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-F707B, SCG04

FCC ID: A3LSMF707B

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IAS ACCREDITED

Testing Laboratory

TL-637

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V2	6/10/2020	Added note.3 in Sec.6.4. Revised explain in Sec.6.8. Added note.6 in Sec.10.12. Revised Max Output Power in Sec.9.5. Revised page.22 in Appendix A.	Sunghoon Kim
V3	6/15/2020	Added multi model in Report.	Sunghoon Kim

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1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID		A3LSMF707B			
Model Number		SM-F707B, SCG04			
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures			
Exposure Category		SAR Limits (W/Kg)			
		Peak spatial-average (1g of tissue)		Product Specific 10g (10g of tissue)	
General population / Uncontrolled exposure		1.6		4.0	
RF Exposure Conditions		Equipment Class - The Highest Reported SAR (W/kg)			
		PCE	DTS	U-NII	DSS
Head		0.46	0.71	0.43	0.80
Body-worn		1.01	0.16	0.25	< 0.10
Hotspot		1.37	0.58	0.57	0.25
Product Specific 10g		2.94	N/A	1.54	N/A
Simultaneous TX	Head	1.59			
	Body-worn	1.54			
	Hotspot	1.58			
	Product Specific 10g	3.01	N/A	3.01	N/A
Date Tested		5/8/2020 to 6/5/2020			
Test Results		Pass			

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

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

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

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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	**0.462**	0.555	0.853	N/A
	GSM 1900	0.063	0.432	0.646	1.909
	WCDMA Band II	0.098	0.565	0.947	2.296
	WCDMA Band IV	0.189	**1.013**	1.076	2.527
	WCDMA Band V	0.266	0.383	0.617	N/A
	LTE Band 2	N/A	N/A	N/A	N/A
	LTE Band 4	N/A	N/A	N/A	N/A
	LTE Band 5	N/A	N/A	N/A	N/A
	LTE Band 12	0.196	0.282	0.500	N/A
	LTE Band 13	0.202	0.230	0.392	N/A
	LTE Band 17	N/A	N/A	N/A	N/A
	LTE Band 25	0.079	0.622	1.242	2.599
	LTE Band 26	0.318	0.447	0.761	N/A
	LTE Band 41	0.140	0.518	**1.365**	**2.941**
	LTE Band 66	0.182	0.752	1.060	2.687
DTS	2.4GHz WLAN	**0.709**	**0.157**	**0.576**	N/A
UNII	5GHz WLAN	**0.425**	**0.246**	**0.571**	**1.542**
DSS	Bluetooth	**0.796**	**0.087**	**0.254**	N/A

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2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with FCC 47 CFR § 2.1093, IEEE STD 1528-2013, 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 2 Room
SAR 3 Room
SAR 4 Room
SAR 5 Room

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.
The full scope of accreditation can be viewed at https://www.iasonline.org/wp-content/uploads/2017/05/TL-637 -cert-New.pdf.

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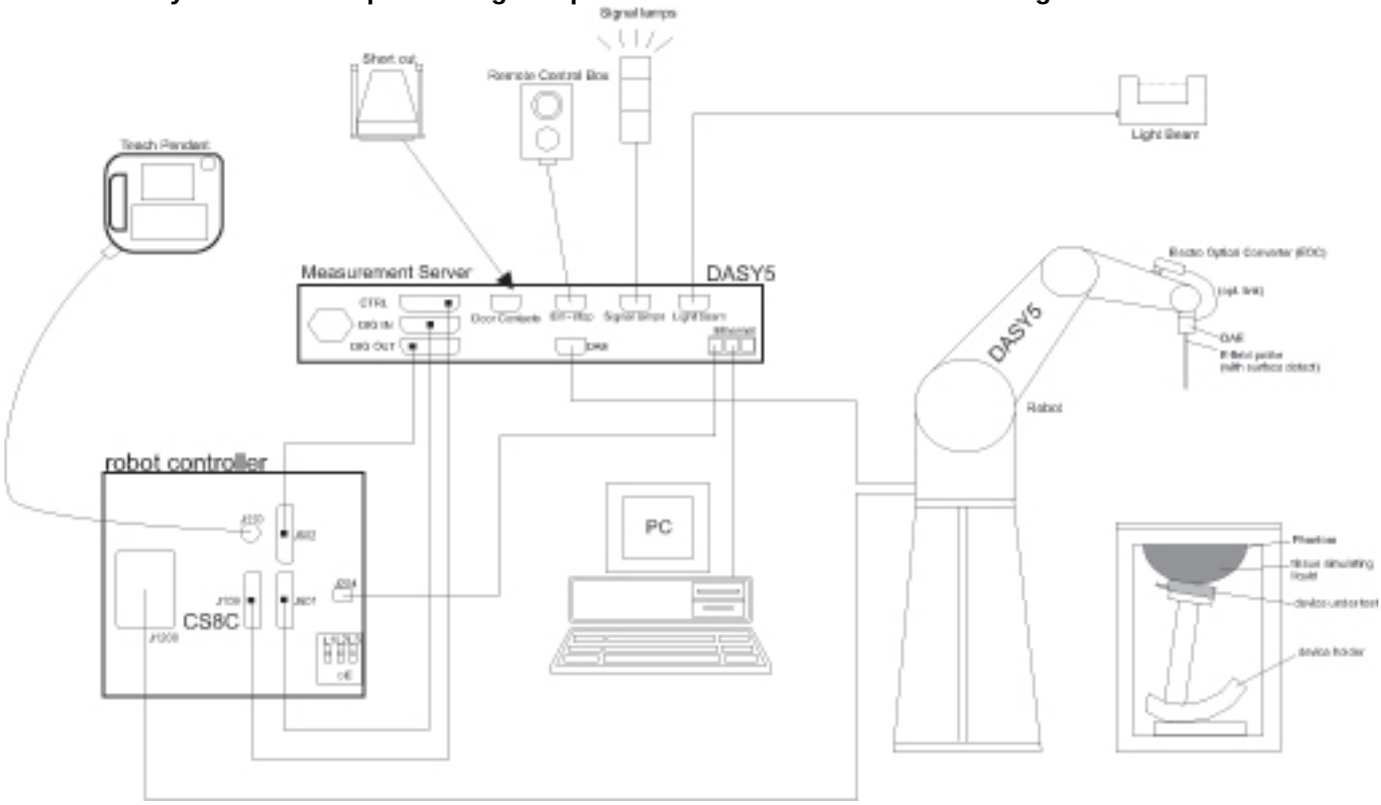
4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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



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

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4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

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Step 3: Zoom Scan

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

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

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

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4.3. Test Equipment

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

Dielectric Property Measurements

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

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-6-2020
Power Sensor	Agilent	U2000A	MY54260010	8-9-2020
Power Sensor	Agilent	U2000A	MY54260007	8-9-2020
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-8-2020
Directional Coupler	Agilent	772D	MY52180193	8-7-2020
Directional Coupler	Agilent	778D	MY52180432	8-7-2020
Low Pass Filter	MICROLAB	LA-15N	03943	8-7-2020
Low Pass Filter	FILTRON	L14012FL	1410003S	8-7-2020
Low Pass Filter	MICROLAB	LA-60N	03942	8-7-2020
Attenuator	Agilent	8491B/003	MY39269292	8-7-2020
Attenuator	Agilent	8491B/010	MY39269315	8-7-2020
Attenuator	Agilent	8491B/020	MY39269298	8-7-2020
E-Field Probe (SAR1)	SPEAG	EX3DV4	7313	2-25-2021
E-Field Probe (SAR3)	SPEAG	EX3DV4	7376	9-27-2020
E-Field Probe (SAR4)	SPEAG	EX3DV4	7545	9-23-2020
E-Field Probe (SAR5)	SPEAG	EX3DV4	3871	8-29-2020
Data Acquisition Electronics (SAR1)	SPEAG	DAE4	1494	7-18-2020
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	1468	9-20-2020
Data Acquisition Electronics (SAR4)	SPEAG	DAE4	1591	9-11-2020
Data Acquisition Electronics (SAR5)	SPEAG	DAE4	1343	8-27-2020
System Validation Dipole	SPEAG	D750V3	1122	2-24-2022
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	D1900V2	5d190	10-23-2020
System Validation Dipole	SPEAG	D2450V2	939	7-25-2021
System Validation Dipole	SPEAG	D2600V2	1097	9-19-2021
System Validation Dipole	SPEAG	D5GHzV2	1184	8-21-2020
System Validation Dipole	SPEAG	D5GHzV2	1209	2-27-2022
Thermometer (SAR1)	Lutron	MHB-382SD	AH.50215	8-8-2020
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-8-2020
Thermometer (SAR4),(SAR5)	Lutron	MHB-382SD	AH.91463	8-8-2020

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	8-8-2020
Base Station Simulator	R & S	CMW500	150314	8-8-2020
Base Station Simulator	R & S	CMW500	162790	8-9-2020
Wireless Connectivity Tester	R & S	CMW270	100982	8-5-2020
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	8-7-2020
UXM 5G Wireless Test Platform	Keysight	E7515B	MY57510596	2-5-2021

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D1900V2 (SN : 5d190), D5GHzV2 (SN : 1184))

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5. Measurement Uncertainty

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

5.1. DECISION RULE

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

6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Refer to Appendix A.
Back Cover	☒ The Back Cover is not removable.
Battery Options	☒ The rechargeable battery is not user accessible
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) ☒ Mobile Hotspot (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20Mhz)/Ch.151(40Mhz)/Ch.155(80Mhz))))
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) ☒ Wi-Fi Direct (Wi-Fi 5 GHz : Ch.36 – Ch.48, Ch.149 – Ch.165))
Test Sample Information	**No.** / **S/N** / **Notes** 1 / 4393b319881f7ece / Main Conducted 2 / 4393b900551f7ece / Main Conducted 3 / 4393b319891f7ece / Wi-Fi & BT Conducted 4 / 4393b319a61f7ece / SAR 5 / 4393B314791F7ECE / SAR 6 / R3CN40CYNTB / SAR 7 / R3CN40CYNLY / SAR 8 / R3CN40CYNRE / SAR

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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 25 FDD Band 26 FDD Band 66 TDD Band 41	QPSK 16QAM 64QAM 256QAM Rel. 15 Carrier Aggregation (1 Uplink and 4 Downlinks)		100% (FDD) 63.3% (TDD)
	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: 98.8% (802.11a) 99.7% (802.11n 20MHz BW) 99.7% (802.11ac 80MHz BW) MIMO mode: 98.8% (802.11a)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No			
	Does this device support Band gap channel(s)? ☒ Yes ☐ No			
Bluetooth	2.4 GHz	Version 5.0 LE		76.8% (DH5)

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.

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6.3. Nominal and Maximum Output Power

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

RF Air interface	Antenna	Mode	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	33.5	24.5		
		GPRS	1	33.5	24.5		
		GPRS	2	32.5	26.5		
		GPRS	3	30.5	26.2		
		GPRS	4	28.5	25.5		
		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	29.0	20.0
		GPRS	1	31.0	22.0	29.0	20.0
		GPRS	2	30.5	24.5	27.0	21.0
		GPRS	3	29.0	24.7	24.5	20.2
		GPRS	4	26.5	23.5	22.5	19.5
		EGPRS	1	27.5	18.5	27.5	18.5
		EGPRS	2	26.5	20.5	26.5	20.5
		EGPRS	3	24.0	19.7	24.0	19.7
		EGPRS	4	23.0	20.0	23.0	20.0

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	25.5	19.5
		HSDPA	24.5	18.5
		HSUPA	24.5	18.5
		DC-HSDPA	24.5	18.5
W-CDMA Band IV	Main 1 Ant.	R99	25.5	20.0
		HSDPA	24.5	19.0
		HSUPA	24.5	19.0
		DC-HSDPA	24.5	19.0
W-CDMA Band V	Main 1 Ant.	R99	25.8	
		HSDPA	24.8	
		HSUPA	24.8	
		DC-HSDPA	24.8	

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power - Hotspot back-off - (dBm)	Reduced. RF Output Power (Proximity sensor & Earjack back-off) (dBm)
LTE Band 2	Main 1 Ant.	QPSK	25.5	19.5	19.5
LTE Band 4	Main 1 Ant.	QPSK	25.5	20.0	20.0
LTE Band 5	Main 1 Ant.	QPSK	25.8		
LTE Band 12	Main 1 Ant.	QPSK	25.8		
LTE Bans 13	Main 1 Ant.	QPSK	25.8		
LTE Band 17	Main 1 Ant.	QPSK	25.8		
LTE Band 25	Main 1 Ant.	QPSK	25.5	19.5	19.5
LTE Band 26	Main 1 Ant.	QPSK	25.8		
LTE Band 66	Main 1 Ant.	QPSK	25.5	20.0	20.0
LTE Band 41	Main 2 Ant.	QPSK	25.8	21.0	22.5

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RF Air interface	Mode	Max. RF Output Power (dBm)				
		SISO		MIMO		
		Ant.1	Ant.2	Ant.1	Ant.2	TOTAL
WiFi 2.4 GHz (Ch.1 - Ch.11)	802.11b		19.0	19.0	19.0	22.0
	802.11g		18.0	18.0	18.0	21.0
	802.11n HT20		18.0	18.0	18.0	21.0
	802.11ax HE20		17.0	17.0	17.0	20.0
WiFi 2.4 GHz (Ch.12 & Ch.13)	802.11b		8.0	8.0	8.0	11.0
	802.11g		8.0	8.0	8.0	11.0
	802.11n HT20		6.0	6.0	6.0	9.0
	802.11ax HE20		6.0	6.0	6.0	9.0
WiFi 5 GHz (UNII-1 & UNII-2A & UNII-3)	802.11a	17.0	17.0	17.0	17.0	20.0
	802.11n HT20	17.0	17.0	17.0	17.0	20.0
	802.11n HT40	16.0	16.0	16.0	16.0	19.0
	802.11ac VHT20	17.0	17.0	17.0	17.0	20.0
	802.11ac VHT40	16.0	16.0	16.0	16.0	19.0
	802.11ac VHT80	15.0	15.0	15.0	15.0	18.0
	802.11ax HE20	16.0	16.0	16.0	16.0	19.0
	802.11ax HE40	15.0	15.0	15.0	15.0	18.0
	802.11ax HE80	14.0	14.0	14.0	14.0	17.0
WiFi 5 GHz (UNII-2C)	802.11a	16.0	16.0	16.0	16.0	19.0
	802.11n HT20	17.0	17.0	17.0	17.0	20.0
	802.11n HT40	16.0	16.0	16.0	16.0	19.0
	802.11ac VHT20	17.0	17.0	17.0	17.0	20.0
	802.11ac VHT40	16.0	16.0	16.0	16.0	19.0
	802.11ac VHT80	15.0	15.0	15.0	15.0	18.0
	802.11ax HE20	16.0	16.0	16.0	16.0	19.0
	802.11ax HE40	15.0	15.0	15.0	15.0	18.0
	802.11ax HE80	14.0	14.0	14.0	14.0	17.0
Bluetooth (Ch.0 - Ch.77)		16.0	16.0			
Bluetooth (Ch.78)		14.0	14.0			
Bluetooth-EDR (Ch.0 - Ch.77)		16.0	16.0			
Bluetooth-EDR (Ch.78)		14.0	14.0			
Bluetooth-LE_1Mbps, 125/500 kbps		6.0				
Bluetooth-LE_2Mbps		6.0				

RF Air interface	Mode	Reduced. RF Output Power (dBm)				
		SISO		MIMO		
		Ant.1	Ant.2	Ant.1	Ant.2	TOTAL
WiFi 2.4 GHz (Ch.1 - Ch.11)	802.11b		13.0	13.0	13.0	16.0
	802.11g		13.0	13.0	13.0	16.0
	802.11n HT20		13.0	13.0	13.0	16.0
	802.11ax HE20		13.0	13.0	13.0	16.0
WiFi 2.4 GHz (Ch.12 & Ch.13)	802.11b		8.0	8.0	8.0	11.0
	802.11g		8.0	8.0	8.0	11.0
	802.11n HT20		6.0	6.0	6.0	9.0
	802.11ax HE20		6.0	6.0	6.0	9.0
WiFi 5 GHz	802.11a	11.0	11.0	11.0	11.0	14.0
	802.11n HT20	11.0	11.0	11.0	11.0	14.0
	802.11n HT40	11.0	11.0	11.0	11.0	14.0
	802.11ac VHT20	11.0	11.0	11.0	11.0	14.0
	802.11ac VHT40	11.0	11.0	11.0	11.0	14.0
	802.11ac VHT80	11.0	11.0	11.0	11.0	14.0
	802.11ax HE20	11.0	11.0	11.0	11.0	14.0
	802.11ax HE40	11.0	11.0	11.0	11.0	14.0
	802.11ax HE80	11.0	11.0	11.0	11.0	14.0

Note(s):.

1. WLAN mode supports RSDB operation. Detail of RSDB operation scenario is mentioned in Sec.13.
2. For Ant.1 of WiFi 2.4GHz, it only work MIMO mode operation.

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6.4. Power Back-off Operation

This device supports multiple power back-off modes: WWAN (Ear-jack), 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 (Earjack)	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66	N/A	✓	N/A	✓
WWAN (Hotspot)	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66	N/A	N/A	✓	N/A
WWAN (Proximity sensor)	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66	N/A	N/A	N/A	✓
WLAN (RCV)	Wi-Fi 2.4GHz Wi-Fi 5GHz	✓	N/A	N/A	N/A

Note(s):

1. Body-worn SAR tested at full power without ear-jack connected because no SAR values were over 1.2 W/kg.
2. Ear-jack & Proximity sensor back-off mode has same reduced power level in Product Specific 10g. So we tested using reduced power of Proximity sensor back-off mode in Product Specific 10g.

Product Specific 10g Adjusted SAR Calculation

Wireless technologies	Max Tune-up Limit (dBm)	Reduced Tune-Up Limit (dBm)	Pow er Factor	Reported SAR Limit (W/kg)
GSM 1900	30.5	27.0	2.24	0.536
W-CDMA B2	25.5	19.5	3.98	0.301
W-CDMA B4	25.5	20.0	3.55	0.338
LTE B25 (2)	25.5	19.5	3.98	0.301
LTE B66 (4)	25.5	20.0	3.55	0.338
LTE B41	25.8	21.0	3.02	0.397

Note(s):

1. 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.
2. LTE 50% RB is scaled up to the Max Tune-Up Limit with MPR included.
3. 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)

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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		

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General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

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

Band 26	Frequency range: 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).

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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

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

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

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6.7. LTE Carrier Aggregation

DL Inter-Band

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-12A (0)(1)(2)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
CA_4A-17A(0)	Band 4			Yes	Yes			20 MHz
	Band 17			Yes	Yes			
CA_2A-4A (0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 4			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-5A(0)(1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
CA_2A-12A (0)(1)(2)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
CA_4A-5A(0)(1)	Band 4			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
CA_4A-13A(0)(1)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 4			Yes	Yes			20 MHz
	Band 13				Yes			
CA_2A-4A-13A(0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 13				Yes			
CA_4A-4A-12A(0)	Band 4	4A-4A BCS 0						50 MHz
	Band 12			Yes	Yes			

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DL Inter-Band (Non-Contiguous)

E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_2A-2A (0)	Band 2	5, 10, 15. 20	5, 10, 15. 20				40 MHz
CA_41A-41C (0)(1)	Band 41	5, 10, 15. 20	41C BCS 1				60 MHz
		41C BCS 1	5, 10, 15. 20				
CA_41A-41D (0)	Band 41	5, 10, 15. 20	41D BCS 0				80 MHz
		41D BCS 0	5, 10, 15. 20				
CA_41A-41A (0)(1)	Band 41	10, 15, 20	10, 15, 20				40 MHz
		5, 10, 15. 20	5, 10, 15. 20				
CA_41C-41C (0)	Band 41	41C BCS 0	41C BCS 0				80 MHz
CA_66A-66A (0)	Band 66	5, 10, 15. 20	5, 10, 15. 20				40 MHz
CA_4A-4A (0)(1)	Band 4	5, 10, 15, 20	5, 10, 15, 20				40 MHz
		5, 10	5, 10				20 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				
CA_41C (0)(1)(2)(3)	Band 41	10	20				40 MHz
		15	15, 20				
		20	10, 15, 20				
	Band 41	5,10	20				40 MHz
		15	15,20				
		20	5, 10, 15, 20				
	Band 41	10	15,20				40 MHz
		15	10,15,20				
		20	10,15,20				
	Band 41	10	20				40 MHz
		20	20				
CA_41D (0)	Band 41	10	20	15			60 MHz
		10	15,20	20			
		15	20	10,15			
		15	10,15,20	20			
		20	15,20	10			
		20	10,15,20	15,20			
CA_41E (0)	Band 41	15,20	15,20	15,20	20		80 MHz

Note(s):

1. For supported channels, please refer to §6.5.
2. This device supports DL 4X4 MIMO for LTE Band 4, 41, 66. Please refer to Sec.9.3.1 for detailed LTE CA combination with 4X4 DL MIMO.

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6.8. Dynamic Antenna tuner testing

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

Per 2019, April TCBC Workshop document

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

The following test procedures were followed to demonstrate that the SAR results in Section 10 represented the appropriate SAR test conditions. For bands with dynamic tuning implemented, SAR was measured according to the required FCC SAR test procedures with the dynamic tuning active to allow the device to automatically to the antenna state for the respective RF exposure test configurations. Additional single point SAR time-sweep measurements were evaluated for other tuner states to determine that the other configurations would result in equivalent or lower SAR values. The additional tuner hardware has no influence on the antenna characteristics, other impedance matching.

To evaluate all the tuner states, the 61 tuner states were divided among the aggregate band, mode and exposure combinations so that each combination was evaluated for at least 11 tuner states and also so that at least 2 single point SAR measurements were made for every available tuner state. Single point time-sweep measurements were performed at the peak SAR location determined by the zoom scan of the configuration with the highest reported SAR for each combination. The tuner state was able to be established remotely so that the device was not moved for the entire series of single point SAR for the tuner states in each combination. The SAR probe remained stationary at the same position throughout the entire series of single point measurements for each combination. When the single point SAR or 1g SAR was > 1.2 W/kg for a particular band / mode / exposure condition, point SAR measurements were made for all 61 states.

This Device supports LTE capabilities with overlapping transmission frequency ranges.

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

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

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Head SAR data

WCDMA Band II		WCDMA Band IV		WCDMA Band V		LTE Band 12	
RMC		RMC		RMC		QPSK, 10MHz BW 1RB, 0 Offset	
Test position	Right Touch	Test position	Right Touch	Test position	Right Touch	Test position	Right Touch
Frequency (MHz)	1880	Frequency (MHz)	1732.6	Frequency (MHz)	826.4	Frequency (MHz)	707.5
Channel	9400	Channel	1413	Channel	4132	Channel	23095
Measured 1g SAR (W/kg)	0.0921	Measured 1g SAR (W/kg)	0.166	Measured 1g SAR (W/kg)	0.223	Measured 1g SAR (W/kg)	0.145
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 0)	0.137	Auto-tune (State 26)	0.213	Auto-tune (State 60)	0.263	Auto-tune (State 0)	0.196
State		State		State		State	
0	0.137	0	0.207	0	0.260	0	0.195
1	0.121	3	0.186	5	0.164	7	0.191
5	0.114	7	0.159	9	0.060	11	0.075
16	0.058	18	0.103	20	0.084	15	0.179
20	0.043	22	0.052	24	0.020	22	0.146
31	0.126	33	0.193	35	0.037	26	0.043
35	0.110	37	0.109	39	0.009	30	0.077
46	0.088	48	0.116	50	0.021	37	0.028
50	0.044	52	0.030	54	0.242	41	0.062
53	0.123	55	0.208	56	0.254	52	0.018
57	0.127	59	0.211	60	0.260	56	0.052

LTE Band 13		LTE Band 25		LTE Band 26		LTE Band 66	
QPSK, 10MHz BW 1RB, 0 Offset		QPSK, 20MHz BW 1RB, 99 Offset		QPSK, 10MHz BW 1RB, 0 Offset		QPSK, 20MHz BW 1RB, 49 Offset	
Test position	Right Touch	Test position	Right Touch	Test position	Right Touch	Test position	Right Touch
Frequency (MHz)	782	Frequency (MHz)	1882.5	Frequency (MHz)	831.5	Frequency (MHz)	1745
Channel	23230	Channel	26365	Channel	26865	Channel	132322
Measured 1g SAR (W/kg)	0.159	Measured 1g SAR (W/kg)	0.0688	Measured 1g SAR (W/kg)	0.261	Measured 1g SAR (W/kg)	0.162
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (41 State)	0.225	Auto-tune (State 26)	0.155	Auto-tune (State 0)	0.317	Auto-tune (State 26)	0.286
State		State		State		State	
0	0.153	0	0.117	0	0.317	0	0.227
9	0.020	11	0.042	4	0.316	2	0.206
13	0.136	14	0.076	8	0.213	6	0.183
17	0.070	19	0.053	13	0.314	10	0.119
24	0.010	26	0.148	17	0.288	12	0.071
28	0.161	30	0.125	21	0.184	25	0.023
32	0.055	34	0.137	28	0.187	27	0.273
38	0.002	40	0.100	32	0.218	36	0.182
43	0.136	45	0.080	44	0.194	42	0.205
54	0.113	56	0.086	47	0.163	47	0.167
58	0.111	60	0.113	58	0.307	51	0.074

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Body SAR data

WCDMA Band II		WCDMA Band IV		WCDMA Band V		LTE Band 12	
RMC		RMC		RMC		QPSK, 10MHz BW 1RB, 0 Offset	
Test position	Edge 3	Test position	Edge 3	Test position	Rear	Test position	Rear
Frequency (MHz)	1880	Frequency (MHz)	1752.6	Frequency (MHz)	826.4	Frequency (MHz)	707.5
Channel	9400	Channel	1513	Channel	4132	Channel	23095
Measured 1g SAR (W/kg)	0.807	Measured 1g SAR (W/kg)	0.869	Measured 1g SAR (W/kg)	0.518	Measured 1g SAR (W/kg)	0.37
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (State 0)	1.158	Auto-tune (State 59)	1.115	Auto-tune (State 0)	0.661	Auto-tune (State 0)	0.452
State		State		State		State	
0	1.136	0	1.094	0	0.661	0	0.434
2	1.022	3	1.049	8	0.185	1	0.403
5	0.965	8	0.860	10	0.096	6	0.283
8	0.742	11	0.542	14	0.450	7	0.234
15	0.581	18	0.662	16	0.410	19	0.257
18	0.530	21	0.459	23	0.078	20	0.211
21	0.340	24	0.241	27	0.589	24	0.062
31	1.108	33	1.073	42	0.530	34	0.093
45	0.793	46	0.866	49	0.066	37	0.023
48	0.525	51	0.384	54	0.588	47	0.112
54	0.648	56	0.982	59	0.637	53	0.440

LTE Band 13		LTE Band 26		LTE Band 66	
QPSK, 10MHz BW 1RB, 0 Offset		QPSK, 15MHz BW 1RB, 0 Offset		QPSK, 20MHz BW 50RB, 24 Offset	
Test position	Rear	Test position	Rear	Test position	Edge 3
Frequency (MHz)	782	Frequency (MHz)	831.5	Frequency (MHz)	1720
Channel	23230	Channel	26865	Channel	132072
Measured 1g SAR (W/kg)	0.309	Measured 1g SAR (W/kg)	0.625	Measured 1g SAR (W/kg)	0.848
Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)		Average Value of Time Swwp (W/kg)	
Auto-tune (0 State)	0.474	Auto-tune (State 0)	0.789	Auto-tune (State 26)	1.147
State		State		State	
0	0.460	0	0.773	0	0.960
4	0.289	1	0.787	1	0.999
9	0.071	4	0.748	7	0.870
10	0.045	5	0.716	10	0.700
22	0.051	20	0.753	20	0.586
23	0.039	24	0.155	21	0.540
30	0.286	25	0.092	24	0.307
36	0.027	32	0.507	37	0.800
40	0.335	38	0.055	38	0.605
50	0.023	51	0.098	44	0.874
56	0.329	57	0.714	58	0.803

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Body SAR : single point SAR > 1.2 W/kg

LTE Band 25					
QPSK, 20MHz BW 1RB, 99Offset					
Test position	Edge 3				
Frequency (MHz)	1905				
Channel	26590				
Measured 1g SAR (W/kg)	1.030				
Average Value of Time Swwp (W/kg)					
Auto-tune (State 26)	1.410				
State					
0	1.181	21	0.371	42	0.879
1	1.072	22	0.288	43	0.858
2	1.057	23	0.234	44	0.831
3	1.042	24	0.173	45	0.837
4	1.003	25	0.112	46	0.742
5	1.006	26	1.410	47	0.685
6	0.911	27	1.333	48	0.580
7	0.851	28	1.322	49	0.441
8	0.759	29	1.308	50	0.357
9	0.643	30	1.270	51	0.259
10	0.553	31	1.268	52	0.161
11	0.448	32	1.168	53	1.143
12	0.321	33	1.098	54	0.665
13	0.734	34	1.000	55	1.382
14	0.623	35	0.841	56	0.871
15	0.602	36	0.725	57	1.150
16	0.587	37	0.581	58	0.668
17	0.554	38	0.408	59	1.375
18	0.561	39	0.424	60	0.866
19	0.482	40	0.976		
20	0.482	41	0.897		

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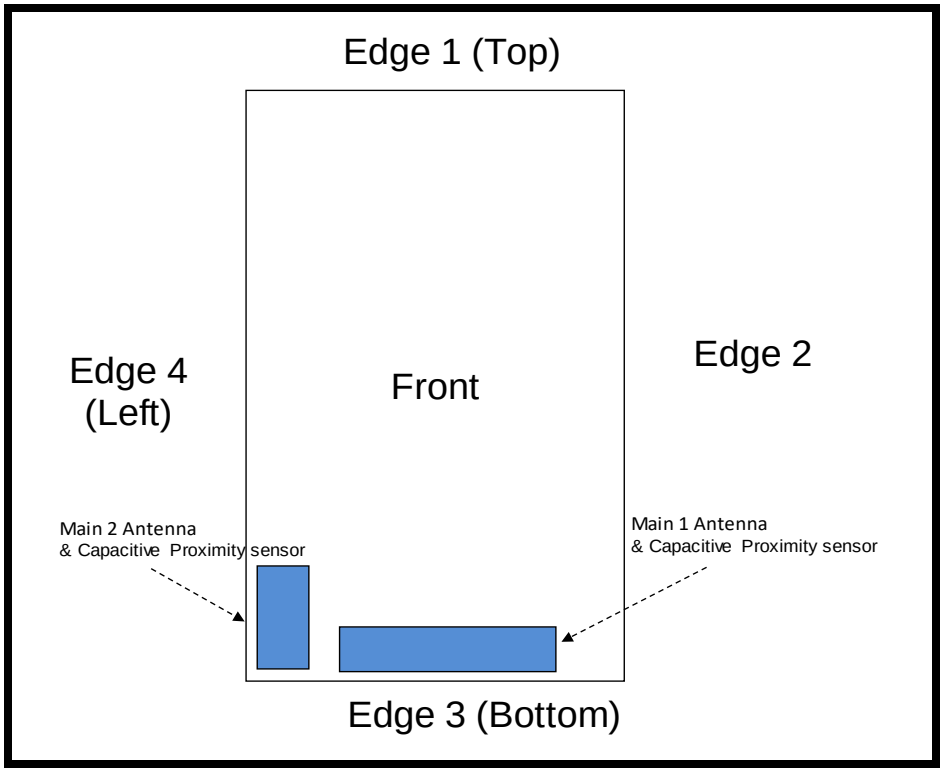
6.9. Proximity Sensor feature

The DUT (Folder Opened condition) has two proximity sensor to reduce the output power. The position of the sensors and antenna are as shown in the graphic.



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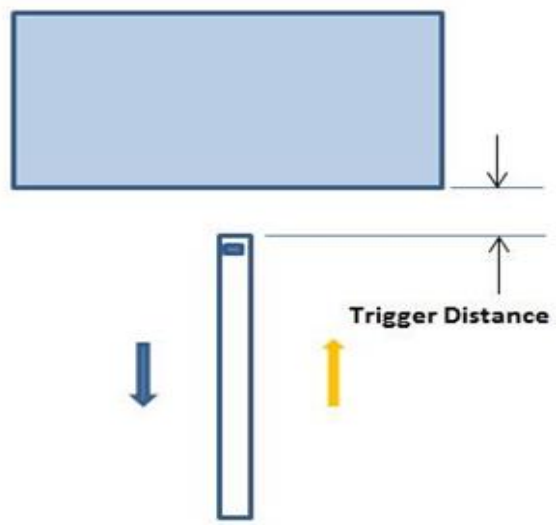
6.9.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

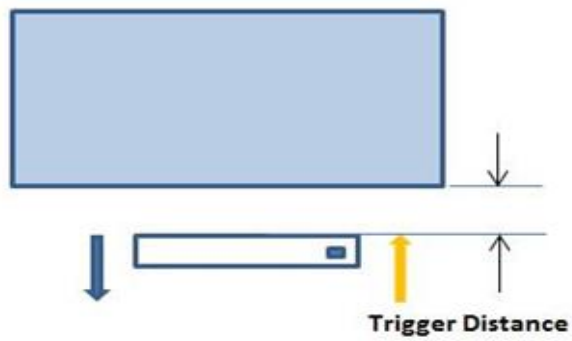
Rear, Front and Edge 3 of the DUT was placed directly below the flat phantom. The DUT was moved toward the phantom in accordance with the steps outlined in KDB 616217 §6.2 to determine the trigger distance for enabling power reduction. The DUT was moved away from the phantom to determine the trigger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

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

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



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



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

LEGEND

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

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

Summary of Trigger Distances

Tissue simulating liquid	Antenna	Trigger distance - Front		Trigger distance - Rear		Trigger distance – Edge 3	
		Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
1750 Head	Main 1 Ant.	8 mm	8 mm	9 mm	9 mm	14 mm	14 mm
1900 Head	Main 1 Ant.	8 mm	8 mm	9 mm	9 mm	14 mm	14 mm
2600 Head	Main 2 Ant.	8 mm	8 mm	9 mm	9 mm	14 mm	14 mm

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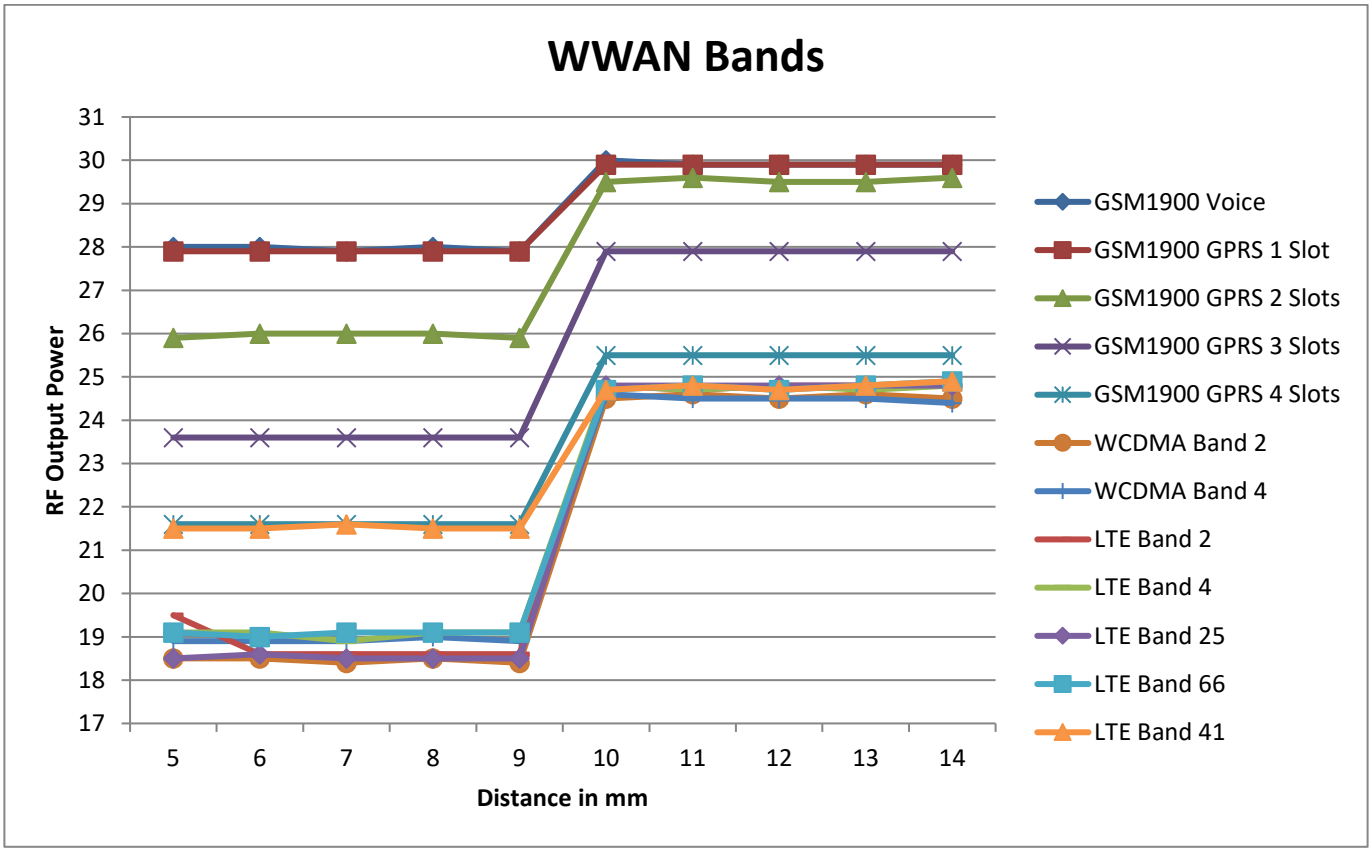
Proximity Sensor Triggering Distance Measurement Results

WWAN Bands

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

Distance to DUT vs. Output Power in dBm										
Distance (mm)	5	6	7	8	9	10	11	12	13	14
GSM1900 Voice	28.0	28.0	27.9	28.0	27.9	30.0	29.9	29.9	29.9	29.9
GSM1900 GPRS 1 Slot	27.9	27.9	27.9	27.9	27.9	29.9	29.9	29.9	29.9	29.9
GSM1900 GPRS 2 Slots	25.9	26.0	26.0	26.0	25.9	29.5	29.6	29.5	29.5	29.6
GSM1900 GPRS 3 Slots	23.6	23.6	23.6	23.6	23.6	27.9	27.9	27.9	27.9	27.9
GSM1900 GPRS 4 Slots	21.6	21.6	21.6	21.6	21.6	25.5	25.5	25.5	25.5	25.5
WCDMA Band 2	18.5	18.5	18.4	18.5	18.4	24.5	24.6	24.5	24.6	24.5
WCDMA Band 4	18.9	18.9	18.9	19.0	18.9	24.6	24.5	24.5	24.5	24.4
LTE Band 2	19.5	18.6	18.6	18.6	18.6	24.8	24.7	24.8	24.8	24.8
LTE Band 4	19.1	19.1	18.9	19.1	19.1	24.8	24.7	24.8	24.7	24.8
LTE Band 25	18.5	18.6	18.5	18.5	18.5	24.8	24.8	24.8	24.8	24.8
LTE Band 66	19.1	19.0	19.1	19.1	19.1	24.7	24.8	24.7	24.8	24.9
LTE Band 41	21.5	21.5	21.6	21.5	21.5	24.7	24.8	24.7	24.8	24.9



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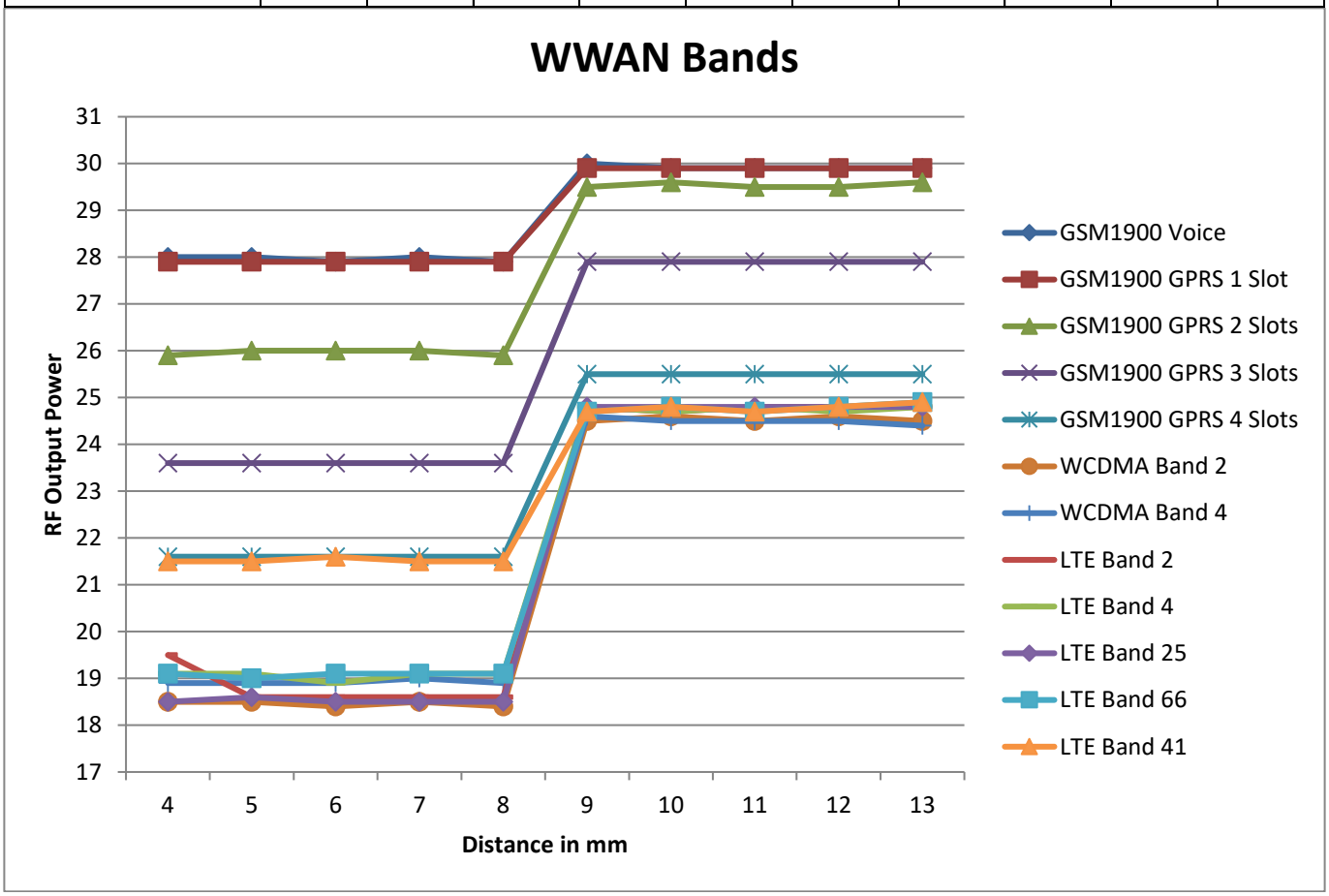
Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	4	5	6	7	8	9	10	11	12	13
GSM1900 Voice	28.0	28.0	27.9	28.0	27.9	30.0	29.9	29.9	29.9	29.9
GSM1900 GPRS 1 Slot	27.9	27.9	27.9	27.9	27.9	29.9	29.9	29.9	29.9	29.9
GSM1900 GPRS 2 Slots	25.9	26.0	26.0	26.0	25.9	29.5	29.6	29.5	29.5	29.6
GSM1900 GPRS 3 Slots	23.6	23.6	23.6	23.6	23.6	27.9	27.9	27.9	27.9	27.9
GSM1900 GPRS 4 Slots	21.6	21.6	21.6	21.6	21.6	25.5	25.5	25.5	25.5	25.5
WCDMA Band 2	18.5	18.5	18.4	18.5	18.4	24.5	24.6	24.5	24.6	24.5
WCDMA Band 4	18.9	18.9	18.9	19.0	18.9	24.6	24.5	24.5	24.5	24.4
LTE Band 2	19.5	18.6	18.6	18.6	18.6	24.8	24.7	24.8	24.8	24.8
LTE Band 4	19.1	19.1	18.9	19.1	19.1	24.8	24.7	24.8	24.7	24.8
LTE Band 25	18.5	18.6	18.5	18.5	18.5	24.8	24.8	24.8	24.8	24.8
LTE Band 66	19.1	19.0	19.1	19.1	19.1	24.7	24.8	24.7	24.8	24.9
LTE Band 41	21.5	21.5	21.6	21.5	21.5	24.7	24.8	24.7	24.8	24.9



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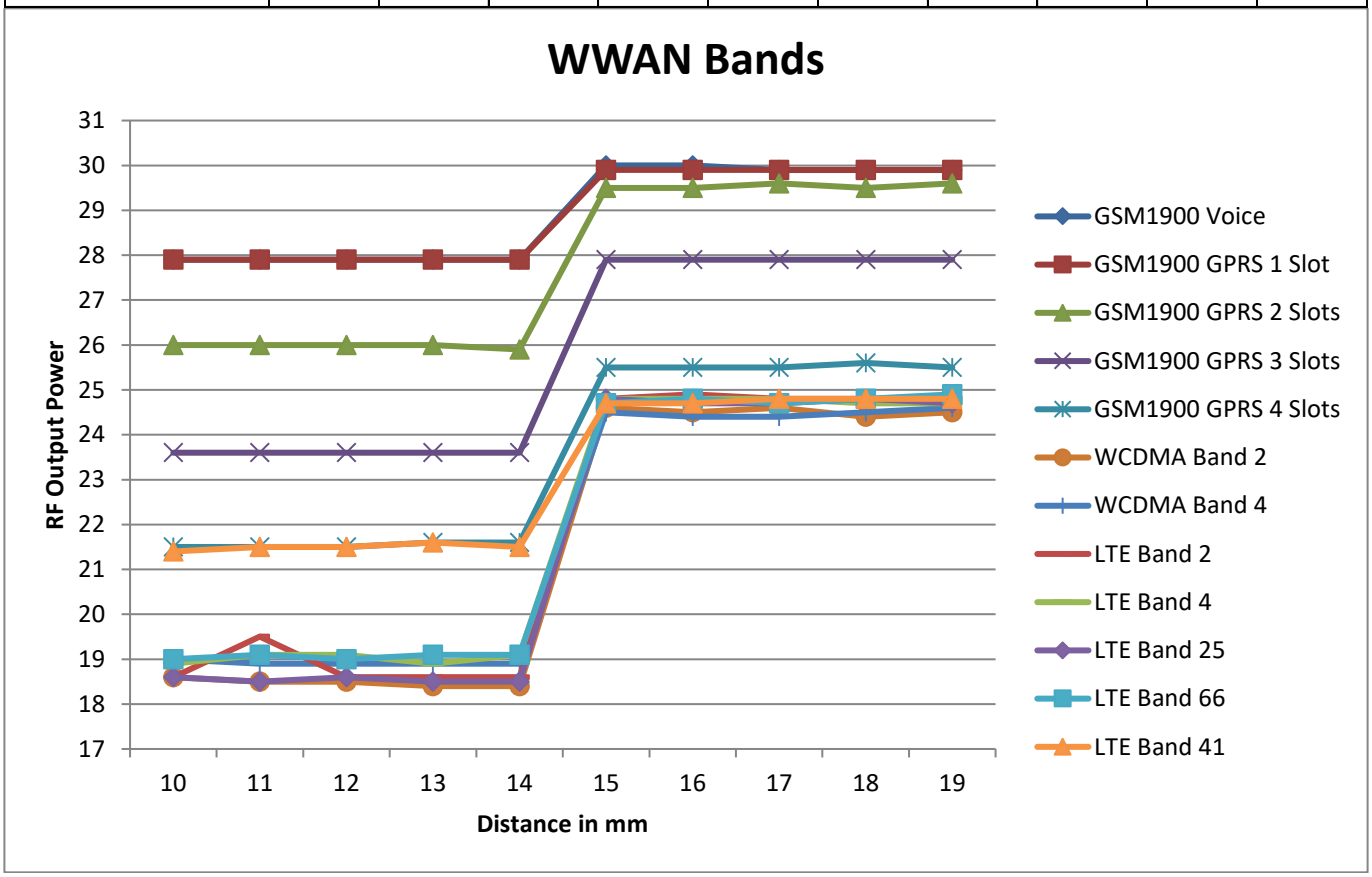
Edge 3, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	10	11	12	13	14	15	16	17	18	19
GSM1900 Voice	27.9	27.9	27.9	27.9	27.9	30.0	30.0	29.9	29.9	29.9
GSM1900 GPRS 1 Slot	27.9	27.9	27.9	27.9	27.9	29.9	29.9	29.9	29.9	29.9
GSM1900 GPRS 2 Slots	26.0	26.0	26.0	26.0	25.9	29.5	29.5	29.6	29.5	29.6
GSM1900 GPRS 3 Slots	23.6	23.6	23.6	23.6	23.6	27.9	27.9	27.9	27.9	27.9
GSM1900 GPRS 4 Slots	21.5	21.5	21.5	21.6	21.6	25.5	25.5	25.5	25.6	25.5
WCDMA Band 2	18.6	18.5	18.5	18.4	18.4	24.6	24.5	24.6	24.4	24.5
WCDMA Band 4	19.0	18.9	18.9	18.9	18.9	24.5	24.4	24.4	24.5	24.6
LTE Band 2	18.6	19.5	18.6	18.6	18.6	24.8	24.9	24.8	24.8	24.8
LTE Band 4	18.9	19.1	19.1	18.9	19.1	24.8	24.8	24.8	24.7	24.7
LTE Band 25	18.6	18.5	18.6	18.5	18.5	24.8	24.7	24.7	24.8	24.7
LTE Band 66	19.0	19.1	19.0	19.1	19.1	24.7	24.8	24.7	24.8	24.9
LTE Band 41	21.4	21.5	21.5	21.6	21.5	24.7	24.7	24.8	24.8	24.8



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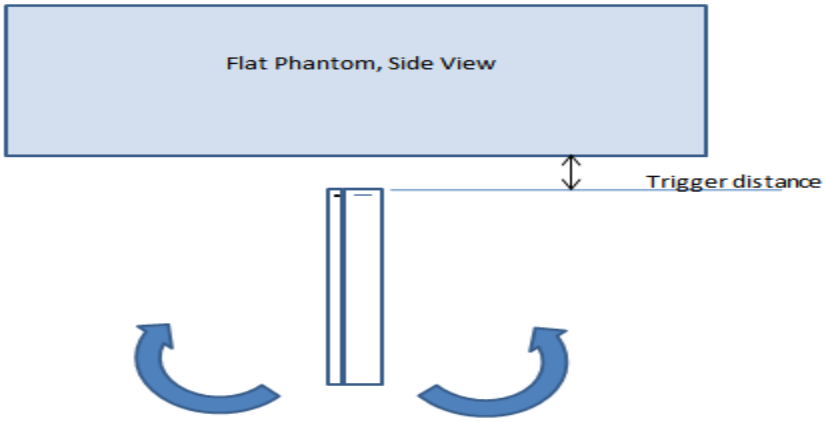
6.9.2. Proximity Sensor Coverage (KDB 616217 §6.3)

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

6.9.3. 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	14 mm	14 mm	On	On	On	On	On	On	On	On	On	On	On
1900	14 mm	14 mm	On	On	On	On	On	On	On	On	On	On	On
2600	14 mm	14 mm	On	On	On	On	On	On	On	On	On	On	On

6.9.4. 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	9 mm	N/A	N/A	8 mm
	Front	8 mm	N/A	N/A	7 mm
	Edge 3	14 mm	N/A	14 mm	13 mm

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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.

Folder Opened

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)			
2.4GHz WLAN	Head	WiFi/BT 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		15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	WiFi/BT Ant.1	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	< 25 mm	Yes	
				Edge 2 (Right)	< 25 mm	Yes	
				Edge 3 (Bottom)	> 25 mm	No	1
				Edge 4 (Left)	> 25 mm	No	1
	Hotspot	WiFi/BT Ant.2	10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	
				Edge 2 (Right)	> 25 mm	No	
				Edge 3 (Bottom)	> 25 mm	No	
				Edge 4 (Left)	< 25 mm	Yes	1
5GHz WLAN	Head	WiFi Ant.1 & WiFi Ant.2	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body		15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot		10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	< 25 mm	Yes	
				Edge 2 (Right)	< 25 mm	Yes	
				Edge 3 (Bottom)	> 25 mm	No	1
				Edge 4 (Left)	> 25 mm	No	1
	Product Specific 10-g		0 mm	Rear	Refer to notes 2 & 4		
				Front			
				Edge 1 (Top)			
				Edge 2 (Right)			
				Edge 3 (Bottom)			
				Edge 4 (Left)			

Notes:

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

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Folder Closed

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	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	
2.4G WLAN	Body	WiFi/BT Ant.1 & WiFi/BT Ant.2	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	WiFi/BT Ant.1	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	No	1
	Hotspot	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	
5GHz WLAN	Body	WiFi Ant.1 & WiFi Ant.2	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot		10 mm	Rear	< 25 mm	Yes	
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	1
				Edge 2 (Right)	< 25 mm	Yes	
				Edge 3 (Bottom)	< 25 mm	Yes	
				Edge 4 (Left)	> 25 mm	No	1

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 Folder Closed condition, Ear-piece is not located. So Head SAR test is not required.
3. Diagonal length of Folder Closed condition is below than 160 mm, so Product Specific 10g SAR is not considered

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8. Dielectric Property Measurements & System Check

8.1 Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.

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

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

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

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

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

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Dielectric Property Measurements Results:
SAR 1 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
6-2-2020	Head 5250	e'	36.6600	Relative Permittivity (ε_r):	36.66	35.93	2.02	5
		e''	16.3000	Conductivity (σ):	4.76	4.70	1.19	5
	Head 5260	e'	36.6400	Relative Permittivity (ε_r):	36.64	35.92	2.00	5
		e''	16.3200	Conductivity (σ):	4.77	4.71	1.29	5
	Head 5600	e'	36.2800	Relative Permittivity (ε_r):	36.28	35.53	2.10	5
		e''	16.6400	Conductivity (σ):	5.18	5.06	2.39	5
	Head 5750	e'	36.1600	Relative Permittivity (ε_r):	36.16	35.36	2.25	5
		e''	16.8000	Conductivity (σ):	5.37	5.21	3.02	5
	Head 5825	e'	36.1400	Relative Permittivity (ε_r):	36.14	35.30	2.38	5
		e''	16.9000	Conductivity (σ):	5.47	5.27	3.87	5

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SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-12-2020	Head 1750	e'	39.3200	Relative Permittivity (ε_r):	39.32	40.08	-1.91	5
		e"	13.4900	Conductivity (σ):	1.31	1.37	-4.11	5
	Head 1710	e'	39.3500	Relative Permittivity (ε_r):	39.35	40.15	-1.98	5
		e"	13.6200	Conductivity (σ):	1.30	1.35	-3.82	5
	Head 1755	e'	39.3200	Relative Permittivity (ε_r):	39.32	40.08	-1.89	5
		e"	13.4700	Conductivity (σ):	1.31	1.37	-4.18	5
5-12-2020	Head 1900	e'	39.2100	Relative Permittivity (ε_r):	39.21	40.00	-1.98	5
		e"	13.2500	Conductivity (σ):	1.40	1.40	-0.01	5
	Head 1850	e'	39.2400	Relative Permittivity (ε_r):	39.24	40.00	-1.90	5
		e"	13.2900	Conductivity (σ):	1.37	1.40	-2.35	5
	Head 1910	e'	39.1900	Relative Permittivity (ε_r):	39.19	40.00	-2.03	5
		e"	13.2500	Conductivity (σ):	1.41	1.40	0.51	5
5-15-2020	Head 1750	e'	38.7500	Relative Permittivity (ε_r):	38.75	40.08	-3.33	5
		e"	14.0000	Conductivity (σ):	1.36	1.37	-0.49	5
	Head 1710	e'	38.8000	Relative Permittivity (ε_r):	38.80	40.15	-3.35	5
		e"	14.1200	Conductivity (σ):	1.34	1.35	-0.29	5
	Head 1755	e'	38.7500	Relative Permittivity (ε_r):	38.75	40.08	-3.31	5
		e"	13.9700	Conductivity (σ):	1.36	1.37	-0.62	5
5-15-2020	Head 1900	e'	38.6500	Relative Permittivity (ε_r):	38.65	40.00	-3.38	5
		e"	13.8200	Conductivity (σ):	1.46	1.40	4.29	5
	Head 1850	e'	38.7300	Relative Permittivity (ε_r):	38.73	40.00	-3.18	5
		e"	13.8300	Conductivity (σ):	1.42	1.40	1.62	5
	Head 1910	e'	38.6200	Relative Permittivity (ε_r):	38.62	40.00	-3.45	5
		e"	13.8200	Conductivity (σ):	1.47	1.40	4.84	5
5-17-2020	Head 750	e'	40.8300	Relative Permittivity (ε_r):	40.83	41.96	-2.70	5
		e"	21.3000	Conductivity (σ):	0.89	0.89	-0.54	5
	Head 700	e'	40.9800	Relative Permittivity (ε_r):	40.98	42.22	-2.93	5
		e"	22.3900	Conductivity (σ):	0.87	0.89	-2.00	5
	Head 790	e'	40.7000	Relative Permittivity (ε_r):	40.70	41.76	-2.53	5
		e"	20.5000	Conductivity (σ):	0.90	0.90	0.48	5
5-17-2020	Head 1750	e'	38.8000	Relative Permittivity (ε_r):	38.80	40.08	-3.20	5
		e"	13.7100	Conductivity (σ):	1.33	1.37	-2.55	5
	Head 1710	e'	38.8300	Relative Permittivity (ε_r):	38.83	40.15	-3.28	5
		e"	13.8200	Conductivity (σ):	1.31	1.35	-2.41	5
	Head 1755	e'	38.8000	Relative Permittivity (ε_r):	38.80	40.08	-3.19	5
		e"	13.6900	Conductivity (σ):	1.34	1.37	-2.62	5
5-24-2020	Head 2600	e'	37.5800	Relative Permittivity (ε_r):	37.58	39.01	-3.67	5
		e"	13.6600	Conductivity (σ):	1.97	1.96	0.64	5
	Head 2500	e'	37.7400	Relative Permittivity (ε_r):	37.74	39.14	-3.57	5
		e"	13.5400	Conductivity (σ):	1.88	1.85	1.52	5
	Head 2700	e'	37.3600	Relative Permittivity (ε_r):	37.36	38.88	-3.92	5
		e"	13.7500	Conductivity (σ):	2.06	2.07	-0.29	5
5-27-2020	Head 2600	e'	37.7700	Relative Permittivity (ε_r):	37.77	39.01	-3.18	5
		e"	13.2600	Conductivity (σ):	1.92	1.96	-2.30	5
	Head 2500	e'	37.9600	Relative Permittivity (ε_r):	37.96	39.14	-3.01	5
		e"	13.2300	Conductivity (σ):	1.84	1.85	-0.81	5
	Head 2700	e'	37.6100	Relative Permittivity (ε_r):	37.61	38.88	-3.28	5
		e"	13.2900	Conductivity (σ):	2.00	2.07	-3.63	5

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SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-10-2020	Head 835	e'	41.7200	Relative Permittivity (ε_r):	41.72	41.50	0.53	5
		e''	19.2600	Conductivity (σ):	0.89	0.90	-0.64	5
	Head 820	e'	41.7300	Relative Permittivity (ε_r):	41.73	41.60	0.31	5
		e''	19.4600	Conductivity (σ):	0.89	0.90	-1.25	5
	Head 850	e'	41.7300	Relative Permittivity (ε_r):	41.73	41.50	0.55	5
		e''	19.0800	Conductivity (σ):	0.90	0.92	-1.45	5
5-13-2020	Head 750	e'	41.5900	Relative Permittivity (ε_r):	41.59	41.96	-0.89	5
		e''	21.5000	Conductivity (σ):	0.90	0.89	0.39	5
	Head 700	e'	41.7300	Relative Permittivity (ε_r):	41.73	42.22	-1.16	5
		e''	22.5900	Conductivity (σ):	0.88	0.89	-1.12	5
	Head 790	e'	41.4900	Relative Permittivity (ε_r):	41.49	41.76	-0.64	5
		e''	20.7300	Conductivity (σ):	0.91	0.90	1.61	5
5-13-2020	Head 835	e'	41.3600	Relative Permittivity (ε_r):	41.36	41.50	-0.34	5
		e''	19.9300	Conductivity (σ):	0.93	0.90	2.81	5
	Head 820	e'	41.4000	Relative Permittivity (ε_r):	41.40	41.60	-0.49	5
		e''	20.2100	Conductivity (σ):	0.92	0.90	2.56	5
	Head 850	e'	41.3400	Relative Permittivity (ε_r):	41.34	41.50	-0.39	5
		e''	19.6500	Conductivity (σ):	0.93	0.92	1.50	5
5-14-2020	Head 1900	e'	39.3800	Relative Permittivity (ε_r):	39.38	40.00	-1.55	5
		e''	13.6500	Conductivity (σ):	1.44	1.40	3.00	5
	Head 1850	e'	39.4500	Relative Permittivity (ε_r):	39.45	40.00	-1.37	5
		e''	13.7700	Conductivity (σ):	1.42	1.40	1.18	5
	Head 1910	e'	39.3700	Relative Permittivity (ε_r):	39.37	40.00	-1.58	5
		e''	13.6200	Conductivity (σ):	1.45	1.40	3.32	5
5-17-2020	Head 835	e'	41.7900	Relative Permittivity (ε_r):	41.79	41.50	0.70	5
		e''	19.8800	Conductivity (σ):	0.92	0.90	2.56	5
	Head 820	e'	41.7900	Relative Permittivity (ε_r):	41.79	41.60	0.45	5
		e''	20.1200	Conductivity (σ):	0.92	0.90	2.10	5
	Head 850	e'	41.7800	Relative Permittivity (ε_r):	41.78	41.50	0.67	5
		e''	19.6600	Conductivity (σ):	0.93	0.92	1.55	5
5-17-2020	Head 1900	e'	39.7400	Relative Permittivity (ε_r):	39.74	40.00	-0.65	5
		e''	13.5000	Conductivity (σ):	1.43	1.40	1.87	5
	Head 1850	e'	39.8200	Relative Permittivity (ε_r):	39.82	40.00	-0.45	5
		e''	13.5900	Conductivity (σ):	1.40	1.40	-0.15	5
	Head 1910	e'	39.7200	Relative Permittivity (ε_r):	39.72	40.00	-0.70	5
		e''	13.4900	Conductivity (σ):	1.43	1.40	2.33	5
5-20-2020	Head 1900	e'	38.2900	Relative Permittivity (ε_r):	38.29	40.00	-4.28	5
		e''	13.8200	Conductivity (σ):	1.46	1.40	4.29	5
	Head 1850	e'	38.4300	Relative Permittivity (ε_r):	38.43	40.00	-3.93	5
		e''	13.9400	Conductivity (σ):	1.43	1.40	2.42	5
	Head 1910	e'	38.2700	Relative Permittivity (ε_r):	38.27	40.00	-4.32	5
		e''	13.8000	Conductivity (σ):	1.47	1.40	4.68	5
5-20-2020	Head 2450	e'	37.5700	Relative Permittivity (ε_r):	37.57	39.20	-4.16	5
		e''	13.4200	Conductivity (σ):	1.83	1.80	1.57	5
	Head 2410	e'	37.6700	Relative Permittivity (ε_r):	37.67	39.28	-4.10	5
		e''	13.4400	Conductivity (σ):	1.80	1.76	2.30	5
	Head 2480	e'	37.4800	Relative Permittivity (ε_r):	37.48	39.16	-4.30	5
		e''	13.4000	Conductivity (σ):	1.85	1.83	0.84	5

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SAR 4 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-24-2020	Head 1900	e'	39.3500	Relative Permittivity (ε_r):	39.35	40.00	-1.63	5
		e"	13.8400	Conductivity (σ):	1.46	1.40	4.44	5
	Head 1850	e'	39.3700	Relative Permittivity (ε_r):	39.37	40.00	-1.58	5
		e"	13.8700	Conductivity (σ):	1.43	1.40	1.91	5
	Head 1910	e'	39.3100	Relative Permittivity (ε_r):	39.31	40.00	-1.72	5
		e"	13.8300	Conductivity (σ):	1.47	1.40	4.91	5
5-24-2020	Head 2450	e'	38.4700	Relative Permittivity (ε_r):	38.47	39.20	-1.86	5
		e"	13.5500	Conductivity (σ):	1.85	1.80	2.55	5
	Head 2410	e'	38.4600	Relative Permittivity (ε_r):	38.46	39.28	-2.09	5
		e"	13.5300	Conductivity (σ):	1.81	1.76	2.99	5
	Head 2480	e'	38.4200	Relative Permittivity (ε_r):	38.42	39.16	-1.90	5
		e"	13.5400	Conductivity (σ):	1.87	1.83	1.89	5
5-27-2020	Head 1900	e'	39.3500	Relative Permittivity (ε_r):	39.35	40.00	-1.63	5
		e"	13.6600	Conductivity (σ):	1.44	1.40	3.08	5
	Head 1850	e'	39.4500	Relative Permittivity (ε_r):	39.45	40.00	-1.37	5
		e"	13.7000	Conductivity (σ):	1.41	1.40	0.66	5
	Head 1910	e'	39.3300	Relative Permittivity (ε_r):	39.33	40.00	-1.68	5
		e"	13.6500	Conductivity (σ):	1.45	1.40	3.55	5
5-31-2020	Head 2450	e'	38.5000	Relative Permittivity (ε_r):	38.50	39.20	-1.79	5
		e"	13.1100	Conductivity (σ):	1.79	1.80	-0.78	5
	Head 2410	e'	38.5500	Relative Permittivity (ε_r):	38.55	39.28	-1.86	5
		e"	13.1200	Conductivity (σ):	1.76	1.76	-0.13	5
	Head 2480	e'	38.4500	Relative Permittivity (ε_r):	38.45	39.16	-1.82	5
		e"	13.1100	Conductivity (σ):	1.81	1.83	-1.34	5
6-3-2020	Head 1900	e'	39.4400	Relative Permittivity (ε_r):	39.44	40.00	-1.40	5
		e"	13.6000	Conductivity (σ):	1.44	1.40	2.63	5
	Head 1850	e'	39.4900	Relative Permittivity (ε_r):	39.49	40.00	-1.28	5
		e"	13.6500	Conductivity (σ):	1.40	1.40	0.29	5
	Head 1910	e'	39.4200	Relative Permittivity (ε_r):	39.42	40.00	-1.45	5
		e"	13.6000	Conductivity (σ):	1.44	1.40	3.17	5
6-3-2020	Head 2450	e'	38.6600	Relative Permittivity (ε_r):	38.66	39.20	-1.38	5
		e"	13.1800	Conductivity (σ):	1.80	1.80	-0.25	5
	Head 2410	e'	38.6900	Relative Permittivity (ε_r):	38.69	39.28	-1.50	5
		e"	13.1800	Conductivity (σ):	1.77	1.76	0.33	5
	Head 2480	e'	38.6300	Relative Permittivity (ε_r):	38.63	39.16	-1.36	5
		e"	13.2100	Conductivity (σ):	1.82	1.83	-0.59	5

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SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-20-2020	Head 5250	e'	35.3900	Relative Permittivity (ε_r):	35.39	35.93	-1.51	5
		e"	15.7000	Conductivity (σ):	4.58	4.70	-2.53	5
	Head 5260	e'	35.3500	Relative Permittivity (ε_r):	35.35	35.92	-1.59	5
		e"	15.7100	Conductivity (σ):	4.59	4.71	-2.50	5
	Head 5600	e'	34.7600	Relative Permittivity (ε_r):	34.76	35.53	-2.18	5
		e"	15.8800	Conductivity (σ):	4.94	5.06	-2.28	5
	Head 5750	e'	34.4900	Relative Permittivity (ε_r):	34.49	35.36	-2.47	5
		e"	15.9900	Conductivity (σ):	5.11	5.21	-1.95	5
	Head 5825	e'	34.4500	Relative Permittivity (ε_r):	34.45	35.30	-2.41	5
		e"	16.0000	Conductivity (σ):	5.18	5.27	-1.67	5
5-24-2020	Head 5250	e'	35.2400	Relative Permittivity (ε_r):	35.24	35.93	-1.93	5
		e"	16.1800	Conductivity (σ):	4.72	4.70	0.45	5
	Head 5260	e'	35.2300	Relative Permittivity (ε_r):	35.23	35.92	-1.93	5
		e"	16.2000	Conductivity (σ):	4.74	4.71	0.54	5
	Head 5600	e'	34.6200	Relative Permittivity (ε_r):	34.62	35.53	-2.57	5
		e"	16.3100	Conductivity (σ):	5.08	5.06	0.36	5
	Head 5750	e'	34.4800	Relative Permittivity (ε_r):	34.48	35.36	-2.50	5
		e"	16.3500	Conductivity (σ):	5.23	5.21	0.26	5
	Head 5825	e'	34.2200	Relative Permittivity (ε_r):	34.22	35.30	-3.06	5
		e"	16.3900	Conductivity (σ):	5.31	5.27	0.73	5
5-27-2020	Head 5250	e'	35.1000	Relative Permittivity (ε_r):	35.10	35.93	-2.32	5
		e"	16.1400	Conductivity (σ):	4.71	4.70	0.20	5
	Head 5260	e'	35.0800	Relative Permittivity (ε_r):	35.08	35.92	-2.34	5
		e"	16.1500	Conductivity (σ):	4.72	4.71	0.23	5
	Head 5600	e'	34.5300	Relative Permittivity (ε_r):	34.53	35.53	-2.83	5
		e"	16.3100	Conductivity (σ):	5.08	5.06	0.36	5
	Head 5750	e'	34.3100	Relative Permittivity (ε_r):	34.31	35.36	-2.98	5
		e"	16.3900	Conductivity (σ):	5.24	5.21	0.51	5
	Head 5825	e'	34.1800	Relative Permittivity (ε_r):	34.18	35.30	-3.17	5
		e"	16.4400	Conductivity (σ):	5.32	5.27	1.04	5
6-1-2020	Head 5250	e'	35.9500	Relative Permittivity (ε_r):	35.95	35.93	0.05	5
		e"	15.9000	Conductivity (σ):	4.64	4.70	-1.29	5
	Head 5260	e'	35.9500	Relative Permittivity (ε_r):	35.95	35.92	0.08	5
		e"	15.8900	Conductivity (σ):	4.65	4.71	-1.38	5
	Head 5600	e'	35.3700	Relative Permittivity (ε_r):	35.37	35.53	-0.46	5
		e"	16.0600	Conductivity (σ):	5.00	5.06	-1.18	5
	Head 5750	e'	35.1700	Relative Permittivity (ε_r):	35.17	35.36	-0.55	5
		e"	16.1600	Conductivity (σ):	5.17	5.21	-0.90	5
	Head 5825	e'	35.1000	Relative Permittivity (ε_r):	35.10	35.30	-0.57	5
		e"	16.1600	Conductivity (σ):	5.23	5.27	-0.68	5
6-3-2020	Head 5250	e'	35.4900	Relative Permittivity (ε_r):	35.49	35.93	-1.23	5
		e"	16.3900	Conductivity (σ):	4.78	4.70	1.75	5
	Head 5260	e'	35.4600	Relative Permittivity (ε_r):	35.46	35.92	-1.29	5
		e"	16.4000	Conductivity (σ):	4.80	4.71	1.79	5
	Head 5600	e'	34.9000	Relative Permittivity (ε_r):	34.90	35.53	-1.78	5
		e"	16.5800	Conductivity (σ):	5.16	5.06	2.02	5
	Head 5750	e'	34.6400	Relative Permittivity (ε_r):	34.64	35.36	-2.04	5
		e"	16.6600	Conductivity (σ):	5.33	5.21	2.16	5
	Head 5825	e'	34.5200	Relative Permittivity (ε_r):	34.52	35.30	-2.21	5
		e"	16.6900	Conductivity (σ):	5.41	5.27	2.57	5

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8.2 System Check

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

System Performance Check Measurement Conditions:

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

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Reference Target SAR Values

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

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (W/kg)	
				1g/10g	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	5d190	10-23-2018	1900	1g	39.10
				10g	20.40
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	1184	8-21-2018	5250	1g	81.10
				10g	23.40
			5600	1g	85.00
				10g	24.40
			5750	1g	82.60
				10g	23.70
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. (D1900V2 (SN : 5d190), D5GHzV2 (SN : 1184))

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			
6-2-2020	D5GHzV2 (5250)	1209	Head	1g	7.65	76.5	79.90	-4.26	
				10g	2.20	22.0	22.60	-2.65	
6-2-2020	D5GHzV2 (5600)	1209	Head	1g	8.42	84.2	83.60	0.72	
				10g	2.39	23.9	23.60	1.27	
6-2-2020	D5GHzV2 (5750)	1209	Head	1g	8.41	84.1	80.20	4.86	1, 2
				10g	2.41	24.1	22.60	6.64	

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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			
5-12-2020	D1750V2	1125	Head	1g	3.45	34.5	36.50	-5.48	
				10g	1.84	18.4	19.20	-4.17	
5-12-2020	D1900V2	5d190	Head	1g	3.83	38.3	39.10	-2.05	
				10g	1.99	19.9	20.40	-2.45	
5-15-2020	D1750V2	1125	Head	1g	3.45	34.5	36.50	-5.48	3, 4
				10g	1.83	18.3	19.20	-4.69	
5-15-2020	D1900V2	5d190	Head	1g	3.94	39.4	39.10	0.77	
				10g	2.05	20.5	20.40	0.49	
5-17-2020	D750V3	1122	Head	1g	0.82	8.2	8.54	-3.86	
				10g	0.54	5.4	5.59	-3.40	
5-17-2020	D1750V2	1125	Head	1g	3.46	34.6	36.50	-5.21	
				10g	1.84	18.4	19.20	-4.17	
5-24-2020	D2600V2	1097	Head	1g	5.69	56.9	57.30	-0.70	
				10g	2.56	25.6	25.70	-0.39	
5-27-2020	D2600V2	1097	Head	1g	5.37	53.7	57.30	-6.28	5, 6
				10g	2.41	24.1	25.70	-6.23	

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			
5-10-2020	D835V2	4d174	Head	1g	0.93	9.26	9.59	-3.44	
				10g	0.60	6.02	6.24	-3.53	
5-13-2020	D750V3	1122	Head	1g	0.91	9.11	8.54	6.67	7, 8
				10g	0.60	5.99	5.59	7.16	
5-13-2020	D835V2	4d174	Head	1g	0.91	9.11	9.59	-5.01	9, 10
				10g	0.60	5.95	6.24	-4.65	
5-14-2020	D1900V2	5d190	Head	1g	3.75	37.50	39.10	-4.09	
				10g	1.92	19.20	20.40	-5.88	
5-17-2020	D835V2	4d174	Head	1g	0.94	9.38	9.59	-2.19	
				10g	0.61	6.10	6.24	-2.24	
5-17-2020	D1900V2	5d190	Head	1g	3.92	39.20	39.10	0.26	
				10g	2.02	20.20	20.40	-0.98	
5-20-2020	D1900V2	5d190	Head	1g	4.20	42.00	39.10	7.42	11, 12
				10g	2.16	21.60	20.40	5.88	
5-20-2020	D2450V2	939	Head	1g	5.32	53.20	53.20	0.00	
				10g	2.46	24.60	25.10	-1.99	
5-24-2020	D1900V2	5d190	Head	1g	3.99	39.90	39.10	2.05	
				10g	2.04	20.40	20.40	0.00	
5-24-2020	D2450V2	939	Head	1g	5.46	54.60	53.20	2.63	13, 14
				10g	2.52	25.20	25.10	0.40	
5-27-2020	D1900V2	5d190	Head	1g	4.03	40.30	39.10	3.07	
				10g	2.06	20.60	20.40	0.98	
5-31-2020	D2450V2	939	Head	1g	5.23	52.30	53.20	-1.69	
				10g	2.43	24.30	25.10	-3.19	
6-3-2020	D1900V2	5d190	Head	1g	4.03	40.30	40.50	-0.49	
				10g	2.06	20.60	21.00	-1.90	
6-3-2020	D2450V2	939	Head	1g	5.31	53.10	53.20	-0.19	
				10g	2.46	24.60	25.10	-1.99	

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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			
5-20-2020	D5GHzV2 (5250)	1184	Head	1g	7.54	75.4	81.10	-7.03	
				10g	2.18	21.8	23.40	-6.84	
5-20-2020	D5GHzV2 (5600)	1184	Head	1g	8.50	85.0	85.00	0.00	
				10g	2.46	24.6	24.40	0.82	
5-20-2020	D5GHzV2 (5750)	1184	Head	1g	8.92	89.2	82.60	7.99	15, 16
				10g	2.57	25.7	23.70	8.44	
5-24-2020	D5GHzV2 (5250)	1184	Head	1g	8.08	80.8	81.10	-0.37	
				10g	2.34	23.4	23.40	0.00	
5-24-2020	D5GHzV2 (5600)	1184	Head	1g	8.93	89.3	85.00	5.06	
				10g	2.57	25.7	24.40	5.33	
5-24-2020	D5GHzV2 (5750)	1184	Head	1g	8.51	85.1	82.60	3.03	
				10g	2.44	24.4	23.70	2.95	
5-27-2020	D5GHzV2 (5250)	1184	Head	1g	8.45	84.5	81.10	4.19	
				10g	2.44	24.4	23.40	4.27	
5-27-2020	D5GHzV2 (5600)	1184	Head	1g	8.64	86.4	85.00	1.65	
				10g	2.49	24.9	24.40	2.05	
5-27-2020	D5GHzV2 (5750)	1184	Head	1g	8.27	82.7	82.60	0.12	
				10g	2.38	23.8	23.70	0.42	
6-1-2020	D5GHzV2 (5250)	1209	Head	1g	8.11	81.1	79.90	1.50	
				10g	2.33	23.3	22.60	3.10	
6-1-2020	D5GHzV2 (5600)	1209	Head	1g	8.23	82.3	83.60	-1.56	
				10g	2.35	23.5	23.60	-0.42	
6-1-2020	D5GHzV2 (5750)	1209	Head	1g	8.18	81.8	80.20	2.00	
				10g	2.30	23.0	22.60	1.77	
6-3-2020	D5GHzV2 (5250)	1209	Head	1g	8.30	83.0	79.90	3.88	
				10g	2.35	23.5	22.60	3.98	
6-3-2020	D5GHzV2 (5600)	1209	Head	1g	8.85	88.5	83.60	5.86	
				10g	2.48	24.8	23.60	5.08	
6-3-2020	D5GHzV2 (5750)	1209	Head	1g	8.46	84.6	80.20	5.49	
				10g	2.38	23.8	22.60	5.31	

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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	31.6	22.6	33.5	24.5
			190	836.6	32.0	23.0		
			251	848.8	32.2	23.2		
GPRS (GMSK)	CS1	1	128	824.2	31.6	22.5	33.5	24.5
			190	836.6	31.9	22.9		
			251	848.8	32.1	23.0		
		2	128	824.2	31.1	25.1	32.5	**26.5**
			190	836.6	30.9	24.9		
			251	848.8	31.0	25.0		
		3	128	824.2	29.2	24.9	30.5	26.2
			190	836.6	29.2	24.9		
			251	848.8	29.2	24.9		
		4	128	824.2	27.0	23.9	28.5	25.5
			190	836.6	27.2	24.2		
			251	848.8	27.4	24.4		
EGPRS (8PSK)	MCS5	1	128	824.2	26.4	17.3	28.0	19.0
			190	836.6	26.9	17.9		
			251	848.8	26.9	17.9		
		2	128	824.2	24.9	18.9	26.0	20.0
			190	836.6	25.1	19.0		
			251	848.8	25.0	19.0		
		3	128	824.2	22.9	18.6	24.0	19.7
			190	836.6	23.1	18.8		
			251	848.8	23.1	18.8		
		4	128	824.2	21.8	18.8	23.0	20.0
			190	836.6	22.1	19.1		
			251	848.8	22.2	19.2		

Notes:

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

- GMSK (GPRS) mode with 2 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.

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GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)				Reduced Average Power (dBm) Hotspot & 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	29.9	20.9	31.0	22.0	28.2	19.2	29.0	20.0
			661	1880.0	30.0	20.9			28.7	19.6		
			810	1909.8	29.8	20.8			28.2	19.2		
GPRS (GMSK)	CS1	1	512	1850.2	29.8	20.8	31.0	22.0	28.2	19.2	29.0	20.0
			661	1880.0	29.9	20.9			28.7	19.6		
			810	1909.8	29.8	20.8			28.2	19.1		
		2	512	1850.2	29.2	23.2	30.5	24.5	26.0	20.0	27.0	**21.0**
			661	1880.0	29.8	23.8			26.4	20.4		
			810	1909.8	29.4	23.4			26.2	20.2		
		3	512	1850.2	28.0	23.7	29.0	**24.7**	24.0	19.8	24.5	20.2
			661	1880.0	28.5	24.2			24.4	20.1		
			810	1909.8	27.9	23.6			24.0	19.7		
		4	512	1850.2	25.8	22.8	26.5	23.5	22.0	19.0	22.5	19.5
			661	1880.0	26.2	23.2			22.4	19.4		
			810	1909.8	25.9	22.9			22.0	19.0		
EGPRS (8PSK)	MCS5	1	512	1850.2	26.5	17.5	27.5	18.5	26.2	17.2	27.5	18.5
			661	1880.0	27.2	18.2			26.8	17.8		
			810	1909.8	26.8	17.8			26.5	17.4		
		2	512	1850.2	25.4	19.4	26.5	20.5	25.1	19.1	26.5	20.5
			661	1880.0	26.3	20.3			25.8	19.8		
			810	1909.8	25.9	19.8			25.5	19.4		
		3	512	1850.2	23.3	19.0	24.0	19.7	23.0	18.8	24.0	19.7
			661	1880.0	23.6	19.4			23.2	19.0		
			810	1909.8	23.1	18.9			22.9	18.7		
		4	512	1850.2	22.2	19.2	23.0	20.0	21.9	18.9	23.0	20.0
			661	1880.0	22.7	19.7			22.3	19.3		
			810	1909.8	22.4	19.4			22.0	19.0		

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

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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			

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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

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DC-HSDPA Setup Procedures used to establish the test signals

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

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

Table E.5.0: Levels for HSDPA connection setup

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

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

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

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

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK

Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.

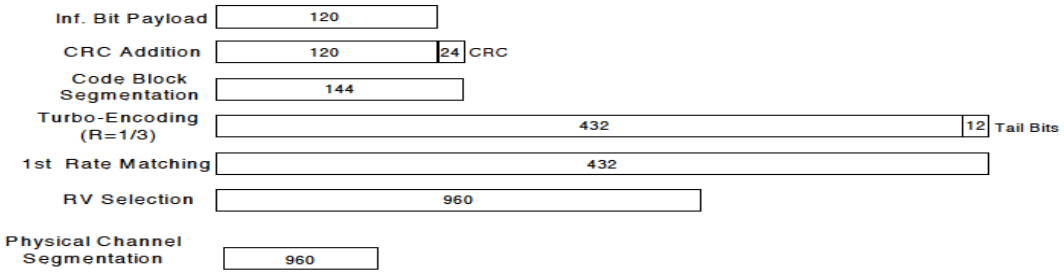

Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 12			
	Power Control Algorithm	Algorithm2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

HSPA+

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

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W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot & Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.7	N/A	25.5	19.1	N/A	19.5
		9400	1880.0	25.2			19.1		
		9538	1907.6	24.9			18.8		
HSDPA	Subtest 1	9262	1852.4	23.7	0	24.5	17.6	0	18.5
		9400	1880.0	24.3			18.1		
		9538	1907.6	23.9			17.8		
	Subtest 2	9262	1852.4	23.7	0	24.5	17.6	0	18.5
		9400	1880.0	24.3			18.1		
		9538	1907.6	23.9			17.8		
	Subtest 3	9262	1852.4	23.3	0.5	24.0	17.2	0.5	18.0
		9400	1880.0	23.8			17.7		
		9538	1907.6	23.4			17.3		
	Subtest 4	9262	1852.4	23.3	0.5	24.0	17.2	0.5	18.0
		9400	1880.0	23.8			17.6		
		9538	1907.6	23.4			17.3		
HSUPA	Subtest 1	9262	1852.4	23.7	0	24.5	17.6	0	18.5
		9400	1880.0	24.2			18.1		
		9538	1907.6	23.9			17.8		
	Subtest 2	9262	1852.4	21.7	2	22.5	15.7	2	16.5
		9400	1880.0	22.2			16.2		
		9538	1907.6	21.9			15.8		
	Subtest 3	9262	1852.4	22.7	1	23.5	16.6	1	17.5
		9400	1880.0	23.2			17.1		
		9538	1907.6	22.9			16.8		
	Subtest 4	9262	1852.4	21.7	2	22.5	15.6	2	16.5
		9400	1880.0	22.2			16.1		
		9538	1907.6	21.9			15.8		
	Subtest 5	9262	1852.4	23.3	0	24.5	17.2	0	18.5
		9400	1880.0	23.8			17.7		
		9538	1907.6	23.5			17.4		
DC-HSDPA	Subtest 1	9262	1852.4	23.7	0	24.5	17.6	0	18.5
		9400	1880.0	24.3			18.1		
		9538	1907.6	23.9			17.8		
	Subtest 2	9262	1852.4	23.8	0	24.5	17.6	0	18.5
		9400	1880.0	24.3			18.1		
		9538	1907.6	23.9			17.8		
	Subtest 3	9262	1852.4	23.3	0.5	24.0	17.1	0.5	18.0
		9400	1880.0	23.8			17.6		
		9538	1907.6	23.5			17.3		
	Subtest 4	9262	1852.4	23.3	0.5	24.0	17.1	0.5	18.0
		9400	1880.0	23.8			17.7		
		9538	1907.6	23.5			17.3		

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W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot & Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	24.5	N/A	25.5	19.0	N/A	20.0
		1413	1732.6	24.9			19.4		
		1513	1752.6	24.6			19.1		
HSDPA	Subtest 1	1312	1712.4	23.5	0	24.5	18.0	0	19.0
		1413	1732.6	24.0			18.4		
		1513	1752.6	23.6			18.1		
	Subtest 2	1312	1712.4	23.5	0	24.5	18.0	0	19.0
		1413	1732.6	24.0			18.4		
		1513	1752.6	23.6			18.1		
	Subtest 3	1312	1712.4	23.0	0.5	24.0	17.5	0.5	18.5
		1413	1732.6	23.5			17.9		
		1513	1752.6	23.1			17.6		
	Subtest 4	1312	1712.4	23.0	0.5	24.0	17.5	0.5	18.5
		1413	1732.6	23.5			17.9		
		1513	1752.6	23.1			17.6		
HSUPA	Subtest 1	1312	1712.4	23.5	0	24.5	18.0	0	19.0
		1413	1732.6	24.0			18.4		
		1513	1752.6	23.6			18.1		
	Subtest 2	1312	1712.4	21.5	2	22.5	16.0	2	17.0
		1413	1732.6	22.0			16.5		
		1513	1752.6	21.6			16.1		
	Subtest 3	1312	1712.4	22.5	1	23.5	17.0	1	18.0
		1413	1732.6	23.0			17.4		
		1513	1752.6	22.6			17.1		
	Subtest 4	1312	1712.4	21.6	2	22.5	16.0	2	17.0
		1413	1732.6	22.0			16.5		
		1513	1752.6	21.6			16.1		
	Subtest 5	1312	1712.4	23.1	0	24.5	17.6	0	19.0
		1413	1732.6	23.6			18.0		
		1513	1752.6	23.2			17.6		
DC-HSDPA	Subtest 1	1312	1712.4	23.4	0	24.5	18.4	0	19.0
		1413	1732.6	23.9			18.4		
		1513	1752.6	23.6			18.1		
	Subtest 2	1312	1712.4	23.5	0	24.5	18.0	0	19.0
		1413	1732.6	24.0			18.4		
		1513	1752.6	23.6			18.1		
	Subtest 3	1312	1712.4	23.0	0.5	24.0	17.5	0.5	18.5
		1413	1732.6	23.5			18.0		
		1513	1752.6	23.1			17.6		
	Subtest 4	1312	1712.4	23.1	0.5	24.0	17.5	0.5	18.5
		1413	1732.6	23.5			18.0		
		1513	1752.6	23.1			17.6		

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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	25.0	N/A	25.8
		4183	836.6	24.6		
		4233	846.6	24.4		
HSDPA	Subtest 1	4132	826.4	24.1	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.3		
	Subtest 2	4132	826.4	24.1	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.3		
	Subtest 3	4132	826.4	23.5	0.5	24.3
		4183	836.6	23.1		
		4233	846.6	22.9		
	Subtest 4	4132	826.4	23.6	0.5	24.3
		4183	836.6	23.1		
		4233	846.6	22.8		
HSUPA	Subtest 1	4132	826.4	24.0	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.4		
	Subtest 2	4132	826.4	22.0	2	22.8
		4183	836.6	21.6		
		4233	846.6	21.3		
	Subtest 3	4132	826.4	23.0	1	23.8
		4183	836.6	22.6		
		4233	846.6	22.4		
	Subtest 4	4132	826.4	22.0	2	22.8
		4183	836.6	21.6		
		4233	846.6	21.3		
	Subtest 5	4132	826.4	23.6	0	24.8
		4183	836.6	23.2		
		4233	846.6	22.9		
DC-HSDPA	Subtest 1	4132	826.4	24.1	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.3		
	Subtest 2	4132	826.4	24.1	0	24.8
		4183	836.6	23.6		
		4233	846.6	23.3		
	Subtest 3	4132	826.4	23.5	0.5	24.3
		4183	836.6	23.1		
		4233	846.6	22.8		
	Subtest 4	4132	826.4	23.5	0.5	24.3
		4183	836.6	23.1		
		4233	846.6	22.8		

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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

<u>Maximum Output Power (Tune-up Limit) for LTE</u>

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

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

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

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.

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1. Max power Results

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0		24.5		0.0	25.8
		1	25		24.5		0.0	25.8
		1	49		24.5		0.0	25.8
		25	0		23.5		1.0	24.8
		25	12		23.7		1.0	24.8
		25	25		23.6		1.0	24.8
		50	0		23.6		1.0	24.8
	16QAM	1	0		23.7		1.0	24.8
		1	25		23.6		1.0	24.8
		1	49		23.6		1.0	24.8
		25	0		22.7		2.0	23.8
		25	12		22.8		2.0	23.8
		25	25		22.7		2.0	23.8
		50	0		22.7		2.0	23.8
	64QAM	1	0		22.9		2.0	23.8
		1	25		22.9		2.0	23.8
		1	49		22.7		2.0	23.8
		25	0		21.6		3.0	22.8
		25	12		21.8		3.0	22.8
		25	25		21.7		3.0	22.8
		50	0		21.6		3.0	22.8
	256QAM	1	0		20.1		5.0	20.8
		1	25		20.1		5.0	20.8
		1	49		20.1		5.0	20.8
		25	0		19.6		5.0	20.8
		25	12		19.8		5.0	20.8
		25	25		19.8		5.0	20.8
		50	0		19.8		5.0	20.8
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	24.6	24.5	24.7	0.0	25.8
		1	12	24.7	24.6	24.7	0.0	25.8
		1	24	24.6	24.6	24.8	0.0	25.8
		12	0	23.6	23.6	23.7	1.0	24.8
		12	7	23.7	23.7	23.8	1.0	24.8
		12	13	23.6	23.6	23.8	1.0	24.8
		25	0	23.6	23.7	23.7	1.0	24.8
	16QAM	1	0	23.7	24.2	23.8	1.0	24.8
		1	12	23.8	24.1	24.1	1.0	24.8
		1	24	23.8	24.2	24.0	1.0	24.8
		12	0	22.7	22.8	22.8	2.0	23.8
		12	7	22.7	22.8	22.8	2.0	23.8
		12	13	22.7	22.8	22.8	2.0	23.8
		25	0	22.7	22.7	22.7	2.0	23.8
	64QAM	1	0	22.9	22.5	23.0	2.0	23.8
		1	12	23.0	22.6	23.1	2.0	23.8
		1	24	22.9	22.6	22.8	2.0	23.8
		12	0	21.7	21.7	21.5	3.0	22.8
		12	7	21.7	21.7	21.7	3.0	22.8
		12	13	21.7	21.7	21.7	3.0	22.8
		25	0	21.7	21.7	21.7	3.0	22.8
	256QAM	1	0	19.7	19.4	19.9	5.0	20.8
		1	12	19.7	19.4	20.0	5.0	20.8
		1	24	19.7	19.5	20.0	5.0	20.8
		12	0	19.6	19.7	19.8	5.0	20.8
		12	7	19.7	19.8	19.8	5.0	20.8
		12	13	19.7	19.7	19.9	5.0	20.8
		25	0	19.7	19.8	19.8	5.0	20.8

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LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	24.5	24.6	24.6	0.0	25.8
		1	8	24.5	24.6	24.6	0.0	25.8
		1	14	24.5	24.6	24.6	0.0	25.8
		8	0	23.5	23.6	23.7	1.0	24.8
		8	4	23.6	23.7	23.7	1.0	24.8
		8	7	23.6	23.7	23.8	1.0	24.8
		15	0	23.6	23.6	23.7	1.0	24.8
	16QAM	1	0	23.6	24.1	23.8	1.0	24.8
		1	8	23.6	24.0	23.8	1.0	24.8
		1	14	23.6	24.0	23.8	1.0	24.8
		8	0	22.7	22.7	22.8	2.0	23.8
		8	4	22.7	22.7	22.8	2.0	23.8
		8	7	22.8	22.7	22.9	2.0	23.8
		15	0	22.7	22.7	22.7	2.0	23.8
	64QAM	1	0	22.8	22.9	22.8	2.0	23.8
		1	8	22.7	22.9	22.9	2.0	23.8
		1	14	22.8	22.9	22.6	2.0	23.8
		8	0	21.5	21.7	21.8	3.0	22.8
		8	4	21.6	21.7	21.8	3.0	22.8
		8	7	21.6	21.7	21.9	3.0	22.8
		15	0	21.6	21.7	21.8	3.0	22.8
	256QAM	1	0	20.2	19.4	19.8	5.0	20.8
		1	8	20.2	19.6	19.8	5.0	20.8
		1	14	20.4	19.6	19.9	5.0	20.8
		8	0	19.7	19.6	19.9	5.0	20.8
		8	4	19.8	19.7	19.9	5.0	20.8
		8	7	19.8	19.7	20.0	5.0	20.8
		15	0	19.8	19.8	19.9	5.0	20.8

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	24.3	24.5	24.6	0.0	25.8
		1	3	24.4	24.5	24.6	0.0	25.8
		1	5	24.4	24.6	24.7	0.0	25.8
		3	0	24.4	24.4	24.6	0.0	25.8
		3	1	24.5	24.5	24.6	0.0	25.8
		3	3	24.4	24.5	24.7	0.0	25.8
		6	0	23.5	23.5	23.7	1.0	24.8
	16QAM	1	0	23.5	23.6	24.1	1.0	24.8
		1	3	23.6	23.7	24.1	1.0	24.8
		1	5	23.5	23.7	24.0	1.0	24.8
		3	0	23.7	23.6	23.8	1.0	24.8
		3	1	23.7	23.7	23.9	1.0	24.8
		3	3	23.7	23.7	24.0	1.0	24.8
		6	0	22.6	22.7	22.6	2.0	23.8
	64QAM	1	0	23.6	23.0	23.6	2.0	23.8
		1	3	22.8	22.9	22.7	2.0	23.8
		1	5	23.0	23.0	22.8	2.0	23.8
		3	0	22.8	22.8	22.6	2.0	23.8
		3	1	22.8	22.9	22.6	2.0	23.8
		3	3	22.9	22.9	22.6	2.0	23.8
		6	0	22.7	22.7	22.7	3.0	22.8
	256QAM	1	0	19.6	19.8	19.8	5.0	20.8
		1	3	20.0	19.8	19.5	5.0	20.8
		1	5	20.1	20.0	19.7	5.0	20.8
		3	0	19.7	19.7	19.5	5.0	20.8
		3	1	19.7	19.7	19.5	5.0	20.8
		3	3	19.8	19.8	19.6	5.0	20.8
		6	0	19.6	19.6	19.5	5.0	20.8

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LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				[redacted]	23230	[redacted]		
				[redacted]	782 MHz	[redacted]		
10 MHz	QPSK	1	0	[redacted]	24.8	[redacted]	0.0	25.8
		1	25	[redacted]	24.7	[redacted]	0.0	25.8
		1	49	[redacted]	24.7	[redacted]	0.0	25.8
		25	0	[redacted]	23.8	[redacted]	1.0	24.8
		25	12	[redacted]	23.8	[redacted]	1.0	24.8
		25	25	[redacted]	23.8	[redacted]	1.0	24.8
		50	0	[redacted]	23.8	[redacted]	1.0	24.8
	16QAM	1	0	[redacted]	24.2	[redacted]	1.0	24.8
		1	25	[redacted]	24.2	[redacted]	1.0	24.8
		1	49	[redacted]	24.2	[redacted]	1.0	24.8
		25	0	[redacted]	22.9	[redacted]	2.0	23.8
		25	12	[redacted]	22.9	[redacted]	2.0	23.8
		25	25	[redacted]	22.9	[redacted]	2.0	23.8
		50	0	[redacted]	22.8	[redacted]	2.0	23.8
	64QAM	1	0	[redacted]	22.9	[redacted]	2.0	23.8
		1	25	[redacted]	23.3	[redacted]	2.0	23.8
		1	49	[redacted]	23.2	[redacted]	2.0	23.8
		25	0	[redacted]	22.0	[redacted]	3.0	22.8
		25	12	[redacted]	22.0	[redacted]	3.0	22.8
		25	25	[redacted]	22.0	[redacted]	3.0	22.8
		50	0	[redacted]	21.9	[redacted]	3.0	22.8
	256QAM	1	0	[redacted]	19.7	[redacted]	5.0	20.8
		1	25	[redacted]	20.0	[redacted]	5.0	20.8
		1	49	[redacted]	19.8	[redacted]	5.0	20.8
		25	0	[redacted]	20.0	[redacted]	5.0	20.8
		25	12	[redacted]	20.0	[redacted]	5.0	20.8
		25	25	[redacted]	20.0	[redacted]	5.0	20.8
		50	0	[redacted]	19.9	[redacted]	5.0	20.8

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23205	23230	23255		
				779.5 MHz	782 MHz	784.5 MHz		
5 MHz	QPSK	1	0	[redacted]	24.7	[redacted]	0.0	25.8
		1	12	[redacted]	24.8	[redacted]	0.0	25.8
		1	24	[redacted]	24.8	[redacted]	0.0	25.8
		12	0	[redacted]	23.8	[redacted]	1.0	24.8
		12	7	[redacted]	23.8	[redacted]	1.0	24.8
		12	13	[redacted]	23.9	[redacted]	1.0	24.8
		25	0	[redacted]	23.8	[redacted]	1.0	24.8
	16QAM	1	0	[redacted]	24.3	[redacted]	1.0	24.8
		1	12	[redacted]	24.3	[redacted]	1.0	24.8
		1	24	[redacted]	24.3	[redacted]	1.0	24.8
		12	0	[redacted]	23.0	[redacted]	2.0	23.8
		12	7	[redacted]	23.0	[redacted]	2.0	23.8
		12	13	[redacted]	23.0	[redacted]	2.0	23.8
		25	0	[redacted]	22.9	[redacted]	2.0	23.8
	64QAM	1	0	[redacted]	22.9	[redacted]	2.0	23.8
		1	12	[redacted]	22.9	[redacted]	2.0	23.8
		1	24	[redacted]	22.9	[redacted]	2.0	23.8
		12	0	[redacted]	21.9	[redacted]	3.0	22.8
		12	7	[redacted]	22.0	[redacted]	3.0	22.8
		12	13	[redacted]	22.0	[redacted]	3.0	22.8
		25	0	[redacted]	21.9	[redacted]	3.0	22.8
	256QAM	1	0	[redacted]	19.6	[redacted]	5.0	20.8
		1	12	[redacted]	19.7	[redacted]	5.0	20.8
		1	24	[redacted]	19.7	[redacted]	5.0	20.8
		12	0	[redacted]	19.9	[redacted]	5.0	20.8
		12	7	[redacted]	20.0	[redacted]	5.0	20.8
		12	13	[redacted]	20.0	[redacted]	5.0	20.8
		25	0	[redacted]	20.0	[redacted]	5.0	20.8

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LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	24.4	24.5	24.5	0.0	25.5
		1	49	24.6	24.3	24.4	0.0	25.5
		1	99	24.9	24.9	23.4	0.0	25.5
		50	0	23.7	23.6	23.5	1.0	24.5
		50	24	23.8	23.5	23.5	1.0	24.5
		50	50	23.8	23.8	23.3	1.0	24.5
		100	0	23.7	23.6	23.4	1.0	24.5
	16QAM	1	0	23.8	24.2	23.9	1.0	24.5
		1	49	24.1	23.9	23.9	1.0	24.5
		1	99	24.3	24.3	23.0	1.0	24.5
		50	0	22.7	22.7	22.5	2.0	23.5
		50	24	22.7	22.6	22.5	2.0	23.5
		50	50	22.8	22.8	22.4	2.0	23.5
		100	0	22.7	22.6	22.4	2.0	23.5
	64QAM	1	0	22.5	22.3	22.5	2.0	23.5
		1	49	23.2	22.3	22.5	2.0	23.5
		1	99	23.3	22.3	22.5	2.0	23.5
		50	0	21.0	21.2	21.3	3.0	22.5
		50	24	21.6	21.0	21.3	3.0	22.5
		50	50	21.8	21.1	21.2	3.0	22.5
		100	0	21.5	21.1	21.3	3.0	22.5
	256QAM	1	0	19.6	19.0	19.2	5.0	20.5
		1	49	19.9	19.5	19.5	5.0	20.5
		1	99	19.8	19.2	19.1	5.0	20.5
		50	0	19.6	19.5	19.3	5.0	20.5
		50	24	19.8	19.7	19.4	5.0	20.5
		50	50	19.8	19.7	19.2	5.0	20.5
		100	0	19.7	19.5	19.3	5.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	24.3	24.5	24.4	0.0	25.5
		1	37	24.7	24.3	24.3	0.0	25.5
		1	74	24.7	24.6	23.3	0.0	25.5
		36	0	23.5	23.5	23.4	1.0	24.5
		36	20	23.8	23.5	23.4	1.0	24.5
		36	39	23.7	23.6	23.3	1.0	24.5
		75	0	23.7	23.6	23.3	1.0	24.5
	16QAM	1	0	23.7	23.5	23.9	1.0	24.5
		1	37	24.2	23.3	23.6	1.0	24.5
		1	74	24.2	23.7	22.8	1.0	24.5
		36	0	22.6	22.6	22.4	2.0	23.5
		36	20	22.7	22.6	22.5	2.0	23.5
		36	39	22.7	22.7	22.4	2.0	23.5
		75	0	22.7	22.6	22.4	2.0	23.5
	64QAM	1	0	21.7	22.4	22.4	2.0	23.5
		1	37	22.2	22.4	22.3	2.0	23.5
		1	74	22.7	22.4	22.3	2.0	23.5
		36	0	20.9	21.7	21.4	3.0	22.5
		36	20	21.2	20.9	21.1	3.0	22.5
		36	39	21.6	21.6	21.0	3.0	22.5
		75	0	21.2	21.2	21.2	3.0	22.5
	256QAM	1	0	19.3	19.5	19.6	5.0	20.5
		1	37	19.5	19.9	19.7	5.0	20.5
		1	74	19.4	19.7	19.5	5.0	20.5
		36	0	19.7	19.5	19.3	5.0	20.5
		36	20	19.7	19.7	19.4	5.0	20.5
		36	39	19.7	19.7	19.3	5.0	20.5
		75	0	19.7	19.6	19.3	5.0	20.5

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LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	24.3	24.2	24.3	0.0	25.5
		1	25	24.7	24.3	24.2	0.0	25.5
		1	49	24.5	24.3	23.2	0.0	25.5
		25	0	23.5	23.5	23.3	1.0	24.5
		25	12	23.7	23.5	23.3	1.0	24.5
		25	25	23.7	23.5	23.1	1.0	24.5
		50	0	23.7	23.5	23.1	1.0	24.5
	16QAM	1	0	23.6	23.3	23.3	1.0	24.5
		1	25	24.1	23.4	23.1	1.0	24.5
		1	49	23.9	23.4	22.2	1.0	24.5
		25	0	22.6	22.6	22.3	2.0	23.5
		25	12	22.8	22.7	22.4	2.0	23.5
		25	25	22.8	22.7	22.3	2.0	23.5
		50	0	22.8	22.6	22.3	2.0	23.5
	64QAM	1	0	21.4	21.1	22.0	2.0	23.5
		1	25	21.9	21.1	22.0	2.0	23.5
		1	49	22.1	21.1	22.0	2.0	23.5
		25	0	20.5	20.9	21.0	3.0	22.5
		25	12	20.8	21.0	21.0	3.0	22.5
		25	25	20.9	21.0	21.0	3.0	22.5
		50	0	20.6	20.9	20.9	3.0	22.5
	256QAM	1	0	20.1	19.1	19.1	5.0	20.5
		1	25	20.2	19.5	19.3	5.0	20.5
		1	49	20.1	19.1	19.0	5.0	20.5
		25	0	19.8	19.7	19.3	5.0	20.5
		25	12	19.9	19.8	19.4	5.0	20.5
		25	25	19.8	19.7	19.3	5.0	20.5
		50	0	19.8	19.6	19.3	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	24.3	24.3	24.3	0.0	25.5
		1	12	24.4	24.3	24.1	0.0	25.5
		1	24	24.6	24.4	23.2	0.0	25.5
		12	0	23.4	23.5	23.3	1.0	24.5
		12	7	23.5	23.5	23.3	1.0	24.5
		12	13	23.6	23.5	23.0	1.0	24.5
		25	0	23.4	23.5	23.1	1.0	24.5
	16QAM	1	0	23.4	23.9	23.4	1.0	24.5
		1	12	23.5	23.9	23.2	1.0	24.5
		1	24	23.7	24.0	22.4	1.0	24.5
		12	0	22.6	22.6	22.3	2.0	23.5
		12	7	22.7	22.7	22.4	2.0	23.5
		12	13	22.7	22.7	22.3	2.0	23.5
		25	0	22.6	22.6	22.2	2.0	23.5
	64QAM	1	0	21.5	21.6	21.4	2.0	23.5
		1	12	21.7	21.6	21.4	2.0	23.5
		1	24	21.8	21.6	21.4	2.0	23.5
		12	0	20.4	20.4	20.4	3.0	22.5
		12	7	20.5	20.5	20.5	3.0	22.5
		12	13	20.5	20.5	20.4	3.0	22.5
		25	0	20.4	20.5	20.7	3.0	22.5
	256QAM	1	0	20.0	19.8	19.1	5.0	20.5
		1	12	20.1	19.8	19.2	5.0	20.5
		1	24	20.0	19.8	19.1	5.0	20.5
		12	0	19.9	19.8	19.4	5.0	20.5
		12	7	19.9	19.8	19.4	5.0	20.5
		12	13	19.9	19.8	19.4	5.0	20.5
		25	0	19.9	19.8	19.5	5.0	20.5

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LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	24.4	24.4	24.2	0.0	25.5
		1	8	24.4	24.4	23.8	0.0	25.5
		1	14	24.5	24.5	23.2	0.0	25.5
		8	0	23.5	23.5	23.2	1.0	24.5
		8	4	23.6	23.6	23.1	1.0	24.5
		8	7	23.6	23.6	23.0	1.0	24.5
		15	0	23.5	23.5	23.0	1.0	24.5
	16QAM	1	0	23.7	23.5	23.1	1.0	24.5
		1	8	23.8	23.4	22.8	1.0	24.5
		1	14	23.9	23.5	22.2	1.0	24.5
		8	0	22.6	22.6	22.4	2.0	23.5
		8	4	22.6	22.7	22.3	2.0	23.5
		8	7	22.7	22.7	22.2	2.0	23.5
		15	0	22.6	22.6	22.2	2.0	23.5
	64QAM	1	0	21.9	21.6	21.7	2.0	23.5
		1	8	21.9	21.6	21.7	2.0	23.5
		1	14	21.9	21.6	21.6	2.0	23.5
		8	0	20.8	20.8	20.8	3.0	22.5
		8	4	20.8	20.8	20.9	3.0	22.5
		8	7	20.9	20.8	20.5	3.0	22.5
		15	0	20.7	20.8	20.5	3.0	22.5
	256QAM	1	0	20.2	19.4	19.3	5.0	20.5
		1	8	20.2	19.3	19.3	5.0	20.5
		1	14	20.2	19.4	19.3	5.0	20.5
		8	0	19.8	19.6	19.4	5.0	20.5
		8	4	19.8	19.6	19.4	5.0	20.5
		8	7	19.9	19.7	19.5	5.0	20.5
		15	0	19.8	19.7	19.4	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	23.5	24.4	23.5	0.0	25.5
		1	3	24.5	24.5	24.5	0.0	25.5
		1	5	24.4	24.5	24.5	0.0	25.5
		3	0	24.5	24.5	24.4	0.0	25.5
		3	1	24.5	24.5	24.5	0.0	25.5
		3	3	24.5	24.5	24.4	0.0	25.5
		6	0	24.4	24.5	24.4	1.0	24.5
	16QAM	1	0	24.0	24.1	23.9	1.0	24.5
		1	3	24.2	24.2	23.9	1.0	24.5
		1	5	24.1	24.2	23.9	1.0	24.5
		3	0	23.7	23.7	23.8	1.0	24.5
		3	1	23.7	23.7	23.8	1.0	24.5
		3	3	23.7	23.7	23.8	1.0	24.5
		6	0	22.5	22.7	22.4	2.0	23.5
	64QAM	1	0	21.8	21.6	21.5	2.0	23.5
		1	3	21.8	21.6	21.4	2.0	23.5
		1	5	21.7	21.6	21.4	2.0	23.5
		3	0	21.9	21.4	21.1	2.0	23.5
		3	1	21.9	21.3	21.1	2.0	23.5
		3	3	21.9	21.4	21.0	2.0	23.5
		6	0	21.1	21.4	21.0	3.0	22.5
	256QAM	1	0	19.7	19.6	19.2	5.0	20.5
		1	3	19.8	19.7	19.3	5.0	20.5
		1	5	19.7	19.6	19.2	5.0	20.5
		3	0	19.6	19.4	19.0	5.0	20.5
		3	1	19.7	19.5	19.1	5.0	20.5
		3	3	19.6	19.5	19.1	5.0	20.5
		6	0	19.5	19.4	19.0	5.0	20.5

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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		24.9		0.0	25.8
		1	37		24.8		0.0	25.8
		1	74		24.6		0.0	25.8
		36	0		23.8		1.0	24.8
		36	20		23.8		1.0	24.8
		36	39		23.7		1.0	24.8
		75	0		23.7		1.0	24.8
	16QAM	1	0		24.5		1.0	24.8
		1	37		24.2		1.0	24.8
		1	74		24.2		1.0	24.8
		36	0		22.8		2.0	23.8
		36	20		22.8		2.0	23.8
		36	39		22.6		2.0	23.8
		75	0		22.7		2.0	23.8
	64QAM	1	0		23.4		2.0	23.8
		1	37		23.2		2.0	23.8
		1	74		22.9		2.0	23.8
		36	0		22.0		3.0	22.8
		36	20		21.9		3.0	22.8
		36	39		21.8		3.0	22.8
		75	0		21.8		3.0	22.8
	256QAM	1	0		20.3		4.0	21.8
		1	37		20.3		4.0	21.8
		1	74		20.0		4.0	21.8
		36	0		20.0		4.0	21.8
		36	20		19.9		4.0	21.8
		36	39		19.8		4.0	21.8
		75	0		19.8		4.0	21.8
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26740	26865	26990		
				819 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	25.4	25.0	24.5	0.0	25.8
		1	25	25.3	24.9	24.4	0.0	25.8
		1	49	25.3	24.8	24.3	0.0	25.8
		25	0	24.3	23.9	23.5	1.0	24.8
		25	12	24.4	23.9	23.5	1.0	24.8
		25	25	24.2	23.8	23.4	1.0	24.8
		50	0	24.2	23.8	23.5	1.0	24.8
	16QAM	1	0	24.5	24.4	23.7	1.0	24.8
		1	25	24.3	24.3	23.5	1.0	24.8
		1	49	24.2	24.2	23.4	1.0	24.8
		25	0	23.3	22.9	22.6	2.0	23.8
		25	12	23.3	22.9	22.7	2.0	23.8
		25	25	23.2	22.8	22.5	2.0	23.8
		50	0	23.2	22.8	22.5	2.0	23.8
	64QAM	1	0	22.7	23.3	23.1	2.0	23.8
		1	25	22.8	23.3	22.9	2.0	23.8
		1	49	23.1	23.3	22.4	2.0	23.8
		25	0	21.5	21.7	21.6	3.0	22.8
		25	12	21.8	21.7	21.7	3.0	22.8
		25	25	22.2	21.6	21.5	3.0	22.8
		50	0	21.8	21.6	21.5	3.0	22.8
	256QAM	1	0	19.8	19.8	20.0	4.0	21.8
		1	25	20.1	20.0	20.1	4.0	21.8
		1	49	19.6	19.6	19.7	4.0	21.8
		25	0	20.3	20.0	19.6	4.0	21.8
		25	12	20.3	20.0	19.7	4.0	21.8
		25	25	20.2	19.9	19.5	4.0	21.8
		50	0	20.2	19.8	19.6	4.0	21.8

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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	25.2	25.0	24.6	0.0	25.8
		1	12	25.0	24.9	24.5	0.0	25.8
		1	24	25.0	24.8	24.5	0.0	25.8
		12	0	24.3	24.0	23.5	1.0	24.8
		12	7	24.3	23.9	23.5	1.0	24.8
		12	13	24.3	23.9	23.5	1.0	24.8
		25	0	24.2	23.8	23.5	1.0	24.8
	16QAM	1	0	24.7	24.2	23.8	1.0	24.8
		1	12	24.6	24.1	23.6	1.0	24.8
		1	24	24.7	24.0	23.7	1.0	24.8
		12	0	23.4	23.0	22.5	2.0	23.8
		12	7	23.5	23.0	22.6	2.0	23.8
		12	13	23.5	22.9	22.6	2.0	23.8
		25	0	23.3	22.8	22.5	2.0	23.8
	64QAM	1	0	22.4	22.7	22.9	2.0	23.8
		1	12	22.3	22.7	22.9	2.0	23.8
		1	24	22.3	22.6	22.4	2.0	23.8
		12	0	21.4	22.0	21.6	3.0	22.8
		12	7	21.4	22.0	21.7	3.0	22.8
		12	13	21.3	21.9	21.6	3.0	22.8
		25	0	21.3	21.8	21.6	3.0	22.8
	256QAM	1	0	20.4	20.1	19.5	5.0	20.8
		1	12	20.5	20.1	19.6	5.0	20.8
		1	24	20.3	19.9	19.5	5.0	20.8
		12	0	20.4	20.0	19.6	5.0	20.8
		12	7	20.4	20.0	19.6	5.0	20.8
		12	13	20.4	20.0	19.6	5.0	20.8
		25	0	20.3	20.0	19.6	5.0	20.8

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	25.3	24.9	24.4	0.0	25.8
		1	8	25.2	24.8	24.4	0.0	25.8
		1	14	25.2	24.8	24.4	0.0	25.8
		8	0	24.3	23.9	23.4	1.0	24.8
		8	4	24.4	23.9	23.5	1.0	24.8
		8	7	24.3	23.9	23.5	1.0	24.8
		15	0	24.3	23.9	23.5	1.0	24.8
	16QAM	1	0	24.7	24.0	23.4	1.0	24.8
		1	8	24.6	23.9	23.4	1.0	24.8
		1	14	24.6	23.9	23.5	1.0	24.8
		8	0	23.4	23.0	22.6	2.0	23.8
		8	4	23.4	22.9	22.6	2.0	23.8
		8	7	23.5	23.0	22.6	2.0	23.8
		15	0	23.4	22.8	22.5	2.0	23.8
	64QAM	1	0	22.5	23.2	22.8	2.0	23.8
		1	8	22.4	23.1	22.8	2.0	23.8
		1	14	22.3	23.0	22.3	2.0	23.8
		8	0	21.7	22.1	21.5	3.0	22.8
		8	4	21.7	22.1	21.5	3.0	22.8
		8	7	21.7	22.0	21.6	3.0	22.8
		15	0	21.6	21.8	21.6	3.0	22.8
	256QAM	1	0	20.1	20.5	19.6	4.0	21.8
		1	8	20.1	20.5	19.5	4.0	21.8
		1	14	20.1	20.5	19.5	4.0	21.8
		8	0	20.3	20.1	19.7	4.0	21.8
		8	4	20.3	20.1	19.7	4.0	21.8
		8	7	20.4	20.1	19.7	4.0	21.8
		15	0	20.5	20.0	19.6	4.0	21.8

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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	25.3	24.9	24.3	0.0	25.8
		1	3	25.4	24.9	24.4	0.0	25.8
		1	5	25.3	24.8	24.3	0.0	25.8
		3	0	25.3	24.8	24.3	0.0	25.8
		3	1	25.3	24.9	24.4	0.0	25.8
		3	3	25.3	24.9	24.3	0.0	25.8
		6	0	24.4	23.8	23.4	1.0	24.8
	16QAM	1	0	24.4	24.0	23.7	1.0	24.8
		1	3	24.5	24.1	23.8	1.0	24.8
		1	5	24.4	23.9	23.8	1.0	24.8
		3	0	24.6	24.0	23.6	1.0	24.8
		3	1	24.6	24.0	23.6	1.0	24.8
		3	3	24.7	24.0	23.6	1.0	24.8
		6	0	23.6	23.0	22.3	2.0	23.8
	64QAM	1	0	23.2	23.2	22.8	2.0	23.8
		1	3	23.2	23.3	22.8	2.0	23.8
		1	5	23.0	23.1	22.8	2.0	23.8
		3	0	23.3	23.3	22.8	2.0	23.8
		3	1	23.4	23.4	22.8	2.0	23.8
		3	3	23.3	23.3	22.8	2.0	23.8
		6	0	21.9	21.9	21.6	3.0	22.8
	256QAM	1	0	20.5	20.1	19.5	5.0	20.8
		1	3	20.6	20.2	19.6	5.0	20.8
		1	5	20.5	20.0	19.5	5.0	20.8
		3	0	20.3	20.0	19.4	5.0	20.8
		3	1	20.4	20.0	19.4	5.0	20.8
		3	3	20.4	20.0	19.4	5.0	20.8
		6	0	20.3	19.9	19.3	5.0	20.8

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LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	24.3	24.7	24.1	0.0	25.5
		1	49	24.1	25.0	24.6	0.0	25.5
		1	99	24.6	24.4	24.3	0.0	25.5
		50	0	23.3	24.0	23.7	1.0	24.5
		50	24	23.4	24.1	23.7	1.0	24.5
		50	50	23.5	23.8	23.6	1.0	24.5
		100	0	23.4	24.0	23.6	1.0	24.5
	16QAM	1	0	23.7	24.4	23.6	1.0	24.5
		1	49	23.6	24.5	24.1	1.0	24.5
		1	99	24.0	23.9	23.8	1.0	24.5
		50	0	22.3	23.1	22.7	2.0	23.5
		50	24	22.4	23.1	22.8	2.0	23.5
		50	50	22.5	22.9	22.7	2.0	23.5
		100	0	22.5	23.0	22.6	2.0	23.5
	64QAM	1	0	22.0	22.3	21.5	2.0	23.5
		1	49	21.7	22.3	21.5	2.0	23.5
		1	99	22.1	22.3	21.5	2.0	23.5
		50	0	20.7	22.3	21.5	3.0	22.5
		50	24	20.7	22.3	21.5	3.0	22.5
		50	50	20.8	22.3	21.5	3.0	22.5
		100	0	20.7	22.3	21.5	3.0	22.5
	256QAM	1	0	19.4	19.9	19.9	5.0	20.5
		1	49	19.5	20.3	20.3	5.0	20.5
		1	99	19.7	20.1	20.0	5.0	20.5
		50	0	19.6	20.1	20.1	5.0	20.5
		50	24	19.9	20.1	20.2	5.0	20.5
		50	50	19.8	20.1	20.1	5.0	20.5
		100	0	19.9	20.0	20.1	5.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	24.4	25.0	24.4	0.0	25.5
		1	37	24.1	24.8	24.6	0.0	25.5
		1	74	24.3	24.4	24.3	0.0	25.5
		36	0	23.3	24.1	23.7	1.0	24.5
		36	20	23.3	24.0	23.7	1.0	24.5
		36	39	23.3	23.8	23.6	1.0	24.5
		75	0	23.3	23.9	23.6	1.0	24.5
	16QAM	1	0	23.7	23.9	23.8	1.0	24.5
		1	37	23.5	23.7	24.0	1.0	24.5
		1	74	23.7	23.3	23.7	1.0	24.5
		36	0	22.4	23.1	22.8	2.0	23.5
		36	20	22.3	23.0	22.8	2.0	23.5
		36	39	22.3	22.8	22.7	2.0	23.5
		75	0	22.4	23.0	22.7	2.0	23.5
	64QAM	1	0	22.0	22.3	22.1	2.0	23.5
		1	37	21.7	22.3	22.1	2.0	23.5
		1	74	21.8	22.3	22.1	2.0	23.5
		36	0	20.7	21.2	20.9	3.0	22.5
		36	20	20.6	21.2	20.9	3.0	22.5
		36	39	20.6	21.2	20.9	3.0	22.5
		75	0	20.6	21.2	20.9	3.0	22.5
	256QAM	1	0	20.1	19.7	20.2	5.0	20.5
		1	37	20.2	19.9	20.4	5.0	20.5
		1	74	20.2	19.7	20.2	5.0	20.5
		36	0	19.8	20.1	20.1	5.0	20.5
		36	20	19.9	20.1	20.1	5.0	20.5
		36	39	19.9	20.1	20.1	5.0	20.5
		75	0	19.9	20.1	20.1	5.0	20.5

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LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	24.3	24.8	24.6	0.0	25.5
		1	25	24.1	24.8	24.6	0.0	25.5
		1	49	24.0	24.5	24.2	0.0	25.5
		25	0	23.4	24.1	23.7	1.0	24.5
		25	12	23.3	24.0	23.7	1.0	24.5
		25	25	23.3	23.9	23.5	1.0	24.5
		50	0	23.3	23.9	23.6	1.0	24.5
	16QAM	1	0	23.4	23.9	24.0	1.0	24.5
		1	25	23.2	23.8	24.0	1.0	24.5
		1	49	23.1	23.4	23.6	1.0	24.5
		25	0	22.5	23.1	22.8	2.0	23.5
		25	12	22.5	23.1	22.8	2.0	23.5
		25	25	22.4	22.9	22.6	2.0	23.5
		50	0	22.4	23.0	22.7	2.0	23.5
	64QAM	1	0	21.9	22.2	22.1	2.0	23.5
		1	25	21.8	22.2	22.1	2.0	23.5
		1	49	21.5	22.2	22.1	2.0	23.5
		25	0	20.7	21.4	21.1	3.0	22.5
		25	12	20.7	21.4	21.1	3.0	22.5
		25	25	20.6	21.2	20.9	3.0	22.5
		50	0	20.6	21.2	20.9	3.0	22.5
	256QAM	1	0	20.0	19.6	19.9	5.0	20.5
		1	25	20.2	19.9	20.2	5.0	20.5
		1	49	20.1	19.7	20.0	5.0	20.5
		25	0	19.8	20.1	20.1	5.0	20.5
		25	12	19.9	20.2	20.2	5.0	20.5
		25	25	19.8	20.1	20.2	5.0	20.5
		50	0	19.8	20.0	20.1	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	24.3	25.0	24.8	0.0	25.5
		1	12	24.2	25.0	24.6	0.0	25.5
		1	24	24.0	24.9	24.5	0.0	25.5
		12	0	23.4	24.1	23.7	1.0	24.5
		12	7	23.4	24.1	23.7	1.0	24.5
		12	13	23.3	24.0	23.6	1.0	24.5
		25	0	23.3	24.0	23.6	1.0	24.5
	16QAM	1	0	23.8	24.2	23.8	1.0	24.5
		1	12	23.7	24.2	23.7	1.0	24.5
		1	24	23.6	24.1	23.6	1.0	24.5
		12	0	22.6	23.1	22.8	2.0	23.5
		12	7	22.5	23.2	22.8	2.0	23.5
		12	13	22.5	23.1	22.7	2.0	23.5
		25	0	22.4	23.0	22.7	2.0	23.5
	64QAM	1	0	22.0	22.7	22.1	2.0	23.5
		1	12	21.9	22.7	22.1	2.0	23.5
		1	24	21.7	22.6	22.1	2.0	23.5
		12	0	20.7	21.7	21.1	3.0	22.5
		12	7	20.7	21.6	21.0	3.0	22.5
		12	13	20.6	21.6	21.0	3.0	22.5
		25	0	20.7	21.6	21.4	3.0	22.5
	256QAM	1	0	19.9	20.1	19.9	5.0	20.5
		1	12	20.0	20.2	19.9	5.0	20.5
		1	24	19.9	20.1	19.8	5.0	20.5
		12	0	19.8	20.2	20.2	5.0	20.5
		12	7	19.9	20.1	20.1	5.0	20.5
		12	13	19.9	20.2	20.2	5.0	20.5
		25	0	19.8	20.1	20.2	5.0	20.5

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LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	24.3	25.0	24.5	0.0	25.5
		1	8	24.2	24.8	24.3	0.0	25.5
		1	14	24.2	24.8	24.3	0.0	25.5
		8	0	23.4	24.0	23.5	1.0	24.5
		8	4	23.4	24.0	23.5	1.0	24.5
		8	7	23.4	23.9	23.5	1.0	24.5
		15	0	23.4	23.9	23.5	1.0	24.5
	16QAM	1	0	23.3	24.3	23.6	1.0	24.5
		1	8	23.2	24.2	23.4	1.0	24.5
		1	14	23.2	24.2	23.4	1.0	24.5
		8	0	22.6	23.1	22.6	2.0	23.5
		8	4	22.6	23.1	22.6	2.0	23.5
		8	7	22.6	23.1	22.7	2.0	23.5
		15	0	22.5	23.0	22.5	2.0	23.5
	64QAM	1	0	22.1	22.2	22.1	2.0	23.5
		1	8	21.9	22.2	22.1	2.0	23.5
		1	14	21.9	22.2	22.1	2.0	23.5
		8	0	20.9	21.2	21.5	3.0	22.5
		8	4	20.9	21.2	21.4	3.0	22.5
		8	7	20.9	21.2	21.3	3.0	22.5
		15	0	20.8	21.2	21.1	3.0	22.5
	256QAM	1	0	20.2	20.0	20.2	5.0	20.5
		1	8	20.2	19.9	20.2	5.0	20.5
		1	14	20.2	19.9	20.1	5.0	20.5
		8	0	19.9	20.0	20.3	5.0	20.5
		8	4	20.0	20.1	20.3	5.0	20.5
		8	7	19.9	20.1	20.3	5.0	20.5
		15	0	19.9	20.2	20.2	5.0	20.5

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	23.9	24.7	24.0	0.0	25.5
		1	3	24.7	24.8	24.8	0.0	25.5
		1	5	24.7	24.8	24.7	0.0	25.5
		3	0	24.7	24.8	24.7	0.0	25.5
		3	1	24.7	24.8	24.7	0.0	25.5
		3	3	24.8	24.8	24.8	0.0	25.5
		6	0	23.9	23.5	23.8	1.0	24.5
	16QAM	1	0	24.4	24.4	24.1	1.0	24.5
		1	3	24.5	23.7	24.2	1.0	24.5
		1	5	24.4	24.5	24.2	1.0	24.5
		3	0	24.0	24.1	24.1	1.0	24.5
		3	1	24.0	24.1	24.1	1.0	24.5
		3	3	24.0	24.0	24.1	1.0	24.5
		6	0	23.1	22.5	23.0	2.0	23.5
	64QAM	1	0	22.4	22.4	23.0	2.0	23.5
		1	3	22.6	22.4	22.9	2.0	23.5
		1	5	22.6	22.4	23.0	2.0	23.5
		3	0	21.8	22.1	22.0	2.0	23.5
		3	1	21.8	22.2	22.1	2.0	23.5
		3	3	21.7	22.1	22.0	2.0	23.5
		6	0	21.0	21.2	20.7	3.0	22.5
	256QAM	1	0	20.0	20.0	19.9	5.0	20.5
		1	3	20.0	20.0	20.0	5.0	20.5
		1	5	20.0	20.0	20.0	5.0	20.5
		3	0	20.0	20.0	20.1	5.0	20.5
		3	1	20.0	20.0	20.1	5.0	20.5
		3	3	20.0	20.0	20.1	5.0	20.5
		6	0	20.0	19.9	19.8	5.0	20.5

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2. Reduced power Results

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot & Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	18.5	18.8	18.8	0.0	19.5
		1	49	18.4	18.9	18.8	0.0	19.5
		1	99	18.6	19.0	18.7	0.0	19.5
		50	0	18.5	19.0	18.9	0.0	19.5
		50	24	18.5	19.0	18.9	0.0	19.5
		50	50	18.6	19.1	18.8	0.0	19.5
		100	0	18.5	18.9	18.8	0.0	19.5
	16QAM	1	0	18.9	19.4	19.4	0.0	19.5
		1	49	18.8	19.5	19.3	0.0	19.5
		1	99	19.1	18.9	19.2	0.0	19.5
		50	0	18.5	19.0	18.9	0.0	19.5
		50	24	18.5	19.1	18.9	0.0	19.5
		50	50	18.5	19.0	18.8	0.0	19.5
		100	0	18.4	18.9	18.8	0.0	19.5
	64QAM	1	0	18.8	19.1	18.9	0.0	19.5
		1	49	18.7	19.3	18.8	0.0	19.5
		1	99	19.0	19.3	19.4	0.0	19.5
		50	0	18.6	19.0	19.0	0.0	19.5
		50	24	18.6	19.2	18.9	0.0	19.5
		50	50	18.6	19.1	18.8	0.0	19.5
		100	0	18.5	18.9	18.8	0.0	19.5
	256QAM	1	0	18.3	18.9	19.0	0.0	19.5
		1	49	18.6	19.4	19.2	0.0	19.5
		1	99	18.5	19.0	18.8	0.0	19.5
		50	0	18.6	19.1	19.0	0.0	19.5
		50	24	18.7	19.3	19.1	0.0	19.5
		50	50	18.8	19.2	19.0	0.0	19.5
		100	0	18.6	19.1	19.0	0.0	19.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26115	26365	26615		
				1857.5 MHz	1882.5 MHz	1907.5 MHz		
15 MHz	QPSK	1	0	18.3	18.9	18.8	0.0	19.5
		1	37	18.5	18.9	18.7	0.0	19.5
		1	74	18.4	18.8	18.7	0.0	19.5
		36	0	18.4	18.9	18.8	0.0	19.5
		36	20	18.5	19.0	18.9	0.0	19.5
		36	39	18.5	19.0	18.8	0.0	19.5
		75	0	18.4	18.9	18.8	0.0	19.5
	16QAM	1	0	18.6	18.9	19.2	0.0	19.5
		1	37	18.8	18.9	19.2	0.0	19.5
		1	74	18.9	18.9	19.1	0.0	19.5
		36	0	18.4	18.9	18.8	0.0	19.5
		36	20	18.5	19.1	18.9	0.0	19.5
		36	39	18.4	19.0	18.9	0.0	19.5
		75	0	18.4	18.9	18.8	0.0	19.5
	64QAM	1	0	18.9	19.2	19.0	0.0	19.5
		1	37	19.0	19.3	18.9	0.0	19.5
		1	74	19.1	19.3	18.8	0.0	19.5
		36	0	18.5	19.0	18.9	0.0	19.5
		36	20	18.5	19.1	18.9	0.0	19.5
		36	39	18.5	19.1	18.9	0.0	19.5
		75	0	18.6	19.0	18.8	0.0	19.5
	256QAM	1	0	18.7	19.4	18.6	0.0	19.5
		1	37	18.9	19.1	18.8	0.0	19.5
		1	74	18.8	19.1	18.6	0.0	19.5
		36	0	18.6	19.1	19.0	0.0	19.5
		36	20	18.7	19.3	19.1	0.0	19.5
		36	39	18.7	19.3	19.1	0.0	19.5
		75	0	18.6	19.2	19.0	0.0	19.5

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LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	18.2	18.8	18.7	0.0	19.5
		1	25	18.3	18.9	18.6	0.0	19.5
		1	49	18.1	18.6	18.6	0.0	19.5
		25	0	18.5	19.0	18.7	0.0	19.5
		25	12	18.5	19.1	18.8	0.0	19.5
		25	25	18.5	19.0	18.7	0.0	19.5
		50	0	18.5	19.0	18.7	0.0	19.5
	16QAM	1	0	18.3	18.7	19.1	0.0	19.5
		1	25	18.5	18.9	19.1	0.0	19.5
		1	49	18.2	18.6	19.0	0.0	19.5
		25	0	18.5	19.0	18.7	0.0	19.5
		25	12	18.6	19.1	18.8	0.0	19.5
		25	25	18.5	19.0	18.8	0.0	19.5
		50	0	18.5	19.0	18.7	0.0	19.5
	64QAM	1	0	18.5	19.0	18.9	0.0	19.5
		1	25	18.8	19.4	18.9	0.0	19.5
		1	49	18.4	19.0	18.8	0.0	19.5
		25	0	18.6	19.1	18.8	0.0	19.5
		25	12	18.6	19.1	18.9	0.0	19.5
		25	25	18.6	19.1	18.8	0.0	19.5
		50	0	18.5	19.0	18.8	0.0	19.5
	256QAM	1	0	18.6	18.9	18.6	0.0	19.5
		1	25	18.7	18.9	18.8	0.0	19.5
		1	49	18.5	19.4	18.4	0.0	19.5
		25	0	18.7	19.3	19.0	0.0	19.5
		25	12	18.8	19.3	19.1	0.0	19.5
		25	25	18.7	19.3	19.0	0.0	19.5
		50	0	18.7	19.3	19.0	0.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26065	26365	26665		
				1852.5 MHz	1882.5 MHz	1912.5 MHz		
5 MHz	QPSK	1	0	18.5	18.9	18.7	0.0	19.5
		1	12	18.5	18.9	18.6	0.0	19.5
		1	24	18.5	18.9	18.6	0.0	19.5
		12	0	18.5	19.0	18.7	0.0	19.5
		12	7	18.6	19.0	18.8	0.0	19.5
		12	13	18.5	19.0	18.7	0.0	19.5
		25	0	18.5	19.0	18.7	0.0	19.5
	16QAM	1	0	18.6	19.5	18.8	0.0	19.5
		1	12	18.7	19.1	18.8	0.0	19.5
		1	24	18.7	19.1	18.8	0.0	19.5
		12	0	18.6	19.1	18.8	0.0	19.5
		12	7	18.6	19.2	18.8	0.0	19.5
		12	13	18.6	19.1	18.8	0.0	19.5
		25	0	18.5	19.1	18.7	0.0	19.5
	64QAM	1	0	18.8	19.0	19.1	0.0	19.5
		1	12	18.8	19.0	19.0	0.0	19.5
		1	24	18.8	19.0	19.0	0.0	19.5
		12	0	18.6	19.0	18.7	0.0	19.5
		12	7	18.6	19.1	18.8	0.0	19.5
		12	13	18.6	19.1	18.8	0.0	19.5
		25	0	18.6	19.0	18.7	0.0	19.5
	256QAM	1	0	18.8	19.3	18.7	0.0	19.5
		1	12	18.8	19.3	18.7	0.0	19.5
		1	24	18.8	19.3	18.7	0.0	19.5
		12	0	18.7	19.2	19.0	0.0	19.5
		12	7	18.8	19.3	19.0	0.0	19.5
		12	13	18.8	19.3	19.0	0.0	19.5
		25	0	18.7	19.3	19.0	0.0	19.5

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LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	18.4	18.9	18.6	0.0	19.5
		1	8	18.5	18.8	18.6	0.0	19.5
		1	14	18.5	18.9	18.7	0.0	19.5
		8	0	18.5	18.9	18.7	0.0	19.5
		8	4	18.5	19.0	18.8	0.0	19.5
		8	7	18.5	19.0	18.8	0.0	19.5
		15	0	18.5	19.0	18.8	0.0	19.5
	16QAM	1	0	18.9	19.0	18.7	0.0	19.5
		1	8	18.8	19.0	18.6	0.0	19.5
		1	14	18.9	19.1	18.7	0.0	19.5
		8	0	18.6	19.0	18.8	0.0	19.5
		8	4	18.6	19.1	18.8	0.0	19.5
		8	7	18.6	19.1	18.9	0.0	19.5
		15	0	18.6	18.9	18.8	0.0	19.5
	64QAM	1	0	18.6	19.3	19.0	0.0	19.5
		1	8	18.6	19.2	19.0	0.0	19.5
		1	14	18.7	19.2	19.0	0.0	19.5
		8	0	18.6	19.0	18.8	0.0	19.5
		8	4	18.6	19.0	18.8	0.0	19.5
		8	7	18.6	19.0	18.8	0.0	19.5
		15	0	18.6	19.1	18.7	0.0	19.5
	256QAM	1	0	18.7	19.5	18.7	0.0	19.5
		1	8	18.7	19.4	18.7	0.0	19.5
		1	14	18.7	19.5	18.8	0.0	19.5
		8	0	18.8	19.3	18.9	0.0	19.5
		8	4	18.8	19.3	19.0	0.0	19.5
		8	7	18.9	19.3	19.0	0.0	19.5
		15	0	18.8	19.3	19.1	0.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26047	26365	26683		
				1850.7 MHz	1882.5 MHz	1914.3 MHz		
1.4 MHz	QPSK	1	0	18.3	18.9	18.5	0.0	19.5
		1	3	18.4	18.9	18.6	0.0	19.5
		1	5	18.3	18.9	18.6	0.0	19.5
		3	0	18.3	18.8	18.5	0.0	19.5
		3	1	18.4	18.8	18.6	0.0	19.5
		3	3	18.4	18.9	18.6	0.0	19.5
		6	0	18.4	18.9	18.6	0.0	19.5
	16QAM	1	0	18.4	19.0	19.0	0.0	19.5
		1	3	18.5	19.1	19.0	0.0	19.5
		1	5	18.4	19.0	19.0	0.0	19.5
		3	0	18.6	19.0	18.8	0.0	19.5
		3	1	18.6	19.0	18.8	0.0	19.5
		3	3	18.6	19.0	18.8	0.0	19.5
		6	0	18.6	19.1	18.5	0.0	19.5
	64QAM	1	0	18.8	19.0	18.8	0.0	19.5
		1	3	18.9	19.1	18.9	0.0	19.5
		1	5	18.8	19.1	18.9	0.0	19.5
		3	0	18.8	19.1	18.6	0.0	19.5
		3	1	18.8	19.1	18.6	0.0	19.5
		3	3	18.8	19.2	18.6	0.0	19.5
		6	0	18.4	19.2	18.7	0.0	19.5
	256QAM	1	0	18.6	19.2	18.7	0.0	19.5
		1	3	18.7	19.4	18.7	0.0	19.5
		1	5	18.6	19.3	18.7	0.0	19.5
		3	0	18.7	19.1	18.7	0.0	19.5
		3	1	18.8	19.2	18.8	0.0	19.5
		3	3	18.7	19.2	18.8	0.0	19.5
		6	0	18.7	19.1	19.0	0.0	19.5

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LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot & Proximity sensor back-off			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	18.5	18.9	19.2	0.0	20
		1	49	19.0	19.3	19.2	0.0	20
		1	99	18.7	19.0	19.1	0.0	20
		50	0	18.9	19.2	19.2	0.0	20
		50	24	19.0	19.4	19.3	0.0	20
		50	50	18.9	19.2	19.2	0.0	20
		100	0	19.0	19.3	19.2	0.0	20
	16QAM	1	0	19.2	19.3	19.6	0.0	20
		1	49	19.5	19.7	19.6	0.0	20
		1	99	19.3	19.4	19.6	0.0	20
		50	0	19.0	19.2	19.2	0.0	20
		50	24	19.1	19.3	19.3	0.0	20
		50	50	19.0	19.2	19.2	0.0	20
		100	0	19.0	19.2	19.2	0.0	20
	64QAM	1	0	18.8	19.1	19.3	0.0	20
		1	49	19.2	19.1	19.3	0.0	20
		1	99	19.1	19.1	19.3	0.0	20
		50	0	19.0	19.1	19.3	0.0	20
		50	24	19.1	19.1	19.3	0.0	20
		50	50	19.0	19.1	19.3	0.0	20
		100	0	19.0	19.1	19.3	0.0	20
	256QAM	1	0	18.8	19.1	19.0	0.0	20
		1	49	19.2	19.5	19.1	0.0	20
		1	99	19.0	19.1	18.9	0.0	20
		50	0	18.9	19.2	19.2	0.0	20
		50	24	19.1	19.3	19.4	0.0	20
		50	50	19.0	19.2	19.3	0.0	20
		100	0	19.0	19.2	19.3	0.0	20
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	18.8	19.0	19.3	0.0	20
		1	37	19.0	19.2	19.2	0.0	20
		1	74	18.9	19.1	19.2	0.0	20
		36	0	19.0	19.2	19.3	0.0	20
		36	20	19.1	19.2	19.3	0.0	20
		36	39	19.0	19.3	19.3	0.0	20
		75	0	19.0	19.2	19.2	0.0	20
	16QAM	1	0	19.2	19.0	19.7	0.0	20
		1	37	19.4	19.2	19.6	0.0	20
		1	74	19.4	19.1	19.6	0.0	20
		36	0	18.9	19.2	19.3	0.0	20
		36	20	19.0	19.2	19.3	0.0	20
		36	39	19.0	19.2	19.3	0.0	20
		75	0	19.0	19.2	19.2	0.0	20
	64QAM	1	0	19.1	19.0	19.6	0.0	20
		1	37	19.2	19.0	19.6	0.0	20
		1	74	19.2	19.0	19.6	0.0	20
		36	0	19.0	18.9	19.3	0.0	20
		36	20	19.1	19.0	19.5	0.0	20
		36	39	19.1	18.9	19.4	0.0	20
		75	0	19.0	18.9	19.3	0.0	20
	256QAM	1	0	19.2	18.9	19.3	0.0	20
		1	37	19.4	19.1	19.6	0.0	20
		1	74	19.4	18.9	19.4	0.0	20
		36	0	19.0	19.3	19.3	0.0	20
		36	20	19.1	19.3	19.3	0.0	20
		36	39	19.1	19.3	19.3	0.0	20
		75	0	19.1	19.2	19.3	0.0	20

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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	18.5	19.0	19.0	0.0	20
		1	25	18.9	19.2	19.2	0.0	20
		1	49	18.6	19.1	19.1	0.0	20
		25	0	18.9	19.2	19.2	0.0	20
		25	12	19.0	19.2	19.3	0.0	20
		25	25	18.9	19.2	19.2	0.0	20
		50	0	18.9	19.2	19.2	0.0	20
	16QAM	1	0	18.7	19.0	19.4	0.0	20
		1	25	18.9	19.2	19.7	0.0	20
		1	49	18.7	18.9	19.4	0.0	20
		25	0	19.0	19.2	19.2	0.0	20
		25	12	19.1	19.2	19.3	0.0	20
		25	25	19.0	19.2	19.3	0.0	20
		50	0	19.0	19.1	19.3	0.0	20
	64QAM	1	0	18.7	19.2	19.0	0.0	20
		1	25	19.1	19.2	19.0	0.0	20
		1	49	18.8	19.2	19.0	0.0	20
		25	0	19.0	19.2	19.0	0.0	20
		25	12	19.2	19.2	19.0	0.0	20
		25	25	19.0	19.2	19.0	0.0	20
		50	0	19.0	19.2	19.0	0.0	20
	256QAM	1	0	18.5	19.1	19.6	0.0	20
		1	25	18.8	19.4	19.8	0.0	20
		1	49	18.6	19.1	19.7	0.0	20
		25	0	19.0	19.3	19.3	0.0	20
		25	12	19.1	19.4	19.4	0.0	20
		25	25	19.0	19.4	19.3	0.0	20
		50	0	19.0	19.3	19.4	0.0	20

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	18.9	19.2	19.2	0.0	20
		1	12	19.0	19.3	19.2	0.0	20
		1	24	18.9	19.3	19.1	0.0	20
		12	0	18.9	19.2	19.3	0.0	20
		12	7	19.0	19.2	19.3	0.0	20
		12	13	19.0	19.2	19.3	0.0	20
		25	0	18.9	19.2	19.3	0.0	20
	16QAM	1	0	19.1	19.4	19.3	0.0	20
		1	12	19.1	19.4	19.3	0.0	20
		1	24	19.0	19.4	19.2	0.0	20
		12	0	19.0	19.4	19.4	0.0	20
		12	7	19.0	19.4	19.4	0.0	20
		12	13	19.0	19.3	19.5	0.0	20
		25	0	18.9	19.2	19.3	0.0	20
	64QAM	1	0	18.8	19.3	19.6	0.0	20
		1	12	18.9	19.3	19.6	0.0	20
		1	24	18.8	19.3	19.6	0.0	20
		12	0	19.0	19.3	19.6	0.0	20
		12	7	19.1	19.3	19.6	0.0	20
		12	13	19.0	19.3	19.6	0.0	20
		25	0	19.0	19.3	19.6	0.0	20
	256QAM	1	0	18.7	19.4	19.4	0.0	20
		1	12	18.8	19.5	19.5	0.0	20
		1	24	18.7	19.4	19.4	0.0	20
		12	0	19.0	19.4	19.4	0.0	20
		12	7	19.0	19.4	19.4	0.0	20
		12	13	19.0	19.4	19.4	0.0	20
		25	0	19.1	19.3	19.4	0.0	20

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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	18.9	19.2	19.2	0.0	20
		1	8	18.9	19.1	19.2	0.0	20
		1	14	18.9	19.1	19.2	0.0	20
		8	0	18.9	19.2	19.3	0.0	20
		8	4	19.0	19.3	19.3	0.0	20
		8	7	18.9	19.3	19.4	0.0	20
		15	0	18.9	19.2	19.3	0.0	20
	16QAM	1	0	19.3	19.3	19.2	0.0	20
		1	8	19.3	19.3	19.2	0.0	20
		1	14	19.3	19.3	19.2	0.0	20
		8	0	19.0	19.3	19.4	0.0	20
		8	4	19.0	19.3	19.5	0.0	20
		8	7	19.1	19.3	19.5	0.0	20
		15	0	19.0	19.2	19.4	0.0	20
	64QAM	1	0	19.2	19.2	19.2	0.0	20
		1	8	19.2	19.2	19.2	0.0	20
		1	14	19.1	19.2	19.2	0.0	20
		8	0	18.9	19.2	19.2	0.0	20
		8	4	19.0	19.2	19.2	0.0	20
		8	7	19.0	19.2	19.2	0.0	20
		15	0	19.0	19.2	19.2	0.0	20
	256QAM	1	0	19.0	19.7	19.2	0.0	20
		1	8	19.0	19.7	19.1	0.0	20
		1	14	19.0	19.7	19.1	0.0	20
		8	0	19.1	19.4	19.3	0.0	20
		8	4	19.2	19.4	19.3	0.0	20
		8	7	19.2	19.4	19.3	0.0	20
		15	0	19.1	19.3	19.4	0.0	20

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	18.7	19.1	19.1	0.0	20
		1	3	18.8	19.2	19.2	0.0	20
		1	5	18.7	19.1	19.1	0.0	20
		3	0	18.7	19.0	19.1	0.0	20
		3	1	18.8	19.1	19.2	0.0	20
		3	3	18.8	19.1	19.2	0.0	20
		6	0	18.8	19.1	19.2	0.0	20
	16QAM	1	0	18.8	19.2	19.6	0.0	20
		1	3	18.9	19.4	19.7	0.0	20
		1	5	18.8	19.3	19.6	0.0	20
		3	0	19.0	19.2	19.3	0.0	20
		3	1	19.0	19.2	19.4	0.0	20
		3	3	19.1	19.3	19.5	0.0	20
		6	0	19.0	19.3	19.1	0.0	20
	64QAM	1	0	19.2	19.0	19.6	0.0	20
		1	3	19.3	19.0	19.6	0.0	20
		1	5	19.2	19.0	19.6	0.0	20
		3	0	19.2	19.0	19.6	0.0	20
		3	1	19.2	19.1	19.6	0.0	20
		3	3	19.2	19.0	19.6	0.0	20
		6	0	18.8	19.0	19.6	0.0	20
	256QAM	1	0	18.9	19.2	19.3	0.0	20
		1	3	19.1	19.4	19.5	0.0	20
		1	5	18.9	19.2	19.4	0.0	20
		3	0	18.9	19.3	19.2	0.0	20
		3	1	18.9	19.3	19.2	0.0	20
		3	3	18.9	19.4	19.3	0.0	20
		6	0	18.8	19.2	19.1	0.0	20

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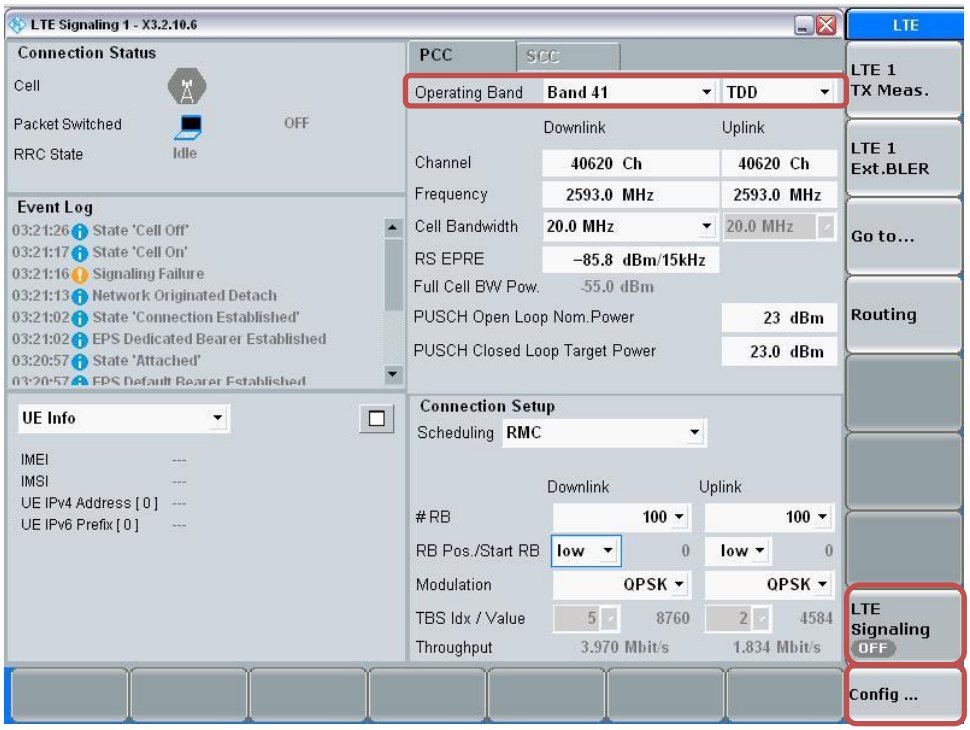
LTE Band TDD Measured Results

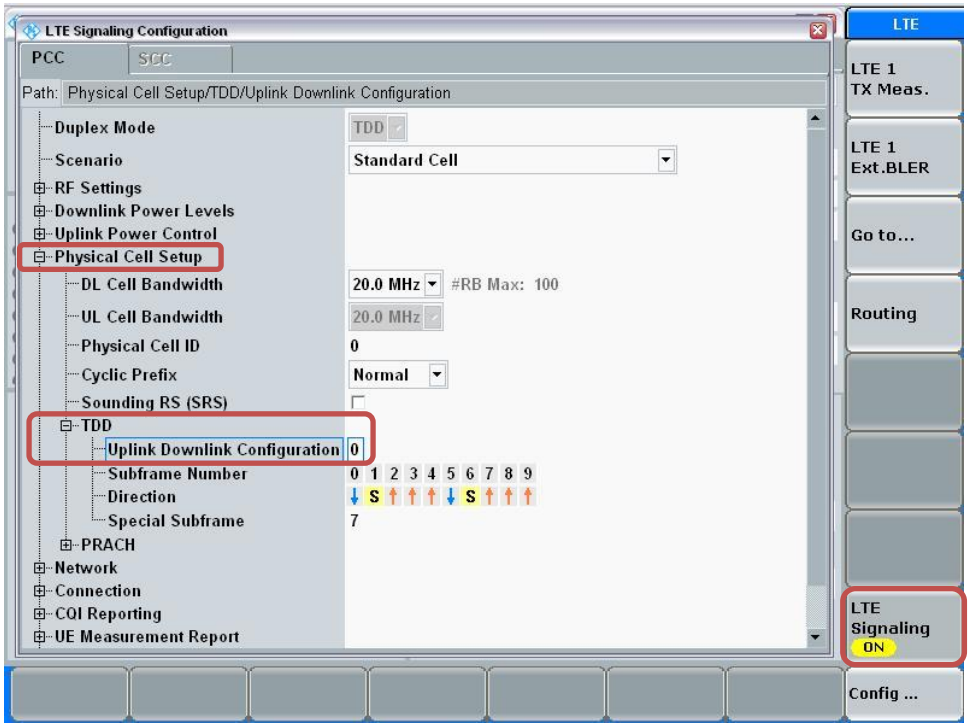
Procedure used to establish SAR test signal for LTE TDD Band

Set to CMW-500 with following parameters:

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



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



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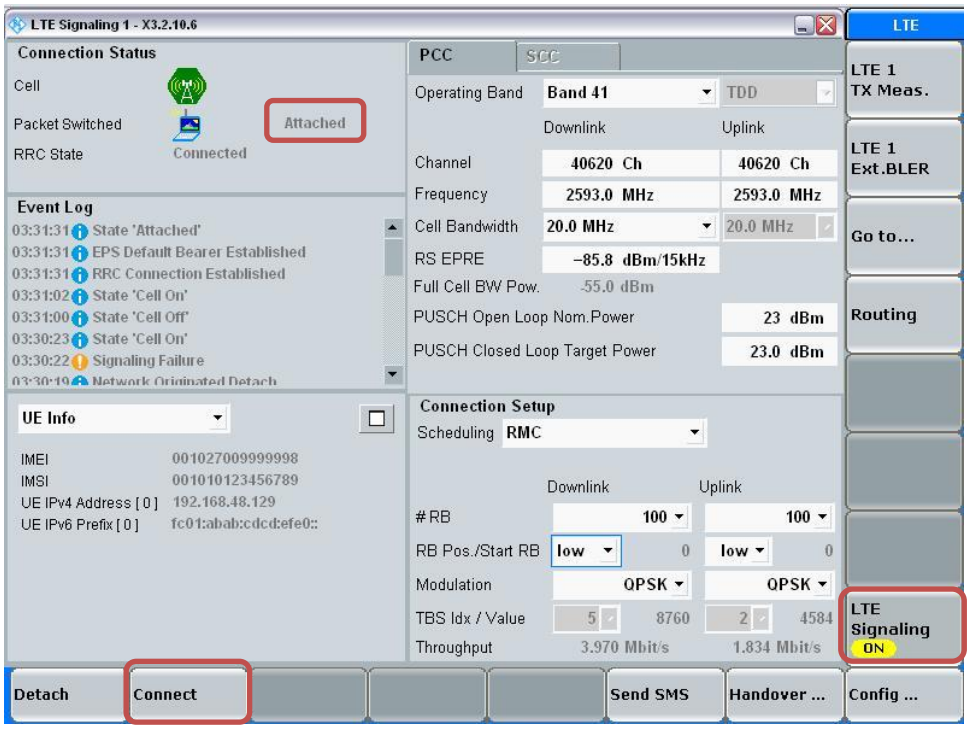
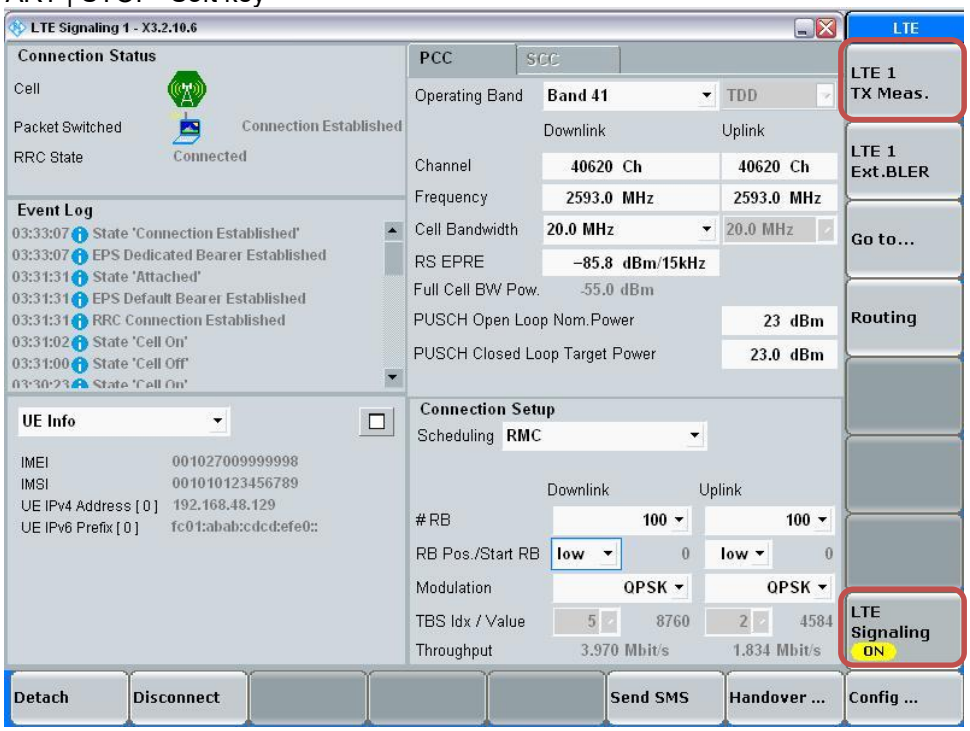
Connect to EUT

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



Max Power Setting

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



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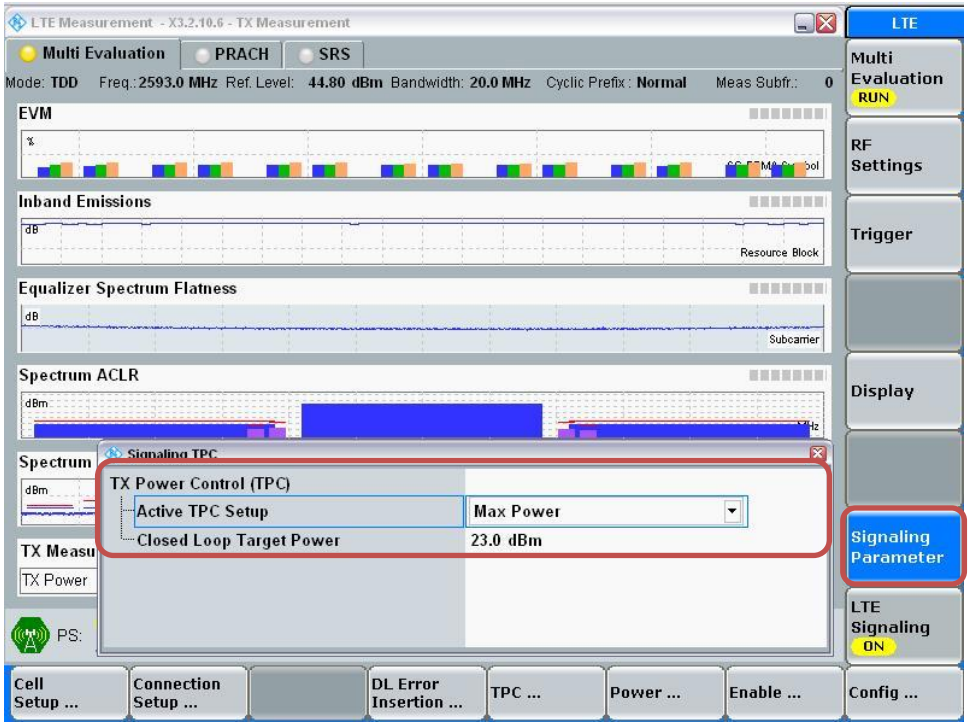
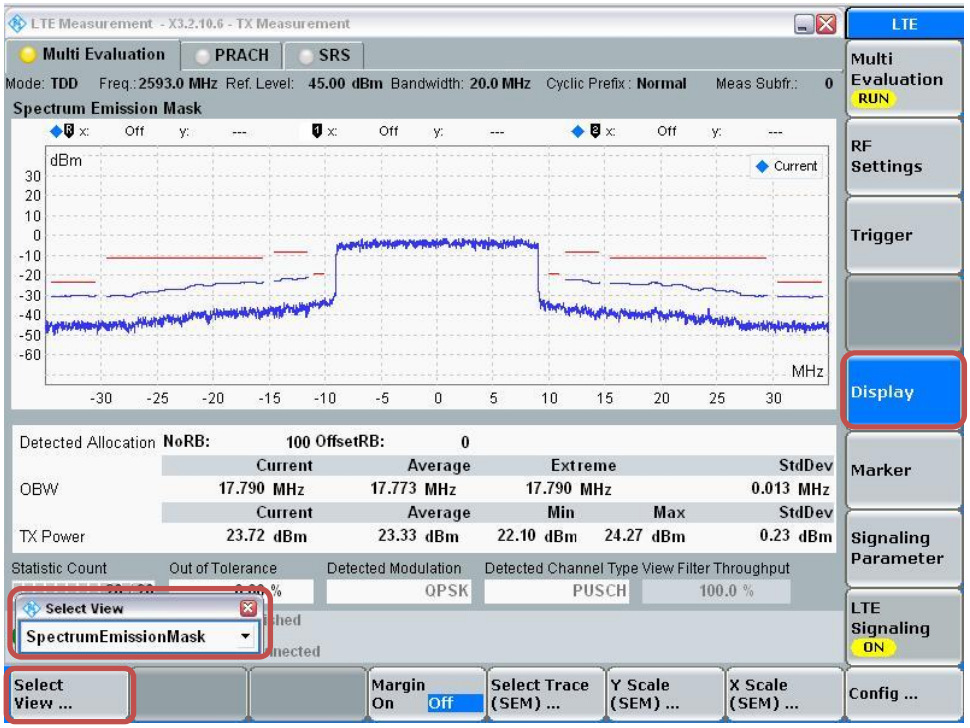
- Select “Signaling Parameter”
- Select “TX Power Control (TPC)” > Select “Active TPC Setup” to “Max Power” > Set “Closed Loop Target Power” to “23 dBm”



View TX Power

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



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1. Max power Results

LTE Band 41 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	24.2	24.3	24.4	25.0	24.6	0.0	25.8
		1	49	24.1	24.3	24.7	25.2	24.9	0.0	25.8
		1	99	24.1	24.3	24.4	24.7	24.8	0.0	25.8
		50	0	23.2	23.3	23.6	24.3	23.9	1.0	24.8
		50	24	23.2	23.4	23.7	24.3	24.0	1.0	24.8
		50	50	23.2	23.4	23.6	24.2	23.9	1.0	24.8
		100	0	23.1	23.3	23.6	24.2	24.0	1.0	24.8
	16QAM	1	0	23.3	23.4	23.1	24.2	23.5	1.0	24.8
		1	49	23.2	23.3	23.6	24.3	23.9	1.0	24.8
		1	99	23.3	23.4	23.3	23.9	23.8	1.0	24.8
		50	0	22.2	22.3	22.6	23.3	22.9	2.0	23.8
		50	24	22.2	22.4	22.7	23.4	23.0	2.0	23.8
		50	50	22.2	22.3	22.6	23.2	22.9	2.0	23.8
		100	0	22.1	22.3	22.6	23.2	22.9	2.0	23.8
	64QAM	1	0	22.1	22.3	22.7	23.0	22.7	2.0	23.8
		1	49	22.0	22.3	23.1	23.1	23.0	2.0	23.8
		1	99	22.0	22.4	22.7	22.6	22.8	2.0	23.8
		50	0	21.2	21.3	21.6	22.3	21.9	3.0	22.8
		50	24	21.2	21.4	21.7	22.3	22.0	3.0	22.8
		50	50	21.1	21.4	21.6	22.2	21.9	3.0	22.8
		100	0	21.1	21.3	21.6	22.2	22.0	3.0	22.8
	256QAM	1	0	18.9	18.9	19.6	20.1	19.7	5.0	20.8
		1	49	19.2	19.3	19.9	20.2	20.0	5.0	20.8
		1	99	18.9	18.9	19.6	19.7	19.8	5.0	20.8
		50	0	19.1	19.2	19.6	20.2	19.9	5.0	20.8
		50	24	19.2	19.3	19.7	20.3	20.0	5.0	20.8
		50	50	19.1	19.2	19.7	20.1	19.9	5.0	20.8
		100	0	19.1	19.2	19.6	20.2	20.0	5.0	20.8
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	24.1	24.1	24.5	25.0	24.7	0.0	25.8
		1	37	24.0	24.2	24.7	25.1	24.8	0.0	25.8
		1	74	24.0	24.0	24.5	24.8	24.9	0.0	25.8
		36	0	23.2	23.2	23.6	24.3	24.0	1.0	24.8
		36	20	23.2	23.4	23.7	24.3	24.1	1.0	24.8
		36	39	23.2	23.3	23.7	24.2	24.0	1.0	24.8
		75	0	23.2	23.3	23.6	24.3	24.0	1.0	24.8
	16QAM	1	0	23.1	23.1	23.6	24.2	23.7	1.0	24.8
		1	37	23.1	23.2	23.8	24.2	24.0	1.0	24.8
		1	74	23.1	23.1	23.6	23.9	24.0	1.0	24.8
		36	0	22.2	22.1	22.6	23.3	22.9	2.0	23.8
		36	20	22.2	22.3	22.7	23.3	23.0	2.0	23.8
		36	39	22.2	22.2	22.7	23.2	23.0	2.0	23.8
		75	0	22.2	22.3	22.6	23.2	23.0	2.0	23.8
	64QAM	1	0	22.4	21.9	22.0	23.4	22.5	2.0	23.8
		1	37	22.3	22.1	22.2	23.4	22.7	2.0	23.8
		1	74	22.3	22.0	22.0	23.1	22.5	2.0	23.8
		36	0	21.2	21.2	21.6	22.3	21.8	3.0	22.8
		36	20	21.2	21.3	21.7	22.3	21.9	3.0	22.8
		36	39	21.1	21.3	21.7	22.3	21.9	3.0	22.8
		75	0	21.1	21.3	21.6	22.2	21.9	3.0	22.8
	256QAM	1	0	19.1	18.7	19.5	20.2	19.5	5.0	20.8
		1	37	19.2	18.9	19.8	20.2	19.7	5.0	20.8
		1	74	19.1	18.8	19.6	19.9	19.6	5.0	20.8
		36	0	19.1	19.2	19.6	20.3	19.9	5.0	20.8
		36	20	19.2	19.3	19.7	20.3	20.0	5.0	20.8
		36	39	19.2	19.3	19.7	20.2	19.9	5.0	20.8
		75	0	19.2	19.2	19.6	20.2	19.9	5.0	20.8

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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	24.1	24.1	24.3	25.0	24.6	0.0	25.8
		1	25	24.1	24.3	24.7	25.1	24.8	0.0	25.8
		1	49	24.0	24.0	24.4	24.9	24.5	0.0	25.8
		25	0	23.2	23.3	23.7	24.3	23.9	1.0	24.8
		25	12	23.2	23.4	23.8	24.4	23.9	1.0	24.8
		25	25	23.2	23.3	23.7	24.3	23.9	1.0	24.8
		50	0	23.1	23.4	23.7	24.3	23.9	1.0	24.8
	16QAM	1	0	23.2	23.2	23.5	24.1	23.8	1.0	24.8
		1	25	23.1	23.4	23.7	24.2	23.9	1.0	24.8
		1	49	23.1	23.2	23.4	24.0	23.7	1.0	24.8
		25	0	22.2	22.3	22.7	23.3	22.9	2.0	23.8
		25	12	22.3	22.4	22.7	23.4	23.0	2.0	23.8
		25	25	22.2	22.4	22.7	23.3	22.9	2.0	23.8
		50	0	22.2	22.4	22.7	23.3	23.0	2.0	23.8
	64QAM	1	0	22.3	21.6	22.6	23.1	22.2	2.0	23.8
		1	25	22.3	21.9	23.0	23.3	22.4	2.0	23.8
		1	49	22.3	21.7	22.6	23.0	22.2	2.0	23.8
		25	0	21.1	21.3	21.7	22.1	21.9	3.0	22.8
		25	12	21.1	21.4	21.8	22.2	22.0	3.0	22.8
		25	25	21.1	21.3	21.6	22.1	21.9	3.0	22.8
		50	0	21.1	21.3	21.6	22.1	21.9	3.0	22.8
	256QAM	1	0	19.0	19.1	19.2	20.1	19.8	5.0	20.8
		1	25	19.1	19.4	19.6	20.2	20.0	5.0	20.8
		1	49	18.9	19.1	19.2	19.9	19.7	5.0	20.8
		25	0	19.1	19.2	19.7	20.2	19.9	5.0	20.8
		25	12	19.2	19.4	19.8	20.2	20.0	5.0	20.8
		25	25	19.1	19.3	19.7	20.1	19.9	5.0	20.8
		50	0	19.1	19.4	19.6	20.2	20.0	5.0	20.8

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	24.2	24.1	24.6	25.2	24.7	0.0	25.8
		1	12	24.1	24.2	24.7	25.1	24.7	0.0	25.8
		1	24	24.1	24.2	24.6	25.1	24.6	0.0	25.8
		12	0	23.2	23.4	23.7	24.3	23.9	1.0	24.8
		12	7	23.2	23.4	23.7	24.3	23.9	1.0	24.8
		12	13	23.2	23.4	23.7	24.2	23.9	1.0	24.8
		25	0	23.2	23.4	23.7	24.2	23.9	1.0	24.8
	16QAM	1	0	23.2	23.2	23.8	24.2	23.8	1.0	24.8
		1	12	23.2	23.3	23.9	24.2	23.8	1.0	24.8
		1	24	23.2	23.3	23.8	24.2	23.7	1.0	24.8
		12	0	22.1	22.4	22.8	23.2	22.9	2.0	23.8
		12	7	22.2	22.4	22.8	23.3	22.9	2.0	23.8
		12	13	22.1	22.4	22.8	23.2	22.9	2.0	23.8
		25	0	22.2	22.4	22.7	23.3	22.9	2.0	23.8
	64QAM	1	0	21.8	22.6	22.8	22.8	23.2	2.0	23.8
		1	12	21.8	22.7	22.9	22.9	23.2	2.0	23.8
		1	24	21.8	22.7	22.7	22.8	23.2	2.0	23.8
		12	0	21.2	21.4	21.6	22.2	22.0	3.0	22.8
		12	7	21.2	21.4	21.7	22.2	22.0	3.0	22.8
		12	13	21.2	21.4	21.6	22.2	22.0	3.0	22.8
		25	0	21.2	21.3	21.6	22.2	21.9	3.0	22.8
	256QAM	1	0	19.5	18.9	19.6	20.1	19.6	5.0	20.8
		1	12	19.5	19.0	19.7	20.2	19.8	5.0	20.8
		1	24	19.6	19.2	19.9	20.3	19.9	5.0	20.8
		12	0	19.3	19.0	19.4	20.1	19.8	5.0	20.8
		12	7	19.4	19.0	19.5	20.1	19.8	5.0	20.8
		12	13	19.4	19.1	19.5	20.2	19.8	5.0	20.8
		25	0	19.4	19.1	19.5	20.1	19.8	5.0	20.8

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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
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	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	20.0	20.0	20.1	20.0	19.5	0.0	21.0	21.5	21.6	21.8	21.7	21.2	0.0	22.5
		1	49	19.9	20.0	20.2	20.4	19.8	0.0	21.0	21.5	21.6	22.1	22.3	21.5	0.0	22.5
		1	99	19.9	20.0	20.1	19.9	19.7	0.0	21.0	21.5	21.6	21.8	21.3	21.4	0.0	22.5
		50	0	20.0	20.0	20.3	20.2	19.8	0.0	21.0	21.6	21.6	22.0	21.9	21.5	0.0	22.5
		50	24	20.0	20.1	20.2	20.4	19.9	0.0	21.0	21.6	21.7	22.1	22.2	21.7	0.0	22.5
		50	50	19.9	20.1	20.3	20.1	19.8	0.0	21.0	21.6	21.7	22.0	21.8	21.6	0.0	22.5
		100	0	19.9	20.0	20.3	20.3	19.8	0.0	21.0	21.5	21.6	22.0	22.0	21.6	0.0	22.5
	16QAM	1	0	20.1	20.0	20.0	20.1	19.4	0.0	21.0	21.8	21.6	21.6	21.8	21.1	0.0	22.5
		1	49	20.1	20.0	20.3	20.3	19.8	0.0	21.0	21.7	21.6	22.0	21.9	21.5	0.0	22.5
		1	99	20.0	20.1	20.0	19.8	19.6	0.0	21.0	21.6	21.7	21.6	21.5	21.4	0.0	22.5
		50	0	20.0	20.0	20.3	20.3	19.8	0.0	21.0	21.7	21.6	22.0	21.9	21.5	0.0	22.5
		50	24	20.0	20.1	20.4	20.3	19.9	0.0	21.0	21.6	21.7	22.1	21.9	21.7	0.0	22.5
		50	50	20.0	20.1	20.4	20.1	19.8	0.0	21.0	21.6	21.7	22.0	21.8	21.5	0.0	22.5
		100	0	19.9	20.0	20.4	20.1	19.8	0.0	21.0	21.5	21.6	22.0	21.8	21.6	0.0	22.5
	64QAM	1	0	19.7	20.1	20.1	20.0	19.9	0.0	21.0	21.6	21.8	21.9	21.7	21.6	0.0	22.5
		1	49	19.7	20.1	20.1	19.9	20.2	0.0	21.0	21.6	21.8	21.9	21.7	21.9	0.0	22.5
		1	99	19.7	20.1	20.1	19.9	20.0	0.0	21.0	21.6	21.8	21.9	21.7	21.7	0.0	22.5
		50	0	19.7	20.1	20.1	19.9	19.8	0.0	21.0	21.5	21.8	21.9	21.7	21.5	0.0	22.5
		50	24	19.7	20.1	20.1	19.9	20.0	0.0	21.0	21.6	21.8	21.9	21.7	21.6	0.0	22.5
		50	50	19.7	20.1	20.1	19.9	19.8	0.0	21.0	21.6	21.8	21.9	21.7	21.6	0.0	22.5
		100	0	19.7	20.1	20.1	20.0	19.8	0.0	21.0	21.6	21.8	21.9	21.7	21.6	0.0	22.5
	256QAM	1	0	18.0	18.1	18.8	19.3	18.9	1.0	20.0	18.8	18.8	19.5	20.0	19.6	2.0	20.5
		1	49	18.3	18.5	19.2	19.5	19.2	1.0	20.0	19.1	19.2	19.9	20.2	19.9	2.0	20.5
		1	99	18.1	18.2	18.8	19.0	19.0	1.0	20.0	18.8	18.8	19.5	19.7	19.8	2.0	20.5
		50	0	18.2	18.4	18.8	19.5	19.1	1.0	20.0	19.0	19.1	19.5	20.2	19.8	2.0	20.5
		50	24	18.3	18.5	18.9	19.5	19.2	1.0	20.0	19.1	19.2	19.6	20.2	20.0	2.0	20.5
		50	50	18.3	18.4	18.8	19.4	19.1	1.0	20.0	19.1	19.1	19.6	20.1	19.9	2.0	20.5
		100	0	18.3	18.4	18.8	19.4	19.1	1.0	20.0	19.1	19.1	19.5	20.1	19.9	2.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	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	20.1	20.1	19.5	0.0	21.0	21.6	21.4	21.9	21.8	21.3	0.0	22.5
		1	37	19.7	19.8	20.3	20.1	19.7	0.0	21.0	21.5	21.6	22.1	21.8	21.5	0.0	22.5
		1	74	19.7	19.7	20.1	19.8	19.8	0.0	21.0	21.5	21.4	21.9	21.5	21.5	0.0	22.5
		36	0	19.8	19.9	20.3	20.2	19.8	0.0	21.0	21.6	21.6	22.0	21.9	21.6	0.0	22.5
		36	20	19.8	20.0	20.4	20.2	19.9	0.0	21.0	21.6	21.7	22.0	21.9	21.7	0.0	22.5
		36	39	19.8	20.0	20.4	20.1	19.8	0.0	21.0	21.6	21.7	22.0	21.8	21.6	0.0	22.5
		75	0	19.8	19.9	20.3	20.1	19.8	0.0	21.0	21.6	21.7	22.0	21.9	21.6	0.0	22.5
	16QAM	1	0	20.0	19.7	20.3	20.3	19.6	0.0	21.0	21.7	21.5	21.8	21.9	21.4	0.0	22.5
		1	37	19.9	19.9	20.5	20.3	19.8	0.0	21.0	21.6	21.7	22.0	21.9	21.6	0.0	22.5
		1	74	19.9	19.8	20.2	19.9	19.9	0.0	21.0	21.6	21.5	21.9	21.6	21.5	0.0	22.5
		36	0	19.9	19.9	20.3	20.2	19.7	0.0	21.0	21.7	21.6	21.9	21.9	21.6	0.0	22.5
		36	20	19.9	20.0	20.4	20.3	19.9	0.0	21.0	21.7	21.7	22.0	21.9	21.7	0.0	22.5
		36	39	19.8	19.9	20.4	20.1	19.7	0.0	21.0	21.6	21.7	22.0	21.9	21.6	0.0	22.5
		75	0	19.8	19.9	20.4	20.2	19.8	0.0	21.0	21.6	21.7	22.0	21.9	21.6	0.0	22.5
	64QAM	1	0	20.0	19.9	20.1	20.1	19.8	0.0	21.0	21.9	21.5	21.8	21.9	21.5	0.0	22.5
		1	37	19.9	19.9	20.1	20.1	19.8	0.0	21.0	21.8	21.5	21.7	21.9	21.5	0.0	22.5
		1	74	19.9	19.8	20.1	20.1	19.8	0.0	21.0	21.7	21.5	21.8	21.9	21.5	0.0	22.5
		36	0	19.9	19.9	20.1	20.1	19.8	0.0	21.0	21.2	21.5	21.8	21.9	21.5	0.0	22.5
		36	20	19.9	19.8	20.1	20.1	19.8	0.0	21.0	21.1	21.5	21.8	21.9	21.5	0.0	22.5
		36	39	19.8	19.8	20.1	20.1	19.8	0.0	21.0	21.1	21.5	21.8	21.9	21.5	0.0	22.5
		75	0	19.8	19.9	20.1	20.1	19.8	0.0	21.0	21.0	21.5	21.8	21.8	21.4	0.0	22.5
	256QAM	1	0	17.8	18.3	18.8	19.0	19.1	1.0	20.0	18.7	19.0	19.4	19.7	19.8	2.0	20.5
		1	37	17.9	18.6	19.0	19.1	19.3	1.0	20.0	18.8	19.3	19.7	19.8	20.0	2.0	20.5
		1	74	17.8	18.4	18.7	18.8	19.2	1.0	20.0	18.7	19.1	19.5	19.5	19.9	2.0	20.5
		36	0	18.3	18.4	18.9	19.5	19.1	1.0	20.0	19.1	19.1	19.5	20.2	19.9	2.0	20.5
		36	20	18.3	18.5	18.9	19.5	19.2	1.0	20.0	19.1	19.2	19.6	20.2	19.9	2.0	20.5
		36	39	18.3	18.5	18.9	19.4	19.1	1.0	20.0	19.1	19.2	19.6	20.1	19.8	2.0	20.5
		75	0	18.2	18.5	18.9	19.4	19.2	1.0	20.0	19.0	19.2	19.6	20.1	19.9	2.0	20.5

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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
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	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	19.8	19.7	20.1	19.9	19.5	0.0	21.0	21.6	21.4	21.9	21.6	21.3	0.0	22.5
		1	25	19.7	20.0	20.3	20.1	19.7	0.0	21.0	21.5	21.7	22.1	21.8	21.6	0.0	22.5
		1	49	19.8	19.7	20.1	19.8	19.5	0.0	21.0	21.4	21.4	21.8	21.5	21.3	0.0	22.5
		25	0	19.9	19.9	20.4	20.2	19.8	0.0	21.0	21.6	21.7	22.1	21.9	21.6	0.0	22.5
		25	12	19.9	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	21.9	21.7	0.0	22.5
		25	25	19.9	20.0	20.3	20.2	19.8	0.0	21.0	21.6	21.8	22.1	21.9	21.6	0.0	22.5
		50	0	19.8	20.0	20.3	20.2	19.8	0.0	21.0	21.5	21.7	22.1	21.8	21.6	0.0	22.5
	16QAM	1	0	19.8	19.9	20.2	20.1	19.7	0.0	21.0	21.7	21.5	21.9	21.7	21.4	0.0	22.5
		1	25	19.7	20.1	20.4	20.1	19.8	0.0	21.0	21.6	21.7	22.1	21.9	21.5	0.0	22.5
		1	49	19.8	19.8	20.2	20.0	19.7	0.0	21.0	21.7	21.5	21.9	21.6	21.3	0.0	22.5
		25	0	19.9	20.0	20.4	20.2	19.9	0.0	21.0	21.7	21.7	22.1	21.9	21.6	0.0	22.5
		25	12	19.9	20.1	20.4	20.2	19.9	0.0	21.0	21.7	21.8	22.2	21.9	21.7	0.0	22.5
		25	25	19.9	20.1	20.3	20.1	19.9	0.0	21.0	21.7	21.7	22.1	21.9	21.6	0.0	22.5
		50	0	19.8	20.1	20.4	20.2	19.8	0.0	21.0	21.6	21.8	22.1	21.9	21.6	0.0	22.5
	64QAM	1	0	20.1	19.7	20.1	20.2	19.6	0.0	21.0	21.5	21.7	21.9	21.6	21.6	0.0	22.5
		1	25	20.1	19.7	20.1	20.2	19.6	0.0	21.0	21.5	21.6	21.9	21.7	21.9	0.0	22.5
		1	49	20.1	19.7	20.1	20.2	19.6	0.0	21.0	21.5	21.6	21.9	21.7	21.5	0.0	22.5
		25	0	19.9	19.6	20.1	20.2	19.6	0.0	21.0	21.5	21.6	21.9	21.5	21.6	0.0	22.5
		25	12	19.9	19.6	20.1	20.1	19.6	0.0	21.0	21.5	21.6	21.9	21.6	21.7	0.0	22.5
		25	25	19.9	19.6	20.1	20.1	19.6	0.0	21.0	21.6	21.7	21.9	21.6	21.6	0.0	22.5
		50	0	19.8	19.6	20.1	20.2	19.6	0.0	21.0	21.5	21.7	21.9	21.6	21.6	0.0	22.5
	256QAM	1	0	17.9	18.3	18.7	19.1	18.9	1.0	20.0	19.0	18.7	19.5	20.0	19.5	2.0	20.5
		1	25	18.1	18.6	19.1	19.2	19.2	1.0	20.0	19.1	19.0	19.8	20.2	19.7	2.0	20.5
		1	49	17.9	18.3	18.7	18.9	18.9	1.0	20.0	18.9	18.9	19.5	19.8	19.4	2.0	20.5
		25	0	18.4	18.4	18.9	19.5	19.2	1.0	20.0	19.1	19.2	19.6	20.1	19.9	2.0	20.5
		25	12	18.4	18.5	19.0	19.6	19.2	1.0	20.0	19.1	19.4	19.7	20.1	20.0	2.0	20.5
		25	25	18.4	18.5	18.9	19.5	19.1	1.0	20.0	19.0	19.3	19.6	20.0	20.0	2.0	20.5
		50	0	18.3	18.5	18.9	19.4	19.1	1.0	20.0	19.0	19.2	19.6	20.1	19.9	2.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490			39750	40185	40620	41055	41490		
				2506 MHz	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	19.8	19.8	20.3	20.1	19.8	0.0	21.0	21.5	21.5	22.1	21.9	21.5	0.0	22.5
		1	12	19.7	19.9	20.4	20.1	19.7	0.0	21.0	21.5	21.6	22.2	21.9	21.5	0.0	22.5
		1	24	19.8	19.9	20.2	20.0	19.7	0.0	21.0	21.5	21.6	22.1	21.8	21.4	0.0	22.5
		12	0	19.8	20.0	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	21.9	21.7	0.0	22.5
		12	7	19.9	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	22.0	21.7	0.0	22.5
		12	13	19.9	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	21.9	21.6	0.0	22.5
		25	0	19.8	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	22.0	21.7	0.0	22.5
	16QAM	1	0	19.8	19.9	20.5	20.2	19.8	0.0	21.0	21.7	21.6	22.1	22.0	21.6	0.0	22.5
		1	12	19.8	20.0	20.6	20.1	19.8	0.0	21.0	21.7	21.7	22.2	22.0	21.5	0.0	22.5
		1	24	19.8	19.9	20.5	20.1	19.7	0.0	21.0	21.7	21.6	22.1	22.0	21.4	0.0	22.5
		12	0	19.8	20.1	20.5	20.2	19.9	0.0	21.0	21.7	21.8	22.1	22.0	21.7	0.0	22.5
		12	7	19.8	20.1	20.5	20.2	19.9	0.0	21.0	21.7	21.9	22.2	22.0	21.7	0.0	22.5
		12	13	19.8	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.1	22.0	21.7	0.0	22.5
		25	0	19.9	20.1	20.4	20.2	19.9	0.0	21.0	21.6	21.8	22.2	21.9	21.7	0.0	22.5
	64QAM	1	0	20.2	20.2	20.3	20.4	20.2	0.0	21.0	21.5	21.8	21.9	21.7	21.6	0.0	22.5
		1	12	20.2	20.2	20.3	20.4	20.2	0.0	21.0	21.5	21.8	21.9	21.7	21.7	0.0	22.5
		1	24	20.2	20.3	20.3	20.4	20.2	0.0	21.0	21.6	21.8	21.9	21.7	21.9	0.0	22.5
		12	0	20.0	20.3	20.3	20.4	20.2	0.0	21.0	21.6	21.8	21.9	21.7	21.4	0.0	22.5
		12	7	20.0	20.3	20.3	20.4	20.2	0.0	21.0	21.6	21.8	21.9	21.7	21.4	0.0	22.5
		12	13	20.0	20.3	20.3	20.4	20.2	0.0	21.0	21.6	21.8	21.9	21.6	21.5	0.0	22.5
		25	0	19.9	20.3	20.3	20.5	20.2	0.0	21.0	21.5	21.8	21.9	21.7	21.4	0.0	22.5
	256QAM	1	0	18.4	18.6	19.1	19.6	19.3	1.0	20.0	18.9	18.8	19.5	20.0	19.6	2.0	20.5
		1	12	18.4	18.6	19.2	19.5	19.3	1.0	20.0	19.0	19.0	19.7	20.2	19.8	2.0	20.5
		1	24	18.3	18.7	19.1	19.5	19.2	1.0	20.0	19.1	19.1	19.8	20.2	19.9	2.0	20.5
		12	0	18.4	18.6	18.9	19.5	19.3	1.0	20.0	18.9	18.9	19.4	20.1	19.6	2.0	20.5
		12	7	18.4	18.6	18.9	19.5	19.2	1.0	20.0	19.0	18.9	19.4	20.1	19.7	2.0	20.5
		12	13	18.3	18.6	18.9	19.5	19.2	1.0	20.0	19.1	19.0	19.5	20.2	19.7	2.0	20.5
		25	0	18.4	18.6	18.9	19.5	19.2	1.0	20.0	19.0	19.0	19.4	20.2	19.7	2.0	20.5

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9.3.1 LTE Rel. 10 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 10 Carrier Aggregation

Index	2CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
2CC #1	2A-2A			O
2CC #2	2A-4A		3CC #1	O
2CC #3	2A-5A			O
2CC #4	2A-12A			O
2CC #5	4A-4A		3CC #2	
2CC #6	4A-5A			O
2CC #7	4A-13A		3CC #1	O
2CC #8	4A-17A	B17 SCC only		
2CC #9	41A-41A			
2CC #10	41C		3CC #3	
2CC #11	66A-66A			
2CC #12	66B			
2CC #13	66C			

Index	3CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
3CC #1	2A-4A-13A			O
3CC #2	4A-4A-12A			O
3CC #3	41A-41C			O
3CC #4	41D	4CC #1		

Index	4CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
4CC #1	41A-41D			O
4CC #2	41C-41C			
4CC #3	41E			

Note:

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

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LTE Release 10 Carrier Aggregation with 4x4 MIMO

Index	2CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
2CC #1	2A-[4A]	3CC #1		O
2CC #2	4A-[4A]	3CC #2		O
2CC #3	[4A]-[4A]	3CC #3		
2CC #4	[4A]-5A			O
2CC #5	[4A]-13A	3CC #1		O
2CC #6	[4A]-17A	B17 SCC only		
2CC #7	41A-[41A]			
2CC #8	[41A]-[41A]			
2CC #9	[41C]	3CC #4		
2CC #10	66A-[66A]			O
2CC #11	[66A]-[66A]			
2CC #12	[66B]			
2CC #13	[66C]			

Index	3CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
3CC #1	2A-[4A]-13A			O
3CC #2	4A-[4A]-12A			O
3CC #3	[4A]-[4A]-12A			O
3CC #4	41A-[41C]			O
3CC #5	[41A]-41C			O
3CC #6	[41A]-[41C]			O
3CC #7	[41D]	4CC #1		

Index	4CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
4CC #1	41A-[41D]			O
4CC #2	[41A]-41D			O
4CC #3	[41A]-[41D]			O
4CC #4	41C-[41C]			O
4CC #5	[41C]-[41C]			
4CC #6	[41E]			

[*] is 4X4 MIMO configuration.

Note:

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

1. Single Carrier 4x4 Downlink MIMO

LTE Band	Bandwidth (MHz)	Channel	Frequency (MHz)	Modulation	RB/Offset	LTE Rel 8 Tx. Power [dBm]	4x4 DL MIMO LTE Rel 8 Tx. Power	Delta
Band 4	20	20050	1720	QPSK	1/99	24.2	24.2	-0.03
Band 66	20	132322	1745	QPSK	1/49	25.0	25.0	-0.04
Band 41	20	41055	2636.5	QPSK	1/49	25.2	25.1	-0.06

Note:

1. According to LTE Test Conditions in TCB workshop (May, 2017), SAR is excluded for LTE downlink 4x4 MIMO operation when uplink output with DL MIMO does not exceed highest uplink output power configuration without DL MIMO by more than a 1/4 dB. And for DL MIMO with carrier aggregation, the same SAR test exclusion procedure is considered.

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2. 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)			
2A-12A	2A	12A			QPSK	20	18700	1860	1/99	20	700	1940	10	5095	737.5							24.7	24.7	0.01
	12A	2A			QPSK	10	23095	707.5	1/0	10	5095	737.5	20	900	1960							24.5	24.6	0.09
2A-5A	2A	5A			QPSK	20	18700	1860	1/99	20	700	1940	10	2525	881.5							24.7	24.7	-0.04
	5A	2A			QPSK	10	20525	836.5	1/49	10	2525	881.5	20	900	1960							25.0	25.1	0.05
4A-5A	4A	5A			QPSK	20	20175	1732.5	1/49	20	2175	2132.5	10	2525	881.5							24.2	23.7	-0.54
	5A	4A			QPSK	10	20525	836.5	1/49	10	2525	881.5	20	2175	2132.5							25.0	25.1	0.06
4A-17A	4A	17A			QPSK	10	20175	1732.5	1/25	10	2175	2132.5	10	5790	740							24.2	24.1	-0.08
2A-4A-13A	2A	4A	13A		QPSK	20	18700	1860	1/99	20	700	1940	20	2175	2132.5	10	5230	751				24.7	24.7	0.01
	4A	13A	2A		QPSK	20	20175	1732.5	1/49	20	2175	2132.5	10	5230	751	20	900	1960				24.2	24.2	0.01
	13A	2A	4A		QPSK	10	23230	782	1/0	10	5230	751	20	900	1960	20	2175	2132.5				24.8	24.8	0.05
4A-4A-12A	4A	4A	12A		QPSK	20	20050	1720	1/99	20	2050	2120	20	2300	2145	10	5095	737.5				24.2	24.2	-0.03
	12A	4A	4A		QPSK	10	23095	737.5	1/0	10	5095	737.5	20	2050	2120	20	2300	2145				24.5	24.4	-0.08
2A-2A	2A	2A			QPSK	20	18700	1860	1/99	20	700	1940	20	1100	1980							24.7	24.7	-0.05
41A-41A	41A	41A			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506							25.2	25.1	-0.11
66A-66A	66A	66A			QPSK	20	132322	1745	1/49	20	66786	2145	20	67036	2170							25.0	24.9	-0.10
41C-41C	41C	41C	41C	41C	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	40620	2593	20	40422	2573.2	25.2	25.2	-0.04
41A-41C	41A	41C	41C		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40422	2573.2				25.2	25.1	-0.06
	41C	41C	41A		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506				25.2	25.1	-0.08
41A-41D	41A	41D	41D	41D	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40818	2612.8	20	41016	2632.6	25.2	25.1	-0.09
	41D	41D	41D	41A	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40857	2616.7	20	40659	2596.9	20	39750	2506	25.2	25.2	-0.05
66B	66B	66B			QPSK	15	132322	1745	1/0	15	66786	2145	5	66879	2154.3							25.0	24.9	-0.02
66C	66C	66C			QPSK	20	132322	1745	1/49	20	66786	2145	20	66984	2164.8							25.0	25.0	-0.04
41E	41E	41E	41E	41E	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40857	2616.7	20	40659	2596.9	20	40461	2577.1	25.2	25.1	-0.10

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

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3. DL CA with downlink 4x4 MIMO 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)			
[4A]-17A	[4A]	17A			QPSK	10	20175	1732.5	1/25	10	2175	2132.5	10	5790	740.0							24.2	24.2	-0.02
[4A]-[4A]-12A	[4A]	[4A]	12A		QPSK	20	20050	1720	1/99	20	2050	2120.0	20	2300	2145.0	10	5095	737.5				24.2	24.2	-0.04
	12A	[4A]	[4A]		QPSK	10	23095	707.5	1/0	10	5095	737.5	20	2050	2120.0	20	2300	2145.0				24.5	24.5	-0.01
2A-[4A]-13A	2A	[4A]	13A		QPSK	20	18700	1860	1/99	20	700	1940.0	20	2175	2132.5	10	5230	751.0				24.7	24.6	-0.11
	[4A]	2A	13A		QPSK	20	20175	1732.5	1/49	20	2175	2132.5	10	5230	751.0	20	900	1960.0				24.2	24.1	-0.08
	13A	2A	[4A]		QPSK	10	23230	782	1/0	10	5230	751.0	20	900	1960.0	20	2175	2132.5				24.8	24.8	0.02
4A-[4A]-12A	4A	[4A]	12A		QPSK	20	20050	1720	1/99	20	2050	2120.0	20	2300	2145.0	10	5095	737.5				24.2	24.2	-0.01
	12A	4A	[4A]		QPSK	10	23095	707.5	1/0	10	5095	737.5	20	2050	2120.0	20	2300	2145.0				24.5	24.5	0.00
[66B]	[66B]	[66B]			QPSK	15	132322	1745	1/0	15	66786	2145	5	66879	2154.3							25.0	24.8	-0.13
[66C]	[66C]	[66C]			QPSK	20	132322	1745	1/49	20	66786	2145	20	66984	2164.8							25.0	24.9	-0.11
[41E]	[41E]	[41E]	[41E]	[41E]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40857	2616.7	20	40659	2596.9	20	40461	2577.1	25.2	25.1	-0.07
41A-[41D]	41A	[41D]	[41D]	[41D]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40818	2612.8	20	41016	2632.6	25.2	25.2	-0.01
	[41D]	[41D]	[41D]	41A	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40857	2616.7	20	40659	2596.9	20	39750	2506	25.2	25.1	-0.08
[41A]-41D	[41A]	41D	41D	41D	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40818	2612.8	20	41016	2632.6	25.2	25.2	-0.03
	41D	41D	41D	[41A]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40659	2596.9	20	39750	2506	25.2	25.2	-0.02
[41A]-[41D]	[41A]	[41D]	[41D]	[41D]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40818	2612.8	20	41016	2632.6	25.2	25.2	-0.02
	[41D]	[41D]	[41D]	[41A]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40659	2596.9	20	39750	2506	25.2	25.2	-0.04
41C-[41C]	41C	41C	[41C]	[41C]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	40620	2593	20	40422	2573.2	25.2	25.2	-0.03
	[41C]	[41C]	41C	41C	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	40620	2593	20	40422	2573.2	25.2	25.2	-0.03
41A-[41C]	41A	[41C]	[41C]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40422	2573.2				25.2	25.2	-0.01
	[41C]	[41C]	41A		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506				25.2	25.1	-0.06
[41A]-41C	[41A]	41C	41C		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40422	2573.2				25.2	25.1	-0.09
	41C	41C	[41A]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506				25.2	25.1	-0.12
41A-[41A]	41A	[41A]			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506							25.2	25.1	-0.14
	[41A]	41A			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506							25.2	25.2	-0.01
66A-[66A]	66A	[66A]			QPSK	20	132322	1745	1/49	20	66786	2145	20	67036	2170							25.0	25.0	-0.01
	[66A]	66A			QPSK	20	132322	1745	1/49	20	66786	2145	20	67036	2170							25.0	24.9	-0.10
[41A]-[41A]	[41A]	[41A]			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506							25.2	25.1	-0.09
[66A]-[66A]	[66A]	[66A]			QPSK	20	132322	1745	1/49	20	66786	2145	20	67036	2170							25.0	24.9	-0.13
[41A]-[41C]	[41A]	[41C]	[41C]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40620	2593	20	40422	2573.2				25.2	25.08	-0.12
[41C]-[41C]	[41C]	[41C]	[41C]	[41C]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	40620	2593	20	40422	2573.2	25.2	25.1	-0.10

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

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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

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.2	802.11b	1 Mbps	1	2412.0	18.7	19.0	Yes	12.4	13.0	Yes
			6	2437.0	18.5			12.3		
			11	2462.0	18.5			12.3		
			12	2467.0	8.0	8.0	No	8.0	8.0	No
			13	2472.0	7.8			7.8		
	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		8.0			8.0	
			13	2472.0						
	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		6.0			6.0	
			13	2472.0						
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	17.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		6.0			6.0	
			13	2472.0						
Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
WiFi MIMO Ant.1	802.11b	1 Mbps	1	2412.0	18.4	19.0	Yes	12.2	13.0	Yes
			6	2437.0	17.9			11.9		
			11	2462.0	18.4			12.3		
			12	2467.0	7.5	8.0	No	7.5	8.0	No
			13	2472.0	7.4			7.4		
	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		8.0			8.0	
			13	2472.0						
	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		6.0			6.0	
			13	2472.0						
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	17.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		6.0			6.0	
			13	2472.0						
Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
WiFi MIMO Ant.2	802.11b	1 Mbps	1	2412.0	18.5	19.0	Yes	12.2	13.0	Yes
			6	2437.0	18.1			11.9		
			11	2462.0	18.2			12.0		
			12	2467.0	7.0	8.0	No	7.0	8.0	No
			13	2472.0	7.4			7.4		
	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		8.0			8.0	
			13	2472.0						
	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		6.0			6.0	
			13	2472.0						
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	17.0	No	Not Required	13.0	No
			6	2437.0						
			11	2462.0						
			12	2467.0		6.0			6.0	
			13	2472.0						

Note(s):

1. SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
2. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1, b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11n/g/ax mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, for each frequency band. Additional output power measurements were not deemed necessary.
3. Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.
4. MIMO DTS SAR test were additionally evaluated at Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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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 WiFi SISO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	16.8	17.0	Yes	Not Required	11.0	No
				56	5280.0	17.0			Not Required		
				60	5300.0	16.8			Not Required		
				64	5320.0	16.7			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	17.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	16.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	17.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	16.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	15.0	No	10.3	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	16.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	15.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	14.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	Not Required	16.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	16.0	17.0	Yes	Not Required	11.0	No
				120	5600.0	16.2			Not Required		
				124	5620.0	16.5			Not Required		
				144	5720.0	16.0			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	16.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	100	5500.0	Not Required	17.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	16.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	15.0	No	10.5	11.0	Yes
				122	5610.0	Not Required			10.3		
				138	5690.0	Not Required			10.0		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	16.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	15.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	14.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	16.4	17.0	Yes	Not Required	11.0	No
				157	5785.0	16.4			Not Required		
				165	5825.0	16.2			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	15.0	No	10.0	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	16.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	15.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	14.0	No	Not Required	11.0	No

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Measured Results of WiFi SISO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	16.9	17.0	Yes	Not Required	11.0	No
				56	5280.0	17.0			Not Required		
				60	5300.0	16.6			Not Required		
				64	5320.0	16.6			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	17.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	16.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	17.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	16.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	15.0	No	10.3	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	16.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	15.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	14.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	Not Required	16.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	16.0	17.0	Yes	Not Required	11.0	No
				120	5600.0	16.7			Not Required		
				124	5620.0	16.5			Not Required		
				144	5720.0	16.5			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	16.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	100	5500.0	Not Required	17.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	16.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	15.0	No	10.3	11.0	Yes
				122	5610.0	Not Required			11.0		
				138	5690.0	Not Required			10.3		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	16.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	15.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	14.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	16.7	17.0	Yes	Not Required	11.0	No
				157	5785.0	16.3			Not Required		
				165	5825.0	16.0			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	15.0	No	10.8	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	16.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	15.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	14.0	No	Not Required	11.0	No

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Measured Results of WiFi MIMO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pw r.		
						Avg Pw r (dBm)	Max Output Pow er (dBm)	SAR Test (Yes/No)
MIMO Ant.1	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	15.1	17.0	Yes
				157	5785.0	15.1		
				165	5825.0	15.0		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No
				159	5795.0	Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No
				159	5795.0	Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	15.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	16.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	15.0	No
				159	5795.0	Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	14.0	No

Measured Results of WiFi MIMO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pw r.		
						Avg Pw r (dBm)	Max Output Pow er (dBm)	SAR Test (Yes/No)
MIMO Ant.2	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	16.5	17.0	Yes
				157	5785.0	16.1		
				165	5825.0	15.9		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No
				159	5795.0	Not Required		
		802.11ac (VHT20)	6.5 Mbps	149	5745.0	Not Required	17.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	16.0	No
				159	5795.0	Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	15.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	16.0	No
				157	5785.0	Not Required		
				165	5825.0	Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	15.0	No
				159	5795.0	Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	14.0	No

Note(s):

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

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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	GFSK	0	2402	14.4	16.0	13.1	16.0
		39	2441	15.5		14.6	
		77	2479	14.0		13.6	
		78	2480	13.6	14.0	13.4	14.0
	EDR, 8-DPSK	0	2402	14.5	16.0	13.2	16.0
		39	2441	15.5		14.6	
		78	2480	14.0		13.7	
		78	2480	13.5	14.0	13.4	14.0
	LE, GFSK-1M, 125/500 kbps	0	2402	4.5	6.0		
		19	2440	5.0			
		39	2480	3.8			
	LE, GFSK-2M	0	2402	4.2	6.0		
		19	2440	4.7			
		39	2480	3.7			

Note(s):

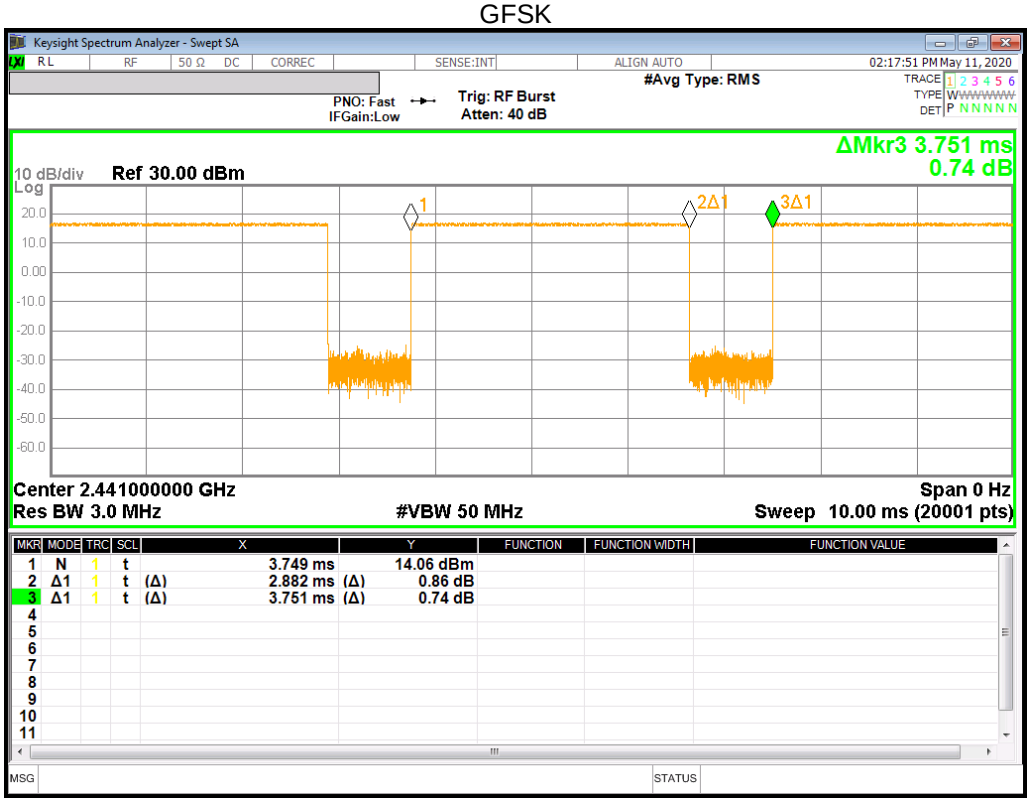
SAR test is evaluated at GFSK mode in Bluetooth

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.882	3.751	76.8%	1.30

Duty Cycle plots

GFSK



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10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

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

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KDB 248227 D01 SAR meas for 802.11:

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

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

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

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

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10.1 GSM 850

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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 2 Slot	N/A	0	Left Touch	190	836.6	32.5	30.9	0.216	0.313	
					Left Tilt	190	836.6	32.5	30.9	0.116	0.168	
					Right Touch	190	836.6	32.5	30.9	0.319	0.462	1
					Right Tilt	190	836.6	32.5	30.9	0.133	0.193	
	Body-worn	GPRS 2 Slot	N/A	15	Rear	190	836.6	32.5	30.9	0.250	0.362	
					Front	190	836.6	32.5	30.9	0.273	0.395	
	Hotspot	GPRS 2 Slot	N/A	10	Rear	190	836.6	32.5	30.9	0.484	0.701	
					Front	190	836.6	32.5	30.9	0.386	0.559	
					Edge 2	190	836.6	32.5	30.9	0.333	0.482	
					Edge 3	190	836.6	32.5	30.9	0.371	0.537	
					Edge 4	190	836.6	32.5	30.9	0.108	0.156	

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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.	Body-worn	GPRS 2 Slot	N/A	15	Rear	190	836.6	32.5	30.9	0.384	0.555	2
					Front	190	836.6	32.5	30.9	0.136	0.197	
	Hotspot	GPRS 2 Slot	N/A	10	Rear	128	824.4	32.5	31.1	0.587	0.810	
						190	836.6	32.5	30.9	0.574	0.830	
						251	848.8	32.5	31.0	0.604	0.853	3
					Front	190	836.6	32.5	30.9	0.194	0.280	
					Edge 2	190	836.6	32.5	30.9	0.105	0.152	
					Edge 3	190	836.6	32.5	30.9	0.187	0.270	
					Edge 4	190	836.6	32.5	30.9	0.094	0.136	

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10.2 GSM 1900

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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	29.0	28.5	0.040	0.045	
					Left Tilt	661	1880.0	29.0	28.5	0.028	0.031	
					Right Touch	661	1880.0	29.0	28.5	0.056	0.063	4
					Right Tilt	661	1880.0	29.0	28.5	0.030	0.034	
	Body-worn	GPRS 3 Slot	Off	15	Rear	661	1880.0	29.0	28.5	0.382	0.432	5
					Front	661	1880.0	29.0	28.5	0.288	0.325	
	Hotspot	GPRS 2 Slot	On	10	Rear	661	1880.0	27.0	26.4	0.446	0.510	
					Front	661	1880.0	27.0	26.4	0.376	0.430	
					Edge 2	661	1880.0	27.0	26.4	0.045	0.051	
					Edge 3	661	1880.0	27.0	26.4	0.565	0.646	6
					Edge 4	661	1880.0	27.0	26.4	0.079	0.090	
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	13	Edge 3	661	1880	29.0	28.5	0.485	0.548	
		GPRS 2 Slot	On	0	Edge 3	661	1880	27.0	26.4	1.670	1.909	7

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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.	Body-worn	GPRS 3 Slot	Off	15	Rear	661	1880.0	29.0	28.5	0.364	0.411	
					Front	661	1880.0	29.0	28.5	0.079	0.089	
	Hotspot	GPRS 2 Slot	On	10	Rear	661	1880.0	27.0	26.4	0.282	0.322	
					Front	661	1880.0	27.0	26.4	0.063	0.072	
					Edge 2	661	1880.0	27.0	26.4	0.033	0.038	
					Edge 3	661	1880.0	27.0	26.4	0.544	0.622	
					Edge 4	661	1880.0	27.0	26.4	0.056	0.064	

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10.3 W-CDMA Band II

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Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	9400	1880.0	25.5	25.2	0.060	0.064	
					Left Tilt	9400	1880.0	25.5	25.2	0.038	0.041	
					Right Touch	9400	1880.0	25.5	25.2	0.092	0.098	8
					Rightt Tilt	9400	1880.0	25.5	25.2	0.051	0.054	
	Body-worn	Rel 99 RMC	Off	15	Rear	9400	1880.0	25.5	25.2	0.531	0.565	9
					Front	9400	1880.0	25.5	25.2	0.408	0.434	
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	19.5	19.1	0.321	0.350	
					Front	9400	1880.0	19.5	19.1	0.256	0.279	
					Edge 2	9400	1880.0	19.5	19.1	0.039	0.042	
					Edge 3	9262	1852.4	19.5	19.1	0.602	0.657	
						9400	1880.0	19.5	19.1	0.807	0.879	
						9538	1907.6	19.5	18.8	0.800	0.947	10
					Edge 4	9400	1880.0	19.5	19.1	0.064	0.070	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	8	Rear	9400	1880.0	25.5	25.2	0.731	0.778	
				13	Edge 3	9400	1880.0	25.5	25.2	0.719	0.766	
			On	0	Rear	9400	1880.0	19.5	19.1	0.966	1.052	
				0	Edge 3	9262	1852.4	19.5	19.1	1.960	2.140	
						9400	1880.0	19.5	19.1	2.000	2.179	
						9538	1907.6	19.5	18.8	1.940	2.296	11

Folder Closed

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.	Body-worn	Rel 99 RMC	Off	15	Rear	9400	1880.0	25.5	25.2	0.432	0.460	
					Front	9400	1880.0	25.5	25.2	0.143	0.152	
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	19.5	19.1	0.253	0.276	
					Front	9400	1880.0	19.5	19.1	0.071	0.077	
					Edge 2	9400	1880.0	19.5	19.1	0.025	0.027	
					Edge 3	9400	1880.0	19.5	19.1	0.450	0.490	
					Edge 4	9400	1880.0	19.5	19.1	0.030	0.033	

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10.4 W-CDMA Band IV

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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	25.5	24.9	0.113	0.129	
					Left Tilt	1413	1732.6	25.5	24.9	0.086	0.098	
					Right Touch	1413	1732.6	25.5	24.9	0.166	0.189	12
					Rightt Tilt	1413	1732.6	25.5	24.9	0.091	0.103	
	Body-worn	Rel 99 RMC	Off	15	Rear	1312	1712.4	25.5	24.5	0.745	0.941	
						1413	1732.6	25.5	24.9	0.890	1.013	13
						1513	1752.6	25.5	24.6	0.694	0.856	
					Front	1413	1732.6	25.5	24.9	0.610	0.694	
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.0	19.4	0.487	0.554	
					Front	1413	1732.6	20.0	19.4	0.435	0.495	
					Edge 2	1413	1732.6	20.0	19.4	0.051	0.058	
					Edge 3	1312	1712.4	20.0	19.0	0.815	1.024	
						1413	1732.6	20.0	19.4	0.883	1.005	
						1513	1752.6	20.0	19.1	0.869	1.076	14
					Edge 4	1413	1732.6	20.0	19.4	0.068	0.077	

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	8	Rear	1413	1732.6	25.5	24.9	1.170	1.332	
				7	Front	1413	1732.6	25.5	24.9	1.070	1.218	
				13	Edge 3	1413	1732.6	25.5	24.9	1.180	1.343	
			On	0	Rear	1413	1732.6	20.0	19.4	1.050	1.195	
				0	Front	1413	1732.6	20.0	19.4	1.110	1.264	
				0	Edge 3	1312	1712.4	20.0	19.0	1.950	2.450	
						1413	1732.6	20.0	19.4	1.910	2.175	
						1513	1752.6	20.0	19.1	2.040	2.527	15

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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.	Body-worn	Rel 99 RMC	Off	15	Rear	1413	1732.6	25.5	24.9	0.311	0.354	
					Front	1413	1732.6	25.5	24.9	0.041	0.046	
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.0	19.4	0.168	0.191	
					Front	1413	1732.6	20.0	19.4	0.025	0.028	
					Edge 2	1413	1732.6	20.0	19.4	0.027	0.030	
					Edge 3	1413	1732.6	20.0	19.4	0.335	0.381	
					Edge 4	1413	1732.6	20.0	19.4	0.068	0.077	

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10.5 W-CDMA Band V

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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	4132	826.4	25.8	25.0	0.167	0.199	
					Left Tilt	4132	826.4	25.8	25.0	0.119	0.142	
					Right Touch	4132	826.4	25.8	25.0	0.223	0.266	16
					Rightt Tilt	4132	826.4	25.8	25.0	0.104	0.124	
	Body-worn	Rel 99 RMC	N/A	15	Rear	4132	826.4	25.8	25.0	0.177	0.211	
					Front	4132	826.4	25.8	25.0	0.194	0.231	
	Hotspot	Rel 99 RMC	N/A	10	Rear	4132	826.4	25.8	25.0	0.323	0.385	
					Front	4132	826.4	25.8	25.0	0.257	0.306	
					Edge 2	4132	826.4	25.8	25.0	0.299	0.356	
					Edge 3	4132	826.4	25.8	25.0	0.230	0.274	
					Edge 4	4132	826.4	25.8	25.0	0.069	0.083	

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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.	Body-worn	Rel 99 RMC	Off	15	Rear	4132	826.4	25.8	25.0	0.322	0.383	17
					Front	4132	826.4	25.8	25.0	0.093	0.111	
	Hotspot	Rel 99 RMC	On	10	Rear	4132	826.4	25.8	25.0	0.518	0.617	18
					Front	4132	826.4	25.8	25.0	0.143	0.170	
					Edge 2	4132	826.4	25.8	25.0	0.077	0.092	
					Edge 3	4183	836.6	25.8	25.0	0.128	0.152	
					Edge 4	4233	846.6	25.8	25.0	0.070	0.083	

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10.6 LTE Band 12 (10MHz Bandwidth)

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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	0	25.8	24.5	0.138	0.187	
								25	12	24.8	23.7	0.109	0.141	
					Left Tilt	23095	707.5	1	0	25.8	24.5	0.082	0.110	
								25	12	24.8	23.7	0.067	0.086	
					Right Touch	23095	707.5	1	0	25.8	24.5	0.145	0.196	19
								25	12	24.8	23.7	0.119	0.154	
					Right Tilt	23095	707.5	1	0	25.8	24.5	0.086	0.117	
								25	12	24.8	23.7	0.076	0.098	
	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	0	25.8	24.5	0.176	0.238	
								25	12	24.8	23.7	0.156	0.202	
					Front	23095	707.5	1	0	25.8	24.5	0.179	0.242	
								25	12	24.8	23.7	0.158	0.204	
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	0	25.8	24.5	0.203	0.274	
								25	12	24.8	23.7	0.181	0.234	
					Front	23095	707.5	1	0	25.8	24.5	0.186	0.251	
								25	12	24.8	23.7	0.167	0.216	
					Edge 2	23095	707.5	1	0	25.8	24.5	0.255	0.345	
								25	12	24.8	23.7	0.200	0.259	
					Edge 3	23095	707.5	1	0	25.8	24.5	0.155	0.209	
								25	12	24.8	23.7	0.131	0.169	
					Edge 4	23095	707.5	1	0	25.8	24.5	0.072	0.097	
								25	12	24.8	23.7	0.070	0.090	

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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.	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	0	25.8	24.5	0.209	0.282	20
								25	12	24.8	23.7	0.164	0.212	
					Front	23095	707.5	1	0	25.8	24.5	0.058	0.079	
								25	12	24.8	23.7	0.043	0.055	
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	0	25.8	24.5	0.370	0.500	21
								25	12	24.8	23.7	0.284	0.367	
					Front	23095	707.5	1	0	25.8	24.5	0.098	0.132	
								25	12	24.8	23.7	0.069	0.090	
					Edge 2	23095	707.5	1	0	25.8	24.5	0.093	0.125	
								25	12	24.8	23.7	0.076	0.098	
					Edge 3	23095	707.5	1	0	25.8	24.5	0.032	0.044	
								25	12	24.8	23.7	0.026	0.033	
					Edge 4	23095	707.5	1	0	25.8	24.5	0.073	0.098	
								25	12	24.8	23.7	0.057	0.074	

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10.7 LTE Band 13 (10MHz Bandwidth)

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Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23230	782.0	1	0	25.8	24.8	0.147	0.187	
								25	25	24.8	23.8	0.117	0.146	
					Left Tilt	23230	782.0	1	0	25.8	24.8	0.084	0.107	
								25	25	24.8	23.8	0.072	0.089	
					Right Touch	23230	782.0	1	0	25.8	24.8	0.159	0.202	22
								25	25	24.8	23.8	0.133	0.166	
					Right Tilt	23230	782.0	1	0	25.8	24.8	0.070	0.088	
								25	25	24.8	23.8	0.072	0.090	
	Body-worn	QPSK	N/A	15	Rear	23230	782.0	1	0	25.8	24.8	0.162	0.206	
								25	25	24.8	23.8	0.143	0.178	
					Front	23230	782.0	1	0	25.8	24.8	0.181	0.230	23
								25	25	24.8	23.8	0.160	0.200	
	Hotspot	QPSK	N/A	10	Rear	23230	782.0	1	0	25.8	24.8	0.231	0.293	
								25	25	24.8	23.8	0.194	0.242	
					Front	23230	782.0	1	0	25.8	24.8	0.172	0.218	
								25	25	24.8	23.8	0.157	0.196	
					Edge 2	23230	782.0	1	0	25.8	24.8	0.215	0.273	
								25	25	24.8	23.8	0.200	0.249	
					Edge 3	23230	782.0	1	0	25.8	24.8	0.115	0.146	
								25	25	24.8	23.8	0.110	0.137	
					Edge 4	23230	782.0	1	0	25.8	24.8	0.093	0.118	
								25	25	24.8	23.8	0.087	0.109	

Folder Closed

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.	Body-worn	QPSK	N/A	15	Rear	23230	782.0	1	0	25.8	24.8	0.175	0.222	
								25	25	24.8	23.8	0.137	0.171	
					Front	23230	782.0	1	0	25.8	24.8	0.042	0.054	
								25	25	24.8	23.8	0.029	0.036	
	Hotspot	QPSK	N/A	10	Rear	23230	782.0	1	0	25.8	24.8	0.309	0.392	24
								25	25	24.8	23.8	0.254	0.317	
					Front	23230	782.0	1	0	25.8	24.8	0.068	0.086	
								25	25	24.8	23.8	0.045	0.057	
					Edge 2	23230	782.0	1	0	25.8	24.8	0.061	0.078	
								25	25	24.8	23.8	0.054	0.067	
					Edge 3	23230	782.0	1	0	25.8	24.8	0.058	0.073	
								25	25	24.8	23.8	0.047	0.058	
					Edge 4	23230	782.0	1	0	25.8	24.8	0.066	0.084	
								25	25	24.8	23.8	0.049	0.062	

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10.8 LTE Band 25 (20MHz Bandwidth)

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Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	26365	1882.5	1	99	25.5	24.9	0.057	0.065	
								50	50	24.5	23.8	0.043	0.050	
					Left Tilt	26365	1882.5	1	99	25.5	24.9	0.042	0.048	
								50	50	24.5	23.8	0.026	0.031	
					Right Touch	26365	1882.5	1	99	25.5	24.9	0.069	0.079	25
								50	50	24.5	23.8	0.051	0.059	
					Right Tilt	26365	1882.5	1	99	25.5	24.9	0.039	0.045	
								50	50	24.5	23.8	0.024	0.028	
	Body-worn	QPSK	Off	15	Rear	26365	1882.5	1	99	25.5	24.9	0.544	0.622	26
								50	50	24.5	23.8	0.398	0.464	
					Front	26365	1882.5	1	99	25.5	24.9	0.433	0.495	
								50	50	24.5	23.8	0.332	0.387	
	Hotspot	QPSK	On	10	Rear	26365	1882.5	1	99	19.5	18.9	0.346	0.393	
								50	50	19.5	19.0	0.344	0.382	
					Front	26365	1882.5	1	99	19.5	18.9	0.327	0.372	
								50	50	19.5	19.0	0.322	0.358	
					Edge 2	26365	1882.5	1	99	19.5	18.9	0.042	0.048	
								50	50	19.5	19.0	0.043	0.048	
					Edge 3	26140	1860.0	1	99	19.5	18.6	0.892	1.088	
								50	50	19.5	18.6	0.875	1.083	
						26365	1882.5	1	99	19.5	18.9	0.953	1.084	
								50	50	19.5	19.0	0.958	1.065	
								100	0	19.5	18.9	0.926	1.075	
						26590	1905.0	1	99	19.5	18.7	1.030	1.242	27
								50	50	19.5	18.8	1.040	1.233	
					Edge 4	26365	1882.5	1	99	19.5	18.9	0.185	0.210	
								50	50	19.5	19.0	0.138	0.153	

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	8	Rear	26365	1882.5	1	99	25.5	24.9	0.747	0.854	
								50	50	24.5	23.8	0.605	0.705	
				7	Front	26365	1882.5	1	99	25.5	24.9	0.661	0.756	
				13	Edge 3	26365	1882.5	1	99	25.5	24.9	0.839	0.959	
								50	50	24.5	23.8	0.649	0.757	
			On	0	Rear	26365	1882.5	1	99	19.5	18.9	1.100	1.251	
								50	50	19.5	19.0	1.110	1.233	
				0	Front	26365	1882.5	1	99	19.5	18.9	1.020	1.160	
				0	Edge 3	26140	1860.0	1	99	19.5	18.6	2.060	2.513	
								50	50	19.5	18.6	2.100	2.599	28
						26365	1882.5	1	99	19.5	18.9	2.110	2.399	
								50	50	19.5	19.0	2.150	2.389	
								100	0	19.5	18.9	2.100	2.438	
						26590	1905.0	1	99	19.5	18.7	2.020	2.436	
								50	50	19.5	18.8	2.100	2.490	

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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.	Body-worn	QPSK	Off	15	Rear	26365	1882.5	1	99	25.5	24.9	0.539	0.616	
								50	50	24.5	23.8	0.386	0.450	
					Front	26365	1882.5	1	99	25.5	24.9	0.146	0.167	
								50	50	24.5	23.8	0.094	0.110	
	Hotspot	QPSK	On	10	Rear	26365	1882.5	1	99	19.5	18.9	0.325	0.370	
								50	50	19.5	19.0	0.317	0.352	
					Front	26365	1882.5	1	99	19.5	18.9	0.075	0.085	
								50	50	19.5	19.0	0.068	0.076	
					Edge 2	26365	1882.5	1	99	19.5	18.9	0.039	0.044	
								50	50	19.5	19.0	0.040	0.044	
					Edge 3	26365	1882.5	1	99	19.5	18.9	0.639	0.727	
								50	50	19.5	19.0	0.630	0.700	
					Edge 4	26365	1882.5	1	99	19.5	18.9	0.052	0.060	
								50	50	19.5	19.0	0.055	0.061	

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10.9 LTE Band 26 (15MHz Bandwidth)

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Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	26865	831.5	1	0	25.8	24.9	0.198	0.241	
								36	0	24.8	23.8	0.166	0.208	
					Left Tilt	26865	831.5	1	0	25.8	24.9	0.137	0.167	
								36	0	24.8	23.8	0.115	0.144	
					Right Touch	26865	831.5	1	0	25.8	24.9	0.261	0.318	29
								36	0	24.8	23.8	0.217	0.272	
					Right Tilt	26865	831.5	1	0	25.8	24.9	0.134	0.163	
								36	0	24.8	23.8	0.117	0.146	
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	0	25.8	24.9	0.221	0.269	
								36	0	24.8	23.8	0.179	0.224	
					Front	26865	831.5	1	0	25.8	24.9	0.238	0.290	
								36	0	24.8	23.8	0.193	0.242	
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	0	25.8	24.9	0.362	0.441	
								36	0	24.8	23.8	0.303	0.379	
					Front	26865	831.5	1	0	25.8	24.9	0.276	0.336	
								36	0	24.8	23.8	0.228	0.285	
					Edge 2	26865	831.5	1	0	25.8	24.9	0.326	0.397	
								36	0	24.8	23.8	0.241	0.302	
					Edge 3	26865	831.5	1	0	25.8	24.9	0.280	0.341	
								36	0	24.8	23.8	0.228	0.285	
					Edge 4	26865	831.5	1	0	25.8	24.9	0.067	0.082	
								36	0	24.8	23.8	0.054	0.068	

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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.	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	0	25.8	24.9	0.367	0.447	30
								36	0	24.8	23.8	0.303	0.379	
					Front	26865	831.5	1	0	25.8	24.9	0.130	0.158	
								36	0	24.8	23.8	0.110	0.138	
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	0	25.8	24.9	0.625	0.761	31
								36	0	24.8	23.8	0.509	0.637	
					Front	26865	831.5	1	0	25.8	24.9	0.178	0.217	
								36	0	24.8	23.8	0.154	0.193	
					Edge 2	26865	831.5	1	0	25.8	24.9	0.101	0.123	
								36	0	24.8	23.8	0.085	0.107	
					Edge 3	26865	831.5	1	0	25.8	24.9	0.183	0.223	
								36	0	24.8	23.8	0.148	0.185	
					Edge 4	26865	831.5	1	0	25.8	24.9	0.089	0.108	
								36	0	24.8	23.8	0.072	0.090	

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10.10 LTE Band 41 (20MHz Bandwidth)

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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	41055	2636.5	1	49	25.8	25.2	0.044	0.050	
								50	24	24.8	24.3	0.035	0.039	
					Left Tilt	41055	2636.5	1	49	25.8	25.2	0.031	0.036	
								50	24	24.8	24.3	0.035	0.039	
					Right Touch	41055	2636.5	1	49	25.8	25.2	0.122	0.140	32
								50	24	24.8	24.3	0.098	0.110	
					Right Tilt	41055	2636.5	1	49	25.8	25.2	0.032	0.037	
								50	24	24.8	24.3	0.024	0.027	
	Body-worn	QPSK	Off	15	Rear	41055	2636.5	1	49	25.8	25.2	0.446	0.512	
								50	24	24.8	24.3	0.379	0.424	
					Front	41055	2636.5	1	49	25.8	25.2	0.451	0.518	33
								50	24	24.8	24.3	0.374	0.419	
	Hotspot	QPSK	On	10	Rear	41055	2636.5	1	49	21.0	20.4	0.375	0.427	
								50	24	21.0	20.4	0.382	0.434	
					Front	41055	2636.5	1	49	21.0	20.4	0.416	0.473	
								50	24	21.0	20.4	0.417	0.474	
					Edge 3	39750	2506.0	1	49	21.0	19.9	0.734	0.950	
								50	24	21.0	20.0	0.762	0.965	
						40185	2549.5	1	49	21.0	20.0	0.923	1.157	
								50	24	21.0	20.1	0.939	1.152	
						40620	2593.0	1	49	21.0	20.2	1.050	1.265	
								50	24	21.0	20.2	1.080	1.291	
						41055	2636.5	1	49	21.0	20.4	1.090	1.240	
								50	24	21.0	20.4	1.110	1.262	
								100	0	21.0	20.3	1.090	1.271	
						41490	2680.0	1	49	21.0	19.8	1.040	1.365	34
								50	24	21.0	19.9	1.060	1.354	
					Edge 4	41055	2636.5	1	49	21.0	20.4	0.117	0.133	
								50	24	21.0	20.4	0.116	0.132	

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Product Specific 10-g	QPSK	Off	8	Rear	41055	2636.5	1	49	25.8	25.2	0.552	0.634	
								50	24	24.8	24.3	0.463	0.518	
				7	Front	41055	2636.5	1	49	25.8	25.2	0.568	0.652	
								50	24	24.8	24.3	0.496	0.555	
				13	Edge 3	41055	2636.5	1	49	25.8	25.2	0.883	1.014	
								50	24	24.8	24.3	0.751	0.841	
			On	0	Rear	39750	2506.0	1	49	22.5	21.5	1.360	1.706	
								50	24	22.5	21.6	1.350	1.668	
						40185	2549.5	1	49	22.5	21.6	1.320	1.608	
								50	24	22.5	21.7	1.360	1.633	
						40620	2593.0	1	49	22.5	22.1	1.340	1.455	
								50	24	22.5	22.1	1.400	1.535	
						41055	2636.5	1	49	22.5	22.3	1.490	1.566	
								50	24	22.5	22.2	1.550	1.655	
								100	0	22.5	22.0	1.630	1.813	
						41490	2680.0	1	49	22.5	21.5	1.530	1.908	
								50	24	22.5	21.7	0.914	1.105	
				0	Front	39750	2506.0	1	49	22.5	21.5	0.546	0.685	
								50	24	22.5	21.6	0.548	0.677	
						40185	2549.5	1	49	22.5	21.6	0.894	1.089	
								50	24	22.5	21.7	0.914	1.098	
						40620	2593.0	1	49	22.5	22.1	0.956	1.038	
								50	24	22.5	22.1	0.996	1.092	
						41055	2636.5	1	49	22.5	22.3	1.510	1.587	
								50	24	22.5	22.2	1.570	1.676	
								100	0	22.5	22.0	1.470	1.635	
						41490	2680.0	1	49	22.5	21.5	1.040	1.297	
								50	24	22.5	21.7	1.060	1.281	
				0	Edge 3	39750	2506.0	1	49	22.5	21.5	2.250	2.823	
								50	24	22.5	21.6	2.380	2.941	35
						40185	2549.5	1	49	22.5	21.6	2.190	2.668	
								50	24	22.5	21.7	2.300	2.762	
						40620	2593.0	1	49	22.5	22.1	2.090	2.269	
								50	24	22.5	22.1	2.250	2.467	
						41055	2636.5	1	49	22.5	22.3	2.140	2.250	
								50	24	22.5	22.2	2.260	2.413	
								100	0	22.5	22.0	2.230	2.480	
						41490	2680.0	1	49	22.5	21.5	2.180	2.719	
								50	24	22.5	21.7	2.270	2.744	

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LTE Band 41 (20MHz Bandwidth)_(Continued)

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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.	Body-worn	QPSK	Off	15	Rear	41055	2636.5	1	49	25.8	25.2	0.393	0.451	
								50	24	24.8	24.3	0.321	0.359	
					Front	41055	2636.5	1	49	25.8	25.2	0.052	0.059	
								50	24	24.8	24.3	0.041	0.046	
	Hotspot	QPSK	On	10	Rear	41055	2636.5	1	49	21.0	20.4	0.512	0.582	
								50	24	21.0	20.4	0.521	0.592	
					Front	41055	2636.5	1	49	21.0	20.4	0.041	0.047	
								50	24	21.0	20.4	0.042	0.048	
					Edge 3	39750	2506.0	1	49	21.0	19.9	0.427	0.553	
								50	24	21.0	20.0	0.439	0.556	
						40185	2549.5	1	49	21.0	20.0	0.517	0.648	
								50	24	21.0	20.1	0.524	0.643	
						40620	2593.0	1	49	21.0	20.2	0.771	0.929	
								50	24	21.0	20.2	0.824	0.985	
						41055	2636.5	1	49	21.0	20.4	0.662	0.753	
								50	24	21.0	20.4	0.667	0.758	
								100	0	21.0	20.3	0.643	0.750	
						41490	2680.0	1	49	21.0	19.8	0.795	1.043	
								50	24	21.0	19.9	0.807	1.031	
					Edge 4	41055	2636.5	1	49	21.0	20.4	0.083	0.094	
								50	24	21.0	20.4	0.083	0.095	

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10.11 LTE Band 66 (20MHz Bandwidth)

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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	132322	1745.0	1	49	25.5	25.0	0.120	0.135	
								50	24	24.5	24.1	0.097	0.107	
					Left Tilt	132322	1745.0	1	49	25.5	25.0	0.067	0.075	
								50	24	24.5	24.1	0.054	0.060	
					Right Touch	132322	1745.0	1	49	25.5	25.0	0.162	0.182	36
								50	24	24.5	24.1	0.129	0.142	
					Right Tilt	132322	1745.0	1	49	25.5	25.0	0.094	0.105	
								50	24	24.5	24.1	0.073	0.080	
	Body-worn	QPSK	Off	15	Rear	132322	1745.0	1	49	25.5	25.0	0.669	0.752	37
								50	24	24.5	24.1	0.577	0.634	
					Front	132322	1745.0	1	49	25.5	25.0	0.646	0.726	
								50	24	24.5	24.1	0.538	0.591	
	Hotspot	QPSK	On	10	Rear	132322	1745.0	1	49	20.0	19.3	0.499	0.590	
								50	24	20.0	19.4	0.500	0.570	
					Front	132322	1745.0	1	49	20.0	19.3	0.356	0.421	
								50	24	20.0	19.4	0.362	0.413	
					Edge 2	132322	1745.0	1	49	20.0	19.3	0.053	0.062	
								50	24	20.0	19.4	0.053	0.060	
					Edge 3	132072	1720.0	1	49	20.0	19.0	0.818	1.025	
								50	24	20.0	19.0	0.848	1.060	38
						132322	1745.0	1	49	20.0	19.3	0.820	0.969	
								50	24	20.0	19.4	0.828	0.945	
								100	0	20.0	19.3	0.817	0.969	
						132572	1770.0	1	49	20.0	19.2	0.838	1.018	
								50	24	20.0	19.3	0.865	1.009	
					Edge 4	132322	1745.0	1	49	20.0	19.3	0.072	0.085	
								50	24	20.0	19.4	0.074	0.085	

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	8	Rear	132322	1745.0	1	49	25.5	25.0	1.040	1.169	
								50	24	24.5	24.1	0.874	0.960	
				7	Front	132322	1745.0	1	49	25.5	25.0	0.935	1.051	
				13	Edge 3	132322	1745.0	1	49	25.5	25.0	1.050	1.181	
								50	24	24.5	24.1	0.861	0.946	
			On	0	Rear	132322	1745.0	1	49	20.0	19.3	1.160	1.371	
								50	24	20.0	19.4	1.190	1.358	
				0	Front	132322	1745.0	1	49	20.0	19.3	1.070	1.265	
				0	Edge 3	132072	1720.0	1	49	20.0	19.0	2.030	2.544	
								50	24	20.0	19.0	2.150	2.687	39
						132322	1745.0	1	49	20.0	19.3	1.950	2.305	
								50	24	20.0	19.4	2.020	2.305	
								100	0	20.0	19.3	2.020	2.395	
						132572	1770.0	1	49	20.0	19.2	1.980	2.406	
								50	24	20.0	19.3	2.080	2.427	

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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.	Body-worn	QPSK	Off	15	Rear	132322	1745.0	1	49	25.5	25.0	0.257	0.289	
								50	24	24.5	24.1	0.216	0.237	
					Front	132322	1745.0	1	49	25.5	25.0	0.069	0.078	
								50	24	24.5	24.1	0.053	0.058	
	Hotspot	QPSK	On	10	Rear	132322	1745.0	1	49	20.0	19.3	0.175	0.207	
								50	24	20.0	19.4	0.175	0.200	
					Front	132322	1745.0	1	49	20.0	19.3	0.032	0.038	
								50	24	20.0	19.4	0.032	0.036	
					Edge 2	132322	1745.0	1	49	20.0	19.3	0.019	0.022	
								50	24	20.0	19.4	0.019	0.022	
					Edge 3	132322	1745.0	1	49	20.0	19.3	0.368	0.435	
								50	24	20.0	19.4	0.364	0.415	
					Edge 4	132322	1745.0	1	49	20.0	19.3	0.040	0.048	
								50	24	20.0	19.4	0.040	0.045	

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10.12 Wi-Fi (DTS Band)

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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.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.059	99.8	13.0	12.4	0.052	0.059	1	
						Left Tilt	1	2412.0	0.005	99.8	13.0	12.4				
						Right Touch	1	2412.0	0.055	99.8	13.0	12.4				
						Rightt Tilt	1	2412.0	0.006	99.8	13.0	12.4				
			Body-worn	Off	15	Rear	1	2412.0	0.203	99.8	19.0	18.7	0.145	0.157	1	40
						Front	1	2412.0	0.024	99.8	19.0	18.7				
			Hotspot	Off	10	Rear	1	2412.0	0.643	99.8	19.0	18.7	0.421	0.455		
						Front	1	2412.0	0.045	99.8	19.0	18.7				
						Edge 4	1	2412.0	0.105	99.8	19.0	18.7	0.088	0.096	2	
MIMO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	11	2462.0	0.776	99.8	13.0	12.3	0.600	0.709		41
						Left Tilt	11	2462.0	0.540	99.8	13.0	12.3	0.402	0.475	2	
						Right Touch	11	2462.0	0.177	99.8	13.0	12.3	0.133	0.157	4	
						Rightt Tilt	11	2462.0	0.126	99.8	13.0	12.3				
			Body-worn	Off	15	Rear	1	2412.0	0.185	99.8	19.0	18.4	0.135	0.157	1	
						Front	1	2412.0	0.178	99.8	19.0	18.4				
			Hotspot	Off	10	Rear	1	2412.0	0.433	99.8	19.0	18.4	0.298	0.346		
						Front	1	2412.0	0.406	99.8	19.0	18.4	0.317	0.368	4	
						Edge 1	1	2412.0	0.191	99.8	19.0	18.4				
						Edge 2	1	2412.0	0.555	99.8	19.0	18.4	0.496	0.576		42
						Edge 4	1	2412.0	0.111	99.8	19.0	18.4				
MIMO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	11	2462.0	0.776	99.8	13.0	12.0				
						Left Tilt	11	2462.0	0.540	99.8	13.0	12.0				
						Right Touch	11	2462.0	0.177	99.8	13.0	12.0				
						Rightt Tilt	11	2462.0	0.126	99.8	13.0	12.0				
			Body-worn	Off	15	Rear	1	2412.0	0.185	99.8	19.0	18.5	0.107	0.122		
						Front	1	2412.0	0.178	99.8	19.0	18.5				
			Hotspot	Off	10	Rear	1	2412.0	0.433	99.8	19.0	18.5	0.310	0.352	2	
						Front	1	2412.0	0.406	99.8	19.0	18.5				
						Edge 1	1	2412.0	0.191	99.8	19.0	18.5				
						Edge 2	1	2412.0	0.555	99.8	19.0	18.5				
						Edge 4	1	2412.0	0.111	99.8	19.0	18.5	0.094	0.106	4	

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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.2)	2.4GHz	802.11b 1 Mbps	Body-worn	Off	15	Rear	1	2412.0	0.012	99.8	19.0	18.7				
						Front	1	2412.0	0.193	99.8	19.0	18.7	0.133	0.144	1	
			Hotspot	Off	10	Rear	1	2412.0	0.016	99.8	19.0	18.7	0.012	0.013	4	
						Front	1	2412.0	0.563	99.8	19.0	18.7	0.362	0.391	1	
						Edge 1	1	2412.0	0.008	99.8	19.0	18.7				
						Edge 4	1	2412.0	0.116	99.8	19.0	18.7				
MIMO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Body-worn	Off	15	Rear	1	2412.0	0.081	99.8	19.0	18.4				
						Front	1	2412.0	0.127	99.8	19.0	18.4	0.106	0.123	1	
			Hotspot	Off	10	Rear	1	2412.0	0.158	99.8	19.0	18.4	0.120	0.139	4	
						Front	1	2412.0	0.316	99.8	19.0	18.4	0.241	0.280		
						Edge 1	1	2412.0	0.038	99.8	19.0	18.4				
						Edge 2	1	2412.0	0.401	99.8	19.0	18.4	0.321	0.373	1	
						Edge 3	1	2412.0	0.180	99.8	19.0	18.4	0.138	0.160	4	
						Edge 4	1	2412.0	0.114	99.8	19.0	18.4				
MIMO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Body-worn	Off	15	Rear	1	2412.0	0.081	99.8	19.0	18.5				
						Front	1	2412.0	0.127	99.8	19.0	18.5	0.098	0.111		
			Hotspot	Off	10	Rear	1	2412.0	0.158	99.8	19.0	18.5				
						Front	1	2412.0	0.316	99.8	19.0	18.5	0.258	0.293	4	
						Edge 1	1	2412.0	0.038	99.8	19.0	18.5				
						Edge 2	1	2412.0	0.401	99.8	19.0	18.5				
						Edge 3	1	2412.0	0.180	99.8	19.0	18.5				
						Edge 4	1	2412.0	0.114	99.8	19.0	18.5				

Note(s):

1. When the Highest reported SAR is ≤ 0.4 or 1.0 W/kg (1-g or 10-g respectively). Therefore, further SAR measurements within this exposure condition are not required.
2. Highest reported SAR is > 0.4 or 1.0 W/kg (1-g or 10-g respectively). Due to the highest reported SAR for this test position, other test positions in this exposure condition were evaluated until a SAR ≤ 0.8 or 2.0 W/kg (1-g or 10-g respectively) was reported.
3. Testing for a second channel was required because the reported SAR for this test position was > 0.8 or 2.0 W/kg (1-g or 10-g respectively).
4. Additional testing required in order satisfying FCC simultaneous transmission limit criteria.
5. SAR testing is not required for OFDM mode(s) when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.
6. 2.4GHz WiFi SAR evaluated for SISO WiFi Ant.2 & WiFi MIMO mode according to WLAN operation scenarios. Detail of WLAN operation scenarios are refer to Sec.13.

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10.13 Wi-Fi (U-NII Bands)

U-NII 2A Results

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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 29.3 Mbps	Head	On	0	Left Touch	58	5290.0	0.776	99.7	11.0	10.3	0.361	0.425				43
						Left Tilt	58	5290.0	0.609	99.7	11.0	10.3	0.306	0.360			2	
						Right Touch	58	5290.0	0.135	99.7	11.0	10.3						
						Right Tilt	58	5290.0	0.198	99.7	11.0	10.3						
		802.11a 6 Mbps	Body-worn	Off	15	Rear	56	5280.0	0.114	98.8	17.0	17.0						
						Front	56	5280.0	0.144	98.8	17.0	17.0	0.060	0.061			1	
			Product Specific 10-g	Off	0	Rear	56	5280.0	4.162	98.8	17.0	17.0			0.654	0.670	4	
						Front	56	5280.0	8.959	98.8	17.0	17.0			1.080	1.106	2	
						Edge 1	56	5280.0	6.956	98.8	17.0	17.0						
						Edge 2	56	5280.0	16.684	98.8	17.0	17.0			1.100	1.126		44
SISO (WiFI Ant.2)	5.3 GHz U-NII 2A	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	58	5290.0	0.003	99.7	11.0	10.3						
						Left Tilt	58	5290.0	0.003	99.7	11.0	10.3						
						Right Touch	58	5290.0	0.004	99.7	11.0	10.3						
						Right Tilt	58	5290.0	0.006	99.7	11.0	10.3	<0.001	<0.001			1	
		802.11a 6 Mbps	Body-worn	Off	15	Rear	56	5280.0	0.068	98.8	17.0	17.0	0.022	0.022			1	
						Front	56	5280.0	0.017	98.8	17.0	17.0						
			Product Specific 10-g	Off	0	Rear	56	5280.0	2.722	98.8	17.0	17.0			0.212	0.215	1	
						Front	56	5280.0	0.025	98.8	17.0	17.0						
						Edge 1	56	5280.0	0.112	98.8	17.0	17.0						
						Edge 2	56	5280.0	0.042	98.8	17.0	17.0						

Folder Closed

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	802.11a 6 Mbps	Body-worn	Off	15	Rear	56	5280.0	0.045	98.8	17.0	17.0						
						Front	56	5280.0	0.164	98.8	17.0	17.0	0.068	0.069			1	45
SISO (WiFI Ant.2)	5.3 GHz U-NII 2A	802.11a 6 Mbps	Body-worn	Off	15	Rear	56	5280.0	0.005	98.8	17.0	17.0						
						Front	56	5280.0	0.107	98.8	17.0	17.0	0.043	0.043			1	

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.

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U-NII 2C Results

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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 29.3 Mbps	Head	On	0	Left Touch	106	5530.0	0.711	99.7	11.0	10.5	0.334	0.373			1	46
						Left Tilt	106	5530.0	0.458	99.7	11.0	10.5						
						Right Touch	106	5530.0	0.226	99.7	11.0	10.5						
						Right Tilt	106	5530.0	0.191	99.7	11.0	10.5						
		802.11n HT 20 6.5 Mbps	Body-worn	Off	15	Rear	124	5620.0	0.381	99.7	17.0	16.5	0.171	0.192			1	
						Front	124	5620.0	0.293	99.7	17.0	16.5						
			Product Specific 10-g	Off	0	Rear	124	5620.0	5.132	99.7	17.0	16.5			0.761	0.857	4	
						Front	124	5620.0	5.629	99.7	17.0	16.5			0.859	0.967	2	
						Edge 1	124	5620.0	5.062	99.7	17.0	16.5						
						Edge 2	124	5620.0	17.411	99.7	17.0	16.5			1.370	1.542		47
SISO (WiFI Ant.2)	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	122	5610.0	0.004	99.7	11.0	11.0						
						Left Tilt	122	5610.0	0.003	99.7	11.0	11.0						
						Right Touch	122	5610.0	0.002	99.7	11.0	11.0						
						Right Tilt	122	5610.0	0.004	99.7	11.0	11.0	<0.001	<0.001			1	
		802.11n HT 20 6.5 Mbps	Body-worn	Off	15	Rear	120	5600.0	0.034	99.7	17.0	16.7	0.013	0.014			1	
						Front	120	5600.0	0.005	99.7	17.0	16.7						
			Product Specific 10-g	Off	0	Rear	120	5600.0	2.540	99.7	17.0	16.7			0.210	0.225	1	
						Front	120	5600.0	0.106	99.7	17.0	16.7						
						Edge 1	120	5600.0	0.013	99.7	17.0	16.7						
						Edge 2	120	5600.0	0.209	99.7	17.0	16.7						

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Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
SISO (WiFI Ant.1)	5.5 GHz U-NII 2C	802.11n HT 20 6.5 Mbps	Body-worn	Off	15	Rear	124	5620.0	0.124	99.7	17.0	16.5						
						Front	124	5620.0	0.520	99.7	17.0	16.5	0.238	0.268			1	48
SISO (WiFI Ant.2)	5.5 GHz U-NII 2C	802.11n HT 20 6.5 Mbps	Body-worn	Off	15	Rear	120	5600.0	0.007	99.7	17.0	16.7						
						Front	120	5600.0	0.056	99.7	17.0	16.7	0.015	0.017			1	

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.

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U-NII 3 Results

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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 29.3 Mbps	Head	On	0	Left Touch	155	5775.0	0.634	99.7	11.0	10.0	0.273	0.348	1	49
						Left Tilt	155	5775.0	0.293	99.7	11.0	10.0				
						Right Touch	155	5775.0	0.112	99.7	11.0	10.0				
						Right Tilt	155	5775.0	0.123	99.7	11.0	10.0				
		802.11a 6 Mbps	Body-worn	Off	15	Rear	157	5785.0	0.509	98.8	17.0	16.4	0.212	0.246	1	50
						Front	157	5785.0	0.347	98.8	17.0	16.4				
			Hotspot	Off	10	Rear	149	5745.0	0.721	98.8	17.0	16.4	0.298	0.344	2	
						Front	149	5745.0	0.619	98.8	17.0	16.4				
						Edge 1	149	5745.0	0.272	98.8	17.0	16.4				
						Edge 2	149	5745.0	1.030	98.8	17.0	16.4	0.495	0.571		51
SISO (WiFi Ant.2)	5.8 GHz U-NII 3	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	155	5775.0	0.007	99.7	11.0	10.8				
						Left Tilt	155	5775.0	0.008	99.7	11.0	10.8	<0.001	<0.001	1	
						Right Touch	155	5775.0	0.007	99.7	11.0	10.8				
						Right Tilt	155	5775.0	0.003	99.7	11.0	10.8				
		802.11a 6 Mbps	Body-worn	Off	15	Rear	149	5745.0	0.147	98.8	17.0	16.7	0.056	0.061	1	
						Front	149	5745.0	0.011	98.8	17.0	16.7				
			Hotspot	Off	10	Rear	149	5745.0	0.197	98.8	17.0	16.7	0.091	0.100	1	
						Front	149	5745.0	0.012	98.8	17.0	16.7				
						Edge 1	149	5745.0	0.016	98.8	17.0	16.7				
						Edge 2	149	5745.0	0.047	98.8	17.0	16.7				
MIMO (WiFi Ant.1)	5.8 GHz U-NII 3	802.11a 6 Mbps	Hotspot	Off	10	Rear	149	5745.0	0.462	98.8	17.0	15.1	0.187	0.296	2	
						Front	149	5745.0	0.306	98.8	17.0	15.1	0.130	0.206	4	
						Edge 1	149	5745.0	0.156	98.8	17.0	15.1				
						Edge 2	149	5745.0	0.618	98.8	17.0	15.1	0.257	0.407		
MIMO (WiFi Ant.2)	5.8 GHz U-NII 3	802.11a 6 Mbps	Hotspot	Off	10	Rear	149	5745.0	0.462	98.8	17.0	16.5				
						Front	149	5745.0	0.306	98.8	17.0	16.5				
						Edge 1	149	5745.0	0.156	98.8	17.0	16.5				
						Edge 2	149	5745.0	0.618	98.8	17.0	16.5				

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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	802.11a 6 Mbps	Body-worn	Off	15	Rear	157	5785.0	0.168	98.8	17.0	16.4				
						Front	157	5785.0	0.470	98.8	17.0	16.4	0.204	0.237	1	
			Hotspot	Off	10	Rear	149	5745.0	0.226	98.8	17.0	16.4				
						Front	149	5745.0	0.756	98.8	17.0	16.4	0.342	0.395	1	
						Edge 2	149	5745.0	0.736	98.8	17.0	16.4				
						Edge 3	149	5745.0	0.483	98.8	17.0	16.4	0.147	0.170	4	
SISO (WiFi Ant.2)	5.8 GHz U-NII 3	802.11a 6 Mbps	Body-worn	Off	15	Rear	149	5745.0	0.007	98.8	17.0	16.7				
						Front	149	5745.0	0.141	98.8	17.0	16.7	0.050	0.055		
			Hotspot	Off	10	Rear	149	5745.0	0.007	98.8	17.0	16.7				
						Front	149	5745.0	0.260	98.8	17.0	16.7	0.107	0.117	1	
						Edge 2	149	5745.0	0.017	98.8	17.0	16.7				
						Edge 3	149	5745.0	0.017	98.8	17.0	16.7	0.010	0.011	4	

Note(s):

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

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10.14 Bluetooth

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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	15.5	0.540	0.796	52
						Left Tilt	39	2441.0	76.8	16.0	15.5	0.355	0.523	
						Right Touch	39	2441.0	76.8	16.0	15.5	0.128	0.189	
						Right Tilt	39	2441.0	76.8	16.0	15.5	0.106	0.156	
		GFSK	Body-worn	N/A	15	Rear	39	2441.0	76.8	16.0	15.5	0.041	0.060	
						Front	39	2441.0	76.8	16.0	15.5	0.040	0.059	
		GFSK	Hotspot	N/A	10	Rear	39	2441.0	76.8	16.0	15.5	0.087	0.128	
						Front	39	2441.0	76.8	16.0	15.5	0.087	0.129	
						Edge 1	39	2441.0	76.8	16.0	15.5	0.049	0.072	
						Edge 2	39	2441.0	76.8	16.0	15.5	0.142	0.209	
BT Ant.2	2.4 GHz	GFSK	Head	N/A	0	Left Touch	39	2441.0	76.8	16.0	14.6	0.063	0.114	
						Left Tilt	39	2441.0	76.8	16.0	14.6	0.005	0.008	
						Right Touch	39	2441.0	76.8	16.0	14.6	0.050	0.091	
						Right Tilt	39	2441.0	76.8	16.0	14.6	0.006	0.010	
		GFSK	Body-worn	N/A	15	Rear	39	2441.0	76.8	16.0	14.6	0.048	0.087	53
						Front	39	2441.0	76.8	16.0	14.6	0.005	0.010	
		GFSK	Hotspot	N/A	10	Rear	39	2441.0	76.8	16.0	14.6	0.140	0.254	54
						Front	39	2441.0	76.8	16.0	14.6	0.011	0.019	
						Edge 4	39	2441.0	76.8	16.0	14.6	0.026	0.048	

Folder Closed

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	Body-worn	N/A	15	Rear	39	2441.0	76.8	16.0	15.5	0.018	0.026	
						Front	39	2441.0	76.8	16.0	15.5	0.022	0.032	
		GFSK	Hotspot	N/A	10	Rear	39	2441.0	76.8	16.0	15.5	0.032	0.048	
						Front	39	2441.0	76.8	16.0	15.5	0.049	0.072	
						Edge 2	39	2441.0	76.8	16.0	15.5	0.086	0.126	
						Edge 3	39	2441.0	76.8	16.0	15.5	0.038	0.056	
BT Ant.2	2.4 GHz	GFSK	Body-worn	N/A	15	Rear	39	2441.0	76.8	16.0	14.6	<0.001	<0.001	
						Front	39	2441.0	76.8	16.0	14.6	0.033	0.061	
		GFSK	Hotspot	N/A	10	Rear	39	2441.0	76.8	16.0	14.6	<0.001	<0.001	
						Front	39	2441.0	76.8	16.0	14.6	0.091	0.164	
						Edge 1	39	2441.0	76.8	16.0	14.6	<0.001	<0.001	
						Edge 4	39	2441.0	76.8	16.0	14.6	0.006	0.011	

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11. SAR Measurement Variability

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

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

Peak spatial-average (1g of tissue)

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 12	Hotspot	Rear	No	0.370	N/A	N/A
	LTE Band 13	Hotspot	Rear	No	0.309	N/A	N/A
835	GSM 850	Hotspot	Rear	No	0.604	N/A	N/A
	WCDMA Band V	Hotspot	Rear	No	0.518	N/A	N/A
	LTE Band 26	Hotspot	Rear	No	0.625	N/A	N/A
1750	WCDMA Band IV	Body	Rear	Yes	0.890	0.877	1.01
	LTE Band 66	Hotspot	Edge 3	No	0.865	N/A	N/A
1900	GSM 1900	Hotspot	Edge 3	No	0.565	N/A	N/A
	WCDMA Band II	Hotspot	Edge 3	No	0.807	N/A	N/A
	LTE Band 25	Hotspot	Edge 3	Yes	1.040	0.964	1.08
2400	Wi-Fi 802.11b/g/n	Head	Left Touch	No	0.600	N/A	N/A
	Bluetooth	Head	Left Touch	No	0.540	N/A	N/A
2600	LTE Band 41	Hotspot	Edge 3	Yes	1.110	1.11	1.00
5250	Wi-Fi 802.11a/n	Head	Left Touch	No	0.361	N/A	N/A
5500	Wi-Fi 802.11a/n	Head	Left Touch	No	0.334	N/A	N/A
5800	Wi-Fi 802.11a/n	Hotspot	Edge 2	No	0.495	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	2.040	N/A	N/A
	LTE Band 66	Product specific 10g	Edge 3	Yes	2.150	2.120	1.01
1900	GSM 1900	Product specific 10g	Edge 3	No	1.670	N/A	N/A
	WCDMA Band II	Product specific 10g	Edge 3	No	2.000	N/A	N/A
	LTE Band 25	Product specific 10g	Edge 3	Yes	2.150	2.150	1.00
2600	LTE Band 41	Product specific 10g	Edge 3	Yes	2.380	2.340	1.02
5250	Wi-Fi 802.11a/n	Product specific 10g	Edge 2	No	1.100	N/A	N/A
5500	Wi-Fi 802.11a/n	Product specific 10g	Edge 2	No	1.370	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.

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12. DUT Holder Perturbations

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

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

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

Peak spatial-average (1g of tissue)

Antenna	Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	DUT Holder Perturbation (Yes/No)	Highest Reported SAR (W/kg)	SAR test without holder Scaled SAR (W/kg)	Deviation (%)
Main 1 Ant.	1750	LTE Band 25	Hotspot	Edge 3	Yes	1.242	1.174	-5.5
Main 2 Ant.	1750	LTE Band 41	Hotspot	Edge 3	Yes	1.365	1.326	-2.9

Note(s):

Both deviation should be within measurement uncertainty (22%).

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13. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations						
Head & Body-worn & Phablet-10g	1	GSM(Voice/GPRS)	+	DTS_Ant.2				
	2	GSM(Voice/GPRS)	+	DTS_MIMO				
	3	GSM(Voice/GPRS)	+	BT_Ant.1				
	4	GSM(Voice/GPRS)	+	BT_Ant.2				
	5	GSM(Voice/GPRS)	+	UNII_Ant.1				
	6	GSM(Voice/GPRS)	+	UNII_Ant.2				
	7	GSM(Voice/GPRS)	+	UNII_MIMO				
	8	GSM(Voice/GPRS)	+	BT_Ant.1	+	UNII MIMO		
	9	GSM(Voice/GPRS)	+	BT_Ant.1	+	DTS_Ant.2	+	UNII MIMO
	10	GSM(Voice/GPRS)	+	BT_Ant.2	+	UNII MIMO		
	11	GSM(Voice/GPRS)	+	***RSDB scenario***				
	12	WCDMA or LTE	+	DTS_Ant.2				
	13	WCDMA or LTE	+	DTS_MIMO				
	14	WCDMA or LTE	+	BT_Ant.1				
	15	WCDMA or LTE	+	BT_Ant.2				
	16	WCDMA or LTE	+	UNII_Ant.1				
	17	WCDMA or LTE	+	UNII_Ant.2				
	18	WCDMA or LTE	+	UNII_MIMO				
	19	WCDMA or LTE	+	BT_Ant.1	+	UNII MIMO		
	20	WCDMA or LTE	+	BT_Ant.1	+	DTS_Ant.2	+	UNII MIMO
	21	WCDMA or LTE	+	BT_Ant.2	+	UNII MIMO		
	22	WCDMA or LTE	+	***RSDB scenario***				
Hotspot	23	GSM(GPRS)	+	DTS_Ant.2				
	24	GSM(GPRS)	+	DTS_MIMO				
	25	GSM(GPRS)	+	BT_Ant.1				
	26	GSM(GPRS)	+	BT_Ant.2				
	27	GSM(GPRS)	+	UNII_Ant.1				
	28	GSM(GPRS)	+	UNII_Ant.2				
	29	GSM(GPRS)	+	UNII_MIMO				
	30	GSM(GPRS)	+	BT_Ant.1	+	UNII MIMO		
	31	GSM(GPRS)	+	BT_Ant.1	+	DTS_Ant.2	+	UNII MIMO
	32	GSM(GPRS)	+	BT_Ant.2	+	UNII MIMO		
	33	GSM(GPRS)	+	***RSDB scenario***				
	34	WCDMA or LTE	+	DTS_Ant.2				
	35	WCDMA or LTE	+	DTS_MIMO				
	36	WCDMA or LTE	+	BT_Ant.1				
	37	WCDMA or LTE	+	BT_Ant.2				
	38	WCDMA or LTE	+	UNII_Ant.1				
	39	WCDMA or LTE	+	UNII_Ant.2				
	40	WCDMA or LTE	+	UNII_MIMO				
	41	WCDMA or LTE	+	BT_Ant.1	+	UNII MIMO		
	42	WCDMA or LTE	+	BT_Ant.1	+	DTS_Ant.2	+	UNII MIMO
	43	WCDMA or LTE	+	BT_Ant.2	+	UNII MIMO		
	44	WCDMA or LTE	+	***RSDB scenario***				

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.
7. UNII Radio can operating both SISO and MIMO modes.
8. DTS Radio can operating both SISO (Only Ant.2) and MIMO modes.
9. Bluetooth Ant.1 Radio cannot transmit simultaneously with Bluetooth Ant.2 Radio.
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 MIMO	1	4	On	On	On	On

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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.

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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.

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1 + UNII MIMO	WWAN + BT Ant.2 + UNII MIMO	WWAN + BT Ant.1 + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1 + 3	1 + 2	1 + 4	1 + 5	A, B, D : 1 + 4 + 5 C : 1 + 8	1 + 6	1 + 7	A, B, D : 1 + 4 + 5 + 6 C : 1 + 6 + 8	A, B, D : 1 + 4 + 5 + 7 C : 1 + 7 + 8	A, B, D : 1 + 2 + 4 + 5 + 6 C : 1 + 2 + 6 + 8	A, B, D : 1 + 3 + 4 + 5 C : 1 + 3 + 8
A : Head (1g-SAR)	Left Touch	0.313	0.059	0.709	0.425	0.001	0.796	0.114		1.022	0.372	0.738	0.314	0.739	1.109	0.427	1.535	0.853	1.594	1.448
	Left Tilt	0.168	0.059	0.475	0.360	0.001	0.523	0.008		0.643	0.227	0.528	0.169	0.529	0.691	0.176	1.052	0.537	1.111	1.004
	Right Touch	0.462	0.059	0.157	0.425	0.001	0.189	0.091		0.619	0.521	0.887	0.463	0.888	0.651	0.553	1.077	0.979	1.136	1.045
	Right Tilt	0.193	0.059	0.709	0.425	0.001	0.156	0.010		0.902	0.252	0.618	0.194	0.619	0.349	0.203	0.775	0.629	0.834	1.328
B : Body-Worn (1g-SAR)	All position	0.395	0.157	0.157	0.246	0.061	0.060	0.087		0.552	0.552	0.641	0.456	0.702	0.455	0.482	0.762	0.789	0.919	0.859
C : Hotspot (1-g SAR)	Rear	0.701	0.455	0.352	0.344	0.100	0.128	0.254	0.296	1.053	1.156	1.045	0.801	0.997	0.829	0.955	1.125	1.251	1.580	1.349
	Front	0.559	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.927	1.014	1.130	0.659	0.765	0.688	0.578	0.894	0.784	1.349	1.133
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.482		0.576	0.571	0.100	0.209		0.407	1.058	0.482	1.053	0.582	0.889	0.691		1.098	0.889	1.098	1.465
	Edge 3	0.537																		
	Edge 4	0.156	0.096	0.106				0.048		0.262	0.252					0.204		0.204	0.252	0.262

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1 + UNII MIMO	WWAN + BT Ant.2 + UNII MIMO	WWAN + BT Ant.1 + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1 + 3	1 + 2	1 + 4	1 + 5	1 + 4 + 5	1 + 6	1 + 7	1 + 4 + 5 + 6	1 + 4 + 5 + 7	1 + 2 + 4 + 5 + 6	1 + 3 + 4 + 5
B : Body-Worn (1g-SAR)	All position	0.555	0.144	0.123	0.237	0.055	0.032	0.061	0.678	0.699	0.792	0.610	0.847	0.587	0.616	0.879	0.908	1.023	0.970
C : Hotspot (1-g SAR)	Rear	0.853	0.013	0.139	0.395	0.117	0.048	0.001	0.992	0.866	1.248	0.970	1.365	0.901	0.854	1.413	1.366	1.426	1.504
	Front	0.280	0.391	0.293	0.395	0.117	0.072	0.164	0.573	0.671	0.675	0.397	0.792	0.352	0.444	0.864	0.956	1.255	1.085
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.152		0.373	0.395	0.117	0.126		0.525		0.547	0.269	0.664	0.278		0.790	0.664	0.790	1.037
	Edge 3	0.270		0.160	0.170	0.011	0.056		0.430		0.440	0.281	0.451	0.326		0.507	0.451	0.507	0.611
	Edge 4	0.136	0.391	0.373				0.011	0.509	0.527					0.147		0.147	0.527	0.509

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A :Head (1g-SAR)	Left Touch	0.045	0.059	0.709	0.425	0.001	0.796	0.114		0.754	0.104	0.470	0.046	0.471	0.841	0.159	1.267	0.585	1.326	1.180
	Left Tilt	0.031	0.059	0.475	0.360	0.001	0.523	0.008		0.506	0.090	0.391	0.032	0.392	0.554	0.039	0.915	0.400	0.974	0.867
	Right Touch	0.063	0.059	0.157	0.425	0.001	0.189	0.091		0.220	0.122	0.488	0.064	0.489	0.252	0.154	0.678	0.580	0.737	0.646
	Right Tilt	0.034	0.059	0.709	0.425	0.001	0.156	0.010		0.743	0.093	0.459	0.035	0.460	0.190	0.044	0.616	0.470	0.675	1.169
B : Body-Worn (1g-SAR)	All position	0.432	0.157	0.157	0.246	0.061	0.060	0.087		0.589	0.589	0.678	0.493	0.739	0.492	0.519	0.799	0.826	0.956	0.896
C : Hotspot (1-g SAR)	Rear	0.510	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.862	0.965	0.854	0.610	0.806	0.638	0.764	0.934	1.060	1.389	1.158
	Front	0.430	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.798	0.885	1.001	0.530	0.636	0.559	0.449	0.765	0.655	1.220	1.004
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.051		0.576	0.571	0.100	0.209		0.407	0.627	0.051	0.622	0.151	0.458	0.260		0.667	0.458	0.667	1.034
	Edge 3	0.646																		
	Edge 4	0.090	0.096	0.106				0.048		0.196	0.186					0.138		0.138	0.186	0.196
D : Product Specific (10-g SAR)	Rear				0.857	0.225														
	Front				1.106	0.225														
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	1.909																		
	Edge 4																			

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.411	0.144	0.123	0.237	0.055	0.032	0.061	0.534	0.555	0.648	0.466	0.703	0.443	0.472	0.735	0.764	0.879	0.826
C : Hotspot (1-g SAR)	Rear	0.322	0.013	0.139	0.395	0.117	0.048	0.001	0.461	0.335	0.717	0.439	0.834	0.370	0.323	0.882	0.835	0.895	0.973
	Front	0.072	0.391	0.293	0.395	0.117	0.072	0.164	0.365	0.463	0.467	0.189	0.584	0.144	0.236	0.656	0.748	1.047	0.877
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.038		0.373	0.395	0.117	0.126		0.411		0.433	0.155	0.550	0.164		0.676	0.550	0.676	0.923
	Edge 3	0.622		0.160	0.170	0.011	0.056		0.782		0.792	0.633	0.803	0.678		0.859	0.803	0.859	0.963
	Edge 4	0.064	0.391	0.373				0.011	0.437	0.455					0.075		0.075	0.455	0.437

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.064	0.059	0.709	0.425	0.001	0.796	0.114		0.773	0.123	0.489	0.065	0.490	0.860	0.178	1.286	0.604	1.345	1.199
	Left Tilt	0.041	0.059	0.475	0.360	0.001	0.523	0.008		0.516	0.100	0.401	0.042	0.402	0.564	0.049	0.925	0.410	0.984	0.877
	Right Touch	0.098	0.059	0.157	0.425	0.001	0.189	0.091		0.255	0.157	0.523	0.099	0.524	0.287	0.189	0.713	0.615	0.772	0.681
	Right Tilt	0.054	0.059	0.709	0.425	0.001	0.156	0.010		0.763	0.113	0.479	0.055	0.480	0.210	0.064	0.636	0.490	0.695	1.189
B : Body-Worn (1g-SAR)	All position	0.565	0.157	0.157	0.246	0.061	0.060	0.087		0.722	0.722	0.811	0.626	0.872	0.625	0.652	0.932	0.959	1.089	1.029
C : Hotspot (1-g SAR)	Rear	0.350	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.702	0.805	0.694	0.450	0.646	0.478	0.604	0.774	0.900	1.229	0.998
	Front	0.279	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.647	0.734	0.850	0.379	0.485	0.408	0.298	0.614	0.504	1.069	0.853
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.042		0.576	0.571	0.100	0.209		0.407	0.618	0.042	0.613	0.142	0.449	0.251		0.658	0.449	0.658	1.025
	Edge 3	0.947																		
	Edge 4	0.070	0.096	0.106				0.048		0.176	0.166					0.118		0.118	0.166	0.176
D : Product Specific (10-g SAR)	Rear	1.052			0.857	0.225						1.909	1.277	2.134						
	Front				1.106	0.225														
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	2.296																		
	Edge 4																			

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAN + UNII MIMO	WWAN + BT Ant.1	WWAN + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.460	0.144	0.123	0.237	0.055	0.032	0.061	0.583	0.604	0.697	0.515	0.752	0.492	0.521	0.784	0.813	0.928	0.875
C : Hotspot (1-g SAR)	Rear	0.276	0.013	0.139	0.395	0.117	0.048	0.001	0.415	0.289	0.671	0.393	0.788	0.324	0.277	0.836	0.789	0.849	0.927
	Front	0.077	0.391	0.293	0.395	0.117	0.072	0.164	0.370	0.468	0.472	0.194	0.589	0.149	0.241	0.661	0.753	1.052	0.882
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.027		0.373	0.395	0.117	0.126		0.400		0.422	0.144	0.539	0.153		0.665	0.539	0.665	0.912
	Edge 3	0.490		0.160	0.170	0.011	0.056		0.650		0.660	0.501	0.671	0.546		0.727	0.671	0.727	0.831
	Edge 4	0.033	0.391	0.373				0.011	0.406	0.424					0.044		0.044	0.424	0.406

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1 + UNII MIMO	WWAN + BT Ant.2 + UNII MIMO	WWAN + BT Ant.1 + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.129	0.059	0.709	0.425	0.001	0.796	0.114		0.838	0.188	0.554	0.130	0.555	0.925	0.243	1.351	0.669	1.410	1.264
	Left Tilt	0.098	0.059	0.475	0.360	0.001	0.523	0.008		0.573	0.157	0.458	0.099	0.459	0.621	0.106	0.982	0.467	1.041	0.934
	Right Touch	0.189	0.059	0.157	0.425	0.001	0.189	0.091		0.346	0.248	0.614	0.190	0.615	0.378	0.280	0.804	0.706	0.863	0.772
	Right Tilt	0.103	0.059	0.709	0.425	0.001	0.156	0.010		0.812	0.162	0.528	0.104	0.529	0.259	0.113	0.685	0.539	0.744	1.238
B : Body-Worn (1g-SAR)	All position	1.013	0.157	0.157	0.246	0.061	0.060	0.087		1.170	1.170	1.259	1.074	1.320	1.073	1.100	1.380	1.407	1.537	1.477
C : Hotspot (1-g SAR)	Rear	0.554	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.906	1.009	0.898	0.654	0.850	0.682	0.808	0.978	1.104	1.433	1.202
	Front	0.495	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.863	0.950	1.066	0.595	0.701	0.624	0.514	0.830	0.720	1.285	1.069
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.058		0.576	0.571	0.100	0.209		0.407	0.634	0.058	0.629	0.158	0.465	0.267		0.674	0.465	0.674	1.041
	Edge 3	1.076																		
	Edge 4	0.077	0.096	0.106				0.048		0.183	0.173					0.125		0.125	0.173	0.183
D : Product Specific (10-g SAR)	Rear	1.332			0.857	0.225						2.189	1.557	2.414						
	Front	1.264			1.106	0.225						2.370	1.489	2.595						
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	2.527																		
	Edge 4																			

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1 + UNII MIMO	WWAN + BT Ant.2 + UNII MIMO	WWAN + BT Ant.1 + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.354	0.144	0.123	0.237	0.055	0.032	0.061	0.477	0.498	0.591	0.409	0.646	0.386	0.415	0.678	0.707	0.822	0.769
C : Hotspot (1-g SAR)	Rear	0.191	0.013	0.139	0.395	0.117	0.048	0.001	0.330	0.204	0.586	0.308	0.703	0.239	0.192	0.751	0.704	0.764	0.842
	Front	0.028	0.391	0.293	0.395	0.117	0.072	0.164	0.321	0.419	0.423	0.145	0.540	0.100	0.192	0.612	0.704	1.003	0.833
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.030		0.373	0.395	0.117	0.126		0.403		0.425	0.147	0.542	0.156		0.668	0.542	0.668	0.915
	Edge 3	0.381		0.160	0.170	0.011	0.056		0.541		0.551	0.392	0.562	0.437		0.618	0.562	0.618	0.722
	Edge 4	0.077	0.391	0.373				0.011	0.450	0.468					0.088		0.088	0.468	0.450

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.199	0.059	0.709	0.425	0.001	0.796	0.114		0.908	0.258	0.624	0.200	0.625	0.995	0.313	1.421	0.739	1.480	1.334
	Left Tilt	0.142	0.059	0.475	0.360	0.001	0.523	0.008		0.617	0.201	0.502	0.143	0.503	0.665	0.150	1.026	0.511	1.085	0.978
	Right Touch	0.266	0.059	0.157	0.425	0.001	0.189	0.091		0.423	0.325	0.691	0.267	0.692	0.455	0.357	0.881	0.783	0.940	0.849
	Right Tilt	0.124	0.059	0.709	0.425	0.001	0.156	0.010		0.833	0.183	0.549	0.125	0.550	0.280	0.134	0.706	0.560	0.765	1.259
B : Body-Worn (1g-SAR)	All position	0.231	0.157	0.157	0.246	0.061	0.060	0.087		0.388	0.388	0.477	0.292	0.538	0.291	0.318	0.598	0.625	0.755	0.695
C : Hotspot (1-g SAR)	Rear	0.385	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.737	0.840	0.729	0.485	0.681	0.513	0.639	0.809	0.935	1.264	1.033
	Front	0.306	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.674	0.761	0.877	0.406	0.512	0.435	0.325	0.641	0.531	1.096	0.880
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.356		0.576	0.571	0.100	0.209		0.407	0.932	0.356	0.927	0.456	0.763	0.565		0.972	0.763	0.972	1.339
	Edge 3	0.274																		
	Edge 4	0.083	0.096	0.106				0.048		0.189	0.179					0.131		0.131	0.179	0.189

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.383	0.144	0.123	0.237	0.055	0.032	0.061	0.506	0.527	0.620	0.438	0.675	0.415	0.444	0.707	0.736	0.851	0.798
C : Hotspot (1-g SAR)	Rear	0.617	0.013	0.139	0.395	0.117	0.048	0.001	0.756	0.630	1.012	0.734	1.129	0.665	0.618	1.177	1.130	1.190	1.268
	Front	0.170	0.391	0.293	0.395	0.117	0.072	0.164	0.463	0.561	0.565	0.287	0.682	0.242	0.334	0.754	0.846	1.145	0.975
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.092		0.373	0.395	0.117	0.126		0.465		0.487	0.209	0.604	0.218		0.730	0.604	0.730	0.977
	Edge 3	0.152		0.160	0.170	0.011	0.056		0.312		0.322	0.163	0.333	0.208		0.389	0.333	0.389	0.493
	Edge 4	0.083	0.391	0.373				0.011	0.456	0.474					0.094		0.094	0.474	0.456

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.187	0.059	0.709	0.425	0.001	0.796	0.114		0.896	0.246	0.612	0.188	0.613	0.983	0.301	1.409	0.727	1.468	1.322
	Left Tilt	0.110	0.059	0.475	0.360	0.001	0.523	0.008		0.585	0.169	0.470	0.111	0.471	0.633	0.118	0.994	0.479	1.053	0.946
	Right Touch	0.196	0.059	0.157	0.425	0.001	0.189	0.091		0.353	0.255	0.621	0.197	0.622	0.385	0.287	0.811	0.713	0.870	0.779
	Right Tilt	0.117	0.059	0.709	0.425	0.001	0.156	0.010		0.826	0.176	0.542	0.118	0.543	0.273	0.127	0.699	0.553	0.758	1.252
B : Body-Worn (1g-SAR)	All position	0.242	0.157	0.157	0.246	0.061	0.060	0.087		0.399	0.399	0.488	0.303	0.549	0.302	0.329	0.609	0.636	0.766	0.706
C : Hotspot (1-g SAR)	Rear	0.274	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.626	0.729	0.618	0.374	0.570	0.402	0.528	0.698	0.824	1.153	0.922
	Front	0.251	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.619	0.706	0.822	0.351	0.457	0.380	0.270	0.586	0.476	1.041	0.825
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.345		0.576	0.571	0.100	0.209		0.407	0.921	0.345	0.916	0.445	0.752	0.554		0.961	0.752	0.961	1.328
	Edge 3	0.209																		
	Edge 4	0.097	0.096	0.106				0.048		0.203	0.193					0.145		0.145	0.193	0.203

Folder Closed

RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.282	0.144	0.123	0.237	0.055	0.032	0.061	0.405	0.426	0.519	0.337	0.574	0.314	0.343	0.606	0.635	0.750	0.697
C : Hotspot (1-g SAR)	Rear	0.500	0.013	0.139	0.395	0.117	0.048	0.001	0.639	0.513	0.895	0.617	1.012	0.548	0.501	1.060	1.013	1.073	1.151
	Front	0.132	0.391	0.293	0.395	0.117	0.072	0.164	0.425	0.523	0.527	0.249	0.644	0.204	0.296	0.716	0.808	1.107	0.937
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.125		0.373	0.395	0.117	0.126		0.498		0.520	0.242	0.637	0.251		0.763	0.637	0.763	1.010
	Edge 3	0.044		0.160	0.170	0.011	0.056		0.204		0.214	0.055	0.225	0.100		0.281	0.225	0.281	0.385
	Edge 4	0.098	0.391	0.373				0.011	0.471	0.489					0.109		0.109	0.489	0.471

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	**A, B, D** : 1+4+5 **C** : 1+8	1+6	1+7	**A, B, D** : 1+4+5+6 **C** : 1+6+8	**A, B, D** : 1+4+5+7 **C** : 1+7+8	**A, B, D** : 1+2+4+5+6 **C** : 1+2+6+8	**A, B, D** : 1+3+4+5 **C** : 1+3+8
A : Head (1g-SAR)	Left Touch	0.187	0.059	0.709	0.425	0.001	0.796	0.114		0.896	0.246	0.612	0.188	0.613	0.983	0.301	1.409	0.727	1.468	1.322
	Left Tilt	0.107	0.059	0.475	0.360	0.001	0.523	0.008		0.582	0.166	0.467	0.108	0.468	0.630	0.115	0.991	0.476	1.050	0.943
	Right Touch	0.202	0.059	0.157	0.425	0.001	0.189	0.091		0.359	0.261	0.627	0.203	0.628	0.391	0.293	0.817	0.719	0.876	0.785
	Right Tilt	0.090	0.059	0.709	0.425	0.001	0.156	0.010		0.799	0.149	0.515	0.091	0.516	0.246	0.100	0.672	0.526	0.731	1.225
B : Body-Worn (1g-SAR)	All position	0.230	0.157	0.157	0.246	0.061	0.060	0.087		0.387	0.387	0.476	0.291	0.537	0.290	0.317	0.597	0.624	0.754	0.694
C : Hotspot (1-g SAR)	Rear	0.293	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.645	0.748	0.637	0.393	0.589	0.421	0.547	0.717	0.843	1.172	0.941
	Front	0.218	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.586	0.673	0.789	0.318	0.424	0.347	0.237	0.553	0.443	1.008	0.792
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.273		0.576	0.571	0.100	0.209		0.407	0.849	0.273	0.844	0.373	0.680	0.482		0.889	0.680	0.889	1.256
	Edge 3	0.146																		
	Edge 4	0.118	0.096	0.106				0.048		0.224	0.214					0.166		0.166	0.214	0.224

Folder Closed

RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.222	0.144	0.123	0.237	0.055	0.032	0.061	0.345	0.366	0.459	0.277	0.514	0.254	0.283	0.546	0.575	0.690	0.637
C : Hotspot (1-g SAR)	Rear	0.392	0.013	0.139	0.395	0.117	0.048	0.001	0.531	0.405	0.787	0.509	0.904	0.440	0.393	0.952	0.905	0.965	1.043
	Front	0.086	0.391	0.293	0.395	0.117	0.072	0.164	0.379	0.477	0.481	0.203	0.598	0.158	0.250	0.670	0.762	1.061	0.891
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.078		0.373	0.395	0.117	0.126		0.451		0.473	0.195	0.590	0.204		0.716	0.590	0.716	0.963
	Edge 3	0.073		0.160	0.170	0.011	0.056		0.233		0.243	0.084	0.254	0.129		0.310	0.254	0.310	0.414
	Edge 4	0.084	0.391	0.373				0.011	0.457	0.475					0.095		0.095	0.475	0.457

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.065	0.059	0.709	0.425	0.001	0.796	0.114		0.774	0.124	0.490	0.066	0.491	0.861	0.179	1.287	0.605	1.346	1.200
	Left Tilt	0.048	0.059	0.475	0.360	0.001	0.523	0.008		0.523	0.107	0.408	0.049	0.409	0.571	0.056	0.932	0.417	0.991	0.884
	Right Touch	0.079	0.059	0.157	0.425	0.001	0.189	0.091		0.236	0.138	0.504	0.080	0.505	0.268	0.170	0.694	0.596	0.753	0.662
	Right Tilt	0.045	0.059	0.709	0.425	0.001	0.156	0.010		0.754	0.104	0.470	0.046	0.471	0.201	0.055	0.627	0.481	0.686	1.180
B : Body-Worn (1g-SAR)	All position	0.622	0.157	0.157	0.246	0.061	0.060	0.087		0.779	0.779	0.868	0.683	0.929	0.682	0.709	0.989	1.016	1.146	1.086
C : Hotspot (1-g SAR)	Rear	0.393	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.745	0.848	0.737	0.493	0.689	0.521	0.647	0.817	0.943	1.272	1.041
	Front	0.372	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.740	0.827	0.943	0.472	0.578	0.501	0.391	0.707	0.597	1.162	0.946
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.048		0.576	0.571	0.100	0.209		0.407	0.624	0.048	0.619	0.148	0.455	0.257		0.664	0.455	0.664	1.031
	Edge 3	1.242																		
	Edge 4	0.210	0.096	0.106				0.048		0.316	0.306					0.258		0.258	0.306	0.316
D : Product Specific (10-g SAR)	Rear	1.251			0.857	0.225						2.108	1.476	2.333						
	Front	1.160			1.106	0.225						2.266	1.385	2.491						
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	2.599																		
	Edge 4																			

Folder Closed

RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.616	0.144	0.123	0.237	0.055	0.032	0.061	0.739	0.760	0.853	0.671	0.908	0.648	0.677	0.940	0.969	1.084	1.031
C : Hotspot (1-g SAR)	Rear	0.370	0.013	0.139	0.395	0.117	0.048	0.001	0.509	0.383	0.765	0.487	0.882	0.418	0.371	0.930	0.883	0.943	1.021
	Front	0.085	0.391	0.293	0.395	0.117	0.072	0.164	0.378	0.476	0.480	0.202	0.597	0.157	0.249	0.669	0.761	1.060	0.890
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.044		0.373	0.395	0.117	0.126		0.417		0.439	0.161	0.556	0.170		0.682	0.556	0.682	0.929
	Edge 3	0.727		0.160	0.170	0.011	0.056		0.887		0.897	0.738	0.908	0.783		0.964	0.908	0.964	1.068
	Edge 4	0.061	0.391	0.373				0.011	0.434	0.452					0.072		0.072	0.452	0.434

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant2	WWAN + UNII Ant1	WWAN + UNII Ant2	WWAM + UNII MIMO	WWAM + BT Ant1	WWAM + BT Ant2	WWAN + BT Ant1+ UNII MIMO	WWAN + BT Ant2+ UNII MIMO	WWAN + BT Ant1+ DTS Ant2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.241	0.059	0.709	0.425	0.001	0.796	0.114		0.950	0.300	0.666	0.242	0.667	1.037	0.355	1.463	0.781	1.522	1.376
	Left Tilt	0.167	0.059	0.475	0.360	0.001	0.523	0.008		0.642	0.226	0.527	0.168	0.528	0.690	0.175	1.051	0.536	1.110	1.003
	Right Touch	0.318	0.059	0.157	0.425	0.001	0.189	0.091		0.475	0.377	0.743	0.319	0.744	0.507	0.409	0.933	0.835	0.992	0.901
	Right Tilt	0.163	0.059	0.709	0.425	0.001	0.156	0.010		0.872	0.222	0.588	0.164	0.589	0.319	0.173	0.745	0.599	0.804	1.298
B : Body-Worn (1g-SAR)	All position	0.290	0.157	0.157	0.246	0.061	0.060	0.087		0.447	0.447	0.536	0.351	0.597	0.350	0.377	0.657	0.684	0.814	0.754
C : Hotspot (1-g SAR)	Rear	0.441	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.793	0.896	0.785	0.541	0.737	0.569	0.695	0.865	0.991	1.320	1.089
	Front	0.336	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.704	0.791	0.907	0.436	0.542	0.465	0.355	0.671	0.561	1.126	0.910
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.397		0.576	0.571	0.100	0.209		0.407	0.973	0.397	0.968	0.497	0.804	0.606		1.013	0.804	1.013	1.380
	Edge 3	0.341																		
	Edge 4	0.082	0.096	0.106				0.048		0.188	0.178					0.130		0.130	0.178	0.188

Folder Closed

RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant2	WWAN + UNII Ant1	WWAN + UNII Ant2	WWAM + UNII MIMO	WWAM + BT Ant1	WWAM + BT Ant2	WWAN + BT Ant1+ UNII MIMO	WWAN + BT Ant2+ UNII MIMO	WWAN + BT Ant1+ DTS Ant2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.447	0.144	0.123	0.237	0.055	0.032	0.061	0.570	0.591	0.684	0.502	0.739	0.479	0.508	0.771	0.800	0.915	0.862
C : Hotspot (1-g SAR)	Rear	0.761	0.013	0.139	0.395	0.117	0.048	0.001	0.900	0.774	1.156	0.878	1.273	0.809	0.762	1.321	1.274	1.334	1.412
	Front	0.217	0.391	0.293	0.395	0.117	0.072	0.164	0.510	0.608	0.612	0.334	0.729	0.289	0.381	0.801	0.893	1.192	1.022
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.123		0.373	0.395	0.117	0.126		0.496		0.518	0.240	0.635	0.249		0.761	0.635	0.761	1.008
	Edge 3	0.223		0.160	0.170	0.011	0.056		0.383		0.393	0.234	0.404	0.279		0.460	0.404	0.460	0.564
	Edge 4	0.108	0.391	0.373				0.011	0.481	0.499					0.119		0.119	0.499	0.481

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.050	0.059	0.709	0.425	0.001	0.796	0.114		0.759	0.109	0.475	0.051	0.476	0.846	0.164	1.272	0.590	1.331	1.185
	Left Tilt	0.039	0.059	0.475	0.360	0.001	0.523	0.008		0.514	0.098	0.399	0.040	0.400	0.562	0.047	0.923	0.408	0.982	0.875
	Right Touch	0.140	0.059	0.157	0.425	0.001	0.189	0.091		0.297	0.199	0.565	0.141	0.566	0.329	0.231	0.755	0.657	0.814	0.723
	Right Tilt	0.037	0.059	0.709	0.425	0.001	0.156	0.010		0.746	0.096	0.462	0.038	0.463	0.193	0.047	0.619	0.473	0.678	1.172
B : Body-Worn (1g-SAR)	All position	0.518	0.157	0.157	0.246	0.061	0.060	0.087		0.675	0.675	0.764	0.579	0.825	0.578	0.605	0.885	0.912	1.042	0.982
C : Hotspot (1-g SAR)	Rear	0.434	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.786	0.889	0.778	0.534	0.730	0.562	0.688	0.858	0.984	1.313	1.082
	Front	0.474	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.842	0.929	1.045	0.574	0.680	0.603	0.493	0.809	0.699	1.264	1.048
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2			0.576	0.571	0.100	0.209		0.407		0.000									
	Edge 3	1.365																		
	Edge 4	0.133	0.096	0.106				0.048		0.239	0.229					0.181		0.181	0.229	0.239
D : Product Specific (10-g SAR)	Rear	1.908			0.857	0.225						2.765	2.133	2.990						
	Front	1.676			1.106	0.225						2.782	1.901	3.007						
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	2.941																		
	Edge 4																			

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.451	0.144	0.123	0.237	0.055	0.032	0.061	0.574	0.595	0.688	0.506	0.743	0.483	0.512	0.775	0.804	0.919	0.866
C : Hotspot (1-g SAR)	Rear	0.592	0.013	0.139	0.395	0.117	0.048	0.001	0.731	0.605	0.987	0.709	1.104	0.640	0.593	1.152	1.105	1.165	1.243
	Front	0.048	0.391	0.293	0.395	0.117	0.072	0.164	0.341	0.439	0.443	0.165	0.560	0.120	0.212	0.632	0.724	1.023	0.853
	Edge 1		0.391	0.373				0.001											
	Edge 2			0.373	0.395	0.117	0.126												
	Edge 3	1.043		0.160	0.170	0.011	0.056		1.203		1.213	1.054	1.224	1.099		1.280	1.224	1.280	1.384
	Edge 4	0.095	0.391	0.373				0.011	0.468	0.486					0.106		0.106	0.486	0.468

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

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

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RF Exposure	Test Position	Standalone SAR (W/kg)								∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	UNII MIMO	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	8	1+3	1+2	1+4	1+5	A, B, D : 1+4+5 C : 1+8	1+6	1+7	A, B, D : 1+4+5+6 C : 1+6+8	A, B, D : 1+4+5+7 C : 1+7+8	A, B, D : 1+2+4+5+6 C : 1+2+6+8	A, B, D : 1+3+4+5 C : 1+3+8
A : Head (1g-SAR)	Left Touch	0.135	0.059	0.709	0.425	0.001	0.796	0.114		0.844	0.194	0.560	0.136	0.561	0.931	0.249	1.357	0.675	1.416	1.270
	Left Tilt	0.075	0.059	0.475	0.360	0.001	0.523	0.008		0.550	0.134	0.435	0.076	0.436	0.598	0.083	0.959	0.444	1.018	0.911
	Right Touch	0.182	0.059	0.157	0.425	0.001	0.189	0.091		0.339	0.241	0.607	0.183	0.608	0.371	0.273	0.797	0.699	0.856	0.765
	Right Tilt	0.105	0.059	0.709	0.425	0.001	0.156	0.010		0.814	0.164	0.530	0.106	0.531	0.261	0.115	0.687	0.541	0.746	1.240
B : Body-Worn (1g-SAR)	All position	0.752	0.157	0.157	0.246	0.061	0.060	0.087		0.909	0.909	0.998	0.813	1.059	0.812	0.839	1.119	1.146	1.276	1.216
C : Hotspot (1-g SAR)	Rear	0.590	0.455	0.352	0.344	0.100	0.128	0.254	0.296	0.942	1.045	0.934	0.690	0.886	0.718	0.844	1.014	1.140	1.469	1.238
	Front	0.421	0.455	0.368	0.571	0.100	0.129	0.019	0.206	0.789	0.876	0.992	0.521	0.627	0.550	0.440	0.756	0.646	1.211	0.995
	Edge 1			0.576	0.571	0.100	0.072		0.407											
	Edge 2	0.062		0.576	0.571	0.100	0.209		0.407	0.638	0.062	0.633	0.162	0.469	0.271		0.678	0.469	0.678	1.045
	Edge 3	1.060																		
	Edge 4	0.085	0.096	0.106				0.048		0.191	0.181					0.133		0.133	0.181	0.191
D : Product Specific (10-g SAR)	Rear	1.371			0.857	0.225						2.228	1.596	2.453						
	Front	1.265			1.106	0.225						2.371	1.490	2.596						
	Edge 1				1.542	0.225														
	Edge 2				1.542	0.225														
	Edge 3	2.687																		
	Edge 4																			

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RF Exposure	Test Position	Standalone SAR (W/kg)							∑ SAR (W/kg)										
		WWAN	DTS Ant.2	DTS MIMO	UNII Ant.1	UNII Ant.2	BT Ant.1	BT Ant.2	WWAN + DTS MIMO	WWAN + DTS Ant.2	WWAN + UNII Ant.1	WWAN + UNII Ant.2	WWAM + UNII MIMO	WWAM + BT Ant.1	WWAM + BT Ant.2	WWAN + BT Ant.1+ UNII MIMO	WWAN + BT Ant.2+ UNII MIMO	WWAN + BT Ant.1+ DTS Ant.2+ UNII MIMO	WWAN + DTS MIMO+ UNII MIMO
		1	2	3	4	5	6	7	1+3	1+2	1+4	1+5	1+4+5	1+6	1+7	1+4+5+6	1+4+5+7	1+2+4+5+6	1+3+4+5
B : Body-Worn (1g-SAR)	All position	0.289	0.144	0.123	0.237	0.055	0.032	0.061	0.412	0.433	0.526	0.344	0.581	0.321	0.350	0.613	0.642	0.757	0.704
C : Hotspot (1-g SAR)	Rear	0.207	0.013	0.139	0.395	0.117	0.048	0.001	0.346	0.220	0.602	0.324	0.719	0.255	0.208	0.767	0.720	0.780	0.858
	Front	0.038	0.391	0.293	0.395	0.117	0.072	0.164	0.331	0.429	0.433	0.155	0.550	0.110	0.202	0.622	0.714	1.013	0.843
	Edge 1		0.391	0.373				0.001											
	Edge 2	0.022		0.373	0.395	0.117	0.126		0.395		0.417	0.139	0.534	0.148		0.660	0.534	0.660	0.907
	Edge 3	0.435		0.160	0.170	0.011	0.056		0.595		0.605	0.446	0.616	0.491		0.672	0.616	0.672	0.776
	Edge 4	0.048	0.391	0.373				0.011	0.421	0.439					0.059		0.059	0.439	0.421

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 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 < 1.6 W/kg (4.0 W/kg).

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Appendixes

Refer to separated files for the following appendixes.

4789467590-S1V3 FCC Report SAR_App A_Photos & Ant. Locations

4789467590-S1V3 FCC Report SAR_App B_Highest SAR Test Plots

4789467590-S1V3 FCC Report SAR_App C_System Check Plots

4789467590-S1V3 FCC Report SAR_App D_SAR Tissue Ingredients

4789467590-S1V3 FCC Report SAR_App E_Probe Cal. Certificates

4789467590-S1V3 FCC Report SAR_App F_Dipole Cal. Certificates

END OF REPORT

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