FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT

FOR

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

MODEL NUMBER: SM-G781B/DS, SM-G781B

FCC ID: A3LSMG781B

REPORT NUMBER: 4789555428-S1V4

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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	8/14/2020	Initial Issue	--
V2	8/27/2020	-Revised note in Sec.1 -Added BLE at WiFi Ant.1 in page.14 of Appendix A. -Revised Antenna's name in SAR report & Appendix A. Added notes in Sec.6.3 & Sec.7. Revised Antenna's name in page 14 of Appendix A. Revised Antenna's name in Sec.10. -Changed Plot No. in DTS's Hotspot exposure. And Changed Plot.44 in Appendix B. -Added LTE 256QAM Power in Sec.9.3	Sunghoon kim
V3	8/28/2020	Delete LTE band 5 cover text In page 48	JeongYeon Won
V4	8/29/2020	Added Note in Sec 6.4	JeongYeon Won

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID		A3LSMG781B			
Model Number		SM-G781B/DS, SM-G781B			
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	NII	DSS
Head		0.26	0.64	0.23	0.81
Body-worn		0.73	0.16	0.35	<0.10
Hotspot		1.05	0.53	0.58	0.22
Product Specific 10g		2.10	N/A	1.09	N/A
Simultaneous TX	Head	1.45	1.45	1.45	1.45
	Body-worn	1.40	1.40	1.40	1.31
	Hotspot	1.57	1.57	1.57	1.50
	Product Specific 10g	3.37	N/A	3.37	N/A
Date Tested		7/26/2020 to 8/27/2020			
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: SM-G781B/DS and SM-G781B have the same hardware but number of SIM card slot is different. SM-G781B is single SIM version and SM-G781B/DS is dual SIM version. This application was tested with SM-G781B/DS in all bands. 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	JeongYeon Won Laboratory Technician 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	**0.262**	0.273	0.570	N/A
	GSM 1900	0.047	0.304	0.902	0.876
	WCDMA Band II	0.090	0.548	1.031	1.204
	WCDMA Band IV	0.092	0.583	0.913	2.065
	WCDMA Band V	0.255	0.356	0.698	N/A
	LTE Band 2	0.079	0.507	**1.045**	1.180
	LTE Band 4	N/A	N/A	N/A	N/A
	LTE Band 5	0.236	0.347	0.694	N/A
	LTE Band 12	0.125	0.195	0.276	N/A
	LTE Band 13	0.145	0.206	0.402	N/A
	LTE Band 17	N/A	N/A	N/A	N/A
	LTE Band 26	0.159	0.211	0.446	N/A
	LTE Band 41	0.087	0.202	0.300	N/A
	LTE Band 66	0.133	**0.726**	0.742	**2.097**
DTS	2.4GHz WLAN	**0.637**	**0.164**	**0.533**	N/A
UNII	5GHz WLAN	**0.231**	**0.351**	**0.582**	**1.089**
DSS	Bluetooth	**0.809**	**0.079**	**0.223**	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 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

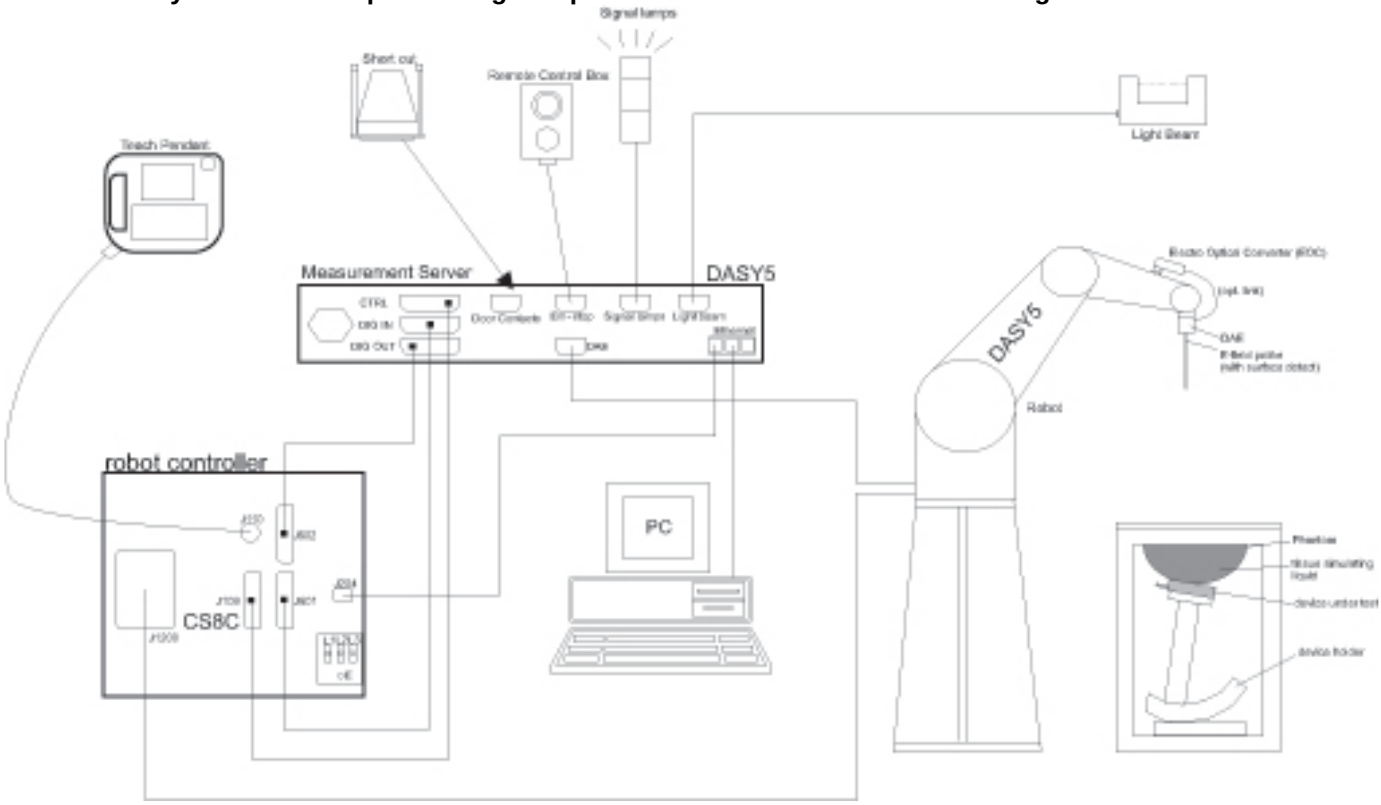
Suwon
SAR 1 Room
SAR 3 Room
SAR 4 Room
SAR 5 Room

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.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	Note
Network Analyzer	Agilent	E5071C	MY46522054	8-7-2020	1
				8-4-2021	
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-17-2021	
Shorting block	SPEAG	DAK-3.5 Short	SMDAK 200 BA	N/A	
Thermometer	LKM	DTM3000	3424	8-9-2020	1
				8-7-2021	

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date	Note
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-6-2020	1
				8-4-2021	
Power Sensor	Agilent	U2000A	MY54260010	8-9-2020	1
				8-4-2021	
Power Sensor	Agilent	U2000A	MY54260007	8-9-2020	1
				8-4-2021	
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-8-2020	1
				8-4-2021	
Directional Coupler	Agilent	772D	MY52180193	8-7-2020	1
				8-4-2021	
Directional Coupler	Agilent	778D	MY52180432	8-7-2020	1
				8-4-2021	
Low Pass Filter	MICROLAB	LA-15N	03943	8-7-2020	1
				8-4-2021	
Low Pass Filter	FILTRON	L14012FL	1410003S	8-7-2020	1
				8-4-2021	
Low Pass Filter	MICROLAB	LA-60N	03942	8-7-2020	1
				8-4-2021	
Attenuator	Agilent	8491B/003	MY39269292	8-7-2020	1
				8-4-2021	
Attenuator	Agilent	8491B/010	MY39269315	8-7-2020	1
Attenuator	R & S	8997 / OSP	-	8-6-2021	
Attenuator	Agilent	8491B/020	MY39269298	8-7-2020	1
				8-4-2021	
E-Field Probe (SAR1)	SPEAG	EX3DV4	7313	2-25-2021	
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 (SAR1)	SPEAG	DAE4	912	11-22-2020	
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	2-24-2022	
System Validation Dipole	SPEAG	D835V2	4d174	2-24-2022	
System Validation Dipole	SPEAG	D1750V2	1125	2-21-2022	
System Validation Dipole	SPEAG	D1900V2	5d199	3-19-2022	
System Validation Dipole	SPEAG	D2450V2	939	7-25-2021	2
System Validation Dipole	SPEAG	D2600V2	1097	9-19-2021	
System Validation Dipole	SPEAG	D5GHzV2	1209	2-27-2022	
Thermometer (SAR1)	Lutron	MHB-382SD	AH.50215	8-8-2020	1
				8-7-2021	
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-8-2020	1
				8-7-2021	
Thermometer (SAR4),(SAR5)	Lutron	MHB-382SD	AH.91463	8-8-2020	1
				8-7-2021	

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date	Note
Base Station Simulator	R & S	CMW500	150313	8-8-2020	1
				8-4-2021	
Base Station Simulator	R & S	CMW500	150314	8-8-2020	1
				8-4-2021	
Base Station Simulator	R & S	CMW500	162790	8-9-2020	1
				8-4-2021	
Wireless Connectivity Tester	R & S	CMW270	100982	8-5-2020	1
				8-3-2021	
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	8-7-2020	1
				8-3-2021	

Note(s):

1. Before the calibration period expired, it was recalibrated and used.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D2450V2 (SN : 939))

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) ☒ Wi-Fi Direct (Wi-Fi 5.2 GHz_UNII-1 (Ch.36 – 48), Wi-Fi 5.8 GHz_UNII-3 (Ch. 149 – 165))		
Test Sample Information	**No.**	**S/N**	**Notes**
	1	R3CN7038XSF	Wi-Fi/BT Conduction
	2	437d2d4d431e7ece	Wi-Fi/BT Conduction
	3	R3CN704K9GZ	Main Conduction
	4	R3CN704KAMF	Main Conduction
	5	R3CN704L6QK	Main Conduction
	6	R3CN7038ZYD	SAR
	7	R3CN7038YHB	SAR
	8	R3CN704KABN	SAR
	9	R3CN704K9LT	SAR
	10	R3CN704KA0Z	SAR
	11	R3CN704L6DM	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			
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 12 FDD Band 13 FDD Band 17 FDD Band 26 FDD Band 66 TDD Band 41	QPSK 16QAM 64QAM 256QAM Rel. 15 Carrier Aggregation (1 Uplink and 2 Downlinks)		100% (FDD) 63.3% (TDD) Power Class 3 Refer to Sec.6.6
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No			
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20) 802.11ax (HE20)		SISO mode : 99.8% (802.11b) MIMO mode : 99.8% (802.11b)
	5 GHz	802.11a 802.11n (HT20) 802.11n (HT40) 802.11ac (VHT20) 802.11ac (VHT40) 802.11ac (VHT80) 802.11ax (HE20) 802.11ax (HE40) 802.11ax (HE80)		SISO mode: 98.7% (802.11n 40MHz BW) 99.7% (802. 11ac 80MHz BW) MIMO mode: 98.7% (802.11n 40MHz BW)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.0 LE		76.8% (DH5)
NFC	13.56 MHz	Type A/B/F		N/A[3]

Notes:

1. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.8% and was considered and used for SAR Testing.
2. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.
3. Measured Duty Cycle is not required due to SAR test exemption.

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 (Hotspot & Proximity sensor & Earjack back-off) (dBm)	
				Tune-up Limit	Frame Pwr	Tune-up Limit	Frame Pwr
GSM850	Main 1 Ant.	Voice	1	**34.0**	**25.0**		
		GPRS	1	**34.0**	**25.0**		
		GPRS	2	**32.0**	**26.0**		
		GPRS	3	**30.5**	**26.2**		
		GPRS	4	**29.0**	**26.0**		
		EGPRS	1	**28.0**	**19.0**		
		EGPRS	2	**26.0**	**20.0**		
		EGPRS	3	**24.0**	**19.7**		
		EGPRS	4	**23.0**	**20.0**		
GSM1900	Main 1 Ant.	Voice	1	**31.0**	**22.0**	**28.0**	**19.0**
		GPRS	1	**31.0**	**22.0**	**28.0**	**19.0**
		GPRS	2	**29.0**	**23.0**	**26.0**	**20.0**
		GPRS	3	**27.5**	**23.2**	**24.5**	**20.2**
		GPRS	4	**26.0**	**23.0**	**23.0**	**20.0**
		EGPRS	1	**27.0**	**18.0**		
		EGPRS	2	**25.0**	**19.0**		
		EGPRS	3	**23.0**	**18.7**		
		EGPRS	4	**22.0**	**19.0**		

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (Hotspot & Proximity sensor & Earjack back-off) (dBm)
W-CDMA Band Ⅱ	Main 1 Ant.	R99	**24.0**	**21.0**
		HSDPA	**23.5**	**20.5**
		HSUPA	**23.0**	**20.0**
		DC-HSDPA	**23.5**	**20.5**
W-CDMA Band Ⅳ	Main 1 Ant.	R99	**24.0**	**21.0**
		HSDPA	**23.5**	**20.5**
		HSUPA	**23.0**	**20.0**
		DC-HSDPA	**23.5**	**20.5**
W-CDMA Band V	Main 1 Ant.	R99	**25.8**	
		HSDPA	**25.3**	
		HSUPA	**24.8**	
		DC-HSDPA	**25.3**	

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm) (Hotspot back-off)	Reduced. RF Output Power (dBm) (Earjack & Proximity sensor back-off)
LTE Band 2	Main 1 Ant.	QPSK	**24.0**	**21.0**	**21.0**
LTE Band 4	Main 1 Ant.	QPSK	**24.0**	**19.5**	**21.0**
LTE Band 5	Main 1 Ant.	QPSK	**25.8**		
LTE Band 12	Main 1 Ant.	QPSK	**24.0**		
LTE Bans 13	Main 1 Ant.	QPSK	**24.0**		
LTE Band 17	Main 1 Ant.	QPSK	**24.0**		
LTE Band 26	Main 1 Ant.	QPSK	**23.5**		
LTE Band 66	Main 1 Ant.	QPSK	**24.0**	**19.5**	**21.0**
LTE Band 41	Main 2 Ant.	QPSK	**25.0**	**21.0**	**21.0**

Normal WLAN mode

Maximum Power

Mode	Band		Max. RF Output Power (dBm)																	
			SISO (WiFi Ant.1)						SISO (WiFi Ant.2)						MIMO (WiFi Ant.1 + Ant.2)					
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	b	g	n	ac	ax
2.4GHz	DTS	2450 MHz		19 Ch12 : 9 Ch13 : 3	18 Ch12 : 9 Ch13 : 3	18 Ch12 : 9 Ch13 : 3		18 Ch12 : 9 Ch13 : 3		19 Ch12 : 9 Ch13 : 3	18 Ch12 : 9 Ch13 : 3	18 Ch12 : 9 Ch13 : 3		18 Ch12 : 9 Ch13 : 3		21 Ch12 : 12 Ch13 : 6	21 Ch12 : 12 Ch13 : 6	21 Ch12 : 12 Ch13 : 6		21 Ch12 : 12 Ch13 : 6
5GHz (20MHz)	UNII-1	5200 MHz	17			17	17	16	17			17	17	16	20			20	20	19
	UNII-2A	5300 MHz	17			17	17	16	17			17	17	16	20			20	20	19
	UNII-2C	5500 MHz	17			17	17	16	17			17	17	16	20			20	20	19
	UNII-3	5800 MHz	17			17	17	16	17			17	17	16	20			20	20	19
5GHz (40MHz)	UNII-1	5200 MHz				17	15	15				17	15	15				20	18	18
	UNII-2A	5300 MHz				17	15	15				17	15	15				20	18	18
	UNII-2C	5500 MHz				17	15	15				17	15	15				20	18	18
	UNII-3	5800 MHz				17	15	15				17	15	15				20	18	18
5GHz (80MHz)	UNII-1	5200 MHz					14	14					14	14					17	17
	UNII-2A	5300 MHz					14	14					14	14					17	17
	UNII-2C	5500 MHz					14	14					14	14					17	17
	UNII-3	5800 MHz					14	14					14	14					17	17

Reduced Power – Receiver Active

Mode	Band		Max. RF Output Power (dBm)																	
			SISO (WiFi Ant.1)						SISO (WiFi Ant.2)						MIMO (WiFi Ant.1 + Ant.2)					
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	b	g	n	ac	ax
2.4GHz	DTS	2450 MHz		13 Ch12 : 9 Ch13 : 3	13 Ch12 : 9 Ch13 : 3	13 Ch12 : 9 Ch13 : 3		13 Ch12 : 9 Ch13 : 3		13 Ch12 : 9 Ch13 : 3	13 Ch12 : 9 Ch13 : 3	13 Ch12 : 9 Ch13 : 3		13 Ch12 : 9 Ch13 : 3		16 Ch12 : 12 Ch13 : 6	16 Ch12 : 12 Ch13 : 6	16 Ch12 : 12 Ch13 : 6		16 Ch12 : 12 Ch13 : 6
5GHz (20MHz)	UNII-1	5200 MHz	11			11	11	11	11			11	11	11	14			14	14	14
	UNII-2A	5300 MHz	11			11	11	11	11			11	11	11	14			14	14	14
	UNII-2C	5500 MHz	11			11	11	11	11			11	11	11	14			14	14	14
	UNII-3	5800 MHz	11			11	11	11	11			11	11	11	14			14	14	14
5GHz (40MHz)	UNII-1	5200 MHz				11	11	11				11	11	11				14	14	14
	UNII-2A	5300 MHz				11	11	11				11	11	11				14	14	14
	UNII-2C	5500 MHz				11	11	11				11	11	11				14	14	14
	UNII-3	5800 MHz				11	11	11				11	11	11				14	14	14
5GHz (80MHz)	UNII-1	5200 MHz					11	11					11	11					14	14
	UNII-2A	5300 MHz					11	11					11	11					14	14
	UNII-2C	5500 MHz					11	11					11	11					14	14
	UNII-3	5800 MHz					11	11					11	11					14	14

Note(s):.

1. This device uses an independent fixed level power reduction mechanism for 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. Since RSDB Power and WLAN Power are the same, RSDB operation is supported in WLAN operation.
4. WiFi Ant.1(2.4GHz & BT & BLE) is same as Sub2 Ant in Block diagram document.
5. WiFi Ant.1(5GHz) is same as Sub3 Ant in Block diagram document.
6. WiFi Ant.2(2.4GHz & BT & 5GHz) is same as Sub4 Ant in Block diagram document.

Bluetooth mode

Antenna	RF Air interface	Max. RF Output Power (dBm)
BT Ant.1	Bluetooth (BDR)	**16.0**
	Bluetooth (EDR)	**14.0**
	Bluetooth LE 1Mbps	**7.0**
	Bluetooth LE 2Mbps	**7.0**
BT Ant.2	Bluetooth (BDR)	**18.0**
	Bluetooth (EDR)	**16.0**
	Bluetooth LE 1Mbps	
	Bluetooth LE 2Mbps	

Note(s):.

1. For Bluetooth mode, Both BT Ant.1 & BT Ant.2 are not work at the same time.

6.4. Power Back-off Operation

This device supports multiple power back-off modes: WWAN (Hotspot), WWAN (Proximity sensor), and WLAN (RCV). Each of the power back-off operates within specific exposure conditions for certain technologies. For full details on how each power back-off mode operates, refer to the Operational Description.

Power Back-off mode	Technologies Supported	Exposure Conditions Active			
		Head	Body-worn	Hotspot	Product Specific 10-g
WWAN (Hotspot)[1]	GSM 1900 W-CDMA B2/4 LTE B2/4/41/66	N/A	N/A	✓	N/A
WWAN (Earjack)[1]	GSM 1900 W-CDMA B2/4 LTE B2/4/41/66	N/A	✓	N/A	✓
WWAN (Proximity sensor)[1]	GSM 1900 W-CDMA B2/4 LTE B2/4/41/66	N/A	N/A	N/A	✓
WLAN (RCV)	Wi-Fi 2.4GHz Wi-Fi 5GHz	✓	N/A	N/A	N/A

Note(s):
1. Tune-up Limits for WWAN (Hotspot) and WWAN (Proximity Sensor) are all Reduced Average Powers. Please refer to Sec.9 for all conducted power measurements.
2. WWAN Back-off priority: RCV → Hotspot → Earjack → Proximity Sensor
3. Body-worn SAR with ear-jack connected is not required due to Body-worn measured at max power is not over 1.2 W/kg.
4. For LTE Band 41, The Antenna & Sensor are located near corner side in device. But Product Specific 10-g SAR is not required for LTE Band 41 due to Hotspot SAR is not over 1.2 W/kg (scale up to maximum tune-up limit). So Product Specific 10-g SAR test was not performed using reduced power of Proximity sensor feature. Therefore, KDB inquiry is not required for additional test for Antenna & Sensor in the corner side.

Product Specific 10g Adjusted SAR Calculation

Wireless technologies	Max Tune-up Limit (dBm)	Reduced Tune-Up Limit (dBm)	Power Factor	Reported SAR Limit (W/kg)
GSM 1900	23.2	20.2	2.00	0.601
W-CDMA B2	24.0	21.0	2.00	0.601
W-CDMA B4	24.0	21.0	2.00	0.601
LTE B2	24.0	21.0	2.00	0.601
LTE B4	24.0	19.5	2.82	0.426
LTE B66	24.0	19.5	2.82	0.426
LTE B41	25.0	21.0	2.51	0.478

Note(s):
1. Tune-up limit powers for GSM 1900 are frame power(dBm).
2. Hotspot mode supports power reduction. When the measured SAR is scaled to the maximum tune-up limit, the adjusted SAR is < 1.2 W/kg. Therefore, Extremity SAR testing is not required for this band in accordance with KDB 648474 §2.5 b. Refer to §10 for Reported SAR results. If the Reported SAR 1g value in §10 is less than the Reported SAR Limit listed above, then Extremity SAR is not required.
3. LTE 50% RB is scaled up to the Max Tune-Up Limit with MPR included.
4. For Reported SAR limit in above table, it was calculated using Max tune-up Limit & Reduced Tune-up limit & Reported SAR 1.2 W/kg. (Reported SAR Limit = 1.2 W/kg / Power factor, Power factor = 10^((Max tune-up limit – Reduced tune-up limit)/10)

6.5. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 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		
	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		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

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 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 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					

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).

6.6. 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%.

6.7. LTE Carrier Aggregation

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_66A-66A (0)	Band 66	5, 10, 15, 20	5, 10, 15, 20				40 MHz

DL Intra-Band (Contiguous)

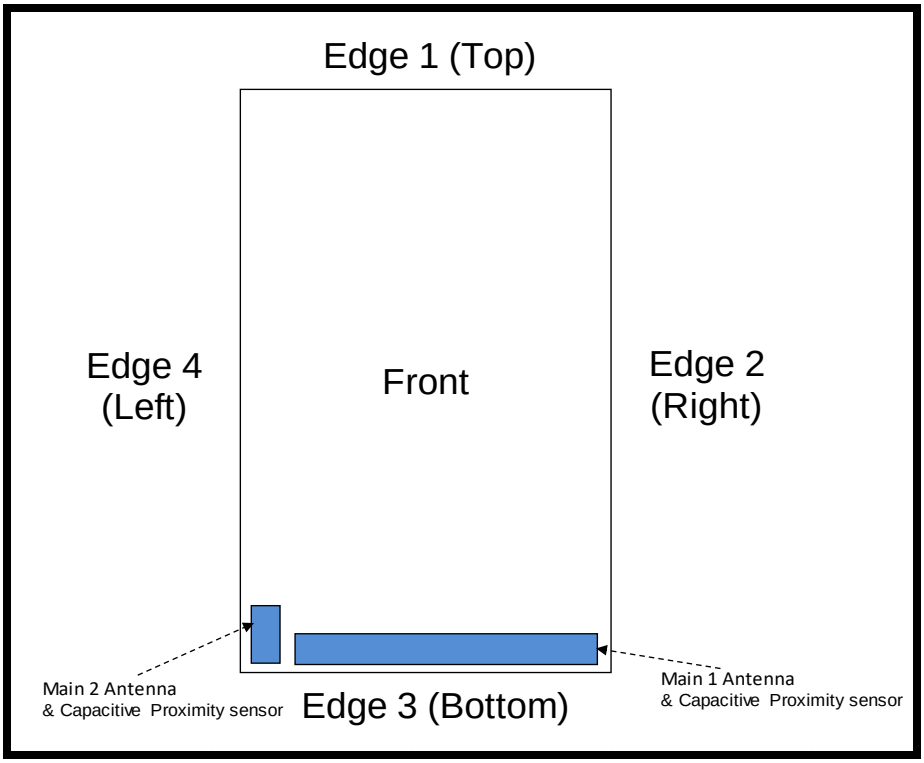
E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_66B (0)	Band 66	5	5, 10, 15				20 MHz
		10	5, 10				
		15	5				
CA_66C (0)	Band 66	5	20				40 MHz
		10	15, 20				
		15	10, 15, 20				
		20	5, 10, 15, 20				

Note(s):

1. For supported channels, please refer to §6.5.

6.8. Proximity Sensor feature

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

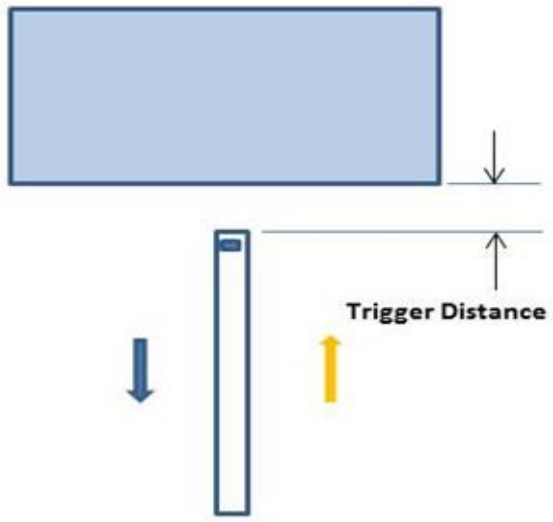


6.8.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

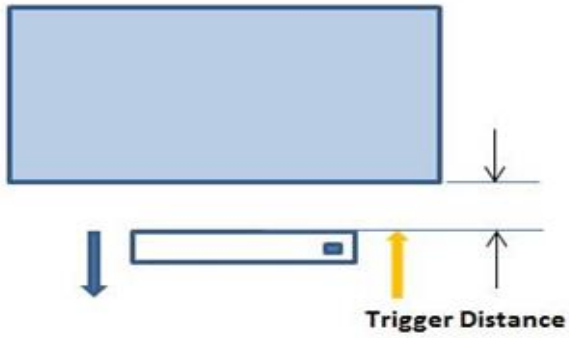
Rear, Front and Edge 3 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger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

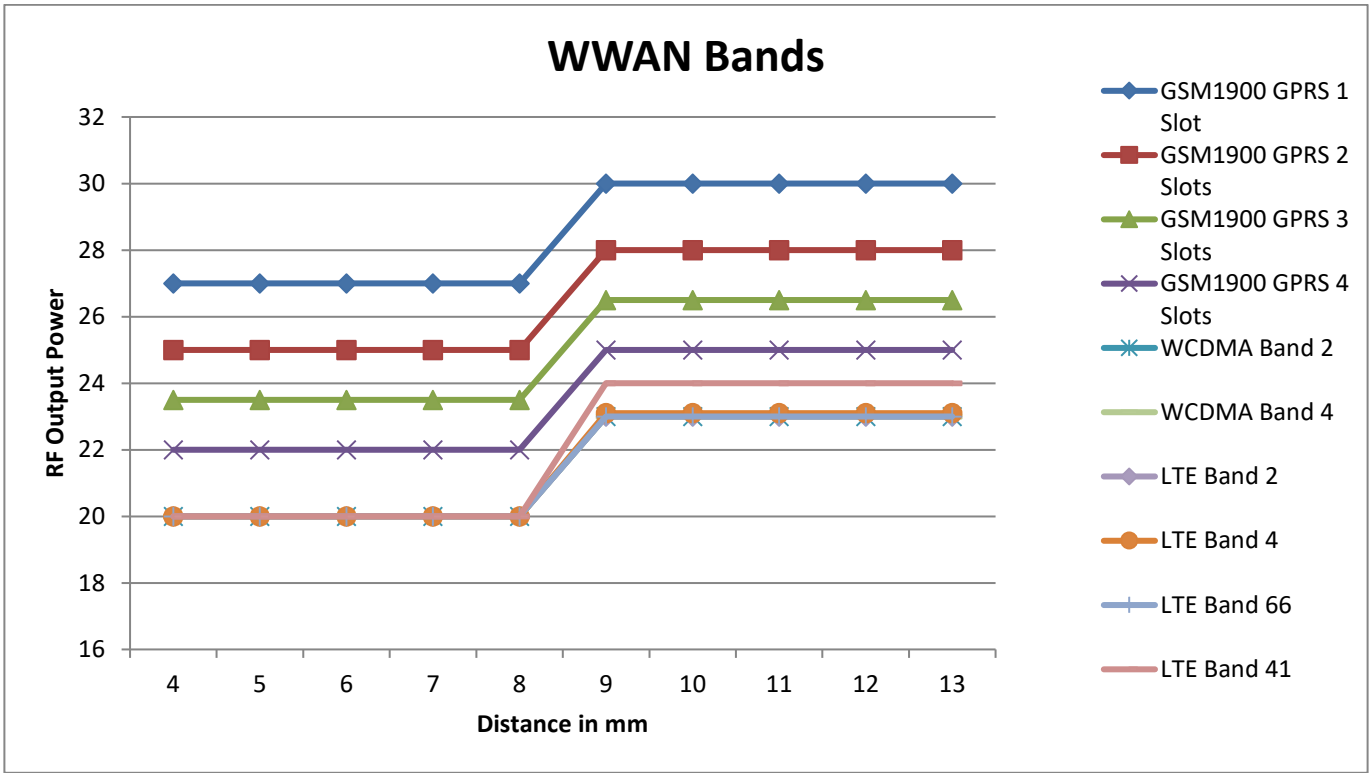
Tissue simulating liquid	Antenna	Trigger distance – Rear		Trigger distance - Front		Trigger distance – Edge 3	
		Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
1750 Head	Main 1 Ant.	8 mm	8 mm	7 mm	7 mm	13 mm	13 mm
1900 Head	Main 1 Ant.	8 mm	8 mm	7 mm	7 mm	13 mm	13 mm
2600 Head	Main 2 Ant.	8 mm	8 mm	7 mm	7 mm	13 mm	13 mm

Proximity Sensor Triggering Distance Measurement Results

WWAN Bands

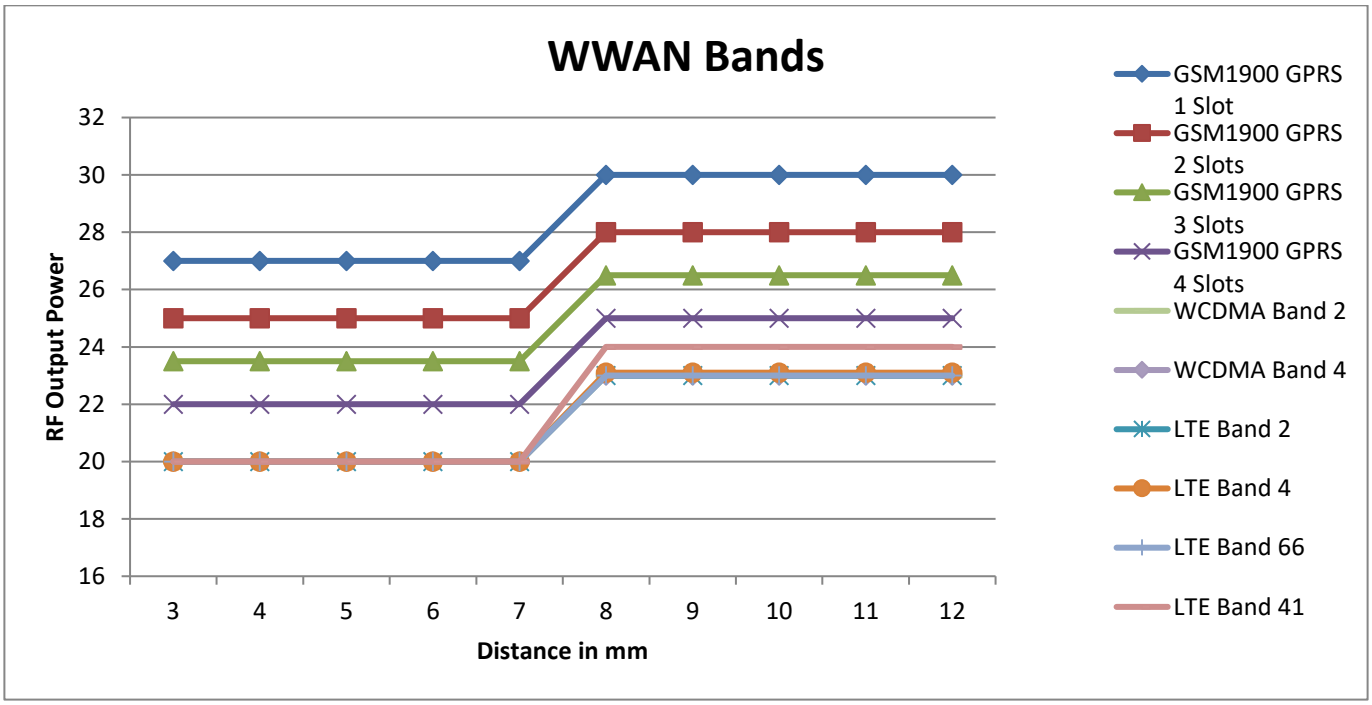
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	4	5	6	7	8	9	10	11	12	13
GSM1900 GPRS 1 Slot	27.0	27.0	27.0	27.0	27.0	30.0	30.0	30.0	30.0	30.0
GSM1900 GPRS 2 Slots	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0
GSM1900 GPRS 3 Slots	23.5	23.5	23.5	23.5	23.5	26.5	26.5	26.5	26.5	26.5
GSM1900 GPRS 4 Slots	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0
WCDMA Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band 4	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 4	20.0	20.0	20.0	20.0	20.0	23.1	23.1	23.1	23.1	23.1
LTE Band 66	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 41	20.0	20.0	20.0	20.0	20.0	24.0	24.0	24.0	24.0	24.0



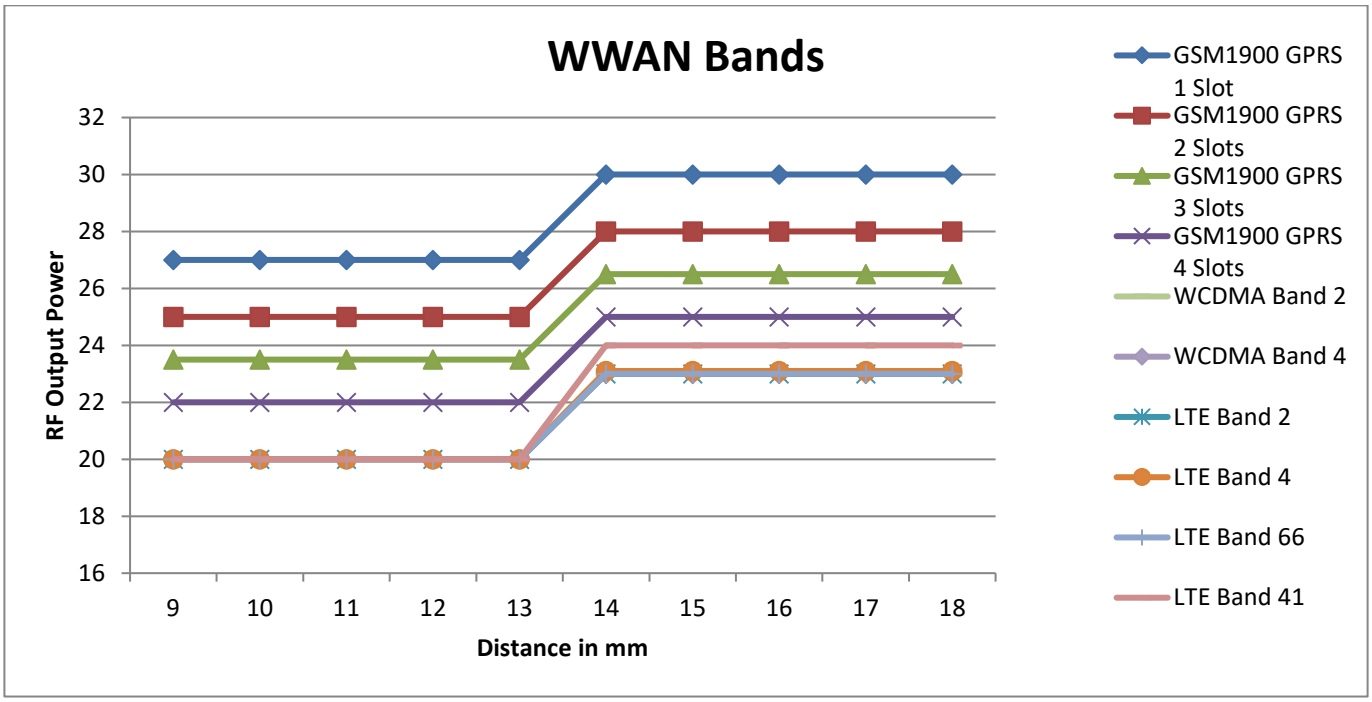
Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	3	4	5	6	7	8	9	10	11	12
GSM1900 GPRS 1 Slot	27.0	27.0	27.0	27.0	27.0	30.0	30.0	30.0	30.0	30.0
GSM1900 GPRS 2 Slots	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0
GSM1900 GPRS 3 Slots	23.5	23.5	23.5	23.5	23.5	26.5	26.5	26.5	26.5	26.5
GSM1900 GPRS 4 Slots	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0
WCDMA Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band 4	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 4	20.0	20.0	20.0	20.0	20.0	23.1	23.1	23.1	23.1	23.1
LTE Band 66	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 41	20.0	20.0	20.0	20.0	20.0	24.0	24.0	24.0	24.0	24.0



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

Distance to DUT vs. Output Power in dBm										
Distance (mm)	9	10	11	12	13	14	15	16	17	18
GSM1900 GPRS 1 Slot	27.0	27.0	27.0	27.0	27.0	30.0	30.0	30.0	30.0	30.0
GSM1900 GPRS 2 Slots	25.0	25.0	25.0	25.0	25.0	28.0	28.0	28.0	28.0	28.0
GSM1900 GPRS 3 Slots	23.5	23.5	23.5	23.5	23.5	26.5	26.5	26.5	26.5	26.5
GSM1900 GPRS 4 Slots	22.0	22.0	22.0	22.0	22.0	25.0	25.0	25.0	25.0	25.0
WCDMA Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
WCDMA Band 4	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 2	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 4	20.0	20.0	20.0	20.0	20.0	23.1	23.1	23.1	23.1	23.1
LTE Band 66	20.0	20.0	20.0	20.0	20.0	23.0	23.0	23.0	23.0	23.0
LTE Band 41	20.0	20.0	20.0	20.0	20.0	24.0	24.0	24.0	24.0	24.0



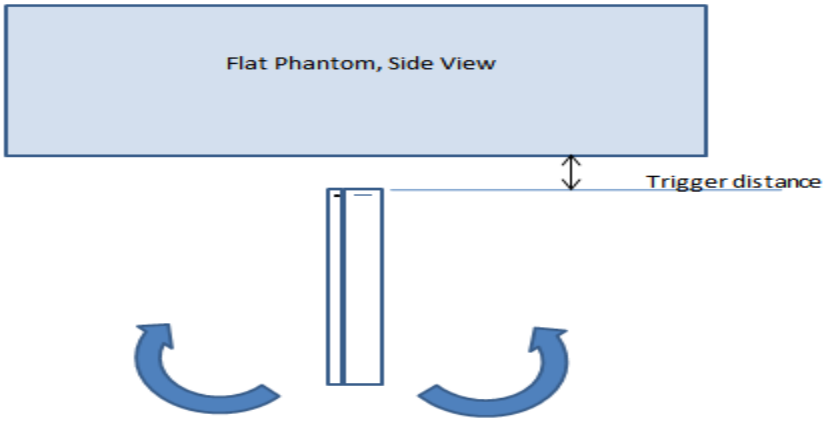
6.8.2. Proximity Sensor Coverage (KDB 616217 §6.3)

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	13 mm	13 mm	On	On	On	On	On	On	On	On	On	On	On
1900	13 mm	13 mm	On	On	On	On	On	On	On	On	On	On	On
2600	13 mm	13 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 (Main 1 Ant & Main 2 Ant)	Rear	8 mm	N/A	N/A	7 mm
	Front	7 mm	N/A	N/A	6 mm
	Edge 3	13 mm	N/A	13 mm	12 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&BLE	Head	WiFi/BT&BLE Ant.1 & WiFi/BT 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	WiFi/BT&BLE Ant.1 & WiFi/BT Ant.2	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	WiFi/BT&BLE Ant.1 & WiFi/BT Ant.2	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	WiFi/BT&BLE Ant.1 & WiFi/BT Ant.2	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.
5. WiFi Ant.1(2.4GHz & BT & BLE) is same as Sub2 Ant in Block diagram document.
6. WiFi Ant.1(5GHz) is same as Sub3 Ant in Block diagram document.
7. WiFi Ant.2(2.4GHz & BT & 5GHz) is same as Sub4 Ant in Block diagram document.

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 ±(%)
7-30-2020	Head 5250	e'	37.1500	Relative Permittivity (ε_r):	37.15	35.93	3.39	5
		e''	15.7800	Conductivity (σ):	4.61	4.70	-2.04	5
	Head 5260	e'	37.1300	Relative Permittivity (ε_r):	37.13	35.92	3.36	5
		e''	15.7800	Conductivity (σ):	4.62	4.71	-2.06	5
	Head 5600	e'	36.6300	Relative Permittivity (ε_r):	36.63	35.53	3.08	5
		e''	16.0000	Conductivity (σ):	4.98	5.06	-1.55	5
	Head 5750	e'	36.4200	Relative Permittivity (ε_r):	36.42	35.36	2.99	5
		e''	16.1000	Conductivity (σ):	5.15	5.21	-1.27	5
	Head 5825	e'	36.3100	Relative Permittivity (ε_r):	36.31	35.30	2.86	5
		e''	16.1500	Conductivity (σ):	5.23	5.27	-0.74	5
8-2-2020	Head 5250	e'	35.8200	Relative Permittivity (ε_r):	35.82	35.93	-0.31	5
		e''	16.2500	Conductivity (σ):	4.74	4.70	0.88	5
	Head 5260	e'	35.7900	Relative Permittivity (ε_r):	35.79	35.92	-0.37	5
		e''	16.2600	Conductivity (σ):	4.76	4.71	0.92	5
	Head 5600	e'	35.2400	Relative Permittivity (ε_r):	35.24	35.53	-0.83	5
		e''	16.4200	Conductivity (σ):	5.11	5.06	1.04	5
	Head 5750	e'	35.0000	Relative Permittivity (ε_r):	35.00	35.36	-1.03	5
		e''	16.5000	Conductivity (σ):	5.28	5.21	1.18	5
	Head 5825	e'	34.8900	Relative Permittivity (ε_r):	34.89	35.30	-1.16	5
		e''	16.5400	Conductivity (σ):	5.36	5.27	1.65	5
8-4-2020	Head 5250	e'	35.0500	Relative Permittivity (ε_r):	35.05	35.93	-2.46	5
		e''	16.5100	Conductivity (σ):	4.82	4.70	2.50	5
	Head 5260	e'	35.0300	Relative Permittivity (ε_r):	35.03	35.92	-2.48	5
		e''	16.5100	Conductivity (σ):	4.83	4.71	2.47	5
	Head 5600	e'	34.6900	Relative Permittivity (ε_r):	34.69	35.53	-2.37	5
		e''	16.6100	Conductivity (σ):	5.17	5.06	2.21	5
	Head 5750	e'	34.5200	Relative Permittivity (ε_r):	34.52	35.36	-2.38	5
		e''	16.6400	Conductivity (σ):	5.32	5.21	2.04	5
	Head 5825	e'	34.5700	Relative Permittivity (ε_r):	34.57	35.30	-2.07	5
		e''	16.8500	Conductivity (σ):	5.46	5.27	3.56	5

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
7-30-2020	Head 2450	e'	37.8200	Relative Permittivity (ϵ_r):	37.82	39.20	-3.52	5
		e''	12.8300	Conductivity (σ):	1.75	1.80	-2.90	5
	Head 2400	e'	37.8800	Relative Permittivity (ϵ_r):	37.88	39.30	-3.61	5
		e''	12.8700	Conductivity (σ):	1.72	1.75	-1.95	5
	Head 2480	e'	37.7900	Relative Permittivity (ϵ_r):	37.79	39.16	-3.50	5
		e''	12.8500	Conductivity (σ):	1.77	1.83	-3.30	5
8-2-2020	Head 1750	e'	39.7200	Relative Permittivity (ϵ_r):	39.72	40.08	-0.91	5
		e''	14.0200	Conductivity (σ):	1.36	1.37	-0.35	5
	Head 1710	e'	39.7700	Relative Permittivity (ϵ_r):	39.77	40.15	-0.94	5
		e''	14.0800	Conductivity (σ):	1.34	1.35	-0.57	5
	Head 1755	e'	39.7200	Relative Permittivity (ϵ_r):	39.72	40.08	-0.89	5
		e''	14.0100	Conductivity (σ):	1.37	1.37	-0.34	5
8-2-2020	Head 1900	e'	39.4300	Relative Permittivity (ϵ_r):	39.43	40.00	-1.43	5
		e''	13.7700	Conductivity (σ):	1.45	1.40	3.91	5
	Head 1850	e'	39.5400	Relative Permittivity (ϵ_r):	39.54	40.00	-1.15	5
		e''	13.8700	Conductivity (σ):	1.43	1.40	1.91	5
	Head 1910	e'	39.4000	Relative Permittivity (ϵ_r):	39.40	40.00	-1.50	5
		e''	13.7500	Conductivity (σ):	1.46	1.40	4.31	5
8-2-2020	Head 2450	e'	38.6600	Relative Permittivity (ϵ_r):	38.66	39.20	-1.38	5
		e''	13.3700	Conductivity (σ):	1.82	1.80	1.19	5
	Head 2400	e'	38.7124	Relative Permittivity (ϵ_r):	38.71	39.30	-1.49	5
		e''	13.3647	Conductivity (σ):	1.78	1.75	1.82	5
	Head 2480	e'	38.6096	Relative Permittivity (ϵ_r):	38.61	39.16	-1.41	5
		e''	13.3847	Conductivity (σ):	1.85	1.83	0.72	5
8-5-2020	Head 1900	e'	39.9800	Relative Permittivity (ϵ_r):	39.98	40.00	-0.05	5
		e''	13.3600	Conductivity (σ):	1.41	1.40	0.82	5
	Head 1850	e'	40.0500	Relative Permittivity (ϵ_r):	40.05	40.00	0.12	5
		e''	13.4500	Conductivity (σ):	1.38	1.40	-1.18	5
	Head 1910	e'	39.9700	Relative Permittivity (ϵ_r):	39.97	40.00	-0.08	5
		e''	13.3500	Conductivity (σ):	1.42	1.40	1.27	5
8-5-2020	Head 2450	e'	39.2700	Relative Permittivity (ϵ_r):	39.27	39.20	0.18	5
		e''	13.0400	Conductivity (σ):	1.78	1.80	-1.31	5
	Head 2400	e'	39.3100	Relative Permittivity (ϵ_r):	39.31	39.30	0.03	5
		e''	13.0300	Conductivity (σ):	1.74	1.75	-0.73	5
	Head 2480	e'	39.2300	Relative Permittivity (ϵ_r):	39.23	39.16	0.17	5
		e''	13.0700	Conductivity (σ):	1.80	1.83	-1.64	5
8-5-2020	Head 2600	e'	39.0500	Relative Permittivity (ϵ_r):	39.05	39.01	0.10	5
		e''	13.1200	Conductivity (σ):	1.90	1.96	-3.33	5
	Head 2500	e'	39.2000	Relative Permittivity (ϵ_r):	39.20	39.14	0.16	5
		e''	13.0700	Conductivity (σ):	1.82	1.85	-2.01	5
	Head 2700	e'	38.8800	Relative Permittivity (ϵ_r):	38.88	38.88	-0.01	5
		e''	13.1800	Conductivity (σ):	1.98	2.07	-4.42	5

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
7-27-2020	Head 835	e'	41.2900	Relative Permittivity (ϵ_r):	41.29	41.50	-0.51	5
		e''	19.4100	Conductivity (σ):	0.90	0.90	0.13	5
	Head 820	e'	41.3300	Relative Permittivity (ϵ_r):	41.33	41.60	-0.66	5
		e''	19.6700	Conductivity (σ):	0.90	0.90	-0.18	5
	Head 850	e'	41.2500	Relative Permittivity (ϵ_r):	41.25	41.50	-0.60	5
		e''	19.1700	Conductivity (σ):	0.91	0.92	-0.98	5
8-4-2020	Head 1900	e'	39.6800	Relative Permittivity (ϵ_r):	39.68	40.00	-0.80	5
		e''	13.7100	Conductivity (σ):	1.45	1.40	3.46	5
	Head 1850	e'	39.7400	Relative Permittivity (ϵ_r):	39.74	40.00	-0.65	5
		e''	13.7500	Conductivity (σ):	1.41	1.40	1.03	5
	Head 1910	e'	39.6700	Relative Permittivity (ϵ_r):	39.67	40.00	-0.82	5
		e''	13.7100	Conductivity (σ):	1.46	1.40	4.00	5

SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
8-3-2020	Head 750	e'	40.7900	Relative Permittivity (ϵ_r):	40.79	41.96	-2.79	5
		e''	20.9600	Conductivity (σ):	0.87	0.89	-2.13	5
	Head 700	e'	40.8900	Relative Permittivity (ϵ_r):	40.89	42.22	-3.15	5
		e''	21.8900	Conductivity (σ):	0.85	0.89	-4.19	5
	Head 790	e'	40.6600	Relative Permittivity (ϵ_r):	40.66	41.76	-2.63	5
		e''	20.1400	Conductivity (σ):	0.88	0.90	-1.28	5
8-3-2020	Head 835	e'	40.5000	Relative Permittivity (ϵ_r):	40.50	41.50	-2.41	5
		e''	19.3900	Conductivity (σ):	0.90	0.90	0.03	5
	Head 820	e'	40.5400	Relative Permittivity (ϵ_r):	40.54	41.60	-2.55	5
		e''	19.6100	Conductivity (σ):	0.89	0.90	-0.48	5
	Head 850	e'	40.4800	Relative Permittivity (ϵ_r):	40.48	41.50	-2.46	5
		e''	19.2100	Conductivity (σ):	0.91	0.92	-0.77	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	2-24-2020	750	1g	8.54
				10g	5.59
D835V2	4d174	2-24-2020	835	1g	9.59
				10g	6.24
D1750V2	1125	2-21-2020	1750	1g	36.50
				10g	19.20
D1900V2	5d199	3-19-2020	1900	1g	40.50
				10g	21.00
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	2-27-2020	5250	1g	79.90
				10g	22.60
			5600	1g	83.60
				10g	23.60
			5750	1g	80.20
				10g	22.60

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D2450V2 (SN : 939))

System Check Results

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

SAR 1 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
7-30-2020	D5GHzV2 (5250)	1209	Head	1g	7.89	78.9	79.90	-1.25	
				10g	2.25	22.5	22.60	-0.44	
7-30-2020	D5GHzV2 (5600)	1209	Head	1g	8.41	84.1	83.60	0.60	
				10g	2.37	23.7	23.60	0.42	
7-30-2020	D5GHzV2 (5750)	1209	Head	1g	8.10	81.0	80.20	1.00	
				10g	2.30	23.0	22.60	1.77	
8-2-2020	D5GHzV2 (5250)	1209	Head	1g	8.32	83.2	79.90	4.13	
				10g	2.36	23.6	22.60	4.42	
8-2-2020	D5GHzV2 (5600)	1209	Head	1g	8.78	87.8	83.60	5.02	
				10g	2.48	24.8	23.60	5.08	
8-2-2020	D5GHzV2 (5750)	1209	Head	1g	8.58	85.8	80.20	6.98	1, 2
				10g	2.43	24.3	22.60	7.52	
8-4-2020	D5GHzV2 (5750)	1209	Head	1g	7.57	75.7	80.20	-5.61	
				10g	2.15	21.5	22.60	-4.87	

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			
7-30-2020	D2450V2	939	Head	1g	5.03	50.3	53.20	-5.45	3, 4
				10g	2.33	23.3	25.10	-7.17	
8-2-2020	D1750V2	1125	Head	1g	3.56	35.6	36.50	-2.47	5, 6
				10g	1.89	18.9	19.20	-1.56	
8-2-2020	D1900V2	5d199	Head	1g	4.18	41.8	40.50	3.21	7, 8
				10g	2.16	21.6	21.00	2.86	
8-2-2020	D2450V2	939	Head	1g	5.27	52.7	53.20	-0.94	
				10g	2.45	24.5	25.10	-2.39	
8-5-2020	D1900V2	5d199	Head	1g	4.10	41.0	40.50	1.23	
				10g	2.13	21.3	21.00	1.43	
8-5-2020	D2450V2	939	Head	1g	5.23	52.3	53.20	-1.69	9, 10
				10g	2.44	24.4	25.10	-2.79	
8-5-2020	D2600V2	1097	Head	1g	5.79	57.9	57.30	1.05	11, 12
				10g	2.61	26.1	25.70	1.56	

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			
7-27-2020	D835V2	4d174	Head	1g	0.89	8.9	9.59	-7.09	13, 14
				10g	0.59	5.9	6.24	-6.25	
8-4-2020	D1900V2	5d199	Head	1g	4.07	40.7	40.50	0.49	
				10g	2.10	21.0	21.00	0.00	

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			
8-3-2020	D750V3	1122	Head	1g	0.82	8.2	8.54	-3.63	15,16
				10g	0.54	5.4	5.59	-3.04	
8-3-2020	D835V2	4d174	Body	1g	0.90	9.0	9.59	-6.47	
				10g	0.59	5.9	6.24	-5.77	

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)			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	128	824.2	32.7	23.6	34.0	25.0
			190	836.6	33.2	24.1		
			251	848.8	32.8	23.7		
GPRS (GMSK)	CS1	1	128	824.2	32.6	23.5	34.0	25.0
			190	836.6	33.1	24.1		
			251	848.8	32.5	23.5		
		2	128	824.2	30.6	24.5	32.0	26.0
			190	836.6	30.8	24.7		
			251	848.8	30.4	24.4		
		3	128	824.2	29.1	24.9	30.5	**26.2**
			190	836.6	29.3	25.0		
			251	848.8	28.9	24.7		
		4	128	824.2	27.6	24.6	29.0	26.0
			190	836.6	28.0	24.9		
			251	848.8	27.7	24.7		
EGPRS (8PSK)	MCS5	1	128	824.2	27.3	18.3	28.0	19.0
			190	836.6	27.4	18.4		
			251	848.8	27.1	18.0		
		2	128	824.2	25.0	18.9	26.0	20.0
			190	836.6	25.5	19.5		
			251	848.8	25.2	19.1		
		3	128	824.2	23.4	19.2	24.0	19.7
			190	836.6	23.6	19.3		
			251	848.8	23.2	19.0		
		4	128	824.2	22.4	19.4	23.0	20.0
			190	836.6	22.5	19.5		
			251	848.8	22.2	19.1		

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, 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)			
					Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	30.0	21.0	31.0	22.0
			661	1880.0	29.9	20.9		
			810	1909.8	30.2	21.2		
GPRS (GMSK)	CS1	1	512	1850.2	30.1	21.0	31.0	22.0
			661	1880.0	29.9	20.8		
			810	1909.8	30.2	21.1		
		2	512	1850.2	28.1	22.0	29.0	23.0
			661	1880.0	28.0	21.9		
			810	1909.8	28.0	21.9		
		3	512	1850.2	26.3	22.1	27.5	**23.2**
			661	1880.0	26.7	22.4		
			810	1909.8	26.7	22.4		
		4	512	1850.2	25.0	22.0	26.0	23.0
			661	1880.0	25.4	22.4		
			810	1909.8	25.4	22.4		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.2	16.2	27.0	18.0
			661	1880.0	25.6	16.6		
			810	1909.8	25.4	16.4		
		2	512	1850.2	24.3	18.3	25.0	19.0
			661	1880.0	24.7	18.7		
			810	1909.8	24.4	18.4		
		3	512	1850.2	22.2	17.9	23.0	18.7
			661	1880.0	22.5	18.2		
			810	1909.8	22.3	18.1		
		4	512	1850.2	21.4	18.4	22.0	19.0
			661	1880.0	21.6	18.6		
			810	1909.8	21.5	18.5		

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 & 3 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 (Continued)

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Reduced Average Power (dBm) Hotspot back-off				Reduced Average Power (dBm) Proximity sensor 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	26.9	17.8	28.0	19.0	26.8	17.8	28.0	19.0
			661	1880.0	27.6	18.5			27.6	18.6		
			810	1909.8	27.4	18.4			27.5	18.4		
GPRS (GMSK)	CS1	1	512	1850.2	26.8	17.7	28.0	19.0	26.8	17.7	28.0	19.0
			661	1880.0	27.4	18.4			27.4	18.4		
			810	1909.8	27.3	18.3			27.3	18.3		
		2	512	1850.2	25.1	19.0	26.0	20.0	25.1	19.0	26.0	20.0
			661	1880.0	25.4	19.4			25.5	19.4		
			810	1909.8	25.4	19.4			25.4	19.4		
		3	512	1850.2	23.3	19.0	24.5	**20.2**	23.3	19.0	24.5	**20.2**
			661	1880.0	23.7	19.4			23.7	19.4		
			810	1909.8	23.7	19.4			23.7	19.4		
		4	512	1850.2	22.0	19.0	23.0	20.0	22.0	19.0	23.0	20.0
			661	1880.0	22.4	19.4			22.4	19.4		
			810	1909.8	22.5	19.5			22.5	19.5		
EGPRS (8PSK)	MCS5	1	512	1850.2								
			661	1880.0								
			810	1909.8								
		2	512	1850.2								
			661	1880.0								
			810	1909.8								
		3	512	1850.2								
			661	1880.0								
			810	1909.8								
		4	512	1850.2								
			661	1880.0								
			810	1909.8								

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 & 3 time slots for Reduced power, based on the Tune-up Procedure. Refer to §6.3.

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.		

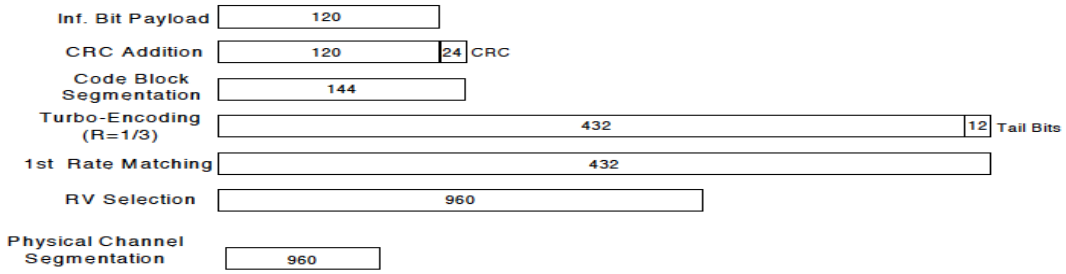


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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 supported 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	23.2	N/A	24.0	20.3	N/A	21.0	20.3	N/A	21.0
		9400	1880.0	23.4			20.4			20.4		
		9538	1907.6	23.5			20.5			20.5		
HSDPA	Subtest 1	9262	1852.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		9400	1880.0	22.4			19.4			19.4		
		9538	1907.6	22.5			19.5			19.5		
	Subtest 2	9262	1852.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		9400	1880.0	22.4			19.4			19.4		
		9538	1907.6	22.5			19.5			19.5		
	Subtest 3	9262	1852.4	21.8	0.5	23.0	18.8	0	20.0	18.8	0	20.0
		9400	1880.0	21.9			18.9			18.9		
		9538	1907.6	22.0			19.0			19.0		
	Subtest 4	9262	1852.4	21.8	1.0	23.0	18.8	0	20.0	18.8	0	20.0
		9400	1880.0	21.9			18.9			18.9		
		9538	1907.6	21.9			19.0			19.0		
HSUPA	Subtest 1	9262	1852.4	22.2	1	23.0	19.3	0	20.0	19.3	0	20.0
		9400	1880.0	22.4			19.4			19.4		
		9538	1907.6	22.5			19.5			19.5		
	Subtest 2	9262	1852.4	20.3	3	21.0	17.3	0	18.0	17.3	0	18.0
		9400	1880.0	20.4			17.4			17.4		
		9538	1907.6	20.5			17.5			17.5		
	Subtest 3	9262	1852.4	21.3	1	22.0	18.3	0	19.0	18.3	0	19.0
		9400	1880.0	21.4			18.4			18.4		
		9538	1907.6	21.5			18.5			18.5		
	Subtest 4	9262	1852.4	20.3	3	21.0	17.3	0	18.0	17.3	0	18.0
		9400	1880.0	20.4			17.4			17.4		
		9538	1907.6	20.5			17.5			17.5		
	Subtest 5	9262	1852.4	21.8	0	23.0	18.9	0	20.0	18.9	0	20.0
		9400	1880.0	22.0			19.0			19.0		
		9538	1907.6	22.0			19.1			19.1		
DC-HSDPA	Subtest 1	9262	1852.4	22.2	0	23.5	19.3	0	20.5	19.3	0	20.5
		9400	1880.0	22.4			19.4			19.4		
		9538	1907.6	22.5			19.5			19.5		
	Subtest 2	9262	1852.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		9400	1880.0	22.4			19.4			19.4		
		9538	1907.6	22.5			19.5			19.5		
	Subtest 3	9262	1852.4	21.8	1.5	23.0	18.8	0	20.0	18.8	0	20.0
		9400	1880.0	21.9			18.9			18.9		
		9538	1907.6	22.0			19.0			19.0		
	Subtest 4	9262	1852.4	21.8	1.0	23.0	18.8	0	20.0	18.8	0	20.0
		9400	1880.0	21.9			18.9			18.9		
		9538	1907.6	22.0			19.0			19.0		

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	23.3	N/A	24.0	20.3	N/A	21.0	20.3	N/A	21.0
		1413	1732.6	23.3			20.3			20.3		
		1513	1752.6	23.4			20.4			20.4		
HSDPA	Subtest 1	1312	1712.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		1413	1732.6	22.3			19.3			19.3		
		1513	1752.6	22.3			19.4			19.4		
	Subtest 2	1312	1712.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		1413	1732.6	22.3			19.3			19.3		
		1513	1752.6	22.3			19.4			19.4		
	Subtest 3	1312	1712.4	21.8	0.5	23.0	18.8	0	20.0	18.8	0	20.0
		1413	1732.6	21.8			18.8			18.8		
		1513	1752.6	21.8			18.9			18.9		
	Subtest 4	1312	1712.4	21.8	0.5	23.0	18.8	0	20.0	18.8	0	20.0
		1413	1732.6	21.8			18.8			18.8		
		1513	1752.6	21.8			18.9			18.9		
HSUPA	Subtest 1	1312	1712.4	22.3	0	23.0	19.3	0	20.0	19.3	0	20.0
		1413	1732.6	22.3			19.3			19.3		
		1513	1752.6	22.3			19.4			19.4		
	Subtest 2	1312	1712.4	20.3	2.5	21.0	17.3	1	18.0	17.3	1	18.0
		1413	1732.6	20.3			17.3			17.3		
		1513	1752.6	20.3			17.4			17.4		
	Subtest 3	1312	1712.4	21.3	1	22.0	18.3	0	19.0	18.3	0	19.0
		1413	1732.6	21.3			18.3			18.3		
		1513	1752.6	21.4			18.4			18.4		
	Subtest 4	1312	1712.4	20.3	2.5	21.0	17.3	1	18.0	17.3	1	18.0
		1413	1732.6	20.3			17.3			17.3		
		1513	1752.6	20.4			17.4			17.5		
	Subtest 5	1312	1712.4	21.9	0	23.0	18.8	0	20.0	18.9	0	20.0
		1413	1732.6	21.9			18.9			18.9		
		1513	1752.6	21.9			19.0			19.0		
DC-HSDPA	Subtest 1	1312	1712.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		1413	1732.6	22.3			19.3			19.3		
		1513	1752.6	22.4			19.4			19.4		
	Subtest 2	1312	1712.4	22.3	0	23.5	19.3	0	20.5	19.3	0	20.5
		1413	1732.6	22.3			19.3			19.3		
		1513	1752.6	22.3			19.4			19.4		
	Subtest 3	1312	1712.4	21.8	0.5	23.0	18.8	0	20.0	18.8	0	20.0
		1413	1732.6	21.8			18.8			18.8		
		1513	1752.6	21.9			18.9			18.9		
	Subtest 4	1312	1712.4	21.8	0.5	23.0	18.8	0	20.0	18.8	0	20.0
		1413	1732.6	21.8			18.8			18.8		
		1513	1752.6	21.8			18.9			19.0		

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	25.8
		4183	836.6	24.6		
		4233	846.6	24.5		
HSDPA	Subtest 1	4132	826.4	23.5	0	25.3
		4183	836.6	23.6		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	23.5	0	25.3
		4183	836.6	23.6		
		4233	846.6	23.5		
	Subtest 3	4132	826.4	23.0	0.5	24.8
		4183	836.6	23.1		
		4233	846.6	23.0		
	Subtest 4	4132	826.4	23.0	0.5	24.8
		4183	836.6	23.1		
		4233	846.6	23.0		
HSUPA	Subtest 1	4132	826.4	23.5	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	21.5	2	22.8
		4183	836.6	21.6		
		4233	846.6	21.5		
	Subtest 3	4132	826.4	22.5	1	23.8
		4183	836.6	22.6		
		4233	846.6	22.5		
	Subtest 4	4132	826.4	21.5	2	22.8
		4183	836.6	21.6		
		4233	846.6	21.5		
	Subtest 5	4132	826.4	23.1	0	24.8
		4183	836.6	23.2		
		4233	846.6	23.0		
DC-HSDPA	Subtest 1	4132	826.4	23.5	0	25.3
		4183	836.6	23.6		
		4233	846.6	23.5		
	Subtest 2	4132	826.4	23.5	0	25.3
		4183	836.6	23.6		
		4233	846.6	23.5		
	Subtest 3	4132	826.4	23.1	0.5	24.8
		4183	836.6	23.1		
		4233	846.6	23.0		
	Subtest 4	4132	826.4	23.0	0.5	24.8
		4183	836.6	23.1		
		4233	846.6	23.0		

9.3. 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 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)

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 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	22.8	22.9	22.9	0.0	24.0
		1	49	22.8	22.8	22.8	0.0	24.0
		1	99	22.8	22.8	22.7	0.0	24.0
		50	0	21.7	21.8	21.8	1.0	23.0
		50	24	21.9	21.9	21.9	1.0	23.0
		50	50	21.8	21.9	21.8	1.0	23.0
		100	0	21.8	21.9	21.7	1.0	23.0
	16QAM	1	0	22.4	22.3	22.4	1.0	23.0
		1	49	22.2	22.3	22.4	1.0	23.0
		1	99	22.3	22.3	22.2	1.0	23.0
		50	0	20.7	20.8	20.8	2.0	22.0
		50	24	20.9	21.0	20.9	2.0	22.0
		50	50	20.9	20.9	20.9	2.0	22.0
		100	0	20.8	20.9	20.8	2.0	22.0
	64QAM	1	0	21.4	21.0	21.3	2.0	22.0
		1	49	21.4	21.1	21.3	2.0	22.0
		1	99	21.5	21.2	21.3	2.0	22.0
		50	0	19.7	19.8	20.0	3.0	21.0
		50	24	19.9	20.0	20.2	3.0	21.0
		50	50	19.9	20.0	20.2	3.0	21.0
		100	0	19.8	20.0	20.0	3.0	21.0
	256QAM	1	0	17.1	17.5	17.6	5.0	19.0
		1	49	17.5	17.8	17.9	5.0	19.0
		1	99	17.4	17.7	17.6	5.0	19.0
		50	0	17.5	17.6	17.6	5.0	19.0
		50	24	17.7	17.7	17.8	5.0	19.0
		50	50	17.6	17.7	17.7	5.0	19.0
		100	0	17.6	17.6	17.6	5.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	22.6	22.9	22.8	0.0	24.0
		1	37	22.7	22.8	22.8	0.0	24.0
		1	74	22.7	22.8	22.7	0.0	24.0
		36	0	21.7	21.8	21.8	1.0	23.0
		36	20	21.8	21.8	21.8	1.0	23.0
		36	39	21.8	21.9	21.9	1.0	23.0
		75	0	21.8	21.9	21.8	1.0	23.0
	16QAM	1	0	22.0	22.3	21.8	1.0	23.0
		1	37	22.2	22.2	21.8	1.0	23.0
		1	74	22.1	22.3	21.7	1.0	23.0
		36	0	20.7	20.8	20.8	2.0	22.0
		36	20	20.9	20.8	20.8	2.0	22.0
		36	39	20.9	20.9	20.9	2.0	22.0
		75	0	20.8	20.9	20.8	2.0	22.0
	64QAM	1	0	20.7	21.4	21.3	2.0	22.0
		1	37	20.9	21.5	21.4	2.0	22.0
		1	74	20.9	21.6	21.3	2.0	22.0
		36	0	19.8	19.8	20.0	3.0	21.0
		36	20	19.9	19.9	20.1	3.0	21.0
		36	39	20.0	20.0	20.2	3.0	21.0
		75	0	19.9	20.0	20.0	3.0	21.0
	256QAM	1	0	17.6	17.8	17.3	5.0	19.0
		1	37	17.8	18.0	17.5	5.0	19.0
		1	74	17.7	18.0	17.3	5.0	19.0
		36	0	17.4	17.6	17.6	5.0	19.0
		36	20	17.6	17.6	17.7	5.0	19.0
		36	39	17.6	17.7	17.7	5.0	19.0
		75	0	17.6	17.7	17.6	5.0	19.0

LTE Band 2 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	22.5	22.5	22.8	0.0	24.0
		1	25	22.8	22.8	22.8	0.0	24.0
		1	49	22.6	22.5	22.7	0.0	24.0
		25	0	21.8	21.8	21.7	1.0	23.0
		25	12	21.9	21.9	21.8	1.0	23.0
		25	25	21.8	21.8	21.8	1.0	23.0
		50	0	21.8	21.8	21.8	1.0	23.0
	16QAM	1	0	21.9	21.6	21.9	1.0	23.0
		1	25	22.3	21.9	21.8	1.0	23.0
		1	49	22.0	21.6	21.7	1.0	23.0
		25	0	20.8	20.9	20.8	2.0	22.0
		25	12	20.9	20.9	20.9	2.0	22.0
		25	25	20.8	20.9	20.8	2.0	22.0
		50	0	20.8	20.9	20.8	2.0	22.0
	64QAM	1	0	20.7	20.8	21.4	2.0	22.0
		1	25	21.1	21.3	21.4	2.0	22.0
		1	49	20.8	21.0	21.4	2.0	22.0
		25	0	19.9	20.0	20.1	3.0	21.0
		25	12	20.0	20.1	20.2	3.0	21.0
		25	25	19.9	20.1	20.1	3.0	21.0
		50	0	19.9	20.0	20.0	3.0	21.0
	256QAM	1	0	17.4	17.8	17.2	5.0	19.0
		1	25	17.7	18.2	17.6	5.0	19.0
		1	49	17.4	17.9	17.2	5.0	19.0
		25	0	17.6	17.6	17.7	5.0	19.0
		25	12	17.7	17.7	17.7	5.0	19.0
		25	25	17.7	17.8	17.7	5.0	19.0
		50	0	17.6	17.7	17.6	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	22.8	22.9	22.7	0.0	24.0
		1	12	22.8	23.0	22.7	0.0	24.0
		1	24	22.7	22.9	22.6	0.0	24.0
		12	0	21.9	21.9	21.9	1.0	23.0
		12	7	21.9	21.9	21.9	1.0	23.0
		12	13	21.8	21.9	21.9	1.0	23.0
		25	0	21.8	21.9	21.9	1.0	23.0
	16QAM	1	0	22.0	22.0	22.4	1.0	23.0
		1	12	22.0	22.1	22.4	1.0	23.0
		1	24	21.9	22.0	22.3	1.0	23.0
		12	0	20.9	21.0	21.1	2.0	22.0
		12	7	21.0	21.0	21.1	2.0	22.0
		12	13	20.9	21.0	21.0	2.0	22.0
		25	0	20.8	20.9	20.9	2.0	22.0
	64QAM	1	0	21.2	21.2	21.1	2.0	22.0
		1	12	21.3	21.3	21.1	2.0	22.0
		1	24	21.2	21.3	20.9	2.0	22.0
		12	0	19.9	20.1	20.3	3.0	21.0
		12	7	20.0	20.1	20.3	3.0	21.0
		12	13	19.9	20.1	20.2	3.0	21.0
		25	0	19.9	20.1	20.2	3.0	21.0
	256QAM	1	0	17.6	17.4	17.8	5.0	19.0
		1	12	17.7	17.4	17.8	5.0	19.0
		1	24	17.6	17.4	17.7	5.0	19.0
		12	0	17.7	17.7	17.8	5.0	19.0
		12	7	17.7	17.8	17.8	5.0	19.0
		12	13	17.6	17.7	17.7	5.0	19.0
		25	0	17.7	17.8	17.7	5.0	19.0

LTE Band 2 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	22.8	22.8	22.8	0.0	24.0
		1	8	22.7	22.8	22.8	0.0	24.0
		1	14	22.7	22.8	22.7	0.0	24.0
		8	0	21.9	21.9	21.9	1.0	23.0
		8	4	21.9	21.9	21.8	1.0	23.0
		8	7	21.9	21.9	21.9	1.0	23.0
		15	0	21.8	21.9	21.9	1.0	23.0
	16QAM	1	0	21.9	21.8	22.2	1.0	23.0
		1	8	21.8	21.8	22.2	1.0	23.0
		1	14	21.8	21.7	22.1	1.0	23.0
		8	0	20.9	21.0	20.9	2.0	22.0
		8	4	21.0	21.0	20.9	2.0	22.0
		8	7	20.9	21.1	21.0	2.0	22.0
		15	0	20.8	21.0	20.9	2.0	22.0
	64QAM	1	0	21.2	21.3	21.2	2.0	22.0
		1	8	21.1	21.3	21.2	2.0	22.0
		1	14	21.1	21.3	21.2	2.0	22.0
		8	0	20.0	20.2	20.3	3.0	21.0
		8	4	19.9	20.2	20.2	3.0	21.0
		8	7	19.9	20.2	20.3	3.0	21.0
		15	0	20.0	20.1	20.2	3.0	21.0
	256QAM	1	0	17.6	18.1	17.6	5.0	19.0
		1	8	17.6	18.0	17.4	5.0	19.0
		1	14	17.5	18.1	17.4	5.0	19.0
		8	0	17.7	17.8	17.6	5.0	19.0
		8	4	17.7	17.8	17.7	5.0	19.0
		8	7	17.7	17.9	17.7	5.0	19.0
		15	0	17.6	17.8	17.8	5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	22.8	22.8	22.7	0.0	24.0
		1	3	22.8	22.8	22.7	0.0	24.0
		1	5	22.7	22.8	22.6	0.0	24.0
		3	0	22.7	22.8	22.7	0.0	24.0
		3	1	22.8	22.8	22.7	0.0	24.0
		3	3	22.8	22.8	22.7	0.0	24.0
		6	0	21.8	21.8	21.8	1.0	23.0
	16QAM	1	0	21.9	21.9	22.1	1.0	23.0
		1	3	21.9	22.0	22.1	1.0	23.0
		1	5	21.8	21.9	22.1	1.0	23.0
		3	0	22.0	21.9	21.9	1.0	23.0
		3	1	22.0	21.9	21.9	1.0	23.0
		3	3	22.0	21.9	21.9	1.0	23.0
		6	0	21.0	21.0	20.7	2.0	22.0
	64QAM	1	0	21.3	21.2	21.3	2.0	22.0
		1	3	21.4	21.2	21.3	2.0	22.0
		1	5	21.2	21.1	21.3	2.0	22.0
		3	0	21.2	21.1	21.1	2.0	22.0
		3	1	21.3	21.2	21.1	2.0	22.0
		3	3	21.2	21.2	21.1	2.0	22.0
		6	0	19.8	20.4	20.2	3.0	21.0
	256QAM	1	0	17.6	17.5	17.6	5.0	19.0
		1	3	17.6	17.5	17.7	5.0	19.0
		1	5	17.5	17.5	17.5	5.0	19.0
		3	0	17.6	17.5	17.7	5.0	19.0
		3	1	17.6	17.6	17.7	5.0	19.0
		3	3	17.6	17.6	17.7	5.0	19.0
		6	0	17.8	17.7	17.6	5.0	19.0

LTE Band 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				20450	20525	20600		
				829 MHz	836.5 MHz	844 MHz		
10 MHz	QPSK	1	0		24.5		0.0	25.8
		1	25		24.6		0.0	25.8
		1	49		24.6		0.0	25.8
		25	0		23.6		1.0	24.8
		25	12		23.6		1.0	24.8
		25	25		23.6		1.0	24.8
		50	0		23.5		1.0	24.8
	16QAM	1	0		24.0		1.0	24.8
		1	25		24.0		1.0	24.8
		1	49		24.0		1.0	24.8
		25	0		22.6		2.0	23.8
		25	12		22.6		2.0	23.8
		25	25		22.7		2.0	23.8
		50	0		22.5		2.0	23.8
	64QAM	1	0		22.8		2.0	23.8
		1	25		22.9		2.0	23.8
		1	49		22.8		2.0	23.8
		25	0		21.7		3.0	22.8
		25	12		21.7		3.0	22.8
		25	25		21.7		3.0	22.8
		50	0		21.5		3.0	22.8
	256QAM	1	0		19.6		5.0	20.8
		1	25		20.0		5.0	20.8
		1	49		19.7		5.0	20.8
		25	0		19.5		5.0	20.8
		25	12		19.6		5.0	20.8
		25	25		19.6		5.0	20.8
		50	0		19.4		5.0	20.8

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	24.6	24.5	24.5	0.0	25.8
		1	12	24.5	24.6	24.5	0.0	25.8
		1	24	24.5	24.6	24.5	0.0	25.8
		12	0	23.6	23.5	23.5	1.0	24.8
		12	7	23.6	23.6	23.6	1.0	24.8
		12	13	23.6	23.7	23.6	1.0	24.8
		25	0	23.6	23.6	23.6	1.0	24.8
	16QAM	1	0	23.7	23.7	24.0	1.0	24.8
		1	12	23.7	23.7	24.0	1.0	24.8
		1	24	23.6	23.8	24.0	1.0	24.8
		12	0	22.7	22.6	22.7	2.0	23.8
		12	7	22.7	22.7	22.7	2.0	23.8
		12	13	22.7	22.7	22.7	2.0	23.8
		25	0	22.5	22.6	22.6	2.0	23.8
	64QAM	1	0	22.6	22.5	22.9	2.0	23.8
		1	12	23.0	22.6	22.8	2.0	23.8
		1	24	22.9	22.5	22.8	2.0	23.8
		12	0	21.7	21.6	21.6	3.0	22.8
		12	7	21.8	21.7	21.6	3.0	22.8
		12	13	21.7	21.7	21.5	3.0	22.8
		25	0	21.7	21.6	21.5	3.0	22.8
	256QAM	1	0	19.6	19.1	19.6	5.0	20.8
		1	12	19.5	19.3	19.6	5.0	20.8
		1	24	19.5	19.2	19.5	5.0	20.8
		12	0	19.5	19.4	19.5	5.0	20.8
		12	7	19.6	19.5	19.5	5.0	20.8
		12	13	19.5	19.5	19.4	5.0	20.8
		25	0	19.5	19.5	19.4	5.0	20.8

LTE Band 5 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.5	24.5	24.5	0.0	25.8
		1	8	24.4	24.5	24.4	0.0	25.8
		1	14	24.5	24.6	24.4	0.0	25.8
		8	0	23.6	23.6	23.5	1.0	24.8
		8	4	23.6	23.6	23.6	1.0	24.8
		8	7	23.6	23.7	23.6	1.0	24.8
		15	0	23.6	23.6	23.5	1.0	24.8
	16QAM	1	0	23.5	24.0	23.6	1.0	24.8
		1	8	23.4	24.0	23.5	1.0	24.8
		1	14	23.4	24.0	23.5	1.0	24.8
		8	0	22.7	22.6	22.6	2.0	23.8
		8	4	22.7	22.7	22.6	2.0	23.8
		8	7	22.7	22.7	22.6	2.0	23.8
		15	0	22.6	22.6	22.5	2.0	23.8
	64QAM	1	0	22.9	22.9	22.7	2.0	23.8
		1	8	22.8	22.9	22.7	2.0	23.8
		1	14	22.8	22.9	22.7	2.0	23.8
		8	0	21.6	21.6	21.6	3.0	22.8
		8	4	21.6	21.7	21.6	3.0	22.8
		8	7	21.6	21.7	21.6	3.0	22.8
		15	0	21.6	21.6	21.6	3.0	22.8
	256QAM	1	0	19.5	19.8	19.2	5.0	20.8
		1	8	19.5	19.9	19.1	5.0	20.8
		1	14	19.5	19.9	19.2	5.0	20.8
		8	0	19.7	19.5	19.3	5.0	20.8
		8	4	19.7	19.6	19.4	5.0	20.8
		8	7	19.7	19.6	19.4	5.0	20.8
		15	0	19.6	19.5	19.5	5.0	20.8

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	24.5	24.5	24.3	0.0	25.8
		1	3	24.6	24.6	24.4	0.0	25.8
		1	5	24.5	24.5	24.3	0.0	25.8
		3	0	24.4	24.5	24.3	0.0	25.8
		3	1	24.5	24.5	24.4	0.0	25.8
		3	3	24.5	24.5	24.4	0.0	25.8
		6	0	23.5	23.5	23.4	1.0	24.8
	16QAM	1	0	23.6	23.9	23.4	1.0	24.8
		1	3	23.7	24.0	23.5	1.0	24.8
		1	5	23.7	24.0	23.4	1.0	24.8
		3	0	23.5	23.7	23.6	1.0	24.8
		3	1	23.6	23.7	23.7	1.0	24.8
		3	3	23.6	23.8	23.7	1.0	24.8
		6	0	22.7	22.4	22.6	2.0	23.8
	64QAM	1	0	22.8	22.9	22.6	2.0	23.8
		1	3	22.9	23.0	22.7	2.0	23.8
		1	5	22.8	22.9	22.6	2.0	23.8
		3	0	22.6	22.9	22.6	2.0	23.8
		3	1	22.6	22.9	22.6	2.0	23.8
		3	3	22.6	22.9	22.6	2.0	23.8
		6	0	21.7	21.5	21.8	3.0	22.8
	256QAM	1	0	19.5	19.2	19.3	5.0	20.8
		1	3	19.7	19.3	19.4	5.0	20.8
		1	5	19.6	19.3	19.3	5.0	20.8
		3	0	19.4	19.3	19.4	5.0	20.8
		3	1	19.5	19.3	19.5	5.0	20.8
		3	3	19.5	19.4	19.4	5.0	20.8
		6	0	19.4	19.5	19.4	5.0	20.8

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0		22.8		0.0	24.0
		1	25		22.8		0.0	24.0
		1	49		22.8		0.0	24.0
		25	0		21.8		1.0	23.0
		25	12		21.9		1.0	23.0
		25	25		21.8		1.0	23.0
		50	0		21.8		1.0	23.0
	16QAM	1	0		22.2		1.0	23.0
		1	25		22.2		1.0	23.0
		1	49		22.2		1.0	23.0
		25	0		20.9		2.0	22.0
		25	12		20.9		2.0	22.0
		25	25		20.9		2.0	22.0
		50	0		20.8		2.0	22.0
	64QAM	1	0		21.2		2.0	22.0
		1	25		21.3		2.0	22.0
		1	49		21.3		2.0	22.0
		25	0		19.9		3.0	21.0
		25	12		20.1		3.0	21.0
		25	25		20.1		3.0	21.0
		50	0		19.9		3.0	21.0
	256QAM	1	0		17.9		5.0	19.0
		1	25		18.3		5.0	19.0
		1	49		18.1		5.0	19.0
		25	0		17.7		5.0	19.0
		25	12		17.8		5.0	19.0
		25	25		17.9		5.0	19.0
		50	0		17.8		5.0	19.0
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	22.8	22.8	23.0	0.0	24.0
		1	12	22.7	22.8	22.9	0.0	24.0
		1	24	22.7	22.9	22.9	0.0	24.0
		12	0	21.8	21.9	21.9	1.0	23.0
		12	7	21.8	21.9	22.0	1.0	23.0
		12	13	21.8	21.9	21.9	1.0	23.0
		25	0	21.8	21.9	21.9	1.0	23.0
	16QAM	1	0	22.4	21.9	22.2	1.0	23.0
		1	12	22.3	22.0	22.1	1.0	23.0
		1	24	22.3	22.0	22.1	1.0	23.0
		12	0	21.0	20.9	21.0	2.0	22.0
		12	7	21.0	21.0	21.0	2.0	22.0
		12	13	21.0	21.0	21.0	2.0	22.0
		25	0	20.9	20.8	21.0	2.0	22.0
	64QAM	1	0	21.2	20.8	21.4	2.0	22.0
		1	12	21.2	20.9	21.3	2.0	22.0
		1	24	21.1	20.9	21.3	2.0	22.0
		12	0	20.0	20.0	20.0	3.0	21.0
		12	7	20.0	20.1	20.0	3.0	21.0
		12	13	20.0	20.1	20.0	3.0	21.0
		25	0	19.9	19.9	20.0	3.0	21.0
	256QAM	1	0	17.9	17.5	18.1	5.0	19.0
		1	12	17.9	17.6	18.0	5.0	19.0
		1	24	17.8	17.6	18.0	5.0	19.0
		12	0	17.9	17.8	17.9	5.0	19.0
		12	7	17.9	17.9	17.9	5.0	19.0
		12	13	17.8	17.9	17.9	5.0	19.0
		25	0	17.9	17.9	17.9	5.0	19.0

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	22.8	22.7	22.9	0.0	24.0
		1	8	22.8	22.7	22.8	0.0	24.0
		1	14	22.7	22.8	22.8	0.0	24.0
		8	0	21.8	21.8	21.9	1.0	23.0
		8	4	21.8	21.8	21.9	1.0	23.0
		8	7	21.9	21.9	21.9	1.0	23.0
		15	0	21.8	21.8	21.9	1.0	23.0
	16QAM	1	0	22.2	21.9	21.9	1.0	23.0
		1	8	22.2	21.9	21.8	1.0	23.0
		1	14	22.2	21.9	21.8	1.0	23.0
		8	0	21.0	20.8	21.0	2.0	22.0
		8	4	21.0	20.9	21.0	2.0	22.0
		8	7	21.0	21.0	21.0	2.0	22.0
		15	0	20.9	20.8	21.0	2.0	22.0
	64QAM	1	0	21.2	21.2	21.2	2.0	22.0
		1	8	21.0	21.3	21.1	2.0	22.0
		1	14	21.1	21.3	21.1	2.0	22.0
		8	0	19.9	20.0	20.1	3.0	21.0
		8	4	19.9	20.0	20.1	3.0	21.0
		8	7	19.9	20.1	20.1	3.0	21.0
		15	0	20.0	20.0	20.0	3.0	21.0
	256QAM	1	0	17.9	18.2	17.8	5.0	19.0
		1	8	17.8	18.2	17.5	5.0	19.0
		1	14	17.8	18.3	17.6	5.0	19.0
		8	0	18.0	17.9	17.8	5.0	19.0
		8	4	18.0	17.9	17.9	5.0	19.0
		8	7	18.0	18.0	17.9	5.0	19.0
		15	0	17.9	17.9	18.0	5.0	19.0

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	22.7	22.7	22.8	0.0	24.0
		1	3	22.7	22.8	22.8	0.0	24.0
		1	5	22.7	22.8	22.8	0.0	24.0
		3	0	22.7	22.6	22.7	0.0	24.0
		3	1	22.7	22.7	22.8	0.0	24.0
		3	3	22.8	22.7	22.8	0.0	24.0
		6	0	21.8	21.8	21.8	1.0	23.0
	16QAM	1	0	21.8	21.8	22.2	1.0	23.0
		1	3	21.9	22.0	22.3	1.0	23.0
		1	5	21.9	21.9	22.2	1.0	23.0
		3	0	22.0	21.7	22.0	1.0	23.0
		3	1	22.0	21.8	22.0	1.0	23.0
		3	3	22.0	21.9	22.0	1.0	23.0
		6	0	21.0	20.9	20.7	2.0	22.0
	64QAM	1	0	21.2	20.9	21.1	2.0	22.0
		1	3	21.3	21.1	21.2	2.0	22.0
		1	5	21.2	21.0	21.2	2.0	22.0
		3	0	21.2	21.0	20.9	2.0	22.0
		3	1	21.2	21.0	20.9	2.0	22.0
		3	3	21.2	21.1	20.9	2.0	22.0
		6	0	19.9	20.2	20.0	3.0	21.0
	256QAM	1	0	17.8	17.5	17.8	5.0	19.0
		1	3	18.0	17.7	17.9	5.0	19.0
		1	5	17.8	17.6	17.7	5.0	19.0
		3	0	17.7	17.6	17.8	5.0	19.0
		3	1	17.8	17.7	17.9	5.0	19.0
		3	3	17.7	17.7	17.9	5.0	19.0
		6	0	17.6	17.8	17.8	5.0	19.0

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			
				Measured Pwr (dBm)		MPR	Tune-up Limit
				[redacted] 23230	[redacted]		
				782 MHz			
10 MHz	QPSK	1	0	22.7		0.0	24.0
		1	25	22.6		0.0	24.0
		1	49	22.5		0.0	24.0
		25	0	21.7		1.0	23.0
		25	12	21.6		1.0	23.0
		25	25	21.5		1.0	23.0
		50	0	21.6		1.0	23.0
	16QAM	1	0	22.1		1.0	23.0
		1	25	22.0		1.0	23.0
		1	49	22.0		1.0	23.0
		25	0	20.7		2.0	22.0
		25	12	20.7		2.0	22.0
		25	25	20.6		2.0	22.0
		50	0	20.6		2.0	22.0
	64QAM	1	0	20.9		2.0	22.0
		1	25	20.9		2.0	22.0
		1	49	20.8		2.0	22.0
		25	0	19.8		3.0	21.0
		25	12	19.8		3.0	21.0
		25	25	19.7		3.0	21.0
		50	0	19.7		3.0	21.0
	256QAM	1	0	17.8		5.0	19.0
		1	25	18.1		5.0	19.0
		1	49	17.7		5.0	19.0
		25	0	18.0		5.0	19.0
		25	12	18.1		5.0	19.0
		25	25	17.9		5.0	19.0
		50	0	18.0		5.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)		MPR	Tune-up Limit
				[redacted] 23230	[redacted]		
				782 MHz			
5 MHz	QPSK	1	0	22.6		0.0	24.0
		1	12	22.6		0.0	24.0
		1	24	22.5		0.0	24.0
		12	0	21.6		1.0	23.0
		12	7	21.7		1.0	23.0
		12	13	21.6		1.0	23.0
		25	0	21.7		1.0	23.0
	16QAM	1	0	22.2		1.0	23.0
		1	12	22.2		1.0	23.0
		1	24	22.1		1.0	23.0
		12	0	20.7		2.0	22.0
		12	7	20.8		2.0	22.0
		12	13	20.8		2.0	22.0
		25	0	20.7		2.0	22.0
	64QAM	1	0	21.1		2.0	22.0
		1	12	21.1		2.0	22.0
		1	24	21.0		2.0	22.0
		12	0	19.7		3.0	21.0
		12	7	19.7		3.0	21.0
		12	13	19.7		3.0	21.0
		25	0	19.7		3.0	21.0
	256QAM	1	0	18.1		5.0	19.0
		1	12	18.2		5.0	19.0
		1	24	18.1		5.0	19.0
		12	0	18.0		5.0	19.0
		12	7	18.1		5.0	19.0
		12	13	18.0		5.0	19.0
		25	0	18.0		5.0	19.0

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				26765	26865	26965		
				821.5 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0	[redacted]	22.6	[redacted]	0.0	23.5
		1	37		22.6		0.0	23.5
		1	74		22.6		0.0	23.5
		36	0		21.5		1.0	22.5
		36	20		21.6		1.0	22.5
		36	39		21.7		1.0	22.5
		75	0		21.6		1.0	22.5
	16QAM	1	0		21.6		1.0	22.5
		1	37		21.6		1.0	22.5
		1	74		21.7		1.0	22.5
		36	0		20.6		2.0	21.5
		36	20		20.6		2.0	21.5
		36	39		20.7		2.0	21.5
		75	0		20.6		2.0	21.5
	64QAM	1	0		20.9		2.0	21.5
		1	37		21.0		2.0	21.5
		1	74		21.0		2.0	21.5
		36	0		19.6		3.0	20.5
		36	20		19.7		3.0	20.5
		36	39		19.7		3.0	20.5
		75	0		19.6		3.0	20.5
	256QAM	1	0		18.0		4.0	19.5
		1	37		18.3		4.0	19.5
		1	74		18.1		4.0	19.5
		36	0		17.8		4.0	19.5
		36	20		17.9		4.0	19.5
		36	39		17.9		4.0	19.5
		75	0		17.8		4.0	19.5

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	22.7	22.7	22.8	0.0	23.5
		1	25	22.6	22.7	22.7	0.0	23.5
		1	49	22.6	22.7	22.7	0.0	23.5
		25	0	21.6	21.7	21.7	1.0	22.5
		25	12	21.7	21.7	21.7	1.0	22.5
		25	25	21.6	21.7	21.7	1.0	22.5
		50	0	21.7	21.6	21.6	1.0	22.5
	16QAM	1	0	21.8	21.7	22.2	1.0	22.5
		1	25	21.7	21.7	22.2	1.0	22.5
		1	49	21.8	21.7	22.1	1.0	22.5
		25	0	20.7	20.6	20.7	2.0	21.5
		25	12	20.8	20.8	20.8	2.0	21.5
		25	25	20.7	20.8	20.8	2.0	21.5
		50	0	20.7	20.6	20.7	2.0	21.5
	64QAM	1	0	20.8	20.9	21.1	2.0	21.5
		1	25	20.7	21.0	21.1	2.0	21.5
		1	49	20.8	21.0	21.1	2.0	21.5
		25	0	19.7	19.7	19.7	3.0	20.5
		25	12	19.8	19.8	19.8	3.0	20.5
		25	25	19.7	19.9	19.8	3.0	20.5
		50	0	19.7	19.7	19.7	3.0	20.5
	256QAM	1	0	17.7	18.0	17.5	4.0	19.5
		1	25	18.0	18.4	17.8	4.0	19.5
		1	49	17.8	18.2	17.5	4.0	19.5
		25	0	18.0	17.9	17.9	4.0	19.5
		25	12	18.0	18.1	18.0	4.0	19.5
		25	25	18.0	18.1	18.0	4.0	19.5
		50	0	17.9	17.9	17.9	4.0	19.5

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	22.7	22.8	22.8	0.0	23.5
		1	12	22.7	22.8	22.7	0.0	23.5
		1	24	22.7	22.9	22.7	0.0	23.5
		12	0	21.7	21.7	21.8	1.0	22.5
		12	7	21.8	21.8	21.8	1.0	22.5
		12	13	21.7	21.8	21.8	1.0	22.5
		25	0	21.7	21.7	21.8	1.0	22.5
	16QAM	1	0	21.8	21.9	22.4	1.0	22.5
		1	12	21.9	21.9	22.3	1.0	22.5
		1	24	21.8	22.0	22.3	1.0	22.5
		12	0	20.8	20.8	20.9	2.0	21.5
		12	7	20.8	20.8	21.0	2.0	21.5
		12	13	20.8	20.9	20.9	2.0	21.5
		25	0	20.7	20.8	20.8	2.0	21.5
	64QAM	1	0	21.0	21.0	20.8	2.0	21.5
		1	12	21.0	21.1	20.7	2.0	21.5
		1	24	20.9	21.1	20.7	2.0	21.5
		12	0	19.6	19.8	19.8	3.0	20.5
		12	7	19.7	19.9	19.9	3.0	20.5
		12	13	19.6	19.9	19.9	3.0	20.5
		25	0	19.6	19.7	19.8	3.0	20.5
	256QAM	1	0	17.9	17.6	18.1	4.0	19.5
		1	12	18.0	17.8	18.1	4.0	19.5
		1	24	17.9	17.7	18.1	4.0	19.5
		12	0	18.0	17.9	18.0	4.0	19.5
		12	7	18.0	18.0	18.0	4.0	19.5
		12	13	18.0	18.0	18.0	4.0	19.5
		25	0	18.0	18.0	18.0	4.0	19.5

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	22.7	22.7	22.7	0.0	23.5
		1	8	22.7	22.7	22.7	0.0	23.5
		1	14	22.6	22.7	22.7	0.0	23.5
		8	0	21.8	21.7	21.7	1.0	22.5
		8	4	21.8	21.7	21.8	1.0	22.5
		8	7	21.8	21.9	21.8	1.0	22.5
		15	0	21.8	21.7	21.7	1.0	22.5
	16QAM	1	0	21.8	21.6	22.2	1.0	22.5
		1	8	21.8	21.7	22.1	1.0	22.5
		1	14	21.8	21.7	22.1	1.0	22.5
		8	0	20.8	20.9	20.8	2.0	21.5
		8	4	20.8	20.9	20.9	2.0	21.5
		8	7	20.8	20.9	20.8	2.0	21.5
		15	0	20.7	20.8	20.8	2.0	21.5
	64QAM	1	0	20.9	21.1	20.9	2.0	21.5
		1	8	21.0	21.1	20.9	2.0	21.5
		1	14	20.9	21.1	20.9	2.0	21.5
		8	0	19.7	19.8	19.8	3.0	20.5
		8	4	19.7	19.8	19.9	3.0	20.5
		8	7	19.7	19.9	19.9	3.0	20.5
		15	0	19.8	19.8	19.8	3.0	20.5
	256QAM	1	0	17.9	18.3	17.8	4.0	19.5
		1	8	18.0	18.3	17.7	4.0	19.5
		1	14	17.9	18.3	17.7	4.0	19.5
		8	0	18.1	18.0	17.9	4.0	19.5
		8	4	18.1	18.0	18.0	4.0	19.5
		8	7	18.1	18.1	17.9	4.0	19.5
		15	0	18.0	18.0	18.0	4.0	19.5

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	22.6	22.6	22.5	0.0	23.5
		1	3	22.7	22.8	22.6	0.0	23.5
		1	5	22.6	22.7	22.5	0.0	23.5
		3	0	22.6	22.6	22.6	0.0	23.5
		3	1	22.6	22.6	22.6	0.0	23.5
		3	3	22.6	22.7	22.6	0.0	23.5
		6	0	21.7	21.7	21.7	1.0	22.5
	16QAM	1	0	21.7	22.0	21.7	1.0	22.5
		1	3	21.8	22.1	21.7	1.0	22.5
		1	5	21.7	22.1	21.7	1.0	22.5
		3	0	21.6	21.9	21.8	1.0	22.5
		3	1	21.7	21.9	21.9	1.0	22.5
		3	3	21.7	21.9	21.9	1.0	22.5
		6	0	20.8	20.6	20.8	2.0	21.5
	64QAM	1	0	21.1	20.8	20.9	2.0	21.5
		1	3	21.2	21.0	21.0	2.0	21.5
		1	5	21.1	20.9	20.9	2.0	21.5
		3	0	21.1	20.8	20.7	2.0	21.5
		3	1	21.1	20.9	20.7	2.0	21.5
		3	3	21.1	20.9	20.7	2.0	21.5
		6	0	19.8	20.0	19.8	3.0	20.5
	256QAM	1	0	18.0	17.8	17.7	4.0	19.5
		1	3	18.1	18.1	17.9	4.0	19.5
		1	5	18.0	18.0	17.8	4.0	19.5
		3	0	17.9	17.8	17.8	4.0	19.5
		3	1	17.9	17.9	17.8	4.0	19.5
		3	3	17.9	18.0	17.9	4.0	19.5
		6	0	17.8	17.8	18.0	4.0	19.5

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	22.1	22.0	22.5	0.0	24
		1	49	22.3	22.4	22.5	0.0	24
		1	99	22.1	22.3	22.5	0.0	24
		50	0	21.3	21.4	21.5	1.0	23
		50	24	21.5	21.5	21.6	1.0	23
		50	50	21.3	21.5	21.5	1.0	23
		100	0	21.4	21.3	21.5	1.0	23
	16QAM	1	0	21.8	21.7	22.0	1.0	23
		1	49	22.0	22.2	21.8	1.0	23
		1	99	21.6	21.8	21.9	1.0	23
		50	0	20.4	20.4	20.5	2.0	22
		50	24	20.5	20.5	20.5	2.0	22
		50	50	20.4	20.5	20.5	2.0	22
		100	0	20.4	20.4	20.5	2.0	22
	64QAM	1	0	20.4	20.7	20.8	2.0	22
		1	49	20.7	21.2	20.8	2.0	22
		1	99	20.5	20.9	20.8	2.0	22
		50	0	19.4	19.4	19.6	3.0	21
		50	24	19.6	19.5	19.7	3.0	21
		50	50	19.4	19.5	19.5	3.0	21
		100	0	19.5	19.4	19.5	3.0	21
	256QAM	1	0	17.5	17.6	17.6	2.0	19
		1	49	17.7	18.0	17.8	2.0	19
		1	99	17.5	17.7	17.6	2.0	19
		50	0	17.8	17.8	17.7	3.0	19
		50	24	17.9	17.8	17.7	3.0	19
		50	50	17.8	17.8	17.6	3.0	19
		100	0	17.9	17.7	17.6	3.0	19
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	22.3	22.3	22.6	0.0	24
		1	37	22.3	22.5	22.4	0.0	24
		1	74	22.2	22.4	22.5	0.0	24
		36	0	21.4	21.4	21.5	1.0	23
		36	20	21.4	21.4	21.5	1.0	23
		36	39	21.4	21.5	21.6	1.0	23
		75	0	21.4	21.4	21.5	1.0	23
	16QAM	1	0	21.7	21.6	21.6	1.0	23
		1	37	21.7	21.8	21.5	1.0	23
		1	74	21.6	21.8	21.6	1.0	23
		36	0	20.5	20.4	20.5	2.0	22
		36	20	20.5	20.4	20.5	2.0	22
		36	39	20.4	20.5	20.6	2.0	22
		75	0	20.5	20.4	20.5	2.0	22
	64QAM	1	0	20.4	20.8	20.9	2.0	22
		1	37	20.6	21.0	20.9	2.0	22
		1	74	20.3	21.0	20.9	2.0	22
		36	0	19.5	19.4	19.6	3.0	21
		36	20	19.5	19.5	19.6	3.0	21
		36	39	19.5	19.5	19.6	3.0	21
		75	0	19.5	19.5	19.5	3.0	21
	256QAM	1	0	17.9	18.1	17.4	2.0	19
		1	37	18.1	18.2	17.4	2.0	19
		1	74	17.9	18.1	17.3	2.0	19
		36	0	17.8	17.8	17.7	3.0	19
		36	20	17.9	17.8	17.6	3.0	19
		36	39	17.8	17.8	17.6	3.0	19
		75	0	17.9	17.8	17.6	3.0	19

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	22.1	22.1	22.3	0.0	24
		1	25	22.4	22.4	22.6	0.0	24
		1	49	22.1	22.3	22.5	0.0	24
		25	0	21.5	21.4	21.6	1.0	23
		25	12	21.5	21.5	21.6	1.0	23
		25	25	21.4	21.5	21.7	1.0	23
		50	0	21.4	21.4	21.6	1.0	23
	16QAM	1	0	21.3	21.2	21.8	1.0	23
		1	25	21.4	21.5	22.1	1.0	23
		1	49	21.2	21.3	21.9	1.0	23
		25	0	20.6	20.5	20.6	2.0	22
		25	12	20.6	20.6	20.7	2.0	22
		25	25	20.5	20.6	20.7	2.0	22
		50	0	20.5	20.4	20.6	2.0	22
	64QAM	1	0	20.3	20.5	20.7	2.0	22
		1	25	20.7	20.9	21.0	2.0	22
		1	49	20.4	20.7	20.8	2.0	22
		25	0	19.5	19.4	19.5	3.0	21
		25	12	19.6	19.6	19.7	3.0	21
		25	25	19.5	19.6	19.7	3.0	21
		50	0	19.4	19.4	19.5	3.0	21
	256QAM	1	0	17.7	17.9	17.2	5.0	19
		1	25	17.9	18.2	17.5	5.0	19
		1	49	17.7	18.1	17.3	5.0	19
		25	0	17.9	17.8	17.6	5.0	19
		25	12	18.0	17.8	17.7	5.0	19
		25	25	17.9	17.9	17.7	5.0	19
		50	0	17.9	17.8	17.6	5.0	19

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	22.5	22.4	22.7	0.0	24
		1	12	22.4	22.5	22.7	0.0	24
		1	24	22.3	22.5	22.6	0.0	24
		12	0	21.5	21.5	21.8	1.0	23
		12	7	21.5	21.5	21.8	1.0	23
		12	13	21.5	21.5	21.7	1.0	23
		25	0	21.5	21.5	21.7	1.0	23
	16QAM	1	0	21.7	21.6	22.1	1.0	23
		1	12	21.6	21.6	22.2	1.0	23
		1	24	21.5	21.7	22.2	1.0	23
		12	0	20.6	20.6	20.9	2.0	22
		12	7	20.6	20.6	20.9	2.0	22
		12	13	20.5	20.6	20.8	2.0	22
		25	0	20.4	20.5	20.8	2.0	22
	64QAM	1	0	20.4	20.7	21.0	2.0	22
		1	12	20.4	20.8	21.0	2.0	22
		1	24	20.4	20.8	20.9	2.0	22
		12	0	19.5	19.5	19.8	3.0	21
		12	7	19.5	19.5	19.8	3.0	21
		12	13	19.5	19.5	19.7	3.0	21
		25	0	19.5	19.4	19.7	3.0	21
	256QAM	1	0	17.9	17.5	17.8	5.0	19
		1	12	17.9	17.6	17.9	5.0	19
		1	24	17.9	17.5	17.8	5.0	19
		12	0	17.9	17.8	17.8	5.0	19
		12	7	17.9	17.8	17.8	5.0	19
		12	13	17.8	17.8	17.7	5.0	19
		25	0	17.9	17.8	17.7	5.0	19

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	22.5	22.5	22.8	0.0	24
		1	8	22.4	22.5	22.7	0.0	24
		1	14	22.4	22.5	22.7	0.0	24
		8	0	21.5	21.6	21.9	1.0	23
		8	4	21.5	21.6	21.8	1.0	23
		8	7	21.5	21.6	21.8	1.0	23
		15	0	21.5	21.5	21.8	1.0	23
	16QAM	1	0	21.6	21.6	21.9	1.0	23
		1	8	21.5	21.5	21.8	1.0	23
		1	14	21.4	21.6	21.7	1.0	23
		8	0	20.6	20.6	20.9	2.0	22
		8	4	20.6	20.7	20.9	2.0	22
		8	7	20.6	20.7	20.9	2.0	22
		15	0	20.5	20.5	20.8	2.0	22
	64QAM	1	0	20.9	20.9	21.2	2.0	22
		1	8	20.8	20.8	21.1	2.0	22
		1	14	20.7	20.9	21.1	2.0	22
		8	0	19.7	19.7	19.9	3.0	21
		8	4	19.6	19.7	19.9	3.0	21
		8	7	19.6	19.7	19.9	3.0	21
		15	0	19.5	19.6	19.9	3.0	21
	256QAM	1	0	17.9	18.2	17.6	5.0	19
		1	8	17.9	18.1	17.5	5.0	19
		1	14	17.8	18.2	17.4	5.0	19
		8	0	18.0	17.9	17.7	5.0	19
		8	4	18.0	17.8	17.7	5.0	19
		8	7	18.0	17.9	17.7	5.0	19
		15	0	18.0	17.8	17.8	5.0	19

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	22.4	22.4	22.6	0.0	24
		1	3	22.4	22.5	22.7	0.0	24
		1	5	22.3	22.4	22.5	0.0	24
		3	0	22.4	22.4	22.6	0.0	24
		3	1	22.4	22.5	22.7	0.0	24
		3	3	22.4	22.5	22.6	0.0	24
		6	0	21.4	21.5	21.7	1.0	23
	16QAM	1	0	21.9	21.5	21.7	1.0	23
		1	3	21.9	21.5	21.7	1.0	23
		1	5	21.8	21.5	21.7	1.0	23
		3	0	21.6	21.7	21.9	1.0	23
		3	1	21.6	21.8	21.9	1.0	23
		3	3	21.6	21.8	21.9	1.0	23
		6	0	20.3	20.6	20.8	2.0	22
	64QAM	1	0	20.9	20.6	20.9	2.0	22
		1	3	20.9	20.7	20.9	2.0	22
		1	5	20.8	20.7	20.8	2.0	22
		3	0	20.8	20.4	20.6	2.0	22
		3	1	20.9	20.5	20.7	2.0	22
		3	3	20.9	20.5	20.7	2.0	22
		6	0	19.4	19.5	19.7	3.0	21
	256QAM	1	0	18.0	17.5	17.7	5.0	19
		1	3	18.0	17.6	17.8	5.0	19
		1	5	17.9	17.6	17.6	5.0	19
		3	0	17.8	17.6	17.7	5.0	19
		3	1	17.8	17.7	17.8	5.0	19
		3	3	17.8	17.7	17.8	5.0	19
		6	0	17.7	17.8	17.6	5.0	19

2. Reduced power Results

LTE Band 2 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
				18700	18900	19100			18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz			1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	19.8	19.9	20.1	0.0	21.0	19.8	19.9	20.2	0.0	21.0
		1	49	19.8	19.9	20.0	0.0	21.0	19.8	19.9	20.1	0.0	21.0
		1	99	19.8	20.0	20.0	0.0	21.0	19.8	20.0	20.0	0.0	21.0
		50	0	19.7	19.8	20.0	0.0	21.0	19.7	19.8	20.0	0.0	21.0
		50	24	19.9	20.0	20.2	0.0	21.0	19.9	20.0	20.2	0.0	21.0
		50	50	19.9	20.0	20.2	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		100	0	19.9	20.0	20.0	0.0	21.0	19.8	20.0	20.0	0.0	21.0
	16QAM	1	0	20.3	20.3	20.6	0.0	21.0	20.3	20.3	20.6	0.0	21.0
		1	49	20.2	20.4	20.6	0.0	21.0	20.2	20.4	20.6	0.0	21.0
		1	99	20.3	20.5	20.6	0.0	21.0	20.3	20.5	20.6	0.0	21.0
		50	0	19.8	19.8	20.0	0.0	21.0	19.8	19.8	20.0	0.0	21.0
		50	24	20.0	20.0	20.2	0.0	21.0	19.9	20.1	20.2	0.0	21.0
		50	50	19.9	20.1	20.2	0.0	21.0	19.9	20.1	20.2	0.0	21.0
		100	0	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	64QAM	1	0	20.4	20.1	20.4	0.0	21.0	20.4	20.1	20.4	0.0	21.0
		1	49	20.5	20.2	20.4	0.0	21.0	20.5	20.2	20.4	0.0	21.0
		1	99	20.5	20.3	20.4	0.0	21.0	20.5	20.3	20.4	0.0	21.0
		50	0	19.8	19.9	20.1	0.0	21.0	19.8	19.9	20.1	0.0	21.0
		50	24	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.3	0.0	21.0
		50	50	19.9	20.1	20.2	0.0	21.0	19.9	20.1	20.3	0.0	21.0
		100	0	19.8	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	256QAM	1	0	17.2	17.5	17.6	2.0	19.0	17.2	17.5	17.6	2.0	19.0
		1	49	17.5	17.9	17.9	2.0	19.0	17.6	17.9	18.0	2.0	19.0
		1	99	17.4	17.8	17.7	2.0	19.0	17.4	17.8	17.7	2.0	19.0
		50	0	17.5	17.6	17.7	2.0	19.0	17.5	17.6	17.7	2.0	19.0
		50	24	17.7	17.8	17.8	2.0	19.0	17.7	17.8	17.8	2.0	19.0
		50	50	17.6	17.7	17.8	2.0	19.0	17.7	17.7	17.8	2.0	19.0
		100	0	17.6	17.7	17.7	2.0	19.0	17.7	17.7	17.7	2.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125			18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz			1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	19.6	19.9	20.1	0.0	21.0	19.6	19.9	20.1	0.0	21.0
		1	37	19.8	20.0	20.0	0.0	21.0	19.8	20.0	20.1	0.0	21.0
		1	74	19.8	20.0	20.0	0.0	21.0	19.8	20.0	20.0	0.0	21.0
		36	0	19.7	19.9	20.0	0.0	21.0	19.7	19.9	20.1	0.0	21.0
		36	20	19.9	19.9	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		36	39	19.9	20.0	20.2	0.0	21.0	19.9	20.0	20.2	0.0	21.0
		75	0	19.8	20.0	20.1	0.0	21.0	19.8	20.0	20.1	0.0	21.0
	16QAM	1	0	20.1	20.4	20.0	0.0	21.0	20.1	20.4	20.0	0.0	21.0
		1	37	20.2	20.3	20.0	0.0	21.0	20.2	20.4	20.0	0.0	21.0
		1	74	20.2	20.5	20.0	0.0	21.0	20.2	20.5	20.0	0.0	21.0
		36	0	19.8	19.9	20.0	0.0	21.0	19.8	19.9	20.0	0.0	21.0
		36	20	19.9	20.0	20.1	0.0	21.0	19.9	19.9	20.1	0.0	21.0
		36	39	19.9	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		75	0	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	64QAM	1	0	19.7	20.5	20.4	0.0	21.0	19.7	20.5	20.4	0.0	21.0
		1	37	19.9	20.5	20.4	0.0	21.0	19.9	20.5	20.4	0.0	21.0
		1	74	19.9	20.6	20.4	0.0	21.0	19.9	20.6	20.4	0.0	21.0
		36	0	19.8	19.9	20.1	0.0	21.0	19.9	19.9	20.1	0.0	21.0
		36	20	20.0	20.0	20.2	0.0	21.0	20.0	19.9	20.2	0.0	21.0
		36	39	20.0	20.0	20.3	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		75	0	19.9	20.1	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	256QAM	1	0	17.6	17.9	17.4	2.0	19.0	17.7	17.9	17.4	2.0	19.0
		1	37	17.8	18.0	17.6	2.0	19.0	17.8	18.1	17.5	2.0	19.0
		1	74	17.8	18.0	17.4	2.0	19.0	17.8	18.0	17.4	2.0	19.0
		36	0	17.5	17.6	17.7	2.0	19.0	17.5	17.6	17.7	2.0	19.0
		36	20	17.6	17.7	17.7	2.0	19.0	17.7	17.7	17.7	2.0	19.0
		36	39	17.6	17.7	17.7	2.0	19.0	17.7	17.8	17.8	2.0	19.0
		75	0	17.6	17.7	17.6	2.0	19.0	17.6	17.7	17.7	2.0	19.0

LTE Band 2 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150			18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz			1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	19.6	19.6	20.1	0.0	21.0	19.6	19.6	20.1	0.0	21.0
		1	25	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		1	49	19.7	19.7	20.1	0.0	21.0	19.7	19.7	20.1	0.0	21.0
		25	0	19.9	19.9	20.1	0.0	21.0	19.9	19.9	20.1	0.0	21.0
		25	12	20.0	20.0	20.2	0.0	21.0	20.0	20.1	20.1	0.0	21.0
		25	25	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		50	0	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	16QAM	1	0	20.0	19.7	20.2	0.0	21.0	20.0	19.7	20.2	0.0	21.0
		1	25	20.4	20.1	20.1	0.0	21.0	20.4	20.1	20.1	0.0	21.0
		1	49	20.1	19.8	20.1	0.0	21.0	20.1	19.8	20.1	0.0	21.0
		25	0	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		25	12	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		25	25	19.9	20.1	20.1	0.0	21.0	19.9	20.1	20.2	0.0	21.0
		50	0	19.9	20.1	20.0	0.0	21.0	19.9	20.1	20.1	0.0	21.0
	64QAM	1	0	19.7	19.9	20.5	0.0	21.0	19.8	19.9	20.5	0.0	21.0
		1	25	20.0	20.3	20.5	0.0	21.0	20.1	20.2	20.5	0.0	21.0
		1	49	19.8	20.1	20.5	0.0	21.0	19.9	20.0	20.5	0.0	21.0
		25	0	20.0	20.0	20.1	0.0	21.0	20.0	20.0	20.2	0.0	21.0
		25	12	20.1	20.1	20.3	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		25	25	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		50	0	20.0	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	256QAM	1	0	17.2	17.4	17.9	2.0	19.0	17.5	17.8	17.3	2.0	19.0
		1	25	17.4	17.8	18.2	2.0	19.0	17.8	18.2	17.6	2.0	19.0
		1	49	17.2	17.6	17.9	2.0	19.0	17.5	18.0	17.3	2.0	19.0
		25	0	17.6	17.7	17.7	2.0	19.0	17.7	17.7	17.7	2.0	19.0
		25	12	17.7	17.8	17.8	2.0	19.0	17.8	17.8	17.9	2.0	19.0
		25	25	17.7	17.8	17.8	2.0	19.0	17.7	17.8	17.8	2.0	19.0
		50	0	17.6	17.8	17.7	2.0	19.0	17.7	17.8	17.7	2.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175			18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz			1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	19.9	20.0	20.2	0.0	21.0	19.8	19.9	20.2	0.0	21.0
		1	12	19.9	20.1	20.2	0.0	21.0	19.9	20.0	20.2	0.0	21.0
		1	24	19.8	20.0	20.1	0.0	21.0	19.8	20.0	20.1	0.0	21.0
		12	0	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		12	7	20.0	20.1	20.3	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		12	13	19.9	20.1	20.2	0.0	21.0	19.9	20.1	20.2	0.0	21.0
		25	0	20.0	20.1	20.2	0.0	21.0	19.9	20.1	20.2	0.0	21.0
	16QAM	1	0	20.5	20.1	20.3	0.0	21.0	20.5	20.1	20.3	0.0	21.0
		1	12	20.5	20.1	20.4	0.0	21.0	20.5	20.2	20.3	0.0	21.0
		1	24	20.4	20.1	20.2	0.0	21.0	20.4	20.2	20.3	0.0	21.0
		12	0	20.1	20.1	20.3	0.0	21.0	20.2	20.1	20.3	0.0	21.0
		12	7	20.1	20.2	20.3	0.0	21.0	20.2	20.1	20.3	0.0	21.0
		12	13	20.1	20.2	20.3	0.0	21.0	20.1	20.1	20.2	0.0	21.0
		25	0	20.0	20.1	20.2	0.0	21.0	20.0	20.0	20.2	0.0	21.0
	64QAM	1	0	20.2	20.2	20.2	0.0	21.0	20.3	20.2	20.1	0.0	21.0
		1	12	20.3	20.3	20.2	0.0	21.0	20.4	20.3	20.2	0.0	21.0
		1	24	20.2	20.3	20.1	0.0	21.0	20.2	20.3	20.1	0.0	21.0
		12	0	19.9	20.1	20.3	0.0	21.0	20.0	20.2	20.3	0.0	21.0
		12	7	20.0	20.2	20.3	0.0	21.0	20.0	20.2	20.3	0.0	21.0
		12	13	19.9	20.2	20.2	0.0	21.0	19.9	20.2	20.3	0.0	21.0
		25	0	20.0	20.1	20.2	0.0	21.0	19.9	20.2	20.2	0.0	21.0
	256QAM	1	0	17.7	17.7	17.5	2.0	19.0	17.7	17.5	17.9	2.0	19.0
		1	12	17.8	17.8	17.4	2.0	19.0	17.8	17.5	17.9	2.0	19.0
		1	24	17.7	17.7	17.3	2.0	19.0	17.7	17.5	17.8	2.0	19.0
		12	0	17.7	17.7	17.8	2.0	19.0	17.7	17.8	17.8	2.0	19.0
		12	7	17.7	17.8	17.8	2.0	19.0	17.8	17.8	17.8	2.0	19.0
		12	13	17.7	17.8	17.7	2.0	19.0	17.7	17.8	17.8	2.0	19.0
		25	0	17.6	17.8	17.8	2.0	19.0	17.8	17.9	17.8	2.0	19.0

LTE Band 2 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185			18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz			1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	20.0	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		1	8	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		1	14	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
		8	0	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		8	4	20.0	20.1	20.2	0.0	21.0	20.0	20.0	20.3	0.0	21.0
		8	7	20.0	20.1	20.3	0.0	21.0	20.0	20.1	20.2	0.0	21.0
		15	0	20.0	20.1	20.2	0.0	21.0	20.0	20.1	20.2	0.0	21.0
	16QAM	1	0	20.4	20.1	20.1	0.0	21.0	20.4	20.2	20.1	0.0	21.0
		1	8	20.4	20.1	20.0	0.0	21.0	20.4	20.1	20.1	0.0	21.0
		1	14	20.3	20.1	20.0	0.0	21.0	20.3	20.1	20.0	0.0	21.0
		8	0	20.1	20.1	20.3	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		8	4	20.1	20.1	20.3	0.0	21.0	20.1	20.2	20.4	0.0	21.0
		8	7	20.1	20.2	20.4	0.0	21.0	20.1	20.2	20.4	0.0	21.0
		15	0	20.0	20.1	20.3	0.0	21.0	20.0	20.1	20.2	0.0	21.0
	64QAM	1	0	20.1	20.3	20.6	0.0	21.0	20.1	20.3	20.6	0.0	21.0
		1	8	20.0	20.3	20.5	0.0	21.0	20.1	20.3	20.5	0.0	21.0
		1	14	20.0	20.3	20.5	0.0	21.0	20.0	20.3	20.5	0.0	21.0
		8	0	20.0	20.1	20.3	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		8	4	20.1	20.1	20.4	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		8	7	20.1	20.1	20.3	0.0	21.0	20.1	20.2	20.3	0.0	21.0
		15	0	20.0	20.2	20.2	0.0	21.0	20.0	20.2	20.2	0.0	21.0
	256QAM	1	0	17.6	18.1	17.6	2.0	19.0	18.1	17.7	17.8	2.0	19.0
		1	8	17.6	18.1	17.5	2.0	19.0	18.0	17.6	17.8	2.0	19.0
		1	14	17.6	18.1	17.4	2.0	19.0	18.0	17.6	17.7	2.0	19.0
		8	0	17.8	17.8	17.7	2.0	19.0	17.8	17.7	17.9	2.0	19.0
		8	4	17.8	17.8	17.7	2.0	19.0	17.8	17.8	17.9	2.0	19.0
		8	7	17.8	17.9	17.7	2.0	19.0	17.8	17.8	17.9	2.0	19.0
		15	0	17.7	17.8	17.8	2.0	19.0	17.7	17.9	17.8	2.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193			18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz			1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	19.8	20.0	20.1	0.0	21.0	19.8	20.0	20.1	0.0	21.0
		1	3	19.9	20.1	20.1	0.0	21.0	19.9	20.1	20.1	0.0	21.0
		1	5	19.8	20.0	20.1	0.0	21.0	19.7	19.9	20.0	0.0	21.0
		3	0	19.8	19.9	20.1	0.0	21.0	19.8	19.9	20.1	0.0	21.0
		3	1	19.8	20.0	20.1	0.0	21.0	19.8	19.9	20.1	0.0	21.0
		3	3	19.8	20.0	20.1	0.0	21.0	19.8	19.9	20.1	0.0	21.0
		6	0	19.9	20.0	20.1	0.0	21.0	19.9	20.0	20.1	0.0	21.0
	16QAM	1	0	20.0	20.2	20.5	0.0	21.0	20.0	20.2	20.5	0.0	21.0
		1	3	20.0	20.3	20.5	0.0	21.0	20.0	20.2	20.5	0.0	21.0
		1	5	19.9	20.1	20.5	0.0	21.0	19.9	20.1	20.4	0.0	21.0
		3	0	20.1	20.1	20.3	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		3	1	20.1	20.1	20.4	0.0	21.0	20.1	20.1	20.4	0.0	21.0
		3	3	20.1	20.1	20.4	0.0	21.0	20.1	20.1	20.3	0.0	21.0
		6	0	20.1	20.2	20.1	0.0	21.0	20.1	20.1	20.0	0.0	21.0
	64QAM	1	0	20.3	20.2	20.4	0.0	21.0	20.3	20.3	20.4	0.0	21.0
		1	3	20.4	20.3	20.4	0.0	21.0	20.4	20.3	20.4	0.0	21.0
		1	5	20.3	20.1	20.4	0.0	21.0	20.3	20.2	20.4	0.0	21.0
		3	0	20.3	20.2	20.2	0.0	21.0	20.3	20.2	20.1	0.0	21.0
		3	1	20.3	20.2	20.2	0.0	21.0	20.3	20.3	20.2	0.0	21.0
		3	3	20.3	20.3	20.2	0.0	21.0	20.3	20.3	20.2	0.0	21.0
		6	0	19.9	20.4	20.2	0.0	21.0	19.9	20.4	20.3	0.0	21.0
	256QAM	1	0	17.6	17.8	17.4	2.0	19.0	17.7	17.6	17.7	2.0	19.0
		1	3	17.9	17.9	17.5	2.0	19.0	17.8	17.6	17.8	2.0	19.0
		1	5	17.8	17.8	17.4	2.0	19.0	17.6	17.6	17.6	2.0	19.0
		3	0	17.7	17.7	17.5	2.0	19.0	17.6	17.6	17.7	2.0	19.0
		3	1	17.7	17.8	17.6	2.0	19.0	17.6	17.6	17.7	2.0	19.0
		3	3	17.7	17.7	17.6	2.0	19.0	17.6	17.7	17.7	2.0	19.0
		6	0	17.6	17.6	17.7	2.0	19.0	17.5	17.8	17.7	2.0	19.0

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	18.2	18.3	18.6	0.0	19.5	19.7	19.7	20.1	0.0	21
		1	49	18.5	18.6	18.5	0.0	19.5	19.9	20.0	20.0	0.0	21
		1	99	18.3	18.3	18.5	0.0	19.5	19.7	19.8	20.0	0.0	21
		50	0	18.5	18.6	18.6	0.0	19.5	20.0	20.0	20.1	0.0	21
		50	24	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.1	0.0	21
		50	50	18.5	18.6	18.5	0.0	19.5	20.0	20.1	20.0	0.0	21
		100	0	18.5	18.5	18.5	0.0	19.5	20.0	20.0	19.9	0.0	21
	16QAM	1	0	18.8	18.7	19.1	0.0	19.5	20.2	20.3	20.6	0.0	21
		1	49	19.0	19.1	18.9	0.0	19.5	20.4	20.6	20.5	0.0	21
		1	99	18.8	18.8	18.9	0.0	19.5	20.2	20.4	20.5	0.0	21
		50	0	18.5	18.6	18.5	0.0	19.5	20.0	20.1	20.1	0.0	21
		50	24	18.7	18.6	18.6	0.0	19.5	20.1	20.1	20.1	0.0	21
		50	50	18.6	18.6	18.5	0.0	19.5	20.0	20.2	20.0	0.0	21
		100	0	18.6	18.5	18.5	0.0	19.5	20.1	20.1	20.0	0.0	21
	64QAM	1	0	18.6	18.8	18.9	0.0	19.5	20.0	20.4	20.4	0.0	21
		1	49	18.8	19.1	18.8	0.0	19.5	20.3	20.5	20.2	0.0	21
		1	99	18.7	18.9	18.8	0.0	19.5	20.1	20.5	20.2	0.0	21
		50	0	18.6	18.5	18.7	0.0	19.5	20.1	20.1	20.1	0.0	21
		50	24	18.7	18.6	18.7	0.0	19.5	20.2	20.1	20.1	0.0	21
		50	50	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.0	0.0	21
		100	0	18.6	18.5	18.6	0.0	19.5	20.1	20.0	20.0	0.0	21
	256QAM	1	0	17.5	17.7	17.6	1.0	18.5	17.5	17.6	17.6	2.0	19
		1	49	17.8	18.0	17.8	1.0	18.5	17.8	18.0	17.8	2.0	19
		1	99	17.5	17.7	17.6	1.0	18.5	17.6	17.7	17.6	2.0	19
		50	0	17.8	17.8	17.7	1.0	18.5	17.8	17.8	17.7	2.0	19
		50	24	17.9	17.8	17.7	1.0	18.5	17.9	17.8	17.7	2.0	19
		50	50	17.9	17.8	17.6	1.0	18.5	17.8	17.8	17.6	2.0	19
		100	0	17.9	17.7	17.6	1.0	18.5	17.9	17.7	17.6	2.0	19

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	18.4	18.5	18.6	0.0	19.5	19.9	20.0	20.1	0.0	21
		1	37	18.4	18.6	18.4	0.0	19.5	20.0	20.1	19.9	0.0	21
		1	74	18.3	18.4	18.5	0.0	19.5	19.9	19.9	20.0	0.0	21
		36	0	18.5	18.6	18.6	0.0	19.5	20.0	20.0	20.0	0.0	21
		36	20	18.6	18.6	18.5	0.0	19.5	20.1	20.1	20.0	0.0	21
		36	39	18.5	18.6	18.6	0.0	19.5	20.1	20.1	20.1	0.0	21
		75	0	18.6	18.6	18.5	0.0	19.5	20.1	20.0	20.0	0.0	21
	16QAM	1	0	18.8	18.9	18.6	0.0	19.5	20.4	20.4	20.1	0.0	21
		1	37	18.9	19.0	18.4	0.0	19.5	20.4	20.5	19.9	0.0	21
		1	74	18.7	18.9	18.5	0.0	19.5	20.3	20.4	20.0	0.0	21
		36	0	18.6	18.5	18.6	0.0	19.5	20.1	20.1	20.0	0.0	21
		36	20	18.6	18.6	18.5	0.0	19.5	20.2	20.1	20.0	0.0	21
		36	39	18.5	18.6	18.6	0.0	19.5	20.1	20.2	20.1	0.0	21
		75	0	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.0	0.0	21
	64QAM	1	0	19.0	18.7	18.8	0.0	19.5	20.0	20.6	20.4	0.0	21
		1	37	19.1	18.9	18.7	0.0	19.5	20.2	20.5	20.4	0.0	21
		1	74	19.0	18.7	18.7	0.0	19.5	19.9	20.6	20.3	0.0	21
		36	0	18.5	18.6	18.7	0.0	19.5	20.1	20.1	20.1	0.0	21
		36	20	18.6	18.6	18.6	0.0	19.5	20.2	20.1	20.1	0.0	21
		36	39	18.5	18.7	18.7	0.0	19.5	20.1	20.1	20.1	0.0	21
		75	0	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.0	0.0	21
	256QAM	1	0	17.9	18.0	17.4	1.0	18.5	17.9	18.1	17.4	2.0	19
		1	37	18.1	18.2	17.4	1.0	18.5	18.1	18.2	17.5	2.0	19
		1	74	17.9	18.1	17.3	1.0	18.5	17.9	18.1	17.3	2.0	19
		36	0	17.8	17.8	17.6	1.0	18.5	17.8	17.8	17.6	2.0	19
		36	20	17.9	17.8	17.6	1.0	18.5	17.9	17.8	17.6	2.0	19
		36	39	17.8	17.8	17.6	1.0	18.5	17.9	17.8	17.7	2.0	19
		75	0	17.9	17.7	17.6	1.0	18.5	17.9	17.8	17.6	2.0	19

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	18.3	18.2	18.2	0.0	19.5	19.8	19.7	19.7	0.0	21
		1	25	18.5	18.5	18.5	0.0	19.5	20.0	20.0	20.0	0.0	21
		1	49	18.3	18.3	18.4	0.0	19.5	19.8	19.8	19.9	0.0	21
		25	0	18.6	18.5	18.5	0.0	19.5	20.1	20.0	20.0	0.0	21
		25	12	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.1	0.0	21
		25	25	18.5	18.6	18.6	0.0	19.5	20.0	20.1	20.1	0.0	21
		50	0	18.5	18.5	18.5	0.0	19.5	20.0	20.0	20.0	0.0	21
	16QAM	1	0	18.7	18.3	18.3	0.0	19.5	20.2	19.8	19.8	0.0	21
		1	25	18.9	18.6	18.5	0.0	19.5	20.4	20.1	20.0	0.0	21
		1	49	18.7	18.4	18.3	0.0	19.5	20.2	19.9	19.8	0.0	21
		25	0	18.6	18.6	18.5	0.0	19.5	20.2	20.1	20.0	0.0	21
		25	12	18.7	18.7	18.6	0.0	19.5	20.2	20.2	20.0	0.0	21
		25	25	18.5	18.7	18.6	0.0	19.5	20.0	20.2	20.1	0.0	21
		50	0	18.5	18.5	18.5	0.0	19.5	20.0	20.0	20.0	0.0	21
	64QAM	1	0	18.6	18.6	18.4	0.0	19.5	20.0	20.0	20.1	0.0	21
		1	25	18.8	18.9	18.8	0.0	19.5	20.2	20.4	20.4	0.0	21
		1	49	18.5	18.8	18.6	0.0	19.5	20.0	20.1	20.2	0.0	21
		25	0	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.0	0.0	21
		25	12	18.7	18.7	18.7	0.0	19.5	20.2	20.2	20.1	0.0	21
		25	25	18.6	18.7	18.7	0.0	19.5	20.1	20.2	20.2	0.0	21
		50	0	18.6	18.6	18.5	0.0	19.5	20.0	20.0	20.0	0.0	21
	256QAM	1	0	17.7	17.9	17.2	1.0	18.5	17.7	17.9	17.2	2.0	19
		1	25	17.9	18.2	17.5	1.0	18.5	17.9	18.3	17.5	2.0	19
		1	49	17.7	18.1	17.3	1.0	18.5	17.7	18.1	17.3	2.0	19
		25	0	17.9	17.8	17.6	1.0	18.5	17.9	17.7	17.6	2.0	19
		25	12	18.0	17.8	17.7	1.0	18.5	18.0	17.9	17.7	2.0	19
		25	25	17.8	17.9	17.7	1.0	18.5	17.9	17.9	17.8	2.0	19
		50	0	17.9	17.8	17.6	1.0	18.5	17.9	17.8	17.6	2.0	19
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	18.4	18.5	18.6	0.0	19.5	20.0	20.0	20.2	0.0	21
		1	12	18.5	18.6	18.7	0.0	19.5	20.0	20.1	20.2	0.0	21
		1	24	18.4	18.5	18.6	0.0	19.5	19.9	20.1	20.1	0.0	21
		12	0	18.6	18.6	18.7	0.0	19.5	20.1	20.1	20.2	0.0	21
		12	7	18.6	18.6	18.7	0.0	19.5	20.1	20.1	20.2	0.0	21
		12	13	18.5	18.6	18.6	0.0	19.5	20.0	20.1	20.1	0.0	21
		25	0	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.2	0.0	21
	16QAM	1	0	19.1	18.6	18.8	0.0	19.5	20.5	20.2	20.3	0.0	21
		1	12	19.1	18.6	18.8	0.0	19.5	20.6	20.2	20.3	0.0	21
		1	24	19.0	18.7	18.7	0.0	19.5	20.5	20.2	20.2	0.0	21
		12	0	18.7	18.6	18.8	0.0	19.5	20.2	20.2	20.2	0.0	21
		12	7	18.7	18.6	18.8	0.0	19.5	20.2	20.2	20.3	0.0	21
		12	13	18.6	18.7	18.7	0.0	19.5	20.1	20.2	20.2	0.0	21
		25	0	18.7	18.5	18.7	0.0	19.5	20.2	20.0	20.2	0.0	21
	64QAM	1	0	18.9	18.5	19.0	0.0	19.5	20.4	20.3	20.1	0.0	21
		1	12	18.9	18.6	19.0	0.0	19.5	20.4	20.4	20.1	0.0	21
		1	24	18.8	18.6	18.9	0.0	19.5	20.3	20.4	20.0	0.0	21
		12	0	18.7	18.7	18.7	0.0	19.5	20.1	20.2	20.2	0.0	21
		12	7	18.7	18.7	18.7	0.0	19.5	20.1	20.2	20.3	0.0	21
		12	13	18.6	18.7	18.6	0.0	19.5	20.0	20.2	20.2	0.0	21
		25	0	18.6	18.6	18.6	0.0	19.5	20.1	20.1	20.2	0.0	21
	256QAM	1	0	18.0	17.5	17.8	1.0	18.5	18.0	17.5	17.8	2.0	19
		1	12	17.9	17.6	17.9	1.0	18.5	18.0	17.6	17.9	2.0	19
		1	24	17.9	17.5	17.8	1.0	18.5	17.9	17.5	17.8	2.0	19
		12	0	17.9	17.8	17.8	1.0	18.5	18.0	17.8	17.8	2.0	19
		12	7	17.9	17.8	17.8	1.0	18.5	17.9	17.8	17.8	2.0	19
		12	13	17.9	17.8	17.8	1.0	18.5	17.9	17.8	17.8	2.0	19
		25	0	17.9	17.8	17.7	1.0	18.5	17.9	17.8	17.7	2.0	19

LTE Band 66 Measured Results (Continued)

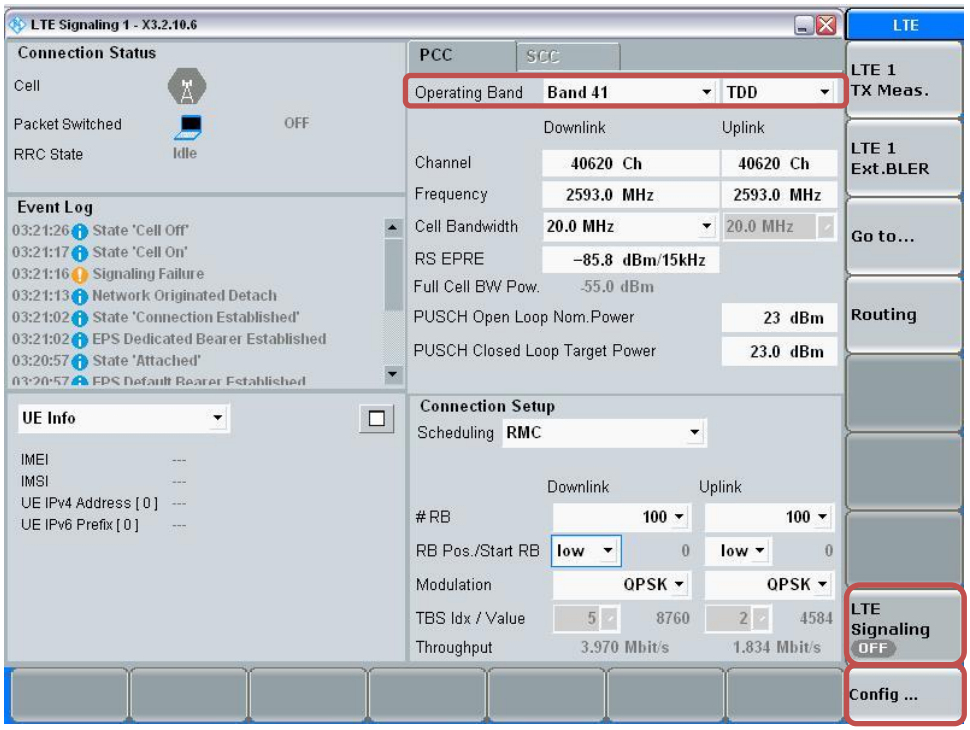
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	18.6	18.5	18.6	0.0	19.5	20.1	20.0	20.1	0.0	21
		1	8	18.5	18.5	18.5	0.0	19.5	20.0	20.0	20.1	0.0	21
		1	14	18.5	18.5	18.5	0.0	19.5	20.0	20.0	20.0	0.0	21
		8	0	18.6	18.6	18.7	0.0	19.5	20.1	20.1	20.2	0.0	21
		8	4	18.6	18.6	18.7	0.0	19.5	20.1	20.1	20.2	0.0	21
		8	7	18.6	18.7	18.7	0.0	19.5	20.1	20.2	20.2	0.0	21
		15	0	18.6	18.6	18.7	0.0	19.5	20.1	20.1	20.2	0.0	21
	16QAM	1	0	19.0	18.6	18.6	0.0	19.5	20.5	20.1	20.1	0.0	21
		1	8	18.9	18.6	18.6	0.0	19.5	20.5	20.1	20.0	0.0	21
		1	14	18.9	18.6	18.5	0.0	19.5	20.4	20.1	20.0	0.0	21
		8	0	18.7	18.6	18.8	0.0	19.5	20.2	20.2	20.3	0.0	21
		8	4	18.7	18.6	18.8	0.0	19.5	20.2	20.2	20.3	0.0	21
		8	7	18.7	18.7	18.8	0.0	19.5	20.2	20.2	20.3	0.0	21
		15	0	18.6	18.5	18.7	0.0	19.5	20.1	20.0	20.2	0.0	21
	64QAM	1	0	18.9	18.9	18.8	0.0	19.5	20.2	20.3	20.3	0.0	21
		1	8	18.9	18.9	18.8	0.0	19.5	20.2	20.4	20.4	0.0	21
		1	14	18.8	18.9	18.7	0.0	19.5	20.1	20.3	20.3	0.0	21
		8	0	18.6	18.7	18.8	0.0	19.5	20.2	20.1	20.1	0.0	21
		8	4	18.6	18.7	18.8	0.0	19.5	20.2	20.1	20.1	0.0	21
		8	7	18.6	18.8	18.7	0.0	19.5	20.1	20.1	20.1	0.0	21
		15	0	18.7	18.6	18.7	0.0	19.5	20.1	20.1	20.1	0.0	21
	256QAM	1	0	17.9	18.2	17.6	1.0	18.5	17.9	18.2	17.6	2.0	19
		1	8	17.9	18.2	17.5	1.0	18.5	17.9	18.2	17.5	2.0	19
		1	14	17.8	18.2	17.5	1.0	18.5	17.8	18.2	17.5	2.0	19
		8	0	18.0	17.9	17.7	1.0	18.5	18.1	17.9	17.7	2.0	19
		8	4	18.0	17.9	17.7	1.0	18.5	18.0	17.9	17.7	2.0	19
		8	7	18.0	18.0	17.7	1.0	18.5	18.0	18.0	17.7	2.0	19
		15	0	18.0	17.8	17.9	1.0	18.5	18.0	17.8	17.8	2.0	19
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	18.5	18.5	18.5	0.0	19.5	19.9	20.0	20.1	0.0	21
		1	3	18.6	18.6	18.6	0.0	19.5	20.0	20.0	20.1	0.0	21
		1	5	18.4	18.5	18.5	0.0	19.5	19.9	20.0	20.0	0.0	21
		3	0	18.4	18.4	18.5	0.0	19.5	19.8	19.9	20.1	0.0	21
		3	1	18.4	18.6	18.5	0.0	19.5	19.9	20.0	20.1	0.0	21
		3	3	18.4	18.6	18.5	0.0	19.5	19.9	20.0	20.1	0.0	21
		6	0	18.5	18.5	18.6	0.0	19.5	20.0	20.0	20.1	0.0	21
	16QAM	1	0	18.6	18.9	18.6	0.0	19.5	20.1	20.1	20.5	0.0	21
		1	3	18.7	19.0	18.7	0.0	19.5	20.1	20.3	20.5	0.0	21
		1	5	18.5	18.9	18.6	0.0	19.5	20.0	20.2	20.4	0.0	21
		3	0	18.5	18.7	18.8	0.0	19.5	20.2	20.0	20.2	0.0	21
		3	1	18.6	18.8	18.8	0.0	19.5	20.2	20.2	20.3	0.0	21
		3	3	18.6	18.8	18.8	0.0	19.5	20.2	20.1	20.3	0.0	21
		6	0	18.7	18.4	18.8	0.0	19.5	20.2	20.2	20.0	0.0	21
	64QAM	1	0	18.8	18.9	18.8	0.0	19.5	20.4	20.1	20.3	0.0	21
		1	3	18.8	19.1	18.8	0.0	19.5	20.5	20.3	20.3	0.0	21
		1	5	18.8	18.9	18.7	0.0	19.5	20.4	20.1	20.3	0.0	21
		3	0	18.5	18.9	18.7	0.0	19.5	20.4	20.1	20.1	0.0	21
		3	1	18.6	19.0	18.8	0.0	19.5	20.4	20.3	20.1	0.0	21
		3	3	18.6	18.9	18.8	0.0	19.5	20.4	20.2	20.1	0.0	21
		6	0	18.6	18.6	18.9	0.0	19.5	20.0	20.3	20.2	0.0	21
	256QAM	1	0	18.0	17.6	17.7	1.0	18.5	18.0	17.6	17.7	2.0	19
		1	3	18.1	17.7	17.8	1.0	18.5	18.1	17.7	17.8	2.0	19
		1	5	17.9	17.6	17.6	1.0	18.5	17.9	17.6	17.6	2.0	19
		3	0	17.8	17.6	17.7	1.0	18.5	17.8	17.6	17.7	2.0	19
		3	1	17.9	17.7	17.8	1.0	18.5	17.9	17.7	17.7	2.0	19
		3	3	17.8	17.7	17.7	1.0	18.5	17.8	17.7	17.7	2.0	19
		6	0	17.7	17.8	17.7	1.0	18.5	17.8	17.8	17.7	2.0	19

LTE Band TDD Measured Results

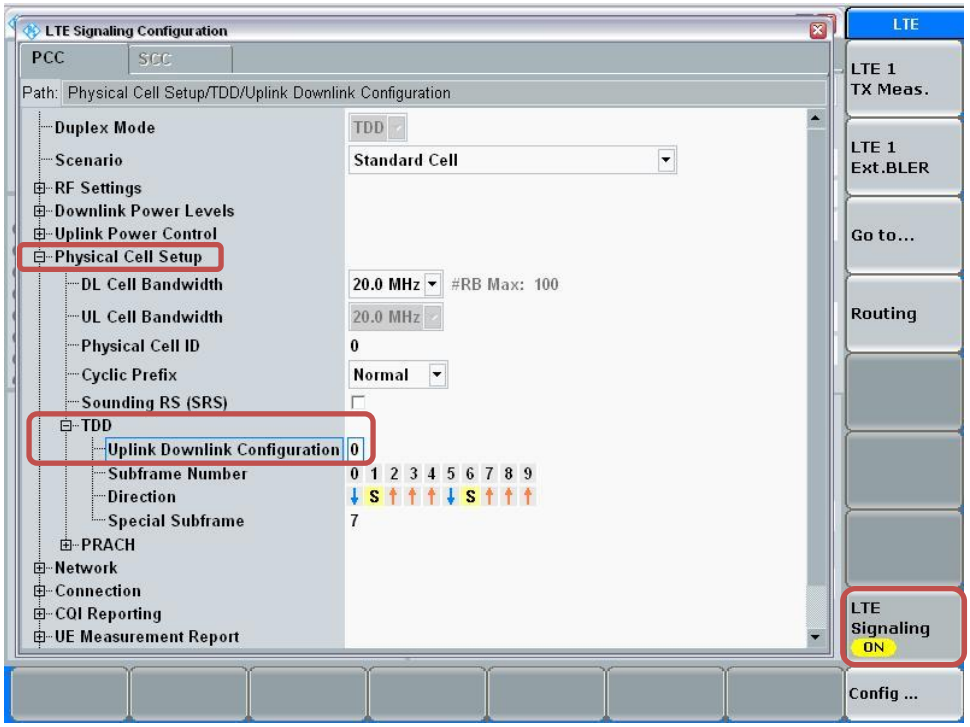
Procedure used to establish SAR test signal for LTE TDD Band

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….”

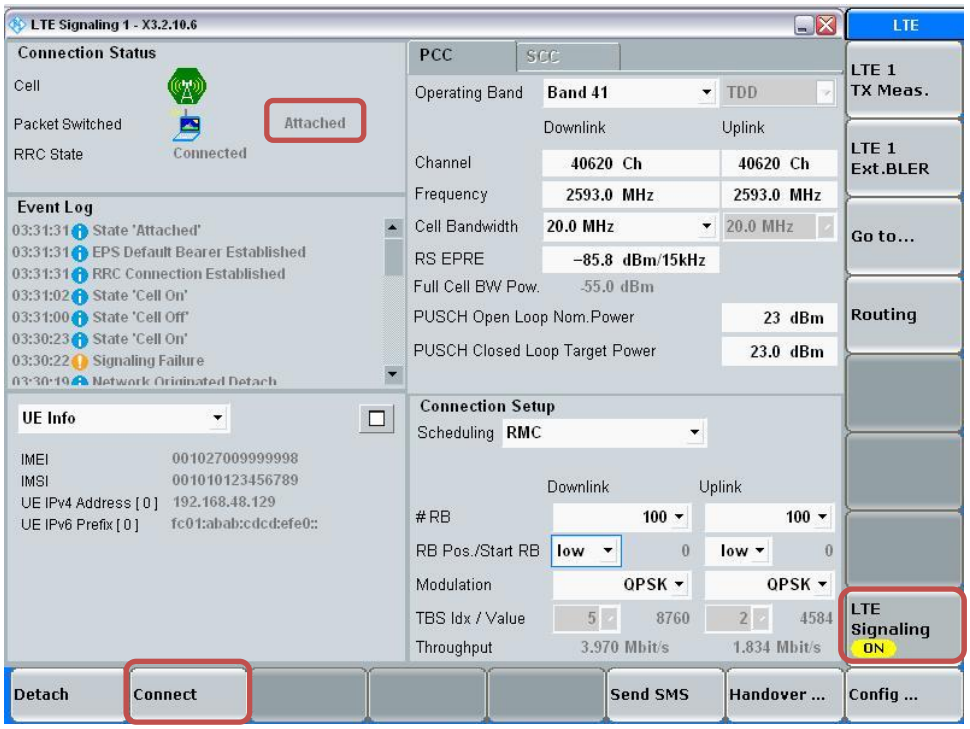


- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
- Turn the cell on using “ON | OFF” key



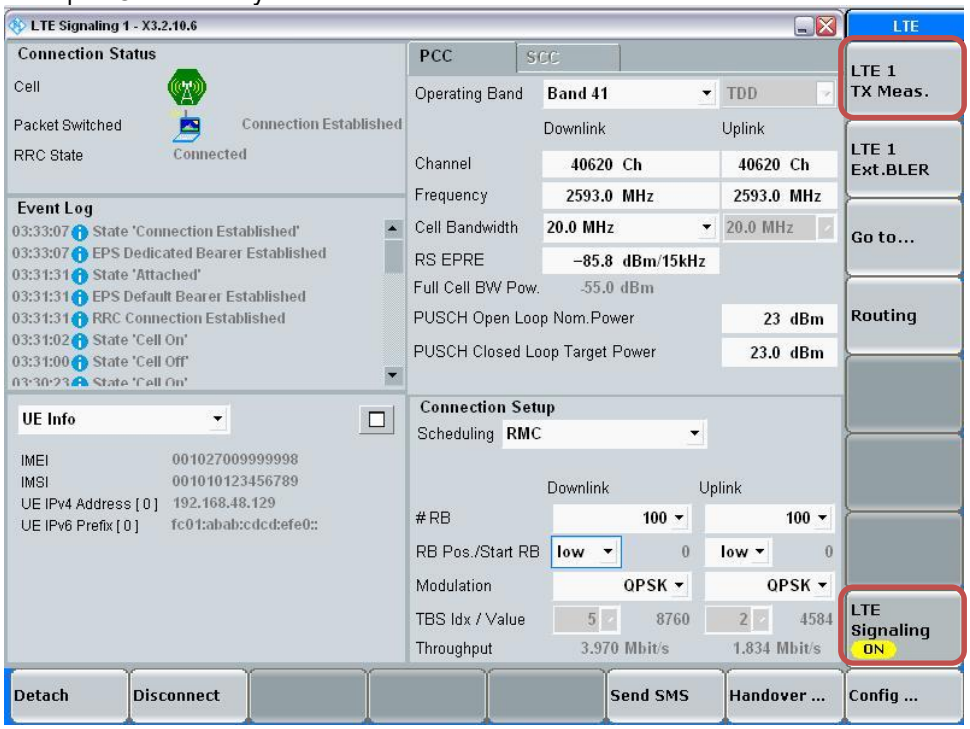
Connect to EUT

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

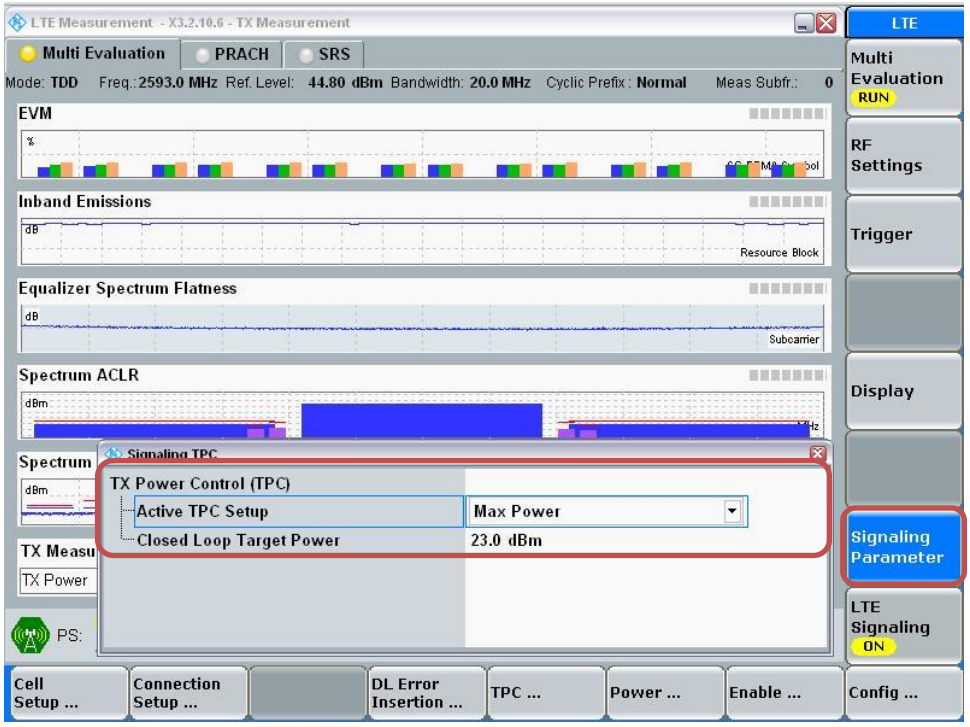


Max Power Setting

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

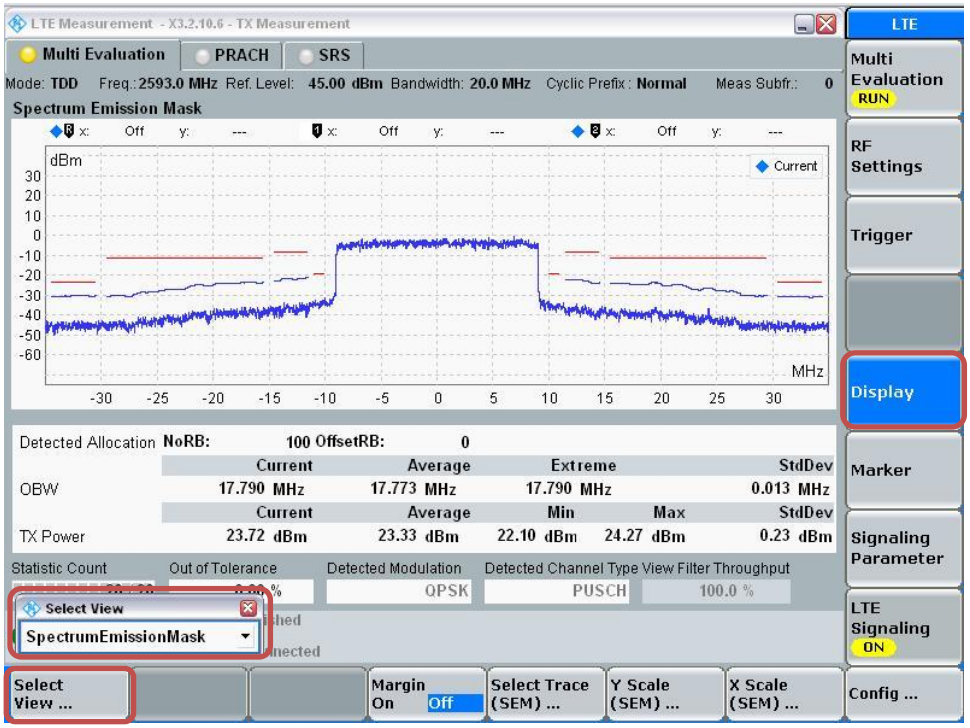


- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



View TX Power

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



1. Max power Results

LTE Band 41 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					MPR	Tune-up Limit
				Measured Pwr (dBm)						
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	23.8	24.7	24.0	23.0	23.0	0.0	25.0
		1	49	23.7	24.6	24.3	23.3	23.4	0.0	25.0
		1	99	23.7	24.5	24.0	22.8	23.3	0.0	25.0
		50	0	22.8	23.5	23.2	22.2	22.2	1.0	24.0
		50	24	22.8	23.5	23.3	22.2	22.4	1.0	24.0
		50	50	22.7	23.4	23.3	22.1	22.4	1.0	24.0
		100	0	22.7	23.4	23.2	22.1	22.3	1.0	24.0
	16QAM	1	0	22.8	23.6	23.1	22.0	21.9	1.0	24.0
		1	49	22.7	23.6	23.5	22.2	22.4	1.0	24.0
		1	99	22.6	23.5	23.2	21.8	22.4	1.0	24.0
		50	0	21.7	22.5	22.2	21.2	21.2	2.0	23.0
		50	24	21.7	22.5	22.4	21.2	21.3	2.0	23.0
		50	50	21.6	22.4	22.3	21.0	21.3	2.0	23.0
		100	0	21.7	22.4	22.2	21.1	21.3	2.0	23.0
	64QAM	1	0	21.9	22.9	22.0	21.1	21.4	2.0	23.0
		1	49	21.8	22.8	22.3	21.3	21.6	2.0	23.0
		1	99	21.6	22.7	22.0	20.7	21.6	2.0	23.0
		50	0	20.8	21.6	21.3	20.3	20.3	3.0	22.0
		50	24	20.8	21.5	21.4	20.3	20.4	3.0	22.0
		50	50	20.7	21.4	21.3	20.1	20.4	3.0	22.0
		100	0	20.7	21.4	21.3	20.1	20.3	3.0	22.0
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	23.7	24.3	24.1	23.0	23.0	0.0	25.0
		1	37	23.6	24.4	24.3	23.2	23.2	0.0	25.0
		1	74	23.6	24.2	24.1	22.9	23.3	0.0	25.0
		36	0	22.8	23.4	23.2	22.2	22.2	1.0	24.0
		36	20	22.8	23.5	23.3	22.2	22.3	1.0	24.0
		36	39	22.7	23.3	23.3	22.1	22.3	1.0	24.0
		75	0	22.7	23.4	23.2	22.1	22.3	1.0	24.0
	16QAM	1	0	23.0	23.4	23.3	22.3	22.0	1.0	24.0
		1	37	23.0	23.5	23.5	22.4	22.3	1.0	24.0
		1	74	23.0	23.3	23.3	22.2	22.4	1.0	24.0
		36	0	21.8	22.4	22.3	21.2	21.2	2.0	23.0
		36	20	21.8	22.5	22.3	21.2	21.3	2.0	23.0
		36	39	21.7	22.3	22.3	21.1	21.3	2.0	23.0
		75	0	21.7	22.4	22.3	21.1	21.3	2.0	23.0
	64QAM	1	0	22.0	21.9	21.9	21.4	20.5	2.0	23.0
		1	37	22.0	22.1	22.0	21.5	20.8	2.0	23.0
		1	74	21.9	21.7	21.9	21.2	20.8	2.0	23.0
		36	0	20.9	21.5	21.3	20.3	20.3	3.0	22.0
		36	20	20.9	21.6	21.3	20.3	20.5	3.0	22.0
		36	39	20.8	21.4	21.3	20.2	20.4	3.0	22.0
		75	0	20.8	21.4	21.3	20.2	20.3	3.0	22.0

LTE Band 41 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	23.8	24.3	24.0	23.0	23.0	0.0	25.0
		1	25	23.7	24.5	24.3	23.3	23.3	0.0	25.0
		1	49	23.7	24.2	24.0	22.9	23.0	0.0	25.0
		25	0	22.8	23.6	23.3	22.2	22.3	1.0	24.0
		25	12	22.8	23.6	23.4	22.3	22.4	1.0	24.0
		25	25	22.7	23.5	23.3	22.1	22.3	1.0	24.0
		50	0	22.7	23.5	23.3	22.1	22.3	1.0	24.0
	16QAM	1	0	22.9	23.6	23.1	22.1	22.2	1.0	24.0
		1	25	22.8	23.8	23.3	22.3	22.6	1.0	24.0
		1	49	22.8	23.5	23.0	22.1	22.3	1.0	24.0
		25	0	21.8	22.5	22.3	21.3	21.3	2.0	23.0
		25	12	21.8	22.6	22.4	21.3	21.4	2.0	23.0
		25	25	21.7	22.4	22.3	21.2	21.3	2.0	23.0
		50	0	21.7	22.5	22.3	21.2	21.3	2.0	23.0
	64QAM	1	0	21.5	22.7	22.4	20.6	21.4	2.0	23.0
		1	25	21.2	23.0	22.6	20.8	21.5	2.0	23.0
		1	49	21.2	22.5	22.4	20.5	21.5	2.0	23.0
		25	0	20.9	21.5	21.3	20.3	20.2	3.0	22.0
		25	12	20.9	21.5	21.4	20.4	20.3	3.0	22.0
		25	25	20.8	21.4	21.3	20.2	20.2	3.0	22.0
		50	0	20.8	21.5	21.3	20.2	20.3	3.0	22.0

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	23.6	24.6	24.3	23.1	23.4	0.0	25.0
		1	12	23.6	24.5	24.3	23.1	23.3	0.0	25.0
		1	24	23.6	24.5	24.3	23.1	23.3	0.0	25.0
		12	0	22.7	23.6	23.4	22.3	22.4	1.0	24.0
		12	7	22.7	23.6	23.4	22.3	22.4	1.0	24.0
		12	13	22.8	23.6	23.4	22.3	22.4	1.0	24.0
		25	0	22.7	23.5	23.3	22.3	22.3	1.0	24.0
	16QAM	1	0	22.7	23.5	23.6	22.3	22.3	1.0	24.0
		1	12	22.7	23.5	23.7	22.2	22.3	1.0	24.0
		1	24	22.7	23.5	23.6	22.2	22.3	1.0	24.0
		12	0	21.7	22.5	22.4	21.3	21.3	2.0	23.0
		12	7	21.8	22.5	22.5	21.3	21.3	2.0	23.0
		12	13	21.7	22.5	22.4	21.3	21.3	2.0	23.0
		25	0	21.7	22.5	22.3	21.3	21.4	2.0	23.0
	64QAM	1	0	22.2	22.3	22.6	21.9	21.0	2.0	23.0
		1	12	22.1	22.2	22.5	21.7	21.0	2.0	23.0
		1	24	22.2	22.2	22.5	21.6	21.0	2.0	23.0
		12	0	20.9	21.6	21.3	20.4	20.4	3.0	22.0
		12	7	20.9	21.6	21.3	20.4	20.4	3.0	22.0
		12	13	20.9	21.6	21.3	20.4	20.4	3.0	22.0
		25	0	20.8	21.7	21.3	20.3	20.4	3.0	22.0

2. Reduced power Results

LTE Band 41 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
				40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	20.1	19.5	19.6	19.4	0.0	21.0	20.3	20.1	19.5	19.6	19.5	0.0	21.0
		1	49	20.0	19.7	19.9	19.9	0.0	21.0	20.3	20.1	19.8	19.8	19.9	0.0	21.0
		1	99	19.9	19.5	19.4	19.8	0.0	21.0	20.2	20.0	19.5	19.3	19.8	0.0	21.0
		50	0	20.1	19.8	19.8	19.8	0.0	21.0	20.3	20.0	19.8	19.8	19.7	0.0	21.0
		50	24	20.1	19.9	19.8	19.9	0.0	21.0	20.3	20.0	19.9	19.8	19.9	0.0	21.0
		50	50	19.9	19.8	19.6	19.9	0.0	21.0	20.2	19.9	19.8	19.6	19.9	0.0	21.0
		100	0	19.9	19.8	19.6	19.8	0.0	21.0	20.2	20.0	19.8	19.7	19.8	0.0	21.0
	16QAM	1	0	20.0	19.5	19.5	19.3	0.0	21.0	20.2	20.0	19.6	19.5	19.3	0.0	21.0
		1	49	19.9	19.9	19.7	19.8	0.0	21.0	20.2	19.9	19.9	19.8	19.8	0.0	21.0
		1	99	19.9	19.5	19.2	19.7	0.0	21.0	20.1	19.9	19.6	19.3	19.7	0.0	21.0
		50	0	20.0	19.8	19.8	19.7	0.0	21.0	20.3	20.1	19.8	19.7	19.8	0.0	21.0
		50	24	20.0	19.9	19.7	19.9	0.0	21.0	20.3	20.0	19.9	19.7	19.9	0.0	21.0
		50	50	19.9	19.8	19.6	19.9	0.0	21.0	20.1	19.9	19.8	19.6	19.9	0.0	21.0
		100	0	19.9	19.8	19.6	19.8	0.0	21.0	20.2	19.9	19.8	19.6	19.8	0.0	21.0
	64QAM	1	0	20.4	19.3	19.5	19.8	0.0	21.0	20.2	20.3	19.5	19.5	19.8	0.0	21.0
		1	49	20.3	19.6	19.8	20.2	0.0	21.0	20.1	20.3	19.8	19.8	20.2	0.0	21.0
		1	99	20.2	19.3	19.3	20.1	0.0	21.0	20.0	20.2	19.5	19.2	20.1	0.0	21.0
		50	0	20.1	19.8	19.8	19.8	0.0	21.0	20.4	20.1	19.8	19.8	19.8	0.0	21.0
		50	24	20.1	19.9	19.8	20.0	0.0	21.0	20.4	20.1	20.0	19.8	20.0	0.0	21.0
		50	50	20.0	19.8	19.7	19.9	0.0	21.0	20.2	20.0	19.9	19.6	20.0	0.0	21.0
		100	0	19.9	19.8	19.7	19.8	0.0	21.0	20.3	20.0	19.8	19.7	19.9	0.0	21.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	19.8	19.7	19.6	19.5	0.0	21.0	20.2	19.8	19.6	19.5	19.5	0.0	21.0
		1	37	19.9	19.8	19.7	19.7	0.0	21.0	20.1	19.9	19.8	19.7	19.7	0.0	21.0
		1	74	19.7	19.7	19.4	19.8	0.0	21.0	20.2	19.6	19.6	19.4	19.8	0.0	21.0
		36	0	20.0	19.8	19.8	19.8	0.0	21.0	20.3	20.0	19.8	19.8	19.8	0.0	21.0
		36	20	20.0	19.9	19.8	19.9	0.0	21.0	20.3	20.1	19.9	19.8	19.9	0.0	21.0
		36	39	19.9	19.9	19.7	19.9	0.0	21.0	20.2	19.9	19.9	19.7	19.9	0.0	21.0
		75	0	20.0	19.8	19.7	19.8	0.0	21.0	20.3	20.0	19.8	19.7	19.8	0.0	21.0
	16QAM	1	0	20.1	19.9	19.7	19.8	0.0	21.0	20.2	19.8	19.9	19.8	19.5	0.0	21.0
		1	37	20.3	20.1	19.8	20.1	0.0	21.0	20.2	20.0	20.1	20.0	19.8	0.0	21.0
		1	74	20.0	19.9	19.5	20.0	0.0	21.0	20.2	19.7	19.8	19.7	19.8	0.0	21.0
		36	0	20.0	19.8	19.8	19.8	0.0	21.0	20.3	19.9	19.8	19.8	19.7	0.0	21.0
		36	20	20.0	19.9	19.7	19.9	0.0	21.0	20.3	20.0	19.8	19.7	19.9	0.0	21.0
		36	39	19.9	19.8	19.7	19.9	0.0	21.0	20.2	19.9	19.8	19.7	19.9	0.0	21.0
		75	0	20.0	19.8	19.7	19.9	0.0	21.0	20.2	20.0	19.8	19.7	19.8	0.0	21.0
	64QAM	1	0	20.3	19.3	19.1	19.8	0.0	21.0	20.6	19.3	19.4	19.9	19.2	0.0	21.0
		1	37	20.2	19.4	19.3	20.1	0.0	21.0	20.5	19.5	19.5	20.0	19.3	0.0	21.0
		1	74	19.9	19.3	18.9	20.1	0.0	21.0	20.4	19.1	19.3	19.7	19.3	0.0	21.0
		36	0	20.1	19.8	19.9	19.9	0.0	21.0	20.4	20.1	19.8	19.9	19.9	0.0	21.0
		36	20	20.1	19.8	19.8	20.0	0.0	21.0	20.4	20.1	19.9	19.8	20.0	0.0	21.0
		36	39	20.0	19.8	19.7	20.0	0.0	21.0	20.3	20.0	19.8	19.8	20.0	0.0	21.0
		75	0	20.0	19.8	19.7	19.9	0.0	21.0	20.3	20.0	19.9	19.7	19.9	0.0	21.0

LTE Band 41 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	19.9	19.6	19.5	19.6	0.0	21.0	20.2	19.8	19.5	19.5	19.5	0.0	21.0
		1	25	20.1	19.8	19.8	19.8	0.0	21.0	20.2	20.0	19.8	19.8	19.8	0.0	21.0
		1	49	19.8	19.5	19.5	19.6	0.0	21.0	20.3	19.7	19.5	19.5	19.5	0.0	21.0
		25	0	20.1	19.8	19.8	19.9	0.0	21.0	20.4	20.1	19.8	19.8	19.9	0.0	21.0
		25	12	20.2	19.9	19.9	20.0	0.0	21.0	20.4	20.2	19.9	19.9	19.9	0.0	21.0
		25	25	20.0	19.8	19.7	19.9	0.0	21.0	20.3	20.0	19.8	19.8	19.9	0.0	21.0
		50	0	20.1	19.9	19.7	19.9	0.0	21.0	20.3	20.1	19.8	19.7	19.9	0.0	21.0
	16QAM	1	0	19.9	19.7	19.6	19.7	0.0	21.0	20.4	19.8	19.7	19.7	19.6	0.0	21.0
		1	25	20.1	19.9	19.8	20.0	0.0	21.0	20.3	20.0	19.9	19.8	19.8	0.0	21.0
		1	49	19.8	19.7	19.5	19.7	0.0	21.0	20.3	19.6	19.6	19.6	19.5	0.0	21.0
		25	0	20.0	19.9	19.8	19.8	0.0	21.0	20.4	20.1	19.9	19.8	19.9	0.0	21.0
		25	12	20.1	19.9	19.9	19.9	0.0	21.0	20.4	20.2	19.9	19.9	20.0	0.0	21.0
		25	25	20.0	19.9	19.8	19.8	0.0	21.0	20.3	20.0	19.9	19.7	19.9	0.0	21.0
		50	0	20.1	19.9	19.8	19.8	0.0	21.0	20.3	20.1	19.8	19.8	19.9	0.0	21.0
	64QAM	1	0	20.4	19.9	19.1	19.9	0.0	21.0	20.7	19.5	19.8	19.9	19.1	0.0	21.0
		1	25	20.3	19.9	19.2	20.1	0.0	21.0	20.5	19.4	20.0	20.1	19.3	0.0	21.0
		1	49	20.0	19.8	18.9	19.9	0.0	21.0	20.5	19.2	19.8	19.8	19.1	0.0	21.0
		25	0	20.1	19.7	19.8	19.8	0.0	21.0	20.4	20.1	19.8	19.8	19.9	0.0	21.0
		25	12	20.2	19.8	19.9	19.9	0.0	21.0	20.4	20.2	19.8	19.9	20.0	0.0	21.0
		25	25	19.9	19.7	19.8	19.8	0.0	21.0	20.3	20.0	19.7	19.7	19.9	0.0	21.0
		50	0	20.0	19.8	19.7	19.8	0.0	21.0	20.3	20.0	19.8	19.7	19.8	0.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz			2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	20.0	19.9	19.8	19.8	0.0	21.0	20.4	20.0	19.8	19.8	19.7	0.0	21.0
		1	12	20.0	19.9	19.8	19.7	0.0	21.0	20.4	20.0	19.8	19.8	19.8	0.0	21.0
		1	24	19.9	19.8	19.8	19.7	0.0	21.0	20.4	19.9	19.8	19.8	19.7	0.0	21.0
		12	0	20.1	19.9	19.9	19.9	0.0	21.0	20.4	20.1	19.9	19.9	19.9	0.0	21.0
		12	7	20.2	20.0	19.9	19.9	0.0	21.0	20.4	20.2	19.9	20.0	20.0	0.0	21.0
		12	13	20.1	19.9	19.9	19.9	0.0	21.0	20.4	20.1	19.9	19.9	19.9	0.0	21.0
		25	0	20.1	19.9	19.9	19.9	0.0	21.0	20.3	20.2	19.9	19.9	19.9	0.0	21.0
	16QAM	1	0	20.1	20.1	19.8	19.8	0.0	21.0	20.6	20.0	19.9	20.0	19.8	0.0	21.0
		1	12	20.1	20.3	19.9	19.8	0.0	21.0	20.7	20.1	20.0	20.1	19.8	0.0	21.0
		1	24	20.0	20.1	19.8	19.8	0.0	21.0	20.6	20.0	19.8	20.0	19.8	0.0	21.0
		12	0	20.1	20.0	19.8	19.9	0.0	21.0	20.5	20.1	19.8	19.9	19.9	0.0	21.0
		12	7	20.1	20.0	19.8	19.9	0.0	21.0	20.5	20.2	19.8	20.0	19.9	0.0	21.0
		12	13	20.1	20.0	19.8	19.9	0.0	21.0	20.4	20.1	19.8	19.9	19.9	0.0	21.0
		25	0	20.1	19.9	19.9	19.9	0.0	21.0	20.4	20.1	20.0	19.9	19.9	0.0	21.0
	64QAM	1	0	20.5	20.1	19.4	20.2	0.0	21.0	20.5	19.8	19.9	20.2	19.5	0.0	21.0
		1	12	20.5	20.0	19.4	20.2	0.0	21.0	20.4	19.7	20.0	20.2	19.5	0.0	21.0
		1	24	20.5	19.8	19.4	20.2	0.0	21.0	20.6	19.6	19.8	20.2	19.4	0.0	21.0
		12	0	20.2	19.8	19.8	19.9	0.0	21.0	20.4	20.1	19.9	19.9	19.9	0.0	21.0
		12	7	20.2	19.8	19.9	20.0	0.0	21.0	20.4	20.1	19.9	20.0	19.9	0.0	21.0
		12	13	20.2	19.8	19.8	19.9	0.0	21.0	20.4	20.1	19.8	19.9	19.9	0.0	21.0
		25	0	20.1	19.7	19.9	19.9	0.0	21.0	20.3	20.2	19.8	19.9	20.0	0.0	21.0

9.3.1. LTE Rel. 15 Carrier Aggregation

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 four (4) downlinks.

LTE Release 15 Carrier Aggregation

Index	2CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
2CC #1	CA_66A-66A			
2CC #2	CA_66B			
2CC #3	CA_66C			

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	SCC3	PCC					PCC			SCC1			SCC2			SCC3					
	1st	2nd	3rd	4th	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)			
66A-66A	66A	66A			QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0							22.5	22.5	-0.05
66B	66B	66B			QPSK	15	132597	1772.5	1/0	15	67061	2172.5	5	66968	2163.2							22.5	22.5	-0.09
66C	66C	66C			QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66838	2150.2							22.5	22.4	-0.11

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

9.4. 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 of Wi-Fi SISO

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Normal WLAN mode					
					Max.Average Power			Reduced Average Power		
					Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.1	802.11b	1 Mbps	1	2412.0	18.2	19.0	Yes	12.3	13.0	Yes
			6	2437.0	18.2			11.9		
			11	2462.0	18.7			12.0		
			12	2467.0	8.1	9.0	No			
			13	2472.0	2.6	3.0				
	802.11g	6 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				
WiFi SISO Ant.2	802.11b	1 Mbps	1	2412.0	18.1	19.0	Yes	12.9	13.0	Yes
			6	2437.0	17.9			12.4		
			11	2462.0	18.0			12.3		
			12	2467.0	8.4	9.0	No			
			13	2472.0	2.4	3.0				
	802.11g	6 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	18.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		9.0				
			13	2472.0		3.0				

Measured Results of Wi-Fi MIMO

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Normal WL		
					Max.Average Power		
					Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi MIMO Ant.1	802.11b	1 Mbps	1	2412.0	17.8	18.0	Yes
			6	2437.0	17.8		
			11	2462.0	18.0		
			12	2467.0	7.9	9.0	No
			13	2472.0	2.5	3.0	
	802.11g	6 Mbps	1	2412.0	Not Required	18.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	18.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	18.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	
WiFi MIMO Ant.2	802.11b	1 Mbps	1	2412.0	17.0	18.0	Yes
			6	2437.0	17.0		
			11	2462.0	16.3		
			12	2467.0	7.9	9.0	No
			13	2472.0	2.3	3.0	
	802.11g	6 Mbps	1	2412.0	Not Required	18.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	18.0	No
			6	2437.0			
			11	2462.0			
			12	2467.0		9.0	
			13	2472.0		3.0	
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	18.0	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. Hotspot MIMO measurement to meet FCC simultaneous transmission limits

9.5. 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 Wi-Fi SISO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max. Average Power			Reduced Average Power		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Reduced Tune-up Limit (dBm)	SAR Test (Yes/No)
SISO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11n (HT20)	6.5 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11n (HT40)	13.5 Mbps	54	5270	16.5	17.0	Yes	Not Required	11.0	No
				62	5310	16.7					
		802.11ac (VHT20)	6.5 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11ac (VHT40)	13.5 Mbps	54	5270	Not Required	15.0	No	Not Required	11.0	No
				62	5310						
		802.11ac (VHT80)	29.3 Mbps	58	5290	Not Required	14.0	No	10.5	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260	Not Required	16.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11ax (HE40)	14.6 Mbps	54	5270	Not Required	15.0	No	Not Required	11.0	No
				62	5310						
		802.11ax (HE80)	30.6 Mbps	58	5290	Not Required	14.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11n (HT20)	6.5 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11n (HT40)	13.5 Mbps	102	5510	16.3	17.0	Yes	Not Required	11.0	No
				118	5590	16.4					
				126	5630	16.3					
				142	5710	16.4					
		802.11ac (VHT20)	6.5 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11ac (VHT40)	13.5 Mbps	102	5510	Not Required	15.0	No	Not Required	11.0	No
				118	5590						
				126	5630						
				142	5710						
		802.11ac (VHT80)	29.3 Mbps	106	5530	Not Required	14.0	No	10.7	11.0	Yes
				122	5610				10.5		
				138	5690				10.7		
		802.11ax (HE20)	7.3 Mbps	100	5500	Not Required	16.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11ax (HE40)	14.6 Mbps	102	5510	Not Required	15.0	No	Not Required	11.0	No
				118	5590						
				126	5630						
				142	5710						
		802.11ax (HE80)	30.6 Mbps	106	5530	Not Required	14.0	No	Not Required	11.0	No
				122	5610						
				138	5690						
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11n (HT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11n (HT40)	13.5 Mbps	151	5755	16.6	17.0	Yes	Not Required	11.0	No
				159	5795	16.8					
		802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	15.0	No	Not Required	11.0	No
				159	5795						
		802.11ac (VHT80)	29.3 Mbps	155	5775	Not Required	14.0	No	11.0	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	16.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	15.0	No	Not Required	11.0	No
				159	5795						
		802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	14.0	No	Not Required	11.0	No

Measured Results of Wi-Fi SISO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max. Average Power			Reduced Average Power		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Reduced Tune-up Limit (dBm)	SAR Test (Yes/No)
SISO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11n (HT20)	6.5 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11n (HT40)	13.5 Mbps	54	5270	16.9	17.0	Yes	Not Required	11.0	No
				62	5310	17.0					
		802.11ac (VHT20)	6.5 Mbps	52	5260	Not Required	17.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11ac (VHT40)	13.5 Mbps	54	5270	Not Required	15.0	No	Not Required	11.0	No
				62	5310						
		802.11ac (VHT80)	29.3 Mbps	58	5290	Not Required	14.0	No	10.9	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260	Not Required	16.0	No	Not Required	11.0	No
				56	5280						
				60	5300						
				64	5320						
		802.11ax (HE40)	14.6 Mbps	54	5270	Not Required	15.0	No	Not Required	11.0	No
				62	5310						
		802.11ax (HE80)	30.6 Mbps	58	5290	Not Required	14.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11n (HT20)	6.5 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11n (HT40)	13.5 Mbps	102	5510	16.6	17.0	Yes	Not Required	11.0	No
				118	5590	16.1					
				126	5630	16.3					
				142	5710	16.4					
		802.11ac (VHT20)	6.5 Mbps	100	5500	Not Required	17.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11ac (VHT40)	13.5 Mbps	102	5510	Not Required	15.0	No	Not Required	11.0	No
				118	5590						
				126	5630						
				142	5710						
		802.11ac (VHT80)	29.3 Mbps	106	5530	Not Required	14.0	No	10.8	11.0	Yes
				122	5610				10.3		
				138	5690				10.3		
		802.11ax (HE20)	7.3 Mbps	100	5500	Not Required	16.0	No	Not Required	11.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11ax (HE40)	14.6 Mbps	102	5510	Not Required	15.0	No	Not Required	11.0	No
				118	5590						
				126	5630						
				142	5710						
		802.11ax (HE80)	30.6 Mbps	106	5530	Not Required	14.0	No	Not Required	11.0	No
				122	5610						
				138	5690						
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11n (HT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11n (HT40)	13.5 Mbps	151	5755	16.7	17.0	Yes	Not Required	11.0	No
				159	5795	16.6					
		802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	15.0	No	Not Required	11.0	No
				159	5795						
		802.11ac (VHT80)	29.3 Mbps	155	5775	Not Required	14.0	No	10.6	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	16.0	No	Not Required	11.0	No
				157	5785						
				165	5825						
		802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	15.0	No	Not Required	11.0	No
				159	5795						
		802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	14.0	No	Not Required	11.0	No

Measured Results of Wi-Fi MIMO

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	MIMO Ant.1			MIMO Ant.2		
					Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	Not Required	17.0	No	Not Required	17.0	No
			157	5785						
			165	5825						
	802.11n (HT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	17.0	No
			157	5785						
			165	5825						
	802.11n (HT40)	13.5 Mbps	151	5755	16.4	17.0	Yes	16.8	17.0	Yes
			159	5795	16.6			17.0		
	802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	17.0	No	Not Required	17.0	No
			157	5785						
			165	5825						
	802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	15.0	No	Not Required	15.0	No
			159	5795						
	802.11ac (VHT80)	29.3 Mbps	155	5775	Not Required	14.0	No	Not Required	14.0	No
	802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	16.0	No	Not Required	16.0	No
			157	5785						
			165	5825						
	802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	15.0	No	Not Required	15.0	No
			159	5795						
	802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	14.0	No	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. Hotspot MIMO measurement to meet FCC simultaneous transmission limits

9.6. Bluetooth

Measured Results

Band (GHz)	Mode	Ch #	Freq. (MHz)	Maximum Average Power (dBm)			
				BT Ant.1		BT Ant.2	
				Meas Pwr	Tune-up Limit	Meas Pwr	Tune-up Limit
2.4	BDR, GFSK	0	2402	14.4	16.0	16.3	18.0
		39	2441	15.9		17.9	
		78	2480	15.3		16.0	
	EDR, 8-DPSK	0	2402	12.2	14.0	14.0	16.0
		39	2441	13.7		15.6	
		78	2480	13.3		13.8	
	LE, GFSK-1M	0	2402	2.3	7.0		
		19	2440	4.0			
		39	2480	3.0			
	LE, GFSK-2M	0	2402	3.4	7.0		
		19	2440	5.9			
		39	2480	4.6			

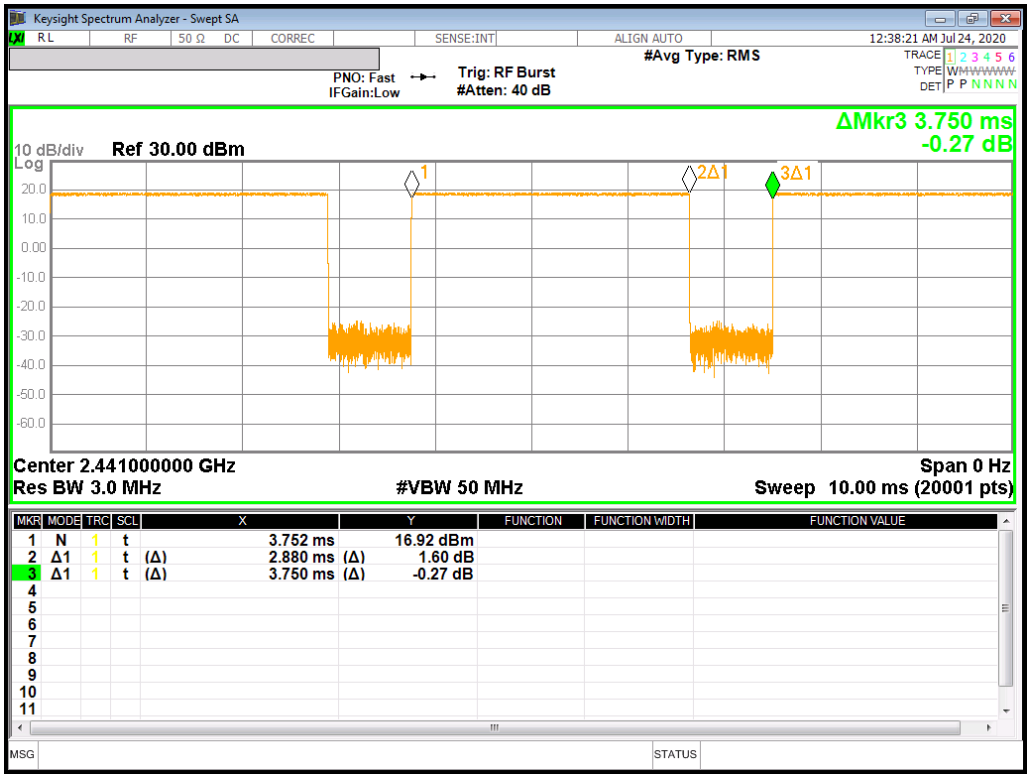
Note(s):
SAR test is evaluated at GFSK mode in Bluetooth

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.880	3.750	76.8%	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 3 Slot	N/A	0	Left Touch	190	836.6	30.5	29.3	0.085	0.113	
					Left Tilt	190	836.6	30.5	29.3	0.060	0.080	
					Right Touch	190	836.6	30.5	29.3	0.198	0.262	1
					Right Tilt	190	836.6	30.5	29.3	0.080	0.105	
	Body-worn	GPRS 3 Slot	N/A	15	Rear	190	836.6	30.5	29.3	0.206	0.273	2
					Front	190	836.6	30.5	29.3	0.171	0.227	
	Hotspot	GPRS 3 Slot	N/A	10	Rear	190	836.6	30.5	29.3	0.430	0.570	3
					Front	190	836.6	30.5	29.3	0.336	0.445	
					Edge 2	190	836.6	30.5	29.3	0.113	0.150	
					Edge 3	190	836.6	30.5	29.3	0.204	0.270	
					Edge 4	190	836.6	30.5	29.3	0.028	0.037	

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	661	1880.0	27.5	26.7	0.039	0.047	4
					Left Tilt	661	1880.0	27.5	26.7	0.017	0.020	
					Right Touch	661	1880.0	27.5	26.7	0.038	0.046	
					Right Tilt	661	1880.0	27.5	26.7	0.016	0.019	
	Body-worn	GPRS 3 Slot	Off	15	Rear	661	1880.0	27.5	26.7	0.252	0.304	5
					Front	661	1880.0	27.5	26.7	0.244	0.294	
	Hotspot	GPRS 3 Slot	On	10	Rear	661	1880.0	24.5	23.7	0.312	0.378	
					Front	661	1880.0	24.5	23.7	0.340	0.412	
					Edge 2	661	1880.0	24.5	23.7	0.052	0.062	
					Edge 3	512	1850.2	24.5	23.3	0.682	0.902	6
						661	1880.0	24.5	23.7	0.732	0.886	
						810	1909.8	24.5	23.7	0.699	0.850	
					Edge 4	661	1880.0	24.5	23.7	0.019	0.023	
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	GPRS 3 Slot	Off	12	Edge 3	661	1880.0	27.5	26.7	0.479	0.578	
		GPRS 3 Slot	On	0	Edge 3	661	1880.0	24.5	23.7	0.727	0.876	7

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	24.0	23.4	0.078	0.090	8
					Left Tilt	9400	1880.0	24.0	23.4	0.026	0.029	
					Right Touch	9400	1880.0	24.0	23.4	0.061	0.070	
					Rightt Tilt	9400	1880.0	24.0	23.4	0.026	0.030	
	Body-worn	Rel 99 RMC	Off	15	Rear	9400	1880.0	24.0	23.4	0.411	0.471	
					Front	9400	1880.0	24.0	23.4	0.478	0.548	9
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	21.0	20.4	0.424	0.485	
					Front	9400	1880.0	21.0	20.4	0.436	0.499	
					Edge 2	9400	1880.0	21.0	20.4	0.058	0.066	
					Edge 3	9262	1852.4	21.0	20.3	0.874	1.029	
						9400	1880.0	21.0	20.4	0.877	1.003	
						9538	1907.6	21.0	20.5	0.921	1.031	10
					Edge 4	9400	1880.0	21.0	20.4	0.029	0.034	
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	12	Edge 3	9400	1880.0	24.0	23.4	0.827	0.948	
			On	0	Edge 3	9400	1880.0	21.0	20.4	1.050	1.204	11

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	24.0	23.3	0.079	0.092	12
					Left Tilt	1413	1732.6	24.0	23.3	0.025	0.030	
					Right Touch	1413	1732.6	24.0	23.3	0.072	0.084	
					Rightt Tilt	1413	1732.6	24.0	23.3	0.059	0.069	
	Body-worn	Rel 99 RMC	Off	15	Rear	1413	1732.6	24.0	23.3	0.497	0.583	13
					Front	1413	1732.6	24.0	23.3	0.488	0.572	
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	21.0	20.3	0.423	0.496	
					Front	1413	1732.6	21.0	20.3	0.423	0.496	
					Edge 2	1413	1732.6	21.0	20.3	0.062	0.073	
					Edge 3	1312	1712.4	21.0	20.3	0.585	0.694	
						1413	1732.6	21.0	20.3	0.691	0.810	
						1513	1752.6	21.0	20.4	0.802	0.913	14
					Edge 4	1413	1732.6	21.0	20.3	0.052	0.061	
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	12	Edge 3	1413	1732.6	24.0	23.3	0.596	0.699	
			On	0	Edge 3	1312	1712.4	21.0	20.3	1.560	1.845	
						1413	1732.6	21.0	20.3	1.730	2.039	
						1513	1752.6	21.0	20.4	1.810	2.065	15

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	25.8	24.6	0.136	0.178	
					Left Tilt	4183	836.6	25.8	24.6	0.084	0.110	
					Right Touch	4183	836.6	25.8	24.6	0.194	0.255	16
					Rightt Tilt	4183	836.6	25.8	24.6	0.090	0.118	
	Body-worn	Rel 99 RMC	N/A	15	Rear	4183	836.6	25.8	24.6	0.271	0.356	17
					Front	4183	836.6	25.8	24.6	0.270	0.354	
	Hotspot	Rel 99 RMC	N/A	10	Rear	4183	836.6	25.8	24.6	0.532	0.698	18
					Front	4183	836.6	25.8	24.6	0.502	0.659	
					Edge 2	4183	836.6	25.8	24.6	0.158	0.207	
					Edge 3	4183	836.6	25.8	24.6	0.400	0.525	
					Edge 4	4183	836.6	25.8	24.6	0.073	0.096	

10.6. LTE Band 2 (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	19100	1900.0	1	0	24.0	22.9	0.061	0.079	19
								50	24	23.0	21.9	0.047	0.060	
					Left Tilt	19100	1900.0	1	0	24.0	22.9	0.024	0.031	
								50	24	23.0	21.9	0.019	0.024	
					Right Touch	19100	1900.0	1	0	24.0	22.9	0.054	0.069	
								50	24	23.0	21.9	0.037	0.047	
					Right Tilt	19100	1900.0	1	0	24.0	22.9	0.037	0.048	
								50	24	23.0	21.9	0.031	0.040	
	Body-worn	QPSK	Off	15	Rear	19100	1900.0	1	0	24.0	22.9	0.368	0.476	
								50	24	23.0	21.9	0.267	0.342	
					Front	19100	1900.0	1	0	24.0	22.9	0.392	0.507	20
								50	24	23.0	21.9	0.301	0.385	
	Hotspot	QPSK	On	10	Rear	19100	1900.0	1	0	21.0	20.1	0.402	0.500	
								50	24	21.0	20.2	0.385	0.464	
					Front	19100	1900.0	1	0	21.0	20.1	0.447	0.556	
								50	24	21.0	20.2	0.440	0.530	
					Edge 2	19100	1900.0	1	0	21.0	20.1	0.053	0.066	
								50	24	21.0	20.2	0.052	0.062	
					Edge 3	18700	1860.0	1	0	21.0	19.8	0.787	1.029	
								50	24	21.0	19.9	0.802	1.030	
						18900	1880.0	1	0	21.0	19.9	0.804	1.045	21
								50	24	21.0	20.0	0.825	1.035	
						19100	1900.0	1	0	21.0	20.1	0.812	1.010	
								50	24	21.0	20.2	0.816	0.982	
								100	0	21.0	20.0	0.809	1.016	
					Edge 4	19100	1900.0	1	0	21.0	20.1	0.023	0.028	
								50	24	21.0	20.2	0.025	0.030	
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	12	Edge 3	19100	1900.0	1	0	24.0	22.9	0.690	0.893	
								50	24	23.0	21.9	0.550	0.704	
			On	0	Edge 3	19100	1900.0	1	0	21.0	20.2	0.971	1.180	22
								50	24	21.0	20.2	0.962	1.163	

10.7. LTE Band 5 (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	20525	836.5	1	49	25.8	24.6	0.118	0.155	
								25	25	24.8	23.6	0.093	0.122	
					Left Tilt	20525	836.5	1	49	25.8	24.6	0.072	0.094	
								25	25	24.8	23.6	0.059	0.077	
					Right Touch	20525	836.5	1	49	25.8	24.6	0.180	0.236	23
								25	25	24.8	23.6	0.154	0.202	
					Right Tilt	20525	836.5	1	49	25.8	24.6	0.072	0.095	
								25	25	24.8	23.6	0.063	0.082	
	Body-worn	QPSK	N/A	15	Rear	20525	836.5	1	49	25.8	24.6	0.264	0.347	24
								25	25	24.8	23.6	0.222	0.292	
					Front	20525	836.5	1	49	25.8	24.6	0.243	0.319	
								25	25	24.8	23.6	0.201	0.264	
	Hotspot	QPSK	N/A	10	Rear	20525	836.5	1	49	25.8	24.6	0.528	0.694	25
								25	25	24.8	23.6	0.437	0.574	
					Front	20525	836.5	1	49	25.8	24.6	0.445	0.585	
								25	25	24.8	23.6	0.362	0.476	
					Edge 2	20525	836.5	1	49	25.8	24.6	0.203	0.267	
								25	25	24.8	23.6	0.155	0.204	
					Edge 3	20525	836.5	1	49	25.8	24.6	0.396	0.520	
								25	25	24.8	23.6	0.331	0.435	
					Edge 4	20525	836.5	1	49	25.8	24.6	0.063	0.083	
								25	25	24.8	23.6	0.051	0.067	

10.8. 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	24.0	22.8	0.082	0.106	
								25	12	23.0	21.9	0.060	0.078	
					Left Tilt	23095	707.5	1	49	24.0	22.8	0.047	0.061	
								25	12	23.0	21.9	0.033	0.043	
					Right Touch	23095	707.5	1	49	24.0	22.8	0.096	0.125	26
								25	12	23.0	21.9	0.082	0.106	
					Right Tilt	23095	707.5	1	49	24.0	22.8	0.045	0.059	
								25	12	23.0	21.9	0.043	0.055	
	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	49	24.0	22.8	0.149	0.195	27
								25	12	23.0	21.9	0.120	0.155	
					Front	23095	707.5	1	49	24.0	22.8	0.130	0.170	
								25	12	23.0	21.9	0.104	0.135	
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	49	24.0	22.8	0.211	0.276	28
								25	12	23.0	21.9	0.158	0.205	
					Front	23095	707.5	1	49	24.0	22.8	0.165	0.215	
								25	12	23.0	21.9	0.127	0.165	
					Edge 2	23095	707.5	1	49	24.0	22.8	0.112	0.146	
								25	12	23.0	21.9	0.094	0.122	
					Edge 3	23095	707.5	1	49	24.0	22.8	0.134	0.175	
								25	12	23.0	21.9	0.102	0.132	
					Edge 4	23095	707.5	1	49	24.0	22.8	0.085	0.112	
								25	12	23.0	21.9	0.075	0.097	

10.9. 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	24.0	22.7	0.091	0.122	
								25	0	23.0	21.7	0.074	0.100	
					Left Tilt	23230	782.0	1	0	24.0	22.7	0.048	0.065	
								25	0	23.0	21.7	0.039	0.053	
					Right Touch	23230	782.0	1	0	24.0	22.7	0.108	0.145	29
								25	0	23.0	21.7	0.088	0.119	
					Right Tilt	23230	782.0	1	0	24.0	22.7	0.049	0.066	
								25	0	23.0	21.7	0.037	0.050	
	Body-worn	QPSK	N/A	15	Rear	23230	782.0	1	0	24.0	22.7	0.153	0.206	30
								25	0	23.0	21.7	0.123	0.166	
					Front	23230	782.0	1	0	24.0	22.7	0.148	0.199	
								25	0	23.0	21.7	0.120	0.162	
	Hotspot	QPSK	N/A	10	Rear	23230	782.0	1	0	24.0	22.7	0.299	0.402	31
								25	0	23.0	21.7	0.241	0.325	
					Front	23230	782.0	1	0	24.0	22.7	0.247	0.332	
								25	0	23.0	21.7	0.198	0.267	
					Edge 2	23230	782.0	1	0	24.0	22.7	0.136	0.183	
								25	0	23.0	21.7	0.109	0.147	
					Edge 3	23230	782.0	1	0	24.0	22.7	0.173	0.233	
								25	0	23.0	21.7	0.139	0.188	
					Edge 4	23230	782.0	1	0	24.0	22.7	0.102	0.137	
								25	0	23.0	21.7	0.086	0.116	

10.10. 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	74	23.5	22.6	0.073	0.089	
								36	39	22.5	21.7	0.058	0.071	
					Left Tilt	26865	831.5	1	74	23.5	22.6	0.044	0.054	
								36	39	22.5	21.7	0.036	0.043	
					Right Touch	26865	831.5	1	74	23.5	22.6	0.130	0.159	32
								36	39	22.5	21.7	0.099	0.120	
					Right Tilt	26865	831.5	1	74	23.5	22.6	0.049	0.059	
								36	39	22.5	21.7	0.036	0.043	
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	74	23.5	22.6	0.173	0.211	33
								36	39	22.5	21.7	0.136	0.165	
					Front	26865	831.5	1	74	23.5	22.6	0.169	0.207	
								36	39	22.5	21.7	0.131	0.159	
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	74	23.5	22.6	0.365	0.446	34
								36	39	22.5	21.7	0.290	0.351	
					Front	26865	831.5	1	74	23.5	22.6	0.315	0.385	
								36	39	22.5	21.7	0.250	0.303	
					Edge 2	26865	831.5	1	74	23.5	22.6	0.122	0.149	
								36	39	22.5	21.7	0.092	0.111	
					Edge 3	26865	831.5	1	74	23.5	22.6	0.258	0.315	
								36	39	22.5	21.7	0.205	0.248	
					Edge 4	26865	831.5	1	74	23.5	22.6	0.041	0.050	
								36	39	22.5	21.7	0.033	0.039	

10.11. LTE Band 41 (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	40185	2549.5	1	0	25.0	24.7	0.081	0.087	35
								50	24	24.0	23.5	0.064	0.072	
					Left Tilt	40185	2549.5	1	0	25.0	24.7	0.031	0.033	
								50	24	24.0	23.5	0.025	0.028	
					Right Touch	40185	2549.5	1	0	25.0	24.7	0.052	0.056	
								50	24	24.0	23.5	0.042	0.046	
					Right Tilt	40185	2549.5	1	0	25.0	24.7	0.067	0.072	
								50	24	24.0	23.5	0.051	0.057	
	Body-worn	QPSK	Off	15	Rear	40185	2549.5	1	0	25.0	24.7	0.188	0.202	36
								50	24	24.0	23.5	0.143	0.160	
					Front	40185	2549.5	1	0	25.0	24.7	0.185	0.199	
								50	24	24.0	23.5	0.147	0.164	
	Hotspot	QPSK	On	10	Rear	39750	2506.0	1	0	21.0	20.4	0.111	0.129	
								50	24	21.0	20.3	0.109	0.128	
					Front	39750	2506.0	1	0	21.0	20.4	0.135	0.156	
								50	24	21.0	20.3	0.131	0.154	
					Edge 3	39750	2506.0	1	0	21.0	20.4	0.255	0.296	
								50	24	21.0	20.3	0.256	0.300	37
					Edge 4	39750	2506.0	1	0	21.0	20.4	0.141	0.163	
								50	24	21.0	20.3	0.136	0.159	

10.12. 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	24.0	22.5	0.095	0.133	38
								50	24	23.0	21.6	0.085	0.117	
					Left Tilt	132572	1770.0	1	0	24.0	22.5	0.034	0.048	
								50	24	23.0	21.6	0.026	0.036	
					Right Touch	132572	1770.0	1	0	24.0	22.5	0.060	0.084	
								50	24	23.0	21.6	0.054	0.075	
					Right Tilt	132572	1770.0	1	0	24.0	22.5	0.042	0.058	
								50	24	23.0	21.6	0.034	0.046	
	Body-worn	QPSK	Off	15	Rear	132572	1770.0	1	0	24.0	22.5	0.461	0.646	
								50	24	23.0	21.6	0.372	0.514	
					Front	132572	1770.0	1	0	24.0	22.5	0.518	0.726	39
								50	24	23.0	21.6	0.419	0.579	
	Hotspot	QPSK	On	10	Rear	132572	1770.0	1	0	19.5	18.6	0.323	0.395	
								50	24	19.5	18.6	0.328	0.399	
					Front	132572	1770.0	1	0	19.5	18.6	0.354	0.433	
								50	24	19.5	18.6	0.362	0.441	
					Edge 2	132572	1770.0	1	0	19.5	18.6	0.044	0.054	
								50	24	19.5	18.6	0.045	0.055	
					Edge 3	132572	1770.0	1	0	19.5	18.6	0.596	0.729	
								50	24	19.5	18.6	0.609	0.742	40
					Edge 4	132572	1770.0	1	0	19.5	18.6	0.059	0.072	
								50	24	19.5	18.6	0.062	0.075	

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	6	Front	132572	1770.0	1	0	24.0	22.5	1.000	1.401	
				12	Edge 3	132572	1770.0	1	0	24.0	22.5	0.701	0.982	
								50	24	23.0	21.6	0.563	0.777	
			On	0	Front	132572	1770.0	1	0	21.0	20.1	1.420	1.732	
					Edge 3	132072	1720.0	1	0	21.0	19.7	1.380	1.856	
								50	24	21.0	20.1	1.600	1.974	
						132322	1745.0	1	0	21.0	19.7	1.540	2.062	
								50	24	21.0	20.1	1.700	2.097	41
						132572	1770.0	1	0	21.0	20.1	1.710	2.085	
								50	24	21.0	20.1	1.670	2.056	
								100	0	21.0	20.1	1.670	2.070	

10.13. 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	1	2412.0	0.375	99.8%	13.0	12.3				
						Left Tilt	1	2412.0	0.509	99.8%	13.0	12.3				
						Right Touch	1	2412.0	0.703	99.8%	13.0	12.3	0.499	0.589	2	
						Rightt Tilt	1	2412.0	0.786	99.8%	13.0	12.3	0.540	0.637		42
			Body-worn	Off	15	Rear	11	2462.0	0.192	99.8%	19.0	18.7	0.152	0.164	1	43
						Front	11	2462.0	0.162	99.8%	19.0	18.7				
			Hotspot	Off	10	Rear	11	2462.0	0.379	99.8%	19.0	18.7	0.284	0.306	2	
						Front	11	2462.0	0.313	99.8%	19.0	18.7	0.253	0.273	4	
						Edge 1	11	2462.0	0.588	99.8%	19.0	18.7	0.494	0.533		44
						Edge 4	11	2462.0	0.143	99.8%	19.0	18.7				
SISO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.034	99.8%	13.0	12.9				
						Left Tilt	1	2412.0	0.025	99.8%	13.0	12.9				
						Right Touch	1	2412.0	0.174	99.8%	13.0	12.9	0.125	0.128	1	
						Rightt Tilt	1	2412.0	0.121	99.8%	13.0	12.9				
			Body-worn	Off	15	Rear	1	2412.0	0.039	99.8%	19.0	18.1	0.030	0.037	1	
						Front	1	2412.0	0.029	99.8%	19.0	18.1				
			Hotspot	Off	10	Rear	1	2412.0	0.080	99.8%	19.0	18.1	0.064	0.078	4	
						Front	1	2412.0	0.071	99.8%	19.0	18.1				
						Edge 1	1	2412.0	0.045	99.8%	19.0	18.1				
						Edge 4	1	2412.0	0.109	99.8%	19.0	18.1	0.079	0.097	1	
MIMO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Hotspot	Off	10	Rear	11	2462.0	0.406	99.8%	18.0	18.0	0.291	0.294	2	
						Front	11	2462.0	0.382	99.8%	18.0	18.0				
						Edge 1	11	2462.0	0.540	99.8%	18.0	18.0	0.474	0.479		
						Edge 4	11	2462.0	0.175	99.8%	18.0	18.0				
MIMO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Hotspot	Off	10	Rear	11	2462.0	0.406	99.8%	18.0	16.3				
						Front	11	2462.0	0.382	99.8%	18.0	16.3				
						Edge 1	11	2462.0	0.540	99.8%	18.0	16.3				
						Edge 4	11	2462.0	0.175	99.8%	18.0	16.3				

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.

10.14. 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	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	58	5290.0	0.009	99.7%	11.0	10.5						
						Left Tilt	58	5290.0	0.008	99.7%	11.0	10.5						
						Right Touch	58	5290.0	0.019	99.7%	11.0	10.5	<0.001	<0.001			1	
						Right Tilt	58	5290.0	0.011	99.7%	11.0	10.5						
		802.11n (HT40)	Body-worn	Off	15	Rear	62	5310.0	0.126	99.7%	17.0	16.7	0.054	0.057			1	
						Front	62	5310.0	0.013	99.7%	17.0	16.7						
			Product Specific 10-g	Off	0	Rear	62	5310.0	4.602	99.7%	17.0	16.7			0.440	0.471	1	
						Front	62	5310.0	0.140	99.7%	17.0	16.7						
						Edge 1	62	5310.0	0.196	99.7%	17.0	16.7						
						Edge 4	62	5310.0	1.549	99.7%	17.0	16.7						
SISO (WiFI Ant.2)	5.3 GHz U-NII 2A	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	58	5290.0	0.158	99.7%	11.0	10.9						
						Left Tilt	58	5290.0	0.208	99.7%	11.0	10.9						
						Right Touch	58	5290.0	0.618	99.7%	11.0	10.9	0.223	0.231			1	45
						Right Tilt	58	5290.0	0.524	99.7%	11.0	10.9						
		802.11n (HT40)	Body-worn	Off	15	Rear	62	5310.0	0.391	99.7%	17.0	17.0	0.179	0.181			1	46
						Front	62	5310.0	0.182	99.7%	17.0	17.0						
			Product Specific 10-g	Off	0	Rear	62	5310.0	2.554	99.7%	17.0	17.0			0.369	0.374	4	
						Front	62	5310.0	3.478	99.7%	17.0	17.0						
						Edge 1	62	5310.0	4.086	99.7%	17.0	17.0			0.452	0.458	2	
						Edge 4	62	5310.0	6.841	99.7%	17.0	17.0			0.991	1.003		47

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	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	138	5690.0	0.016	99.7%	11.0	10.7						
						Left Tilt	138	5690.0	0.018	99.7%	11.0	10.7						
						Right Touch	138	5690.0	0.028	99.7%	11.0	10.7	0.008	0.009			1	
						Right Tilt	138	5690.0	0.014	99.7%	11.0	10.7						
		802.11n (HT40)	Body-worn	Off	15	Rear	118	5590.0	0.145	99.7%	17.0	16.4	0.062	0.072			1	
						Front	118	5590.0	0.016	99.7%	17.0	16.4						
			Product Specific 10-g	Off	0	Rear	118	5590.0	5.566	99.7%	17.0	16.4			0.478	0.549	1	
						Front	118	5590.0	0.167	99.7%	17.0	16.4						
						Edge 1	118	5590.0	0.317	99.7%	17.0	16.4						
						Edge 4	118	5590.0	3.186	99.7%	17.0	16.4						
SISO (WiFI Ant.2)	5.5 GHz U-NII 2C	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	106	5530.0	0.131	99.7%	11.0	10.8						
						Left Tilt	106	5530.0	0.159	99.7%	11.0	10.8						
						Right Touch	106	5530.0	0.399	99.7%	11.0	10.8	0.155	0.164			1	48
						Right Tilt	106	5530.0	0.347	99.7%	11.0	10.8						
		802.11n (HT40)	Body-worn	Off	15	Rear	102	5510.0	0.453	99.7%	17.0	16.6	0.208	0.229			1	49
						Front	102	5510.0	0.093	99.7%	17.0	16.6						
			Product Specific 10-g	Off	0	Rear	102	5510.0	2.892	99.7%	17.0	16.6			0.475	0.524	4	
						Front	102	5510.0	3.246	99.7%	17.0	16.6						
						Edge 1	102	5510.0	4.361	99.7%	17.0	16.6			0.361	0.398	2	
						Edge 4	102	5510.0	6.549	99.7%	17.0	16.6			0.988	1.089		50

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	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	155	5775.0	0.031	99.7%	11.0	11.0				
						Left Tilt	155	5775.0	0.030	99.7%	11.0	11.0				
						Right Touch	155	5775.0	0.045	99.7%	11.0	11.0	0.015	0.015	1	
						Right Tilt	155	5775.0	0.020	99.7%	11.0	11.0				
		802.11n (HT40)	Body-worn	Off	15	Rear	159	5795.0	0.260	99.7%	17.0	16.8	0.115	0.121	1	
						Front	159	5795.0	0.025	99.7%	17.0	16.8				
			Hotspot	Off	10	Rear	151	5755.0	0.369	99.7%	17.0	16.6	0.169	0.185	1	
						Front	151	5755.0	0.032	99.7%	17.0	16.6				
						Edge 1	151	5755.0	0.045	99.7%	17.0	16.6				
						Edge 4	151	5755.0	0.186	99.7%	17.0	16.6				
SISO (WiFI Ant.2)	5.8 GHz U-NII 3	802.11ac VHT 80 MCS 0	Head	On	0	Left Touch	155	5775.0	0.121	99.7%	11.0	10.6				
						Left Tilt	155	5775.0	0.148	99.7%	11.0	10.6				
						Right Touch	155	5775.0	0.514	99.7%	11.0	10.6	0.206	0.229	1	51
						Right Tilt	155	5775.0	0.334	99.7%	11.0	10.6				
		802.11n (HT40)	Body-worn	Off	15	Rear	151	5755.0	0.693	99.7%	17.0	16.7	0.327	0.351	1	52
						Front	151	5755.0	0.074	99.7%	17.0	16.7				
			Hotspot	Off	10	Rear	151	5755.0	0.988	99.7%	17.0	16.7	0.480	0.515		
						Front	151	5755.0	0.197	99.7%	17.0	16.7	0.083	0.089	4	
						Edge 1	151	5755.0	0.512	99.7%	17.0	16.7				
						Edge 4	151	5755.0	0.593	99.7%	17.0	16.7	0.263	0.282	2	
MIMO (WiFI Ant.1)	5.8 GHz U-NII 3	802.11n (HT40)	Hotspot	Off	10	Rear	151	5755.0	1.136	99.7%	17.0	16.4				
						Front	151	5755.0	0.187	99.7%	17.0	16.4				
						Edge 1	151	5755.0	0.530	99.7%	17.0	16.4				
						Edge 4	151	5755.0	0.720	99.7%	17.0	16.4				
MIMO (WiFI Ant.2)	5.8 GHz U-NII 3	802.11n (HT40)	Hotspot	Off	10	Rear	151	5755.0	1.136	99.7%	17.0	16.8	0.548	0.582		53
						Front	151	5755.0	0.187	99.7%	17.0	16.8	0.079	0.084	4	
						Edge 1	151	5755.0	0.530	99.7%	17.0	16.8				
						Edge 4	151	5755.0	0.720	99.7%	17.0	16.8	0.327	0.348	2	

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.

10.15. Bluetooth

Antenna	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	
BT Ant.1	2.4 GHz	GFSK	Head	N/A	0	Left Touch	39	2441.0	76.8%	16.0	15.9	0.347	0.462	
						Left Tilt	39	2441.0	76.8%	16.0	15.9	0.412	0.549	
						Right Touch	39	2441.0	76.8%	16.0	15.9	0.592	0.789	
						Right Tilt	0	2402.0	76.8%	16.0	14.4	0.304	0.567	
							39	2441.0	76.8%	16.0	15.9	0.607	0.809	54
							78	2480.0	76.8%	16.0	15.3	0.471	0.718	
			Body-worn	N/A	15	Rear	39	2441.0	76.8%	16.0	15.9	0.060	0.079	55
						Front	39	2441.0	76.8%	16.0	15.9	0.054	0.072	
			Hotspot	N/A	10	Rear	39	2441.0	76.8%	16.0	15.9	0.107	0.143	
						Front	39	2441.0	76.8%	16.0	15.9	0.086	0.114	
						Edge 1	39	2441.0	76.8%	16.0	15.9	0.167	0.223	56
						Edge 4	39	2441.0	76.8%	16.0	15.9	0.027	0.036	
BT Ant.2	2.4 GHz	GFSK	Head	N/A	0	Left Touch	39	2441.0	76.8%	18.0	17.9	0.307	0.412	
						Left Tilt	39	2441.0	76.8%	18.0	17.9	0.367	0.492	
						Right Touch	39	2441.0	76.8%	18.0	17.9	0.510	0.684	
						Right Tilt	39	2441.0	76.8%	18.0	17.9	0.586	0.786	
			Body-worn	N/A	15	Rear	39	2441.0	76.8%	18.0	17.9	0.019	0.026	
						Front	39	2441.0	76.8%	18.0	17.9	0.018	0.024	
			Hotspot	N/A	10	Rear	39	2441.0	76.8%	18.0	17.9	0.041	0.056	
						Front	39	2441.0	76.8%	18.0	17.9	0.042	0.056	
						Edge 1	39	2441.0	76.8%	18.0	17.9	0.031	0.042	
						Edge 4	39	2441.0	76.8%	18.0	17.9	0.078	0.104	

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	0.211	N/A	N/A
	LTE Band 13	Hotspot	Rear	No	0.299	N/A	N/A
835	GSM 850	Hotspot	Rear	No	0.430	N/A	N/A
	WCDMA Band V	Hotspot	Rear	No	0.532	N/A	N/A
	LTE Band 5	Hotspot	Rear	No	0.528	N/A	N/A
	LTE Band 26	Hotspot	Rear	No	0.365	N/A	N/A
1750	WCDMA Band IV	Hotspot	Edge 3	Yes	0.802	0.800	1.00
	LTE Band 66	Hotspot	Edge 3	No	0.609	N/A	N/A
1900	GSM 1900	Hotspot	Edge 3	No	0.682	N/A	N/A
	WCDMA Band II	Hotspot	Edge 3	Yes	0.921	0.920	1.00
	LTE Band 2	Hotspot	Edge 3	No	0.804	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Head	Right Tilt	No	0.540	N/A	N/A
	Bluetooth	Head	Right Tilt	No	0.607	N/A	N/A
2600	LTE Band 41	Hotspot	Edge 3	No	0.256	N/A	N/A
5250	Wi-Fi 802.11a/ac	Head	Right Touch	No	0.223	N/A	N/A
5500	Wi-Fi 802.11a/ac	Body	Rear	No	0.208	N/A	N/A
5800	Wi-Fi 802.11a/ac	Hotspot	Rear	No	0.480	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	1.810	N/A	N/A
	LTE Band 66	Product Specific 10g	Edge 3	No	1.710	N/A	N/A
1900	GSM 1900	Product Specific 10g	Edge 3	No	0.727	N/A	N/A
	WCDMA Band II	Product Specific 10g	Edge 3	No	1.050	N/A	N/A
	LTE Band 2	Product Specific 10g	Edge 3	No	0.971	N/A	N/A
5250	Wi-Fi 802.11a/ac	Product Specific 10g	Edge 4	No	0.991	N/A	N/A
5500	Wi-Fi 802.11a/ac	Product Specific 10g	Edge 4	No	0.988	N/A	N/A

Note(s):

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

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations						
Head & Body-worn & Product Specific 10-g	1	GSM(Voice/GPRS)	+	DTS_Ant.1	or/and	DTS_Ant.2		
	2	GSM(Voice/GPRS)	+	UNII_Ant.1	or/and	UNII_Ant.2		
	3	GSM(Voice/GPRS)	+	BT Ant.1	or	BT Ant.2		
	4	GSM(Voice/GPRS)	+	DTS_Ant.2	+	BT Ant.1		
	5	GSM(Voice/GPRS)	+	UNII_Ant.1	+	BT Ant.1	or	BT Ant.2
	6	GSM(Voice/GPRS)	+	UNII MIMO	+	BT Ant.1	or	BT Ant.2
	7	GSM(Voice/GPRS)	+	***RSDB scenarios (1- 4)***				
	8	GSM(Voice/GPRS)	+	***RSDB scenarios (1, 3)***		BT Ant.1		
	9	WCDMA or LTE	+	DTS_Ant.1	or/and	DTS_Ant.2		
	10	WCDMA or LTE	+	UNII_Ant.1	or/and	UNII_Ant.2		
	11	WCDMA or LTE	+	BT Ant.1	or	BT Ant.2		
	12	WCDMA or LTE	+	DTS_Ant.2	+	BT Ant.1		
	13	WCDMA or LTE	+	UNII_Ant.1	+	BT Ant.1	or	BT Ant.2
	14	WCDMA or LTE	+	UNII MIMO	+	BT Ant.1	or	BT Ant.2
	15	WCDMA or LTE	+	***RSDB scenarios (1- 4)***				
	16	WCDMA or LTE	+	***RSDB scenarios (1, 3)***	+	BT Ant.1		
Hotspot	17	GSM(GPRS)	+	DTS_Ant.1	or/and	DTS_Ant.2		
	18	GSM(GPRS)	+	UNII_Ant.1	or/and	UNII_Ant.2		
	19	GSM(GPRS)	+	BT Ant.1	or	BT Ant.2		
	20	GSM(GPRS)	+	DTS_Ant.2	+	BT Ant.1		
	21	GSM(GPRS)	+	UNII_Ant.1	+	BT Ant.1	or	BT Ant.2
	22	GSM(GPRS)	+	UNII MIMO	+	BT Ant.1	or	BT Ant.2
	23	GSM(GPRS)	+	***RSDB scenarios (1- 4)***				
	24	GSM(GPRS)	+	***RSDB scenarios (1, 3)***	+	BT Ant.1		
	25	WCDMA or LTE	+	DTS_Ant.1	or/and	DTS_Ant.2		
	26	WCDMA or LTE	+	UNII_Ant.1	or/and	UNII_Ant.2		
	27	WCDMA or LTE	+	BT Ant.1	or	BT Ant.2		
	28	WCDMA or LTE	+	DTS_Ant.2	+	BT Ant.1		
	29	WCDMA or LTE	+	UNII_Ant.1	+	BT Ant.1	or	BT Ant.2
	30	WCDMA or LTE	+	UNII MIMO	+	BT Ant.1	or	BT Ant.2
	31	WCDMA or LTE	+	***RSDB scenarios (1- 4)***				
	32	WCDMA or LTE	+	***RSDB scenarios (1, 3)***	+	BT Ant.1		

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. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. DTS Ant.2 Radio can transmit simultaneously with Bluetooth Ant.1 Radio.
6. DTS Radio can only transmit simultaneously with U-NII Radio in RSDB scenarios (1 - 4).
7. DTS and U-NII Radio can operating both SISO and MIMO modes.
8. BT Radio can operating Only SISO mode.
9. Bluetooth Ant.1 Radio can transmit simultaneously with certain RSDB scenarios (1, 3).
10. 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
2.4GHz + 5GHz RSDB & MIMO	2	3	On		On	On
	3	3	On	On	-	On
2.4GHz + 5GHz RSDB MIMO	4	4	On	On	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.

12.1. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A,B : 1+5+6+8 C : 1+7+8	A,B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.262	0.637	0.128		0.015	0.231		0.809	0.786	0.899	0.390	1.027	0.277	0.493	0.508	1.071	1.048	1.199	1.086	1.063	1.317	1.294
B: Body-worn (1-g SAR)	All Position	0.273	0.164	0.037		0.121	0.351		0.079	0.026	0.437	0.310	0.474	0.394	0.624	0.745	0.352	0.299	0.389	0.473	0.420	0.824	0.771
C: Hotspot (1-g SAR)	Rear	0.570	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.876	0.648	0.864	0.755	1.085	1.152	0.713	0.626	0.791	0.898	0.811	1.295	1.208
	Front	0.445	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.718	0.542	0.924	0.630	0.534	0.529	0.559	0.501	0.656	0.744	0.686	0.643	0.585
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.150																					
	Edge 3	0.270																					
	Edge 4	0.037	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.570	0.134	0.516	0.222	0.319	0.385	0.073	0.141	0.170	0.258	0.326	0.421	0.489

12.2. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	1+2	1+3	A,B,D : 1+2+3 C : 1+4	1+5	1+6	A,B,D : 1+5+6 C : 1+7	1+8	1+9	1+3+8	1+5+8	1+5+9	A,B,D: 1+5+6+8 C : 1+7+8	A,B,D : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.047	0.637	0.128		0.015	0.231		0.809	0.786	0.684	0.175	0.812	0.062	0.278	0.293	0.856	0.833	0.984	0.871	0.848	1.102	1.079
B: Body-worn (1-g SAR)	All Position	0.304	0.164	0.037		0.121	0.351		0.079	0.026	0.468	0.341	0.505	0.425	0.655	0.776	0.383	0.330	0.420	0.504	0.451	0.855	0.802
C: Hotspot (1-g SAR)	Rear	0.378	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.684	0.456	0.672	0.563	0.893	0.960	0.521	0.434	0.599	0.706	0.619	1.103	1.016
	Front	0.412	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.685	0.509	0.891	0.597	0.501	0.496	0.526	0.468	0.623	0.711	0.653	0.610	0.552
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.062																					
	Edge 3	0.902																					
	Edge 4	0.023	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.556	0.120	0.502	0.208	0.305	0.371	0.059	0.127	0.156	0.244	0.312	0.407	0.475
D: Product Specific (10-g SAR)	Rear					0.549	0.524																
	Front					0.549	1.089																
	Edge 1					0.549	0.458																
	Edge 2																						
	Edge 3	0.876																					
	Edge 4					0.549	1.089																

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.3. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	1+2	1+3	A,B,D : 1+2+3 C : 1+4	1+5	1+6	A,B,D : 1+5+6 C : 1+7	1+8	1+9	1+3+8	1+5+8	1+5+9	A,B,D: 1+5+6+8 C : 1+7+8	A,B,D : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.090	0.637	0.128		0.015	0.231		0.809	0.786	0.727	0.218	0.855	0.105	0.321	0.336	0.899	0.876	1.027	0.914	0.891	1.145	1.122
B: Body-worn (1-g SAR)	All Position	0.548	0.164	0.037		0.121	0.351		0.079	0.026	0.712	0.585	0.749	0.669	0.899	1.020	0.627	0.574	0.664	0.748	0.695	1.099	1.046
C: Hotspot (1-g SAR)	Rear	0.485	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.791	0.563	0.779	0.670	1.000	1.067	0.628	0.541	0.706	0.813	0.726	1.210	1.123
	Front	0.499	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.772	0.596	0.978	0.684	0.588	0.583	0.613	0.555	0.710	0.798	0.740	0.697	0.639
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.066																					
	Edge 3	1.031																					
	Edge 4	0.034	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.567	0.131	0.513	0.219	0.316	0.382	0.070	0.138	0.167	0.255	0.323	0.418	0.486
D: Product Specific (10-g SAR)	Rear					0.549	0.524																
	Front					0.549	1.089																
	Edge 1					0.549	0.458																
	Edge 2																						
	Edge 3	1.204																					
	Edge 4					0.549	1.089																

12.4. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	1+2	1+3	A,B,D : 1+2+3 C : 1+4	1+5	1+6	A,B,D : 1+5+6 C : 1+7	1+8	1+9	1+3+8	1+5+8	1+5+9	A,B,D: 1+5+6+8 C : 1+7+8	A,B,D : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.092	0.637	0.128		0.015	0.231		0.809	0.786	0.729	0.220	0.857	0.107	0.323	0.338	0.901	0.878	1.029	0.916	0.893	1.147	1.124
B: Body-worn (1-g SAR)	All Position	0.583	0.164	0.037		0.121	0.351		0.079	0.026	0.747	0.620	0.784	0.704	0.934	1.055	0.662	0.609	0.699	0.783	0.730	1.134	1.081
C: Hotspot (1-g SAR)	Rear	0.496	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.802	0.574	0.790	0.681	1.011	1.078	0.639	0.552	0.717	0.824	0.737	1.221	1.134
	Front	0.496	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.769	0.593	0.975	0.681	0.585	0.580	0.610	0.552	0.707	0.795	0.737	0.694	0.636
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.073																					
	Edge 3	0.913																					
	Edge 4	0.061	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.594	0.158	0.540	0.246	0.343	0.409	0.097	0.165	0.194	0.282	0.350	0.445	0.513
D: Product Specific (10-g SAR)	Rear					0.549	0.524																
	Front					0.549	1.089																
	Edge 1					0.549	0.458																
	Edge 2																						
	Edge 3	2.059																					
	Edge 4					0.549	1.089																

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.5. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.255	0.637	0.128		0.015	0.231		0.809	0.786	0.892	0.383	1.020	0.270	0.486	0.501	1.064	1.041	1.192	1.079	1.056	1.310	1.287
B: Body-worn (1-g SAR)	All Position	0.356	0.164	0.037		0.121	0.351		0.079	0.026	0.520	0.393	0.557	0.477	0.707	0.828	0.435	0.382	0.472	0.556	0.503	0.907	0.854
C: Hotspot (1-g SAR)	Rear	0.698	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	1.004	0.776	0.992	0.883	1.213	1.280	0.841	0.754	0.919	1.026	0.939	1.423	1.336
	Front	0.659	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.932	0.756	1.138	0.844	0.748	0.743	0.773	0.715	0.870	0.958	0.900	0.857	0.799
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.207																					
	Edge 3	0.525																					
	Edge 4	0.096	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.629	0.193	0.575	0.281	0.378	0.444	0.132	0.200	0.229	0.317	0.385	0.480	0.548

12.6. Sum of the SAR for LTE Band 2 & 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	1+2	1+3	A,B,D : 1+2+3 C : 1+4	1+5	1+6	A,B,D : 1+5+6 C : 1+7	1+8	1+9	1+3+8	1+5+8	1+5+9	A,B,D: 1+5+6+8 C : 1+7+8	A,B,D : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.079	0.637	0.128		0.015	0.231		0.809	0.786	0.716	0.207	0.844	0.094	0.310	0.325	0.888	0.865	1.016	0.903	0.880	1.134	1.111
B: Body-worn (1-g SAR)	All Position	0.507	0.164	0.037		0.121	0.351		0.079	0.026	0.671	0.544	0.708	0.628	0.858	0.979	0.586	0.533	0.623	0.707	0.654	1.058	1.005
C: Hotspot (1-g SAR)	Rear	0.500	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.806	0.578	0.794	0.685	1.015	1.082	0.643	0.556	0.721	0.828	0.741	1.225	1.138
	Front	0.556	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.829	0.653	1.035	0.741	0.645	0.640	0.670	0.612	0.767	0.855	0.797	0.754	0.696
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.066																					
	Edge 3	1.045																					
	Edge 4	0.030	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.563	0.127	0.509	0.215	0.312	0.378	0.066	0.134	0.163	0.251	0.319	0.414	0.482
D: Product Specific (10-g SAR)	Rear					0.549	0.524																
	Front					0.549	1.089																
	Edge 1					0.549	0.458																
	Edge 2																						
	Edge 3	1.180																					
	Edge 4					0.549	1.089																

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.7. Sum of the SAR for LTE Band 5 & 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.236	0.637	0.128		0.015	0.231		0.809	0.786	0.873	0.364	1.001	0.251	0.467	0.482	1.045	1.022	1.173	1.060	1.037	1.291	1.268
B: Body-worn (1-g SAR)	All Position	0.347	0.164	0.037		0.121	0.351		0.079	0.026	0.511	0.384	0.548	0.468	0.698	0.819	0.426	0.373	0.463	0.547	0.494	0.898	0.845
C: Hotspot (1-g SAR)	Rear	0.694	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	1.000	0.772	0.988	0.879	1.209	1.276	0.837	0.750	0.915	1.022	0.935	1.419	1.332
	Front	0.585	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.858	0.682	1.064	0.770	0.674	0.669	0.699	0.641	0.796	0.884	0.826	0.783	0.725
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.267																					
	Edge 3	0.520																					
	Edge 4	0.083	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.616	0.180	0.562	0.268	0.365	0.431	0.119	0.187	0.216	0.304	0.372	0.467	0.535

12.8. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.125	0.637	0.128		0.015	0.231		0.809	0.786	0.762	0.253	0.890	0.140	0.356	0.371	0.934	0.911	1.062	0.949	0.926	1.180	1.157
B: Body-worn (1-g SAR)	All Position	0.195	0.164	0.037		0.121	0.351		0.079	0.026	0.359	0.232	0.396	0.316	0.546	0.667	0.274	0.221	0.311	0.395	0.342	0.746	0.693
C: Hotspot (1-g SAR)	Rear	0.276	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.582	0.354	0.570	0.461	0.791	0.858	0.419	0.332	0.497	0.604	0.517	1.001	0.914
	Front	0.215	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.488	0.312	0.694	0.400	0.304	0.299	0.329	0.271	0.426	0.514	0.456	0.413	0.355
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.146																					
	Edge 3	0.175																					
	Edge 4	0.112	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.645	0.209	0.591	0.297	0.394	0.460	0.148	0.216	0.245	0.333	0.401	0.496	0.564

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.9. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.145	0.637	0.128		0.015	0.231		0.809	0.786	0.782	0.273	0.910	0.160	0.376	0.391	0.954	0.931	1.082	0.969	0.946	1.200	1.177
B: Body-worn (1-g SAR)	All Position	0.206	0.164	0.037		0.121	0.351		0.079	0.026	0.370	0.243	0.407	0.327	0.557	0.678	0.285	0.232	0.322	0.406	0.353	0.757	0.704
C: Hotspot (1-g SAR)	Rear	0.402	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.708	0.480	0.696	0.587	0.917	0.984	0.545	0.458	0.623	0.730	0.643	1.127	1.040
	Front	0.332	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.605	0.429	0.811	0.517	0.421	0.416	0.446	0.388	0.543	0.631	0.573	0.530	0.472
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.183																					
	Edge 3	0.233																					
	Edge 4	0.137	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.670	0.234	0.616	0.322	0.419	0.485	0.173	0.241	0.270	0.358	0.426	0.521	0.589

12.10. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.159	0.637	0.128		0.015	0.231		0.809	0.786	0.796	0.287	0.924	0.174	0.390	0.405	0.968	0.945	1.096	0.983	0.960	1.214	1.191
B: Body-worn (1-g SAR)	All Position	0.211	0.164	0.037		0.121	0.351		0.079	0.026	0.375	0.248	0.412	0.332	0.562	0.683	0.290	0.237	0.327	0.411	0.358	0.762	0.709
C: Hotspot (1-g SAR)	Rear	0.446	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.752	0.524	0.740	0.631	0.961	1.028	0.589	0.502	0.667	0.774	0.687	1.171	1.084
	Front	0.385	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.658	0.482	0.864	0.570	0.474	0.469	0.499	0.441	0.596	0.684	0.626	0.583	0.525
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.149																					
	Edge 3	0.315																					
	Edge 4	0.050	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.583	0.147	0.529	0.235	0.332	0.398	0.086	0.154	0.183	0.271	0.339	0.434	0.502

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.11. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	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+9	1+3+8	1+5+8	1+5+9	A, B : 1+5+6+8 C : 1+7+8	A, B : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.087	0.637	0.128		0.015	0.231		0.809	0.786	0.724	0.215	0.852	0.102	0.318	0.333	0.896	0.873	1.024	0.911	0.888	1.142	1.119
B: Body-worn (1-g SAR)	All Position	0.202	0.164	0.037		0.121	0.351		0.079	0.026	0.366	0.239	0.403	0.323	0.553	0.674	0.281	0.228	0.318	0.402	0.349	0.753	0.700
C: Hotspot (1-g SAR)	Rear	0.129	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.435	0.207	0.423	0.314	0.644	0.711	0.272	0.185	0.350	0.457	0.370	0.854	0.767
	Front	0.156	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.429	0.253	0.635	0.341	0.245	0.240	0.270	0.212	0.367	0.455	0.397	0.354	0.296
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2																						
	Edge 3	0.300																					
	Edge 4	0.163	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.696	0.260	0.642	0.348	0.445	0.511	0.199	0.267	0.296	0.384	0.452	0.547	0.615

12.12. 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 Ant.1	BT Ant.2	WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + DTS Ant.2+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.1	WWAN + UNII Ant.1+ BT Ant.2	WWAN + UNII MIMO+ BT Ant.1	WWAN + UNII MIMO+ BT Ant.2
		1	2	3	4	5	6	7	8	9	1+2	1+3	A,B,D : 1+2+3 C : 1+4	1+5	1+6	A,B,D : 1+5+6 C : 1+7	1+8	1+9	1+3+8	1+5+8	1+5+9	A,B,D: 1+5+6+8 C : 1+7+8	A,B,D : 1+5+6+9 C : 1+7+9
A: Head (1-g SAR)	All Position	0.133	0.637	0.128		0.015	0.231		0.809	0.786	0.770	0.261	0.898	0.148	0.364	0.379	0.942	0.919	1.070	0.957	0.934	1.188	1.165
B: Body-worn (1-g SAR)	All Position	0.726	0.164	0.037		0.121	0.351		0.079	0.026	0.890	0.763	0.927	0.847	1.077	1.198	0.805	0.752	0.842	0.926	0.873	1.277	1.224
C: Hotspot (1-g SAR)	Rear	0.399	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.705	0.477	0.693	0.584	0.914	0.981	0.542	0.455	0.620	0.727	0.640	1.124	1.037
	Front	0.441	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.714	0.538	0.920	0.626	0.530	0.525	0.555	0.497	0.652	0.740	0.682	0.639	0.581
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042													
	Edge 2	0.055																					
	Edge 3	0.742																					
	Edge 4	0.075	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.608	0.172	0.554	0.260	0.357	0.423	0.111	0.179	0.208	0.296	0.364	0.459	0.527
D: Product Specific (10-g SAR)	Rear					0.549	0.524																
	Front	1.732				0.549	1.089							2.281	2.821	3.370							
	Edge 1					0.549	0.458																
	Edge 2																						
	Edge 3	2.097																					
	Edge 4					0.549	1.089																

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 DTS, UNII, MIMO SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

12.13. Sum of the SAR for WWAN & Wi-Fi (RSDB) & 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 Ant.1	BT Ant.2	WWAN +DTS Ant.2 +UNII Ant.1	WWAN +DTS MIMO +UNII Ant.1	WWAN +DTS Ant.2 +UNII MIMO	WWAN +DTS MIMO +UNII MIMO	WWAN +DTS Ant.2 +UNII Ant.1 +BT Ant.1	WWAN +DTS Ant.2 +UNII MIMO +BT Ant.1
		1	2	3	4	5	6	7	8	9	1+3+5	1+2+3+5	1+3+5+6	A,B : 1+2+3+5+6 C : 1+4+7	1+3+5+8	A,B : 1+3+5+6+8 C : 1+3+7+8
A: Head (1-g SAR)	All Position	0.262	0.637	0.128		0.015	0.231		0.809	0.786	0.405	1.042	0.636	1.273	1.214	1.445
B: Body-worn (1-g SAR)	All Position	0.726	0.164	0.037		0.121	0.351		0.079	0.026	0.884	1.048	1.235	1.399	0.963	1.314
C: Hotspot (1-g SAR)	Rear	0.698	0.306	0.078	0.294	0.185	0.515	0.582	0.143	0.056	0.961	1.267	1.476	1.574	1.104	1.501
	Front	0.659	0.273	0.097	0.479	0.185	0.089	0.084	0.114	0.056	0.941	1.214	1.030	1.222	1.055	0.954
	Edge 1		0.533	0.097	0.479	0.185	0.515	0.582	0.223	0.042						
	Edge 2	0.267														
	Edge 3	1.045														
	Edge 4	0.163	0.533	0.097	0.479	0.185	0.282	0.348	0.036	0.104	0.445	0.978	0.727	0.990	0.481	0.644

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 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 sum of the 1-g SAR (10-g SAR) is < 1.6W/kg (4.0 W/kg).

Appendixes

Refer to separated files for the following appendixes.

4789555428-S1 FCC Report SAR_App A_Photos & Ant. Locations

4789555428-S1 FCC Report SAR_App B_Highest SAR Test Plots

4789555428-S1 FCC Report SAR_App C_System Check Plots

4789555428-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4789555428-S1 FCC Report SAR_App E_Probe Cal. Certificates

4789555428-S1 FCC Report SAR_App F_Dipole Cal. Certificates

END OF REPORT