	0	25.4	24.7	0.303	0.359	
								25	0	24.4	23.5	0.245	0.298	
					Edge 2	23230	782.0	1	0	25.4	24.7	0.346	0.410	
								25	0	24.4	23.5	0.281	0.342	
					Edge 3	23230	782.0	1	0	25.4	24.7	0.315	0.373	
								25	0	24.4	23.5	0.246	0.299	
					Edge 4	23230	782.0	1	0	25.4	24.7	0.189	0.224	
								25	0	24.4	23.5	0.155	0.189	

10.12 LTE Band 14 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23330	793.0	1	0	25.4	24.4	0.165	0.208	
								25	0	24.4	23.5	0.126	0.154	
					Left Tilt	23330	793.0	1	0	25.4	24.4	0.112	0.141	
								25	0	24.4	23.5	0.088	0.108	
					Right Touch	23330	793.0	1	0	25.4	24.4	0.217	0.274	37
								25	0	24.4	23.5	0.175	0.214	
					Right Tilt	23330	793.0	1	0	25.4	24.4	0.112	0.141	
								25	0	24.4	23.5	0.090	0.111	
	Body-worn	QPSK	N/A	15	Rear	23330	793.0	1	0	25.4	24.4	0.291	0.367	38
								25	0	24.4	23.5	0.223	0.273	
					Front	23330	793.0	1	0	25.4	24.4	0.279	0.352	
								25	0	24.4	23.5	0.214	0.262	
	Hotspot	QPSK	N/A	10	Rear	23330	793.0	1	0	25.4	24.4	0.537	0.677	39
								25	0	24.4	23.5	0.434	0.532	
					Front	23330	793.0	1	0	25.4	24.4	0.350	0.441	
								25	0	24.4	23.5	0.280	0.343	
					Edge 2	23330	793.0	1	0	25.4	24.4	0.364	0.459	
								25	0	24.4	23.5	0.270	0.331	
					Edge 3	23330	793.0	1	0	25.4	24.4	0.354	0.446	
								25	0	24.4	23.5	0.285	0.349	
					Edge 4	23330	793.0	1	0	25.4	24.4	0.164	0.207	
								25	0	24.4	23.5	0.129	0.158	

10.13 LTE Band 25 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	26365	1882.5	1	0	25.9	24.9	0.106	0.135	40
								50	24	24.9	23.9	0.079	0.099	
					Left Tilt	26365	1882.5	1	0	25.9	24.9	0.097	0.123	
								50	24	24.9	23.9	0.069	0.086	
					Right Touch	26365	1882.5	1	0	25.9	24.9	0.067	0.086	
								50	24	24.9	23.9	0.050	0.062	
					Right Tilt	26365	1882.5	1	0	25.9	24.9	0.082	0.104	
								50	24	24.9	23.9	0.054	0.068	
	Body-worn	QPSK	Off	15	Rear	26365	1882.5	1	0	25.9	24.9	0.560	0.711	41
								50	24	24.9	23.9	0.442	0.554	
					Front	26365	1882.5	1	0	25.9	24.9	0.488	0.620	
								50	24	24.9	23.9	0.383	0.480	
	Hotspot	QPSK	On	10	Rear	26365	1882.5	1	0	20.7	20.3	0.423	0.466	
								50	24	20.7	20.4	0.427	0.459	
					Front	26365	1882.5	1	0	20.7	20.3	0.377	0.415	
								50	24	20.7	20.4	0.375	0.403	
					Edge 2	26365	1882.5	1	0	20.7	20.3	0.056	0.062	
								50	24	20.7	20.4	0.058	0.063	
					Edge 3	26140	1860.0	1	0	20.7	20.1	0.821	0.937	
								50	24	20.7	20.3	0.825	0.914	
						26365	1882.5	1	0	20.7	20.3	0.923	1.016	42
								50	24	20.7	20.4	0.902	0.970	
								100	0	20.7	20.4	0.861	0.924	
						26590	1905.0	1	0	20.7	20.2	0.874	0.974	
								50	24	20.7	20.3	0.895	0.986	
					Edge 4	26365	1882.5	1	0	20.7	20.3	0.054	0.059	
								50	24	20.7	20.4	0.057	0.061	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	QPSK	Off	9	Rear	26365	1882.5	1	0	25.9	24.9	0.758	0.963	
								50	24	24.9	23.9	0.595	0.746	
				7	Front	26365	1882.5	1	0	25.9	24.9	0.875	1.111	
								50	24	24.9	23.9	0.696	0.873	
				11	Edge 3	26365	1882.5	1	0	25.9	24.9	1.100	1.397	
								50	24	24.9	23.9	0.915	1.147	
			On	0	Rear	26365	1882.5	1	0	20.7	20.3	0.896	0.981	
								50	24	20.7	20.4	0.923	0.990	
				0	Front	26365	1882.5	1	0	20.7	20.3	1.010	1.106	
								50	24	20.7	20.4	1.050	1.126	
				0	Edge 3	26140	1860.0	1	0	20.7	20.1	1.880	2.147	
								50	24	20.7	20.3	1.940	2.149	
						26365	1882.5	1	0	20.7	20.3	1.980	2.168	
								50	24	20.7	20.4	2.070	2.220	
								100	0	20.7	20.4	2.050	2.200	
						26590	1905.0	1	0	20.7	20.2	2.030	2.262	43
								50	24	20.7	20.3	2.020	2.225	

10.14 LTE Band 26 (15MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	26865	831.5	1	0	26.0	25.1	0.170	0.208	
								36	20	25.0	24.1	0.133	0.164	
					Left Tilt	26865	831.5	1	0	26.0	25.1	0.124	0.152	
								36	20	25.0	24.1	0.098	0.121	
					Right Touch	26865	831.5	1	0	26.0	25.1	0.263	0.322	44
								36	20	25.0	24.1	0.204	0.251	
					Right Tilt	26865	831.5	1	0	26.0	25.1	0.139	0.170	
								36	20	25.0	24.1	0.112	0.138	
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	0	26.0	25.1	0.327	0.401	45
								36	20	25.0	24.1	0.275	0.338	
					Front	26865	831.5	1	0	26.0	25.1	0.295	0.362	
								36	20	25.0	24.1	0.243	0.299	
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	0	26.0	25.1	0.633	0.776	46
								36	20	25.0	24.1	0.524	0.645	
					Front	26865	831.5	1	0	26.0	25.1	0.503	0.616	
								36	20	25.0	24.1	0.412	0.507	
					Edge 2	26865	831.5	1	0	26.0	25.1	0.329	0.403	
								36	20	25.0	24.1	0.258	0.318	
					Edge 3	26865	831.5	1	0	26.0	25.1	0.418	0.512	
								36	20	25.0	24.1	0.360	0.443	
					Edge 4	26865	831.5	1	0	26.0	25.1	0.152	0.186	
								36	20	25.0	24.1	0.105	0.129	

10.15 LTE Band 30 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	27710	2310.0	1	0	24.5	23.0	0.066	0.092	
								25	0	23.5	22.2	0.053	0.071	
					Left Tilt	27710	2310.0	1	0	24.5	23.0	0.049	0.069	
								25	0	23.5	22.2	0.039	0.052	
					Right Touch	27710	2310.0	1	0	24.5	23.0	0.073	0.103	
								25	0	23.5	22.2	0.058	0.078	
					Right Tilt	27710	2310.0	1	0	24.5	23.0	0.074	0.104	47
								25	0	23.5	22.2	0.059	0.079	
	Body-worn	QPSK	Off	15	Rear	27710	2310.0	1	0	24.5	23.0	0.438	0.615	48
								25	0	23.5	22.2	0.352	0.473	
					Front	27710	2310.0	1	0	24.5	23.0	0.428	0.601	
								25	0	23.5	22.2	0.341	0.458	
	Hotspot	QPSK	On	10	Rear	27710	2310.0	1	0	19.5	18.8	0.235	0.278	
								25	0	19.5	18.8	0.240	0.284	
					Front	27710	2310.0	1	0	19.5	18.8	0.241	0.285	
								25	0	19.5	18.8	0.242	0.286	
					Edge 3	27710	2310.0	1	0	19.5	18.8	0.344	0.407	
								25	0	19.5	18.8	0.349	0.412	49
					Edge 4	27710	2310.0	1	0	19.5	18.8	0.112	0.133	
								25	0	19.5	18.8	0.114	0.135	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Product Specific 10-g	QPSK	Off	0	Edge 3	27710	2310.0	1	0	24.5	23.0	0.938	1.317	50
								25	0	23.5	22.2	0.772	1.038	

10.16 LTE Band 41 (20MHz Bandwidth)

LTE Band 41 Power Class 3 SAR measured Results

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	39750	2506.0	1	99	25.5	24.7	0.037	0.044	
								50	24	24.5	23.5	0.025	0.032	
					Left Tilt	39750	2506.0	1	99	25.5	24.7	0.019	0.022	
								50	24	24.5	23.5	0.012	0.015	
					Right Touch	39750	2506.0	1	99	25.5	24.7	0.034	0.040	
								50	24	24.5	23.5	0.025	0.032	
					Right Tilt	39750	2506.0	1	99	25.5	24.7	0.034	0.041	
								50	24	24.5	23.5	0.023	0.029	
	Body-worn	QPSK	Off	15	Rear	39750	2506.0	1	99	25.5	24.7	0.204	0.243	
								50	24	24.5	23.5	0.166	0.207	
					Front	39750	2506.0	1	99	25.5	24.7	0.169	0.201	
								50	24	24.5	23.5	0.137	0.171	
	Hotspot	QPSK	On	10	Rear	39750	2506.0	1	99	21.5	21.1	0.163	0.180	
								50	24	21.5	21.0	0.167	0.189	
					Front	39750	2506.0	1	99	21.5	21.1	0.136	0.150	
								50	24	21.5	21.0	0.140	0.158	
					Edge 3	39750	2506.0	1	99	21.5	21.1	0.377	0.416	51
								50	24	21.5	21.0	0.366	0.413	
					Edge 4	39750	2506.0	1	99	21.5	21.1	0.082	0.091	
								50	24	21.5	21.0	0.083	0.094	

LTE Band 41 Power Class 2 SAR measured Results

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	39750	2506.0	1	99	28.0	26.8	0.042	0.056	52
	Body-worn	QPSK	Off	15	Rear	39750	2506.0	1	99	28.0	26.8	0.223	0.297	53
	Hotspot	QPSK	On	10	Edge 3	39750	2506.0	50	24	21.5	21.0	0.181	0.204	

From May 2017 TCB Workshop, SAR tested were performed using Power Class 3. SAR test for Power Class 2 is tested using the highest SAR test configuration in Power Class 3 for each LTE configuration and exposure condition combination. According to the highest time average power for UL-DL configurations, configuration # 1 with duty cycle 43.3% is used for Power Class 2 SAR test.

Additional SAR testing for Power Class 2 is not required when;

- The *reported* SAR vs. output power can be linearly scaled with < 10% discrepancy between power classes and all *reported* SAR are < 1.4 W/kg

Reported SAR vs. Output Power linearly scaled

Antenna	RF Exposure Conditions	Power Class 2				Power Class 3				PC 2 linearly Scaled Reported SAR (W/kg)	Linearly scaled (%)
		Duty Cycle (%)	Tune-up Power (dBm)	Frame Avg. Power (mW)	Reported SAR (W/kg)	Duty Cycle (%)	Tune-up Power (dBm)	Frame Avg. Power (mW)	Reported SAR (W/kg)		
Main 2 Ant.	Head	43.3	28.0	273.2	0.056	63.3	25.0	200.2	0.039	0.041	5.2
	Body-worn	43.3	28.0	273.2	0.297	63.3	25.0	200.2	0.216	0.218	0.7
	Hotspot	43.3	21.5	61.2	0.204	63.3	21.5	89.4	0.416	0.298	-28.3

Conclusion:

Simultaneous SAR test for Power Class 2 is not required base on the *reported* SAR < 1.4 W/kg and *reported* SAR vs. output power linearly scaled < 10%.

10.17 LTE Band 66 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	132572	1770.0	1	0	26.3	25.2	0.160	0.208	54
								50	0	25.3	24.1	0.120	0.159	
					Left Tilt	132572	1770.0	1	0	26.3	25.2	0.097	0.126	
								50	0	25.3	24.1	0.071	0.094	
					Right Touch	132572	1770.0	1	0	26.3	25.2	0.126	0.163	
								50	0	25.3	24.1	0.093	0.124	
					Right Tilt	132572	1770.0	1	0	26.3	25.2	0.085	0.110	
								50	0	25.3	24.1	0.057	0.075	
	Body-worn	QPSK	Off	15	Rear	132072	1720.0	1	0	26.3	24.6	0.723	1.065	
						132322	1745.0	1	0	26.3	24.8	0.837	1.182	55
						132572	1770.0	1	0	26.3	25.2	0.752	0.976	
								50	0	25.3	24.1	0.581	0.770	
					Front	132572	1770.0	1	0	26.3	25.2	0.595	0.772	
								50	0	25.3	24.1	0.461	0.611	
	Hotspot	QPSK	On	10	Rear	132572	1770.0	1	0	20.9	20.3	0.502	0.582	
								50	0	20.9	20.2	0.507	0.591	
					Front	132572	1770.0	1	0	20.9	20.3	0.472	0.548	
								50	0	20.9	20.2	0.478	0.558	
					Edge 2	132572	1770.0	1	0	20.9	20.3	0.096	0.111	
								50	0	20.9	20.2	0.096	0.112	
					Edge 3	132072	1720.0	1	0	20.9	19.9	0.802	1.013	
								50	0	20.9	20.0	0.862	1.050	
						132322	1745.0	1	0	20.9	19.9	0.723	0.902	
								50	0	20.9	20.2	0.757	0.897	
						132572	1770.0	1	0	20.9	20.3	0.978	1.135	
								50	0	20.9	20.2	0.979	1.142	56
								100	0	20.9	20.2	0.972	1.139	
					Edge 4	132572	1770.0	1	0	20.9	20.3	0.115	0.133	
								50	0	20.9	20.2	0.116	0.135	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	QPSK	Off	9	Rear	132572	1770.0	1	0	26.3	25.2	0.901	1.169	
								50	0	25.3	24.1	0.722	0.957	
				7	Front	132572	1770.0	1	0	26.3	25.2	1.100	1.427	
								50	0	25.3	24.1	0.888	1.177	
				11	Edge 3	132572	1770.0	1	0	26.3	25.2	1.210	1.570	
								50	0	25.3	24.1	0.991	1.314	
			On	0	Rear	132572	1770.0	1	0	20.9	20.3	1.110	1.274	
								50	0	20.9	20.2	1.130	1.318	
				0	Front	132572	1770.0	1	0	20.9	20.3	1.340	1.538	
								50	0	20.9	20.2	1.360	1.587	
				0	Edge 3	132072	1720.0	1	0	20.9	19.8	1.960	2.508	
								50	0	20.9	20.1	2.030	2.469	
						132322	1745.0	1	0	20.9	20.0	1.960	2.404	
								50	0	20.9	20.2	2.070	2.449	
						132572	1770.0	1	0	20.9	20.3	1.900	2.181	
								50	0	20.9	20.2	1.970	2.298	
								100	0	20.9	20.2	2.150	2.526	57

10.18 LTE Band 71 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	133297	680.5	1	49	25.7	24.5	0.058	0.077	
								50	24	24.7	23.5	0.047	0.063	
					Left Tilt	133297	680.5	1	49	25.7	24.5	0.027	0.036	
								50	24	24.7	23.5	0.022	0.029	
					Right Touch	133297	680.5	1	49	25.7	24.5	0.073	0.096	58
								50	24	24.7	23.5	0.052	0.069	
					Right Tilt	133297	680.5	1	49	25.7	24.5	0.038	0.051	
								50	24	24.7	23.5	0.029	0.038	
	Body-worn	QPSK	N/A	15	Rear	133297	680.5	1	49	25.7	24.5	0.119	0.158	59
								50	24	24.7	23.5	0.094	0.125	
					Front	133297	680.5	1	49	25.7	24.5	0.112	0.149	
								50	24	24.7	23.5	0.088	0.118	
	Hotspot	QPSK	N/A	10	Rear	133297	680.5	1	49	25.7	24.5	0.201	0.267	60
								50	24	24.7	23.5	0.150	0.200	
					Front	133297	680.5	1	49	25.7	24.5	0.119	0.158	
								50	24	24.7	23.5	0.093	0.124	
					Edge 2	133297	680.5	1	49	25.7	24.5	0.128	0.170	
								50	24	24.7	23.5	0.104	0.138	
					Edge 3	133297	680.5	1	49	25.7	24.5	0.089	0.118	
								50	24	24.7	23.5	0.063	0.084	
					Edge 4	133297	680.5	1	49	25.7	24.5	0.098	0.131	
								50	24	24.7	23.5	0.075	0.100	

10.19 Wi-Fi (DTS Band)

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
SISO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	6	2437.0	0.152	98.9	17.0	16.4				
						Left Tilt	6	2437.0	0.146	98.9	17.0	16.4				
						Right Touch	6	2437.0	0.660	98.9	17.0	16.4	0.580	0.680		61
						Rightt Tilt	6	2437.0	0.537	98.9	17.0	16.4	0.450	0.527	2	
			Body-worn	Off	15	Rear	11	2462.0	0.126	98.9	21.0	20.5	0.103	0.118	4	
						Front	11	2462.0	0.148	98.9	21.0	20.5	0.105	0.120	1	
			Hotspot	Off	10	Rear	11	2462.0	0.295	98.9	21.0	20.5	0.207	0.237	2	
						Front	11	2462.0	0.272	98.9	21.0	20.5	0.168	0.192	4	
						Edge 1	11	2462.0	0.240	98.9	21.0	20.5				
						Edge 4	11	2462.0	0.726	98.9	21.0	20.5	0.521	0.597		62
SISO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.019	98.9	17.0	16.5				
						Left Tilt	1	2412.0	0.015	98.9	17.0	16.5				
						Right Touch	1	2412.0	0.106	98.9	17.0	16.5	0.119	0.135	1	
						Rightt Tilt	1	2412.0	0.052	98.9	17.0	16.5				
			Body-worn	Off	15	Rear	11	2462.0	0.142	98.9	21.0	20.1	0.107	0.134	1	63
						Front	11	2462.0	0.018	98.9	21.0	20.1				
			Hotspot	Off	10	Rear	11	2462.0	0.381	98.9	21.0	20.1	0.283	0.354	1	
						Front	11	2462.0	0.043	98.9	21.0	20.1				
						Edge 1	11	2462.0	0.038	98.9	21.0	20.1				
						Edge 4	11	2462.0	0.180	98.9	21.0	20.1				
MIMO (WiFi Ant.1)	2.4GHz	802.11g 6 Mbps	Hotspot	Off	10	Rear	6	2437.0	0.674	98.7	19.0	18.6				
						Front	6	2437.0	0.233	98.7	19.0	18.6				
						Edge 1	6	2437.0	0.232	98.7	19.0	18.6				
						Edge 4	6	2437.0	0.516	98.7	19.0	18.6	0.452	0.506	2	
MIMO (WiFi Ant.2)	2.4GHz	802.11g 6 Mbps	Hotspot	Off	10	Rear	6	2437.0	0.674	98.7	19.0	18.3	0.490	0.580		64
						Front	6	2437.0	0.233	98.7	19.0	18.3				
						Edge 1	6	2437.0	0.232	98.7	19.0	18.3				
						Edge 4	6	2437.0	0.516	98.7	19.0	18.3				

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
6. For Hotspot exposure condition, MIMO SAR test were additionally evaluated for determining simultaneous transmission SAR test exclusion.

10.20 Wi-Fi (U-NII Bands)

U-NII 2A Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
SISO (WiFI Ant.1)	5.3 GHz U-NII 2A	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	54	5270.0	0.293	98.6	15.0	14.5						
						Left Tilt	54	5270.0	0.409	98.6	15.0	14.5	0.109	0.125			1	65
						Right Touch	54	5270.0	0.249	98.6	15.0	14.5						
						Right Tilt	54	5270.0	0.356	98.6	15.0	14.5						
		802.11a 6 Mbps	Body-worn	Off	15	Rear	52	5260.0	0.147	98.7	18.0	16.9	0.051	0.066			1	
						Front	52	5260.0	0.014	98.7	18.0	16.9						
			Product Specific 10-g	Off	0	Rear	52	5260.0	2.088	98.7	18.0	16.9			0.229	0.298	1	
						Front	52	5260.0	1.443	98.7	18.0	16.9						
						Edge 1	52	5260.0	0.748	98.7	18.0	16.9						
						Edge 4	52	5260.0	0.710	98.7	18.0	16.9						
SISO (WiFI Ant.2)	5.3 GHz U-NII 2A	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	62	5310.0	0.073	98.6	15.0	14.6						
						Left Tilt	62	5310.0	0.108	98.6	15.0	14.6	0.029	0.032			1	
						Right Touch	62	5310.0	0.061	98.6	15.0	14.6						
						Right Tilt	62	5310.0	0.087	98.6	15.0	14.6						
		802.11a 6 Mbps	Body-worn	Off	15	Rear	64	5320.0	0.118	98.7	18.0	17.1	0.055	0.069			1	66
						Front	64	5320.0	0.013	98.7	18.0	17.1						
			Product Specific 10-g	Off	0	Rear	64	5320.0	6.547	98.7	18.0	17.1			0.719	0.896	1	67
						Front	64	5320.0	0.111	98.7	18.0	17.1						
						Edge 1	64	5320.0	1.317	98.7	18.0	17.1						
						Edge 4	64	5320.0	0.206	98.7	18.0	17.1						

U-NII 2C Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
SISO (WiFI Ant.1)	5.5 GHz U-NII 2C	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	102	5510.0	0.389	98.6	15.0	14.5						
						Left Tilt	102	5510.0	0.325	98.6	15.0	14.5						
						Right Touch	102	5510.0	0.447	98.6	15.0	14.5						
						Right Tilt	102	5510.0	0.477	98.6	15.0	14.5	0.225	0.255			1	68
		802.11a 6 Mbps	Body-worn	Off	15	Rear	144	5720.0	0.194	98.7	18.0	17.0	0.076	0.098			1	
						Front	144	5720.0	0.046	98.7	18.0	17.0						
			Product Specific 10-g	Off	0	Rear	144	5720.0	2.429	98.7	18.0	17.0			0.282	0.361	4	
						Front	144	5720.0	2.085	98.7	18.0	17.0						
						Edge 1	144	5720.0	3.593	98.7	18.0	17.0						
						Edge 4	144	5720.0	3.621	98.7	18.0	17.0			0.682	0.874	1	
SISO (WiFI Ant.2)	5.5 GHz U-NII 2C	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	142	5710.0	0.176	98.6	15.0	14.9						
						Left Tilt	142	5710.0	0.225	98.6	15.0	14.9						
						Right Touch	142	5710.0	0.185	98.6	15.0	14.9						
						Right Tilt	142	5710.0	0.292	98.6	15.0	14.9	0.101	0.104			1	
		802.11a 6 Mbps	Body-worn	Off	15	Rear	124	5620.0	0.503	98.7	18.0	16.9	0.237	0.309			1	69
						Front	124	5620.0	0.040	98.7	18.0	16.9						
			Product Specific 10-g	Off	0	Rear	124	5620.0	6.886	98.7	18.0	16.9			1.060	1.384		70
						Front	124	5620.0	0.569	98.7	18.0	16.9						
						Edge 1	124	5620.0	1.986	98.7	18.0	16.9			0.393	0.513	2	
						Edge 4	124	5620.0	0.609	98.7	18.0	16.9						

Note(s):

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

U-NII 3 Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
SISO (WiFI Ant.1)	5.8 GHz U-NII 3	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	159	5795.0	0.171	98.6	15.0	14.3				
						Left Tilt	159	5795.0	0.162	98.6	15.0	14.3				
						Right Touch	159	5795.0	0.543	98.6	15.0	14.3				
						Right Tilt	159	5795.0	0.577	98.6	15.0	14.3	0.180	0.214	1	71
		802.11a 6 Mbps	Body-worn	Off	15	Rear	149	5745.0	0.269	98.7	18.0	17.7	0.115	0.125	1	
						Front	149	5745.0	0.070	98.7	18.0	17.7				
			Hotspot	Off	10	Rear	149	5745.0	0.440	98.7	18.0	17.7	0.156	0.169	1	
						Front	149	5745.0	0.126	98.7	18.0	17.7				
						Edge 1	149	5745.0	0.213	98.7	18.0	17.7				
						Edge 4	149	5745.0	0.174	98.7	18.0	17.7				
SISO (WiFI Ant.2)	5.8 GHz U-NII 3	802.11n HT 40 13.5 Mbps	Head	On	0	Left Touch	159	5795.0	0.211	98.6	15.0	14.7				
						Left Tilt	159	5795.0	0.220	98.6	15.0	14.7	0.077	0.085	1	
						Right Touch	159	5795.0	0.158	98.6	15.0	14.7				
						Right Tilt	159	5795.0	0.205	98.6	15.0	14.7				
		802.11a 6 Mbps	Body-worn	Off	15	Rear	165	5825.0	0.552	98.7	18.0	17.8	0.254	0.268	1	72
						Front	165	5825.0	0.021	98.7	18.0	17.8				
			Hotspot	Off	10	Rear	149	5745.0	1.053	98.7	18.0	17.8	0.518	0.546		73
						Front	149	5745.0	0.048	98.7	18.0	17.8				
						Edge 1	149	5745.0	0.400	98.7	18.0	17.8	0.177	0.187	2	
						Edge 4	149	5745.0	0.209	98.7	18.0	17.8				
MIMO (WiFI Ant.1)	5.8 GHz U-NII 3	802.11a 6 Mbps	Hotspot	Off	10	Rear	149	5745.0	1.143	98.7	18.0	16.8				
						Front	149	5745.0	0.109	98.7	18.0	16.8				
						Edge 1	149	5745.0	0.424	98.7	18.0	16.8				
						Edge 4	149	5745.0	0.274	98.7	18.0	16.8				
MIMO (WiFI Ant.2)	5.8 GHz U-NII 3	802.11a 6 Mbps	Hotspot	Off	10	Rear	149	5745.0	1.143	98.7	18.0	17.9	0.521	0.539		74
						Front	149	5745.0	0.109	98.7	18.0	17.9				
						Edge 1	149	5745.0	0.424	98.7	18.0	17.9	0.178	0.184	2	
						Edge 4	149	5745.0	0.274	98.7	18.0	17.9				

Note(s):

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

10.21 Bluetooth

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
2.4 GHz	GFSK	Head	N/A	0	Left Touch	39	2441.0	76.9%	10.0	9.5	0.018	0.027	
					Left Tilt	39	2441.0	76.9%	10.0	9.5	0.023	0.033	
					Right Touch	39	2441.0	76.9%	10.0	9.5	0.094	0.138	75
					Right Tilt	39	2441.0	76.9%	10.0	9.5	0.023	0.033	
		Body-worn	N/A	15	Rear	39	2441.0	76.9%	10.0	9.5	0.007	0.011	76
					Front	39	2441.0	76.9%	10.0	9.5	0.005	0.008	
		Hotspot	N/A	10	Rear	39	2441.0	76.9%	10.0	9.5	0.018	0.026	
					Front	39	2441.0	76.9%	10.0	9.5	0.012	0.018	
					Edge 1	39	2441.0	76.9%	10.0	9.5	0.010	0.015	
					Edge 4	39	2441.0	76.9%	10.0	9.5	0.020	0.030	77

10.22 LTE-uplink 2CA Band 41 (20MHz + 20MHz BW)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Main 1-2	Head	QPSK	Off	0	Left touch	39750	2506.0	1	99	39948	2525.8	1	0	25.5	25.3	0.044	0.045	78
	Body-worn	QPSK	Off	15	Rear	39750	2506.0	1	99	39948	2525.8	1	0	25.5	25.3	0.254	0.265	79
	Hotspot	QPSK	On	10	Edge 3	39750	2506.0	1	99	39948	2525.8	1	0	21.5	21.3	0.414	0.433	80

11. SAR Measurement Variability

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

1) Repeated measurement is not required when the original highest measured SAR is <0.8 or 2 W/kg (1-g or 10-g respectively); steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.8 or 2 W/kg (1-g or 10-g respectively), repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 or 3.6 W/kg (~ 10% from the 1-g or 10-g respective SAR limit).
4) Perform a third repeated measurement only if the original, first, or second repeated measurement is ≥ 1.5 or 3.75 W/kg (1-g or 10-g respectively) and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Peak spatial-average (1g of tissue)

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 12	Hotspot	Rear	No	0.320	N/A	N/A
	LTE Band 13	Hotspot	Rear	No	0.504	N/A	N/A
	LTE Band 14	Hotspot	Rear	No	0.537	N/A	N/A
	LTE Band 71	Hotspot	Rear	No	0.201	N/A	N/A
835	GSM 850	Hotspot	Rear	No	0.521	N/A	N/A
	WCDMA Band V	Hotspot	Rear	No	0.682	N/A	N/A
	CDMA BC0	Hotspot	Rear	No	0.309	N/A	N/A
	CDMA BC10	Body	Rear	No	0.433	N/A	N/A
	LTE Band 26	Hotspot	Rear	No	0.633	N/A	N/A
1750	WCDMA Band IV	Hotspot	Edge 3	No	0.842	N/A	N/A
	LTE Band 66	Hotspot	Edge 3	Yes	0.979	0.979	1.00
1900	GSM 1900	Hotspot	Edge 3	No	0.784	N/A	N/A
	WCDMA Band II	Hotspot	Edge 3	No	0.919	N/A	N/A
	CDMA BC1	Hotspot	Edge 3	No	1.090	1.080	1.01
	LTE Band 25	Hotspot	Edge 3	No	0.923	N/A	N/A
2300	LTE Band30	Body	Rear	No	0.438	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Head	Right Touch	No	0.580	N/A	N/A
	Bluetooth	Head	Right Touch	No	0.094	N/A	N/A
2600	LTE Band 7	Body	Rear	No	0.436	N/A	N/A
	LTE Band 41	Hotspot	Edge 3	No	0.414	N/A	N/A
5250	Wi-Fi 802.11a/n	Head	Left Tilt	No	0.109	N/A	N/A
5500	Wi-Fi 802.11a/n	Body	Rear	No	0.237	N/A	N/A
5800	Wi-Fi 802.11a/n	Hotspot	Rear	No	0.521	N/A	N/A

Peak spatial-average (10g of tissue)

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
1750	WCDMA Band IV	Product specific 10g	Edge 3	No	1.840	N/A	N/A
	LTE Band 66	Product specific 10g	Edge 3	Yes	2.150	2.150	1.00
1900	WCDMA Band II	Product specific 10g	Edge 3	Yes	2.090	2.080	1.00
	CDMA BC1	Product specific 10g	Edge 3	No	1.490	N/A	N/A
	LTE Band 25	Product specific 10g	Edge 3	No	2.070	N/A	N/A
2300	LTE Band 30	Product specific 10g	Edge 3	No	0.938	N/A	N/A
5250	Wi-Fi 802.11a/n	Product specific 10g	Rear	No	0.719	N/A	N/A
5500	Wi-Fi 802.11a/n	Product specific 10g	Rear	No	1.060	N/A	N/A

Note(s):

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

12. DUT Holder Perturbations

In accordance with published DUT Holder Perturbations in Oct.2016 TCB workshop,

When Highest reported SAR is over 1.2 or 3.0 W/kg (1-g or 10-g respectively), Holder perturbation verification is required for each antenna, using the highest configuration among all applicable frequency bands. Both Head test and Body test (Edge 1-4 sides) are evaluated with DUT holder. Both Front and Rear sides are evaluated without DUT holder. (Details of test setup are refer to Appendix A.)

So we are only consider about Head test and Body test (Edge 1-4 sides).

All highest SAR level is not over 1.2 or 3.0 W/kg (1-g or 10-g respectively) in All bands.

Please refer to Section 10. **So DUT Holder perturbations verification are not required.**

13. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations				
Head & Body-worn & Phablet-10g	1	GSM(Voice/GPRS)	+	DTS_Ant.1	+	DTS_Ant.2
	2	GSM(Voice/GPRS)	+	U-NII_Ant.1	+	U-NII_Ant.2
	3	GSM(Voice/GPRS)	+	BT		
	4	GSM(Voice/GPRS)	+	U-NII_Ant.2	+	BT
	5	GSM(Voice/GPRS)	+	***RSDB scenarios***		
	6	W-CDMA	+	DTS_Ant.1	+	DTS_Ant.2
	7	W-CDMA	+	U-NII_Ant.1	+	U-NII_Ant.2
	8	W-CDMA	+	BT		
	9	W-CDMA	+	U-NII_Ant.2	+	BT
	10	W-CDMA	+	***RSDB scenarios***		
	11	CDMA (1xRTT/EVDO)	+	DTS_Ant.1	+	DTS_Ant.2
	12	CDMA (1xRTT/EVDO)	+	U-NII_Ant.1	+	U-NII_Ant.2
	13	CDMA (1xRTT/EVDO)	+	BT		
	14	CDMA (1xRTT/EVDO)	+	U-NII_Ant.2	+	BT
	15	CDMA (1xRTT/EVDO)	+	***RSDB scenarios***		
	16	LTE	+	DTS_Ant.1	+	DTS_Ant.2
	17	LTE	+	U-NII_Ant.1	+	U-NII_Ant.2
	18	LTE	+	BT		
	19	LTE	+	U-NII_Ant.2	+	BT
	20	LTE	+	***RSDB scenarios***		
Hotspot	21	GSM(GPRS)	+	DTS_Ant.1	+	DTS_Ant.2
	22	GSM(GPRS)	+	U-NII_Ant.1	+	U-NII_Ant.2
	23	GSM(GPRS)	+	BT		
	24	GSM(GPRS)	+	U-NII_Ant.2	+	BT
	25	GSM(GPRS)	+	***RSDB scenarios***		
	26	W-CDMA	+	DTS_Ant.1	+	DTS_Ant.2
	27	W-CDMA	+	U-NII_Ant.1	+	U-NII_Ant.2
	28	W-CDMA	+	BT		
	29	W-CDMA	+	U-NII_Ant.2	+	BT
	30	W-CDMA	+	***RSDB scenarios***		
	31	CDMA(EVDO)	+	DTS_Ant.1	+	DTS_Ant.2
	32	CDMA(EVDO)	+	U-NII_Ant.1	+	U-NII_Ant.2
	33	CDMA(EVDO)	+	BT		
	34	CDMA(EVDO)	+	U-NII_Ant.2	+	BT
	35	CDMA(EVDO)	+	***RSDB scenarios***		
	36	LTE	+	DTS_Ant.1	+	DTS_Ant.2
	37	LTE	+	U-NII_Ant.1	+	U-NII_Ant.2
	38	LTE	+	BT		
	39	LTE	+	U-NII_Ant.2	+	BT
	40	LTE	+	***RSDB scenarios***		

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. GPRS, W-CDMA, LTE supports Hotspot and VoIP.
4. Only U-NII Ant.2 Radio can transmit simultaneously with Bluetooth Radio.
5. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
6. DTS Radio can only transmit simultaneously with U-NII Radio in RSDB scenarios.
7. DTS and UNII Radio can operating both SISO and MIMO modes.
8. BT tethering is consider about each RF exposure conditions

RSDB scenarios

Mode	Scenario	# of TX	5GHz		2.4GHz	
			Ant1	Ant2	Ant1	Ant2
2.4GHz+5GHz RSDB Only	1	2	-	On	On	-

Simultaneous transmission SAR test exclusion considerations

KDB 447498 D01 General RF Exposure Guidance provides two procedures for determining simultaneous transmission SAR test exclusion: Sum of SAR and SAR to Peak Location Ratio (SPLSR)

Sum of SAR

To qualify for simultaneous transmission SAR test exclusion based upon Sum of SAR the sum of the reported standalone SARs for all simultaneously transmitting antennas shall be below the applicable standalone SAR limit. If the sum of the SARs is above the applicable limit then simultaneous transmission SAR test exclusion may still apply if the requirements of the SAR to Peak Location Ratio (SPLSR) evaluation are met.

SAR to Peak Location Ratio (SPLSR)

KDB 447498 D01 General RF Exposure Guidance explains how to calculate the SAR to Peak Location Ratio (SPLSR) between pairs of simultaneously transmitting antennas:

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

Where:

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

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

Ri is the separation distance between the pair of simultaneous transmitting antennas. When the SAR is measured, for both antennas in the pair, it is determined by the actual x, y and z coordinates in the 1-g SAR for each SAR peak location, based on the extrapolated and interpolated result in the zoom scan measurement, using the formula of

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

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

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

When an individual antenna transmits at on two bands simultaneously, the sum of the highest *reported* SAR for the frequency bands should be used to determine SAR_1.or SAR_2. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

The antennas in all antenna pairs that do not qualify for simultaneous transmission SAR test exclusion must be tested for SAR compliance, according to the enlarged zoom scan and volume scan post-processing procedures in KDB Publication 865664 D01

The antennas for the unlicensed transmitters are closely situated. As a result, the associated SAR hotspots are also closely situated. Some of the sum of SAR calculations yielded results over 1.6 W/kg. The SPSLR calculations for these situations were performed by treating the unlicensed SAR values as a single transmitter. The most conservative distance between all the unlicensed hotspots to the licensed hotspot was used for the value of *d* in the SPSLR calculation.

Simultaneous transmission SAR measurement

When simultaneous transmission SAR measurements are required in different frequency bands not covered by a single probe calibration point then separate tests for each frequency band are performed. The tests are performed using enlarged zoom scans which are processed, by means of superposition, using the DASY5 volume scan postprocessing procedures to determine the 1-g SAR for the aggregate SAR distribution.

The spatial resolution used for all enlarged zoom scans is the same as used for the most stringent zoom scans. I.E. the scan parameters required for the highest frequency assessed are used for all enlarged zoom scans. The scans cover the complete area of the device to ensure all transmitting antennas and radiating structures are assessed.

DASY5 provides the ability to perform Multiband Evaluations according to the latest standards using the Volume Scan job as well as appropriate routines for the Post-processing.

In order to extract and process measurements within different frequency bands, the SEMCAD X Post-processor performs the combination and subsequent superposition of these measurement data via DASY5= Combined MultiBand Averaged SAR.

Combined Multi Band Averaged SAR allows - in addition to the data extraction - an evaluation of the 1 g, 10 g and/or arbitrary averaged mass SAR.
Power Scaling Factor is used to allow the volume scans to be scaled by a value other than "1", this is important when the results need to be scaled to different maximum power levels. The Power Scaling Factor is applied to each individual point of the scan. When power scaling is used in multi-band combinations the scaling factor is applied to each individual point of the first scan, the second factor is then applied to each individual point of the second scan and so on. The scans are then combined.

13.1 Sum of the SAR for GSM 850 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.181	0.680	0.135		0.255	0.104		0.138	0.861	0.316	0.996	0.436	0.285	0.540	0.319	0.423	0.965
B: Body-Worn (1g-SAR)	All position	0.351	0.120	0.134		0.125	0.309		0.011	0.471	0.485	0.605	0.476	0.660	0.785	0.362	0.671	0.780
C: Hotspot (1-g SAR)	Rear	0.584	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.821	0.938	1.164	0.753	1.130	1.123	0.610	1.156	1.367
	Front	0.414	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.606	0.768	0.994	0.583	0.960	0.953	0.432	0.978	1.152
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.204																
	Edge 3	0.377																
	Edge 4	0.077	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.674	0.431	0.583	0.246	0.623	0.616	0.107	0.653	1.220

13.2 Sum of the SAR for GSM 1900 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.042	0.680	0.135		0.255	0.104		0.138	0.722	0.177	0.857	0.297	0.146	0.401	0.180	0.284	0.826
B: Body-Worn (1g-SAR)	All position	0.342	0.120	0.134		0.125	0.309		0.011	0.462	0.476	0.596	0.467	0.651	0.776	0.353	0.662	0.771
C: Hotspot (1-g SAR)	Rear	0.679	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.916	1.033	1.259	0.848	1.225	1.218	0.705	1.251	1.462
	Front	0.630	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.822	0.984	1.210	0.799	1.176	1.169	0.648	1.194	1.368
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.100																
	Edge 3	1.190																
	Edge 4	0.096	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.693	0.450	0.602	0.265	0.642	0.635	0.126	0.672	1.239

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.138	0.680	0.135		0.255	0.104		0.138	0.818	0.273	0.953	0.393	0.242	0.497	0.276	0.380	0.922
B: Body-Worn (1g-SAR)	All position	0.786	0.120	0.134		0.125	0.309		0.011	0.906	0.920	1.040	0.911	1.095	1.220	0.797	1.106	1.215
C: Hotspot (1-g SAR)	Rear	0.461	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.698	0.815	1.041	0.630	1.007	1.000	0.487	1.033	1.244
	Front	0.397	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.589	0.751	0.977	0.566	0.943	0.936	0.415	0.961	1.135
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.073																
	Edge 3	1.124																
	Edge 4	0.071	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.668	0.425	0.577	0.240	0.617	0.610	0.101	0.647	1.214
D: Product Specific 10-g (10-g SAR)	Rear	1.044				0.361	1.384						1.405	2.428	2.789			
	Front	1.126				0.874	1.384						2.000	2.510	3.384			
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	2.491																
	Edge 4					0.874	1.384											

13.4 Sum of the SAR for WCDMA Band IV & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.213	0.680	0.135		0.255	0.104		0.138	0.893	0.348	1.028	0.468	0.317	0.572	0.351	0.455	0.997
B: Body-Worn (1g-SAR)	All position	0.970	0.120	0.134		0.125	0.309		0.011	1.090	1.104	1.224	1.095	1.279	1.404	0.981	1.290	1.399
C: Hotspot (1-g SAR)	Rear	0.582	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.819	0.936	1.162	0.751	1.128	1.121	0.608	1.154	1.365
	Front	0.543	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.735	0.897	1.123	0.712	1.089	1.082	0.561	1.107	1.281
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.110																
	Edge 3	1.054																
	Edge 4	0.144	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.741	0.498	0.650	0.313	0.690	0.683	0.174	0.720	1.287
D: Product Specific 10-g (10-g SAR)	Rear	1.148				0.361	1.384						1.509	2.532	2.893			
	Front	1.406				0.874	1.384						2.280	2.790	3.664			
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	2.202																
	Edge 4					0.874	1.384											

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.271	0.680	0.135		0.255	0.104		0.138	0.951	0.406	1.086	0.526	0.375	0.630	0.409	0.513	1.055
B: Body-Worn (1g-SAR)	All position	0.390	0.120	0.134		0.125	0.309		0.011	0.510	0.524	0.644	0.515	0.699	0.824	0.401	0.710	0.819
C: Hotspot (1-g SAR)	Rear	0.803	0.237	0.354	0.580	0.169	0.546	0.539	0.026	1.040	1.157	1.383	0.972	1.349	1.342	0.829	1.375	1.586
	Front	0.543	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.735	0.897	1.123	0.712	1.089	1.082	0.561	1.107	1.281
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.298																
	Edge 3	0.501																
	Edge 4	0.124	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.721	0.478	0.630	0.293	0.670	0.663	0.154	0.700	1.267

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.218	0.680	0.135		0.255	0.104		0.138	0.898	0.353	1.033	0.473	0.322	0.577	0.356	0.460	1.002
B: Body-Worn (1g-SAR)	All position	0.288	0.120	0.134		0.125	0.309		0.011	0.408	0.422	0.542	0.413	0.597	0.722	0.299	0.608	0.717
C: Hotspot (1-g SAR)	Rear	0.381	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.618	0.735	0.961	0.550	0.927	0.920	0.407	0.953	1.164
	Front	0.275	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.467	0.629	0.855	0.444	0.821	0.814	0.293	0.839	1.013
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.179																
	Edge 3	0.197																
	Edge 4	0.053	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.650	0.407	0.559	0.222	0.599	0.592	0.083	0.629	1.196

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.154	0.680	0.135		0.255	0.104		0.138	0.834	0.289	0.969	0.409	0.258	0.513	0.292	0.396	0.938
B: Body-Worn (1g-SAR)	All position	0.754	0.120	0.134		0.125	0.309		0.011	0.874	0.888	1.008	0.879	1.063	1.188	0.765	1.074	1.183
C: Hotspot (1-g SAR)	Rear	0.459	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.696	0.813	1.039	0.628	1.005	0.998	0.485	1.031	1.242
	Front	0.459	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.651	0.813	1.039	0.628	1.005	0.998	0.477	1.023	1.197
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.074																
	Edge 3	1.195																
	Edge 4	0.070	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.667	0.424	0.576	0.239	0.616	0.609	0.100	0.646	1.213
D: Product Specific 10-g (10-g SAR)	Rear	1.084				0.361	1.384						1.445	2.468	2.829			
	Front	1.279				0.874	1.384						2.153	2.663	3.537			
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	1.906																
	Edge 4					0.874	1.384											

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.362	0.680	0.135		0.255	0.104		0.138	1.042	0.497	1.177	0.617	0.466	0.721	0.500	0.604	1.146
B: Body-Worn (1g-SAR)	All position	0.512	0.120	0.134		0.125	0.309		0.011	0.632	0.646	0.766	0.637	0.821	0.946	0.523	0.832	0.941
C: Hotspot (1-g SAR)	Rear	0.445	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.682	0.799	1.025	0.614	0.991	0.984	0.471	1.017	1.228
	Front	0.334	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.526	0.688	0.914	0.503	0.880	0.873	0.352	0.898	1.072
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.229																
	Edge 3	0.253																
	Edge 4	0.098	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.695	0.452	0.604	0.267	0.644	0.637	0.128	0.674	1.241

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.079	0.680	0.135		0.255	0.104		0.138	0.759	0.214	0.894	0.334	0.183	0.438	0.217	0.321	0.863
B: Body-Worn (1g-SAR)	All position	0.480	0.120	0.134		0.125	0.309		0.011	0.600	0.614	0.734	0.605	0.789	0.914	0.491	0.800	0.909
C: Hotspot (1-g SAR)	Rear	0.373	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.610	0.727	0.953	0.542	0.919	0.912	0.399	0.945	1.156
	Front	0.266	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.458	0.620	0.846	0.435	0.812	0.805	0.284	0.830	1.004
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2																	
	Edge 3	0.408																
	Edge 4	0.153	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.750	0.507	0.659	0.322	0.699	0.692	0.183	0.729	1.296

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.203	0.680	0.135		0.255	0.104		0.138	0.883	0.338	1.018	0.458	0.307	0.562	0.341	0.445	0.987
B: Body-Worn (1g-SAR)	All position	0.255	0.120	0.134		0.125	0.309		0.011	0.375	0.389	0.509	0.380	0.564	0.689	0.266	0.575	0.684
C: Hotspot (1-g SAR)	Rear	0.401	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.638	0.755	0.981	0.570	0.947	0.940	0.427	0.973	1.184
	Front	0.280	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.472	0.634	0.860	0.449	0.826	0.819	0.298	0.844	1.018
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.296																
	Edge 3	0.222																
	Edge 4	0.158	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.755	0.512	0.664	0.327	0.704	0.697	0.188	0.734	1.301

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.288	0.680	0.135		0.255	0.104		0.138	0.968	0.423	1.103	0.543	0.392	0.647	0.426	0.530	1.072
B: Body-Worn (1g-SAR)	All position	0.333	0.120	0.134		0.125	0.309		0.011	0.453	0.467	0.587	0.458	0.642	0.767	0.344	0.653	0.762
C: Hotspot (1-g SAR)	Rear	0.598	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.835	0.952	1.178	0.767	1.144	1.137	0.624	1.170	1.381
	Front	0.359	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.551	0.713	0.939	0.528	0.905	0.898	0.377	0.923	1.097
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.410																
	Edge 3	0.373																
	Edge 4	0.224	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.821	0.578	0.730	0.393	0.770	0.763	0.254	0.800	1.367

13.12 Sum of the SAR for LTE Band 14 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.274	0.680	0.135		0.255	0.104		0.138	0.954	0.409	1.089	0.529	0.378	0.633	0.412	0.516	1.058
B: Body-Worn (1g-SAR)	All position	0.367	0.120	0.134		0.125	0.309		0.011	0.487	0.501	0.621	0.492	0.676	0.801	0.378	0.687	0.796
C: Hotspot (1-g SAR)	Rear	0.677	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.914	1.031	1.257	0.846	1.223	1.216	0.703	1.249	1.460
	Front	0.441	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.633	0.795	1.021	0.610	0.987	0.980	0.459	1.005	1.179
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.459																
	Edge 3	0.446																
	Edge 4	0.207	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.804	0.561	0.713	0.376	0.753	0.746	0.237	0.783	1.350

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.135	0.680	0.135		0.255	0.104		0.138	0.815	0.270	0.950	0.390	0.239	0.494	0.273	0.377	0.919
B: Body-Worn (1g-SAR)	All position	0.711	0.120	0.134		0.125	0.309		0.011	0.831	0.845	0.965	0.836	1.020	1.145	0.722	1.031	1.140
C: Hotspot (1-g SAR)	Rear	0.466	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.703	0.820	1.046	0.635	1.012	1.005	0.492	1.038	1.249
	Front	0.415	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.607	0.769	0.995	0.584	0.961	0.954	0.433	0.979	1.153
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.063																
	Edge 3	1.016																
	Edge 4	0.061	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.658	0.415	0.567	0.230	0.607	0.600	0.091	0.637	1.204
D: Product Specific 10-g (10-g SAR)	Rear	0.990				0.361	1.384						1.351	2.374	2.735			
	Front	1.126				0.874	1.384						2.000	2.510	3.384			
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	2.262																
	Edge 4					0.874	1.384											

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.322	0.680	0.135		0.255	0.104		0.138	1.002	0.457	1.137	0.577	0.426	0.681	0.460	0.564	1.106
B: Body-Worn (1g-SAR)	All position	0.401	0.120	0.134		0.125	0.309		0.011	0.521	0.535	0.655	0.526	0.710	0.835	0.412	0.721	0.830
C: Hotspot (1-g SAR)	Rear	0.776	0.237	0.354	0.580	0.169	0.546	0.539	0.026	1.013	1.130	1.356	0.945	1.322	1.315	0.802	1.348	1.559
	Front	0.616	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.808	0.970	1.196	0.785	1.162	1.155	0.634	1.180	1.354
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.403																
	Edge 3	0.512																
	Edge 4	0.186	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.783	0.540	0.692	0.355	0.732	0.725	0.216	0.762	1.329

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

13.15 Sum of the SAR for LTE Band 30 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.104	0.680	0.135		0.255	0.104		0.138	0.784	0.239	0.919	0.359	0.208	0.463	0.242	0.346	0.888
B: Body-Worn (1g-SAR)	All position	0.615	0.120	0.134		0.125	0.309		0.011	0.735	0.749	0.869	0.740	0.924	1.049	0.626	0.935	1.044
C: Hotspot (1-g SAR)	Rear	0.284	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.521	0.638	0.864	0.453	0.830	0.823	0.310	0.856	1.067
	Front	0.286	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.478	0.640	0.866	0.455	0.832	0.825	0.304	0.850	1.024
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2																	
	Edge 3	0.412																
	Edge 4	0.135	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.732	0.489	0.641	0.304	0.681	0.674	0.165	0.711	1.278
D: Product Specific 10-g (10-g SAR)	Rear					0.361	1.384											
	Front					0.874	1.384											
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	1.317																
	Edge 4					0.874	1.384											

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

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.056	0.680	0.135		0.255	0.104		0.138	0.736	0.191	0.871	0.311	0.160	0.415	0.194	0.298	0.840
B: Body-Worn (1g-SAR)	All position	0.297	0.120	0.134		0.125	0.309		0.011	0.417	0.431	0.551	0.422	0.606	0.731	0.308	0.617	0.726
C: Hotspot (1-g SAR)	Rear	0.189	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.426	0.543	0.769	0.358	0.735	0.728	0.215	0.761	0.972
	Front	0.158	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.350	0.512	0.738	0.327	0.704	0.697	0.176	0.722	0.896
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2																	
	Edge 3	0.433																
	Edge 4	0.094	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.691	0.448	0.600	0.263	0.640	0.633	0.124	0.670	1.237

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

13.17 Sum of the SAR for LTE Band 66 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B, D**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.208	0.680	0.135		0.255	0.104		0.138	0.888	0.343	1.023	0.463	0.312	0.567	0.346	0.450	0.992
B: Body-Worn (1g-SAR)	Rear	1.182	0.118	0.134		0.125	0.309		0.011	1.300	1.316	1.434	1.307	1.491	1.616	1.193	1.502	1.609
	Front	0.772	0.120	0.134		0.125	0.309		0.008	0.892	0.906	1.026	0.897	1.081	1.206	0.780	1.089	1.201
C: Hotspot (1-g SAR)	Rear	0.591	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.828	0.945	1.171	0.760	1.137	1.130	0.617	1.163	1.374
	Front	0.558	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.750	0.912	1.138	0.727	1.104	1.097	0.576	1.122	1.296
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.112																
	Edge 3	1.142																
	Edge 4	0.135	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.732	0.489	0.641	0.304	0.681	0.674	0.165	0.711	1.278
D: Product Specific 10-g (10-g SAR)	Rear	1.318				0.361	1.384						1.679	2.702	3.063			
	Front	1.587				0.874	1.384						2.461	2.971	3.845			
	Edge 1					0.874	0.513											
	Edge 2																	
	Edge 3	2.526																
	Edge 4					0.874	1.384											

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Standalone SAR (W/kg)								∑ 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (≤ 0.04)	Volume Scan (Yes/ No)	Figure
	WWAB	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT						
	1	2	3	4	5	6	7	8						
Rear	1.182				0.125	0.309			① + ⑤ + ⑥	1.616				1
	1.182				0.125				① + ⑤	1.307	157.3	0.01	No	
	1.182					0.309			① + ⑥	1.491	152.3	0.01	No	
					0.125	0.309			⑤ + ⑥	0.434	8.9	0.03	No	
Rear	1.182	0.118				0.309			① + ② + ⑥	1.609				2
	1.182	0.118							① + ②	1.300	132.0	0.01	No	
	1.182					0.309			① + ⑥	1.491	152.3	0.01	No	
		0.118				0.309			② + ⑥	0.427	24.0	0.01	No	

13.18 Sum of the SAR for LTE Band 71 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)								
		WWAN	DTS Ant.1	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	UNII MIMO	BT	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT	WWAN + BT + UNII Ant.2	(RSDB Scenario) WWAN + DTS Ant.1 + UNII Ant.2
		1	2	3	4	5	6	7	8	1+2	1+3	**A, B**:1+2+3 **C**:1+4	1+5	1+6	**A, B**:1+5+6 **C**:1+7	1+8	1+6+8	1+2+6
A: Head (1g-SAR)	All position	0.096	0.680	0.135		0.255	0.104		0.138	0.776	0.231	0.911	0.351	0.200	0.455	0.234	0.338	0.880
B: Body-Worn (1g-SAR)	All position	0.158	0.120	0.134		0.125	0.309		0.011	0.278	0.292	0.412	0.283	0.467	0.592	0.169	0.478	0.587
C: Hotspot (1-g SAR)	Rear	0.267	0.237	0.354	0.580	0.169	0.546	0.539	0.026	0.504	0.621	0.847	0.436	0.813	0.806	0.293	0.839	1.050
	Front	0.158	0.192	0.354	0.580	0.169	0.546	0.539	0.018	0.350	0.512	0.738	0.327	0.704	0.697	0.176	0.722	0.896
	Edge 1		0.597	0.354	0.580	0.169	0.187	0.184	0.015									
	Edge 2	0.170																
	Edge 3	0.118																
	Edge 4	0.131	0.597	0.354	0.506	0.169	0.546	0.539	0.030	0.728	0.485	0.637	0.300	0.677	0.670	0.161	0.707	1.274

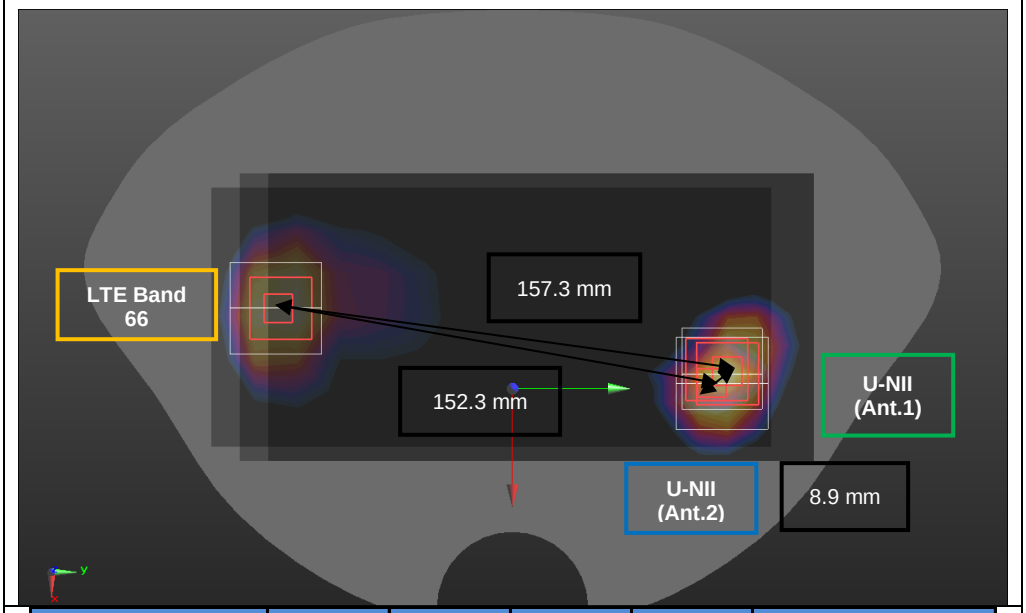
Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.
2. For Wi-Fi of DTS & UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

Conclusion:

Simultaneous transmission SAR measurement (Volume Scan) is not required because the either sum of the 1-g SAR (10-g SAR) is < 1.6 W/kg (4.0 W/kg) or SPLSR is below 0.04 of 1-g SAR.

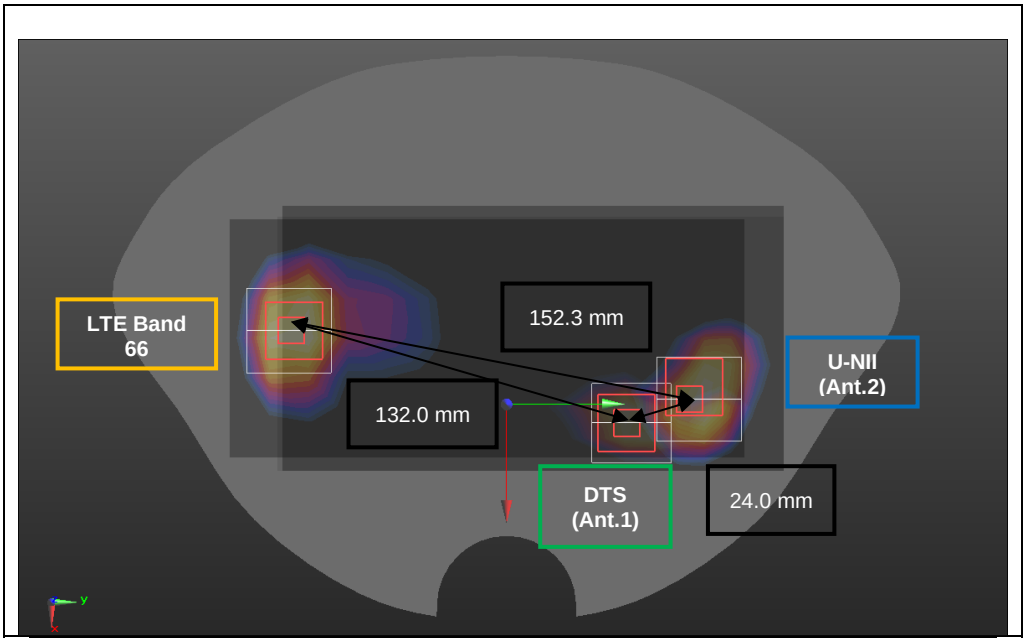
Figure (1)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 66	①	1.182	-0.0030	-0.0809	0.0007	① + ②	157.3
UNII_Ant.1	②	0.125	0.0176	0.0750	-0.0009	① + ③	152.3
UNII_Ant.2	③	0.309	0.0238	0.0690	0.0011	② + ③	8.9

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

Figure (2)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 66	①	1.182	-0.0030	-0.0809	0.0007	① + ②	132.0
DTS_Ant.1	②	0.118	0.0320	0.0464	0.0011	① + ③	152.3
UNII_Ant.2	③	0.309	0.0238	0.0690	0.0011	② + ③	24.0

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

Appendixes

Refer to separated files for the following appendixes.

4789354138-S1V2 FCC Report SAR_App A_Photos & Ant. Locations

4789354138-S1V2 FCC Report SAR_App B_Highest SAR Test Plots

4789354138-S1V2 FCC Report SAR_App C_System Check Plots

4789354138-S1V2 FCC Report SAR_App D_SAR Tissue Ingredients

4789354138-S1V2 FCC Report SAR_App E_Probe Cal. Certificates

4789354138-S1V2 FCC Report SAR_App F_Dipole Cal. Certificates

END OF REPORT