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 and NFC

MODEL NUMBER: SM-A536B/DS

FCC ID: A3LSMA536B

REPORT NUMBER: 4790160839-S1V1

ISSUE DATE: 12/30/2021

Prepared for
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IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	12/30/2021	Initial Issue	--

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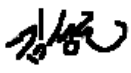
1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID		A3LSMA536B			
Model Number		SM-A536B/DS			
Applicable Standards		FCC 47 CFR § 2.1093 IEEE Std 1528-2013 Published RF exposure KDB procedures			
Exposure Category		SAR Limits (W/Kg)			
		Peak spatial-average (1g of tissue)		Product Specific 10g (10g of tissue)	
General population / Uncontrolled exposure		1.6		4.0	
RF Exposure Conditions		Equipment Class - The Highest Reported SAR (W/kg)			
		PCE	DTS	NII	DSS
Head		0.39	0.72	0.29	0.24
Body-worn		1.12	< 0.10	< 0.10	< 0.10
Hotspot		1.21	0.16	0.19	0.11
Product Specific 10g		2.36	N/A	0.86	N/A
Simultaneous TX	Head	1.11	1.11	0.92	0.92
	Body-worn	1.40	1.15	1.40	1.40
	Hotspot	1.51	1.37	1.51	1.51
	Product Specific 10g	3.22	N/A	3.22	N/A
Date Tested		Reference model (FCC ID : A3LSMA536E) :10/29/2021 to 12/29/2021			
		Variant model (FCC ID : A3LSMA536B) :12/6/2021 to 12/30/2021			
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 Senior Test Engineer UL Korea, Ltd. Suwon Laboratory

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

Equipment Class	Band	The Highest Reported SAR (W/kg)			
		1g of tissue			10g of tissue
		Head Exposure condition	Body-worn Exposure condition	Hotspot Exposure condition	Product Specific Exposure condition
PCE	GSM 850	0.346	0.361	0.781	N/A
	GSM 1900	0.055	0.512	0.517	N/A
	WCDMA Band II	0.185	0.871	0.710	1.814
	WCDMA Band IV	0.155	**1.116**	1.025	**2.361**
	WCDMA Band V	**0.393**	0.438	0.930	N/A
	LTE Band 2	0.100	0.667	0.750	1.626
	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	0.206	0.313	0.327	N/A
	LTE Band 17	N/A	N/A	N/A	N/A
	LTE Band 26	0.259	0.359	0.686	N/A
	LTE Band 66	0.111	0.912	**1.210**	1.994
	LTE Band 41	0.299	0.235	0.527	N/A
DTS	2.4GHz WLAN	**0.715**	**0.038**	**0.158**	N/A
UNII	5GHz WLAN	**0.294**	**0.097**	**0.188**	**0.862**
DSS	Bluetooth	**0.236**	**0.043**	**0.109**	N/A

Note(s):

The Highest Reported SAR value are determined to be the higher of both Reference model and Variant model.

1.2. Introduction Of Test Data Reuse

This report referenced from the FCC ID: A3LSMA536E SAR (FCC 47 CFR § 2.1093, IEEE 1528-2013).

And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.3. Difference

The FCC ID : A3LSMA536B shares the same enclosure and circuit board as FCC ID : A3LSMA536E.

The antennas (WWAN & WLAN & BT) and surrounding circuitry and layout are identical between these two units.

After confirming through Spot-check SAR evaluation that the performance of the FCC ID : A3LSMA536E

Remains representative of FCC ID : A3LSMA536B. The test data of FCC ID : A3LSMA536E being submitted for this application to cover WWAN & WLAN & BT features.

1.4. Spot Check Verification Data

Band		Antenna	RF Exposure Conditions	Mode	Dist. (mm)	Test Position	Reference Model (FCC ID : A3LSMA536E) Highest configuration Reported SAR (W/kg)	Variant Model (FCC ID : A3LSMA536B) Spot check Reported SAR (W/kg)	Diviation (%)	Note
GSM	850	Main 1 Ant.	Head	GPRS 3 slots	0	Right Touch	0.316	0.346	9.5	
			Body-worn	GPRS 3 slots	15	Rear	0.308	0.361	17.2	
			Hotspot	GPRS 3 slots	10	Rear	0.781	0.687	-12.0	
GSM	1900	Main 1 Ant.	Head	GPRS 2 slots	0	Right Touch	0.055	0.038	-30.9	
			Body-worn	GPRS 2 slots	15	Rear	0.512	0.346	-32.4	
			Hotspot	GPRS 4 slots	10	Edge 3	0.517	0.512	-1.0	
WCDMA	Band II	Main 1 Ant.	Head	Rel 99 RMC	0	Right Touch	0.185	0.130	-29.7	
			Body-worn	Rel 99 RMC	15	Rear	0.871	0.785	-9.9	
			Hotspot	Rel 99 RMC	10	Edge 3	0.710	0.621	-12.5	
			Product Specific 10-g	Rel 99 RMC	0	Edge 3	1.814	1.547	-14.7	
WCDMA	Band IV	Main 1 Ant.	Head	Rel 99 RMC	0	Right Touch	0.117	0.155	32.5	1
			Body-worn	Rel 99 RMC	15	Rear	0.740	1.116	50.8	2
			Hotspot	Rel 99 RMC	10	Edge 3	1.025	1.022	-0.3	
			Product Specific 10-g	Rel 99 RMC	0	Edge 3	2.361	2.209	-6.4	
WCDMA	Band V	Main 1 Ant.	Head	Rel 99 RMC	0	Right Touch	0.393	0.276	-29.8	
			Body-worn	Rel 99 RMC	15	Rear	0.438	0.253	-42.2	
			Hotspot	Rel 99 RMC	10	Rear	0.930	0.627	-32.6	
LTE	Band 2	Main 1 Ant.	Head	QPSK	0	Right Touch	0.073	0.100	37.0	1
			Body-worn	QPSK	15	Rear	0.667	0.574	-13.9	
			Hotspot	QPSK	10	Edge 3	0.659	0.750	13.8	
			Product Specific 10-g	QPSK	0	Edge 3	1.626	1.570	-3.4	
LTE	Band 12	Main 1 Ant.	Head	QPSK	0	Right Touch	0.172	0.206	19.8	
			Body-worn	QPSK	15	Rear	0.247	0.313	26.7	
			Hotspot	QPSK	10	Rear	0.321	0.327	1.9	
LTE	Band 26	Main 1 Ant.	Head	QPSK	0	Right Touch	0.259	0.239	-7.7	
			Body-worn	QPSK	15	Front	0.359	0.280	-22.0	
			Hotspot	QPSK	10	Edge 3	0.686	0.525	-23.5	
LTE	Band 41	Main 2 Ant.	Head	QPSK	0	Left Touch	0.133	0.299	124.8	1
			Body-worn	QPSK	15	Rear	0.198	0.235	18.7	
			Hotspot	QPSK	10	Edge 3	0.406	0.527	29.8	
LTE	Band 66	Main 1 Ant.	Head	QPSK	0	Right Touch	0.079	0.111	40.5	1
			Body-worn	QPSK	15	Rear	0.653	0.912	39.7	2
			Hotspot	QPSK	10	Edge 3	1.210	1.179	-2.6	
			Product Specific 10-g	QPSK	0	Edge 3	1.706	1.994	16.9	
WLAN	2.4GHz	WiFi Ant.1	Head	802.11b	0	Right Touch	0.663	0.715	7.8	
			Body-worn	802.11b	15	Rear	0.011	0.038	245.5	1
			Hotspot	802.11b	10	Edge 1	0.137	0.158	15.3	
Bluetooth	2.4GHz	BT Ant.1	Head	GFSK	0	Right Touch	0.159	0.236	48.4	1
			Body-worn	GFSK	15	Rear	0.043	0.015	-65.1	
			Hotspot	GFSK	10	Edge 1	0.109	0.030	-72.5	
WLAN	5.3GHz (UNII-2A)	WiFi Ant.1	Head	802.11n HT40	0	Right Touch	0.294	0.228	-22.4	
			Body-worn	802.11n HT40	15	Rear	0.051	0.072	41.2	1
			Product Specific 10-g	802.11n HT40	0	Edge 4	0.453	0.862	90.3	1
WLAN	5.5GHz (UNII-2C)	WiFi Ant.1	Head	802.11n HT40	0	Right Touch	0.264	0.208	-21.2	
			Body-worn	802.11a	15	Rear	0.093	0.085	-8.6	
			Product Specific 10-g	802.11a	0	Edge 4	0.722	0.612	-15.2	
WLAN	5.8GHz (UNII-3)	WiFi Ant.1	Head	802.11n HT40	0	Right Touch	0.191	0.234	22.5	
			Body-worn	802.11n HT40	15	Rear	0.097	0.082	-15.5	
			Hotspot	802.11n HT40	10	Edge 4	0.188	0.111	-41.0	
WLAN	5.9GHz (UNII-4)	WiFi Ant.1	Head	802.11n HT40	0	Right Touch	0.079	0.096	21.5	
			Body-worn	802.11n HT40	15	Rear	0.049	0.046	-6.1	
			Product Specific 10-g	802.11n HT40	0	Edge 4	0.573	0.425	-25.8	

Note(s):

1. According to spot-check procedures approved by FCC through a KDB inquiry, If SAR measured value was less than 0.4 W/kg or 1.0 W/kg (1-g or 10-g respectively), no further tests were performed even if the deviation was more than 30%. For Spot-check procedures and Full test results, please refer to Section.10.
2. If Spot-check deviation is over 30% for over than 0.4 W/kg or 1.0 W/kg (1-g or 10-g respectively) from reference model, Full test performed for the RF exposure condition.

1.5. Reference Detail

Reference application that contains the reused reference data.

Equipment Class	Reference FCC ID (Parent)	Application Type	Reference Test Report Number	Exhibit Type	Variant Test Report Number	Data Re-used
PCE	A3LSMA536E	Original Grant	4790160849-S1	Test Report	4790160839-S1	All (SAR results)
DTS	A3LSMA536E	Original Grant	4790160849-S1	Test Report	4790160839-S1	All (SAR results)
DSS	A3LSMA536E	Original Grant	4790160849-S1	Test Report	4790160839-S1	All (SAR results)
NII	A3LSMA536E	Original Grant	4790160849-S1	Test Report	4790160839-S1	All (SAR results)

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; RF Exposure Procedures Update (Overlapping LTE Bands)
- TCB workshop October, 2014; RF Exposure Procedures Update (Other LTE Considerations)
- TCB workshop October, 2016; RF Exposure Procedures (Bluetooth Duty Factor)
- TCB workshop October, 2016; RF Exposure Procedures (DUT Holder Perturbations)
- TCB workshop May, 2017; RF Exposure Procedures (LTE Test Conditions)
- TCB workshop November, 2017; RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR)
- TCB workshop April, 2018; RF Exposure Procedures (LTE DL CA SAR Test Exclusion Update)
- TCB workshop April, 2019; RF Exposure Procedures (Tissue Simulating Liquids (TSL))

3. Facilities and Accreditation

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

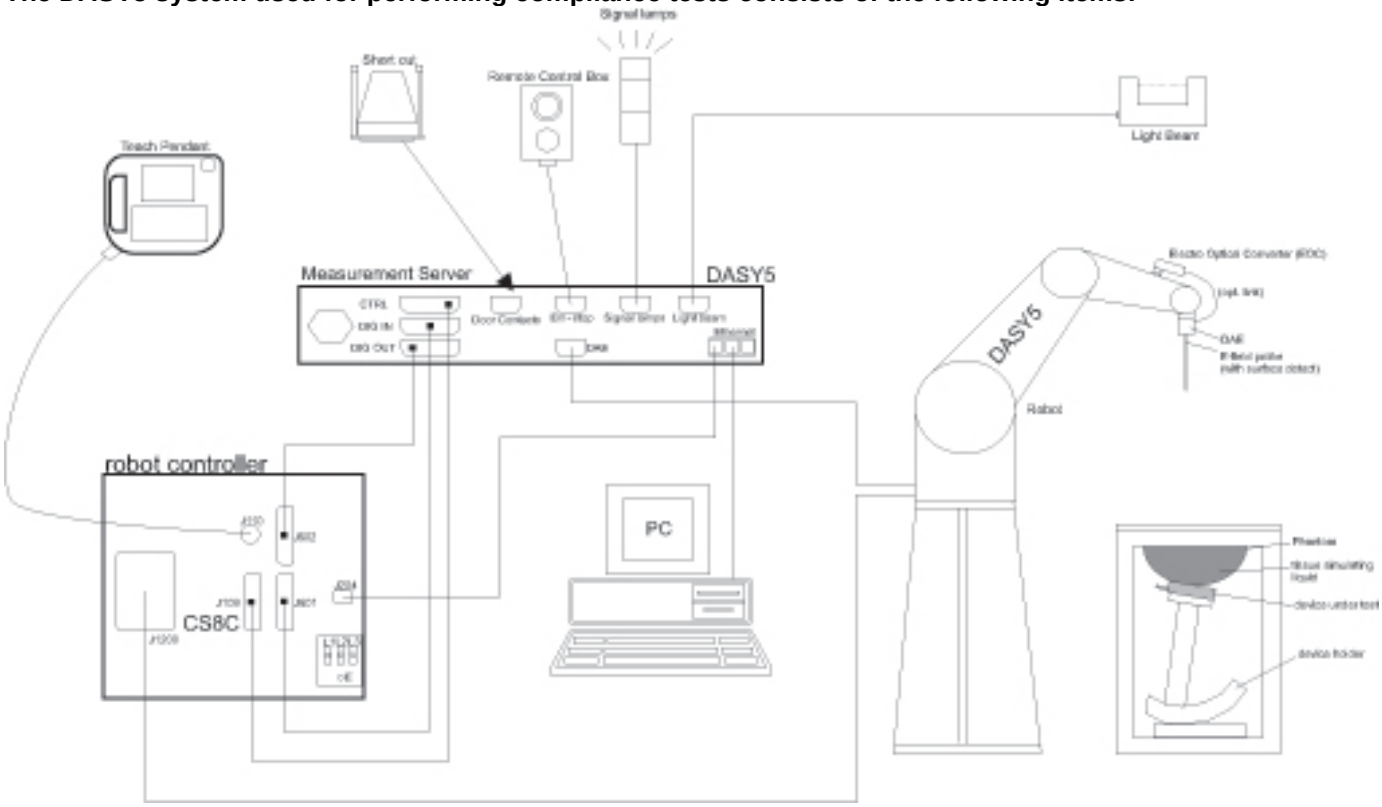
Suwon
SAR 1 Room
SAR 2 Room
SAR 3 Room
SAR 4 Room
SAR 7 Room

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

4. SAR Measurement System & Test Equipment

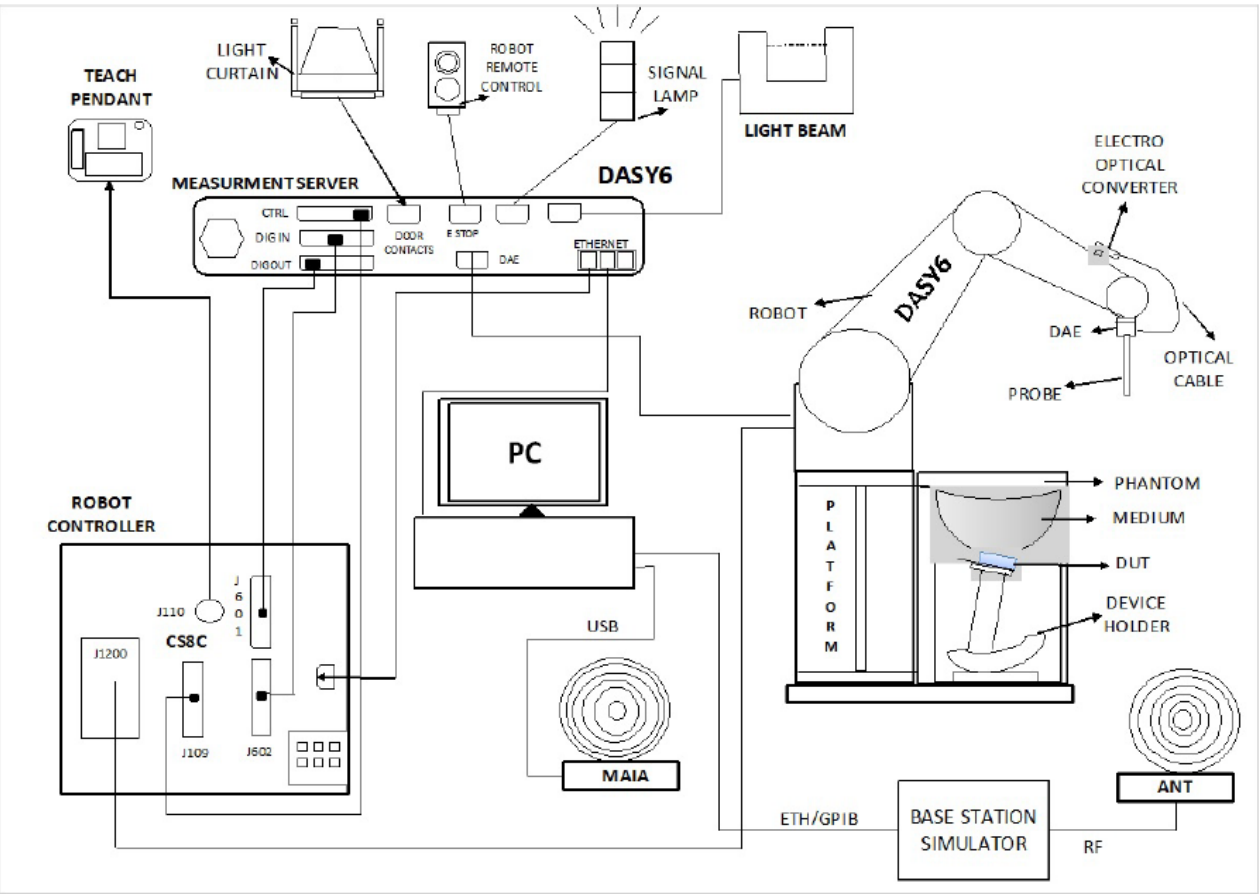
4.1. SAR Measurement System

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



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

The DASY6 & 8 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 Win10 and the DASY6 or 8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

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

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

Step 3: Zoom Scan

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

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

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

4.3. Test Equipment

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

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	8-6-2022
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7-21-2022
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3851	8-4-2022

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-4-2022
Power Sensor	Agilent	U2000A	MY54260007	8-4-2022
Power Sensor	Agilent	U2000A	MY60180020	8-4-2022
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-4-2022
Directional Coupler	Agilent	772D	MY52180193	8-3-2022
Directional Coupler	Agilent	778D	MY52180432	8-3-2022
Low Pass Filter	MINI-CIRCUITS	NLP-1200	VUU19301915	8-4-2022
Low Pass Filter	MICROLAB	LA-15N	3943	8-3-2022
Low Pass Filter	FILTRON	L14012FL	1410003S	8-3-2022
Low Pass Filter	MICROLAB	LA-60N	3942	8-4-2022
Attenuator	MINI-CIRCUITS	BW-N3W5+	N/A	8-4-2022
Attenuator	Agilent	8491B/003	MY39272275	8-17-2022
Attenuator	Agilent	8491B/010	MY39272011	8-4-2022
Attenuator	Agilent	8491B/020	MY39271973	8-4-2022
E-Field Probe	SPEAG	EX3DV4	7314	5-31-2022
E-Field Probe	SPEAG	EX3DV4	7645	4-15-2022
E-Field Probe	SPEAG	EX3DV4	7309	4-20-2022
E-Field Probe	SPEAG	EX3DV4	7330	9-29-2022
E-Field Probe	SPEAG	EX3DV4	7376	7-30-2022
E-Field Probe	SPEAG	EX3DV4	7545	8-26-2022
Data Acquisition Electronics	SPEAG	DAE4	1447	3-23-2022
Data Acquisition Electronics	SPEAG	DAE4	1591	3-26-2022
Data Acquisition Electronics	SPEAG	DAE4	1343	8-23-2022
Data Acquisition Electronics	SPEAG	DAE4	1468	9-27-2022
Data Acquisition Electronics	SPEAG	DAE4	1670	5-6-2022
System Validation Dipole	SPEAG	D750V3	1122	2-24-2022
System Validation Dipole	SPEAG	D835V2	4d194	3-20-2022
System Validation Dipole	SPEAG	D1750V2	1125	2-21-2022
System Validation Dipole	SPEAG	D1900V2	5d199	3-19-2022
System Validation Dipole	SPEAG	D2450V2	960	3-20-2022
System Validation Dipole	SPEAG	D2600V2	1097	9-29-2023
System Validation Dipole	SPEAG	D5GHzV2	1209	11-24-2023
System Validation Dipole	SPEAG	D5GHzV2	1184	12-3-2022
Thermometer	Lutron	MHB-382SD	AH.50213	8-4-2022
Thermometer	Lutron	MHB-382SD	AJ.45903	8-3-2022
Thermometer	Lutron	MHB-382SD	AH.50215	8-3-2022
Thermometer	Lutron	MHB-382SD	AK.12123	8-3-2022
Thermometer	Lutron	MHB-382SD	AK.18789	8-3-2022

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	169801	8-3-2022
Base Station Simulator	R & S	CMW500	169799	8-3-2022
Base Station Simulator	R & S	CMW500	169800	8-3-2022
Base Station Simulator	R & S	CMW500	169798	8-3-2022
Base Station Simulator	R & S	CMW500	169797	8-3-2022
Base Station Simulator	R & S	CMW500	150313	8-3-2022
Base Station Simulator	R & S	CMW500	150314	8-4-2022
Base Station Simulator	R & S	CMW500	162790	8-3-2022

Note(s):

1. For System Validation Dipole, Calibration interval applied every 2 years according to referencing KDB 865664 guidance.
2. Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (for blue box items)
3. All equipments were used until Cal.Due data.

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) ☒ Mobile Hotspot (Wi-Fi 5.8 GHz)		
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz) ☒ Wi-Fi Direct (Wi-Fi 5.2 GHz_UNII-1, Wi-Fi 5.8 GHz_UNII-3)		
Test Sample Information	**No.**	**S/N**	**Notes**
	1	R3CRA0RS25L	Main Conducted
	2	R3CRA0RS2ED	Wi-Fi & BT Conducted
	3	R3CRA0RS2PM	SAR
	4	R3CRA0RS2XV	SAR
	5	R3CRA0RS33Z	SAR
	6	R3CRA0RS3FB	SAR
	7	R3CEA0RS32T	SAR
	8	R3CRA0RS38L	SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK) GPRS (GMSK) EGPRS (8PSK)	GPRS Multi-Slot Class: ☐ Class 8 - 1 Up, 4 Down ☐ Class 10 - 2 Up, 4 Down ☐ Class 12 - 4 Up, 4 Down ☒ Class 33 - 4 Up, 5 Down	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
	Does this device support DTM (Dual Transfer Mode)? ☐ Yes ☒ No			
W-CDMA (UMTS)	Band II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 17 FDD Band 26 TDD Band 41 FDD Band 66	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)		99.1% (802.11b)
	5 GHz	802.11a 802.11n (HT20) & (HT40) 802.11ac (VHT20) & (VHT40) & (VHT80)		96.3% (802.11a) 95.9% (802.11n 40)
	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		76.7% (DH5)
NFC	13.56 MHz	Type A/B/F		N/A[3]

Notes:

1. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.7% and was considered and used for SAR Testing.
2. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.
3. Measured Duty Cycle is not required due to SAR test exemption.

6.3. Nominal and Maximum Output Power

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

RF Air interface	Antenna	Mode	Time Slots	Max. RF Output Power (dBm)		Reduced. RF Output Power (Hotspot & Proximity sensor & Earjack back-off) (dBm)	
				Tune-up Limit	Frame Pwr	Tune-up Limit	Frame Pwr
GSM850	Main 1 Ant.	Voice	1	**34.0**	**25.0**		
		GPRS	1	**34.0**	**25.0**		
		GPRS	2	**31.5**	**25.5**		
		GPRS	3	**30.0**	**25.7**		
		GPRS	4	**28.5**	**25.5**		
		EGPRS	1	**27.5**	**18.5**		
		EGPRS	2	**24.5**	**18.5**		
		EGPRS	3	**23.0**	**18.7**		
		EGPRS	4	**22.0**	**19.0**		
GSM1900	Main 1 Ant.	Voice	1	**31.0**	**22.0**	**29.3**	**20.3**
		GPRS	1	**31.0**	**22.0**	**29.3**	**20.3**
		GPRS	2	**28.5**	**22.5**	**26.3**	**20.3**
		GPRS	3	**26.5**	**22.2**	**24.3**	**20.0**
		GPRS	4	**25.0**	**22.0**	**23.3**	**20.3**
		EGPRS	1	**25.5**	**16.5**	**23.3**	**14.3**
		EGPRS	2	**23.5**	**17.5**	**21.3**	**15.3**
		EGPRS	3	**22.0**	**17.7**	**19.8**	**15.5**
		EGPRS	4	**20.5**	**17.5**	**19.3**	**16.3**

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	**25.0**	**20.0**
		HSDPA	**24.0**	**20.0**
		HSUPA	**23.5**	**19.5**
		DC-HSDPA	**24.0**	**20.0**
W-CDMA Band Ⅳ	Main 1 Ant.	R99	**25.0**	**20.0**
		HSDPA	**24.0**	**19.5**
		HSUPA	**24.0**	**19.5**
		DC-HSDPA	**24.0**	**19.5**
W-CDMA Band V	Main 1 Ant.	R99	**24.5**	
		HSDPA	**23.5**	
		HSUPA	**23.0**	
		DC-HSDPA	**23.5**	

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)	
				Hotspot back-off	Proximity sensor & Ear-jack back-off
LTE Band 2	Main 1 Ant.	QPSK	**24.0**	**20.0**	**20.0**
LTE Band 4	Main 1 Ant.	QPSK	**24.5**	**20.0**	**20.0**
LTE Band 5	Main 1 Ant.	QPSK	**24.5**		
LTE Band 12	Main 1 Ant.	QPSK	**25.5**		
LTE Band 17	Main 1 Ant.	QPSK	**25.5**		
LTE Band 26	Main 1 Ant.	QPSK	**24.5**		
LTE Band 66	Main 1 Ant.	QPSK	**24.5**	**21.5**	**21.5**
LTE Band 41	Main 2 Ant.	QPSK	**25.0**	**22.0**	**22.0**

WLAN power

Band	Mode	Max (dBm)	Reduce (dBm)	Max (dBm)				Reduce (dBm)			
		b	b	a	g	n	ac	a	g	n	ac
2.4GHz	1-10Ch	19	16		18	18			16	16	
2.4GHz	11Ch	19	16		15	15			15	15	
2.4GHz	12Ch	19	16		9	6			9	6	
2.4GHz	13Ch	19	16		8	6			8	6	
5GHz (20MHz)	UNII-1			13		13	13	13		13	13
	UNII-2A			13		13	13	13		13	13
	UNII-2C			16		16	16	14		14	14
	UNII-3			15		15	15	14		14	14
	UNII-4			13		13	13	13		13	13
5GHz (40MHz)	UNII-1					13	13			13	13
	UNII-2A					13	13			13	13
	UNII-2C					14	14			14	14
	UNII-3					15	15			14	14
	UNII-4					15	15			14	14
5GHz (80MHz)	UNII-1						11				11
	UNII-2A						7				7
	UNII-2C						13				13
	UNII-3						13				13
	UNII-4						13				13

Bluetooth-Maximum power

Band	Mode	Maximum output power (dBm)	Reduced output power (dBm)
2.4GHz	Bluetooth_GFSK	17.0	12.0
2.4GHz	Bluetooth_EDR	13.0	12.0
2.4GHz	Bluetooth_LE 1M	16.5	12.0
2.4GHz	Bluetooth_LE 2M	16.5	12.0

Note(s):.

1. This device uses an independent fixed level power reduction mechanism for WLAN mode and Bluetooth operations during RCV operation. Detailed descriptions of the power reduction mechanism are included in the operational description.
2. WLAN operation scenarios are refer to section.12.

6.4. Power Back-off Operation

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

Power Back-off mode	Technologies Supported	Exposure Conditions Active			
		Head	Body-worn	Hotspot	Product Specific 10-g
WWAN (Hotspot)	GSM 1900 WCDMA Band II & IV LTE Band 2 & 4 & 66 & 41	N/A	N/A	✓	N/A
WWAN (Proximity sensor)	GSM 1900 WCDMA Band II & IV LTE Band 2 & 4 & 66 & 41	N/A	N/A	N/A	✓
WWAN (Ear-jack)	GSM 1900 WCDMA Band II & IV LTE Band 2 & 4 & 66 & 41	N/A	✓	N/A	✓
WLAN/BT (RCV)	2.4GHz/5GHz WLAN & Bluetooth	✓	N/A	N/A	N/A

Note(s):
1. WWAN Back-off priority: RCV → Hotspot → Proximity Sensor → Ear-jack
2. Body-worn SAR with ear-jack connected is not required due to Body-worn measured at max power is not over 1.2 W/kg.

Product Specific 10g Adjusted SAR Calculation

Wireless technologies	Max Tune-up Limit (dBm)	Reduced Tune-Up Limit (dBm)	Power Factor	Reported SAR Limit (W/kg)
GSM 1900	22.5	20.3	1.66	0.723
WCDMA Band II	25.0	20.0	3.16	0.379
WCDMA Band IV	25.0	20.0	3.16	0.379
LTE Band 2	24.0	20.0	2.51	0.478
LTE Band 66(4)	24.5	21.5	2.00	0.601
LTE Band 41	25.0	22.0	2.00	0.601

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

6.4. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 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 17	Frequency range: 704 - 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23780/ 709	23755/ 706.5		
	Mid			23790/ 710	23790/ 710		
	High			23800/ 711	23825/ 713.5		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

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

Band 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					

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

LTE transmitter and antenna implementation

Refer to Appendix A.

Maximum power reduction (MPR)

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

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

MPR Built-in by design
The manufacturer MPR values are always within the 3GPP maximum MPR allowance but may not follow the default MPR values.
A-MPR (additional MPR) was disabled during SAR testing

Power reduction

Yes

Spectrum plots for RB configurations

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

Notes:

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

6.6. LTE (TDD) Considerations

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

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

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

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

Calculated Duty Cycle

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

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

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

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

7. RF Exposure Conditions (Test Configurations)

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

Wireless technologies	RF Exposure Conditions	Antenaa	DUT-to-User Separation	Test Position	Antenna-to-edge/surface		SAR Required	Note
WWAN	Head	All Main Antennas	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	All Main Antennas	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	All Main Antennas	0 mm	Rear	Refer to notes 2 & 3			
				Front				
				Edge 1 (Top)				
				Edge 2 (Right)				
				Edge 3 (Bottom)				
				Edge 4 (Left)				
2.4GHz WLAN/BT & 5GHz WLAN	Head	All Main Antennas	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 2.4G &WiFi 5G	10 mm	Rear	<	25 mm	Yes	
				Front	<	25 mm	Yes	
				Edge 1 (Top)	<	25 mm	Yes	
				Edge 2 (Right)	>	25 mm	No	1
				Edge 3 (Bottom)	>	25 mm	No	1
				Edge 4 (Left)	<	25 mm	Yes	
	Product Specific 10-g	All Main Antennas	0 mm	Rear	Refer to notes 2 & 4			
				Front				
				Edge 1 (Top)				
				Edge 2 (Right)				
				Edge 3 (Bottom)				
				Edge 4 (Left)				

Notes:

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

8. Dielectric Property Measurements & System Check

8.1. Dielectric Property Measurements

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

Tissue Dielectric Parameters
FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

Target Frequency (MHz)	Head	
	ε_r	σ (S/m)
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
835	41.5	0.90
900	41.5	0.97
915	41.5	0.98
1450	40.5	1.20
1610	40.3	1.29
1800 – 2000	40.0	1.40
2450	39.2	1.80
3000	38.5	2.40
5000	36.2	4.45
5100	36.1	4.55
5200	36.0	4.66
5300	35.9	4.76
5400	35.8	4.86
5500	35.6	4.96
5600	35.5	5.07
5700	35.4	5.17
5800	35.3	5.27
6000	35.1	5.48
NOTE: For convenience, permittivity and conductivity values at some frequencies that are not part of the original data from Drossos et al. [B60] or the extension to 5800 MHz are provided (i.e., the values shown in italics). These values were linearly interpolated between the values in this table that are immediately above and below these values, except the values at 6000 MHz that were linearly extrapolated from the values at 3000 MHz and 5800 MHz.		

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

IEEE Std 1528-2013
Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:
SAR 1 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-20-2021	Head 5250	e'	35.7300	Relative Permittivity (ϵ_r):	35.73	35.93	-0.57	5
		e"	16.2800	Conductivity (σ):	4.75	4.70	1.07	5
	Head 5260	e'	35.7100	Relative Permittivity (ϵ_r):	35.71	35.92	-0.59	5
		e"	16.2900	Conductivity (σ):	4.76	4.71	1.10	5
	Head 5600	e'	35.0000	Relative Permittivity (ϵ_r):	35.00	35.53	-1.50	5
		e"	16.6500	Conductivity (σ):	5.18	5.06	2.45	5
	Head 5750	e'	34.7100	Relative Permittivity (ϵ_r):	34.71	35.36	-1.85	5
		e"	16.8300	Conductivity (σ):	5.38	5.21	3.21	5
	Head 5825	e'	34.5800	Relative Permittivity (ϵ_r):	34.58	35.30	-2.04	5
		e"	16.9000	Conductivity (σ):	5.47	5.27	3.87	5
12-22-2021	Head 5250	e'	35.6300	Relative Permittivity (ϵ_r):	35.63	35.93	-0.84	5
		e"	15.5900	Conductivity (σ):	4.55	4.70	-3.21	5
	Head 5260	e'	35.6100	Relative Permittivity (ϵ_r):	35.61	35.92	-0.87	5
		e"	15.6000	Conductivity (σ):	4.56	4.71	-3.18	5
	Head 5600	e'	35.3200	Relative Permittivity (ϵ_r):	35.32	35.53	-0.60	5
		e"	15.9300	Conductivity (σ):	4.96	5.06	-1.98	5
	Head 5750	e'	35.0700	Relative Permittivity (ϵ_r):	35.07	35.36	-0.83	5
		e"	16.0800	Conductivity (σ):	5.14	5.21	-1.39	5
	Head 5825	e'	34.9500	Relative Permittivity (ϵ_r):	34.95	35.30	-0.99	5
		e"	16.1400	Conductivity (σ):	5.23	5.27	-0.81	5
12-23-2021	Head 835	e'	41.9800	Relative Permittivity (ϵ_r):	41.98	41.50	1.16	5
		e"	19.8500	Conductivity (σ):	0.92	0.90	2.40	5
	Head 820	e'	42.2000	Relative Permittivity (ϵ_r):	42.20	41.60	1.44	5
		e"	20.2000	Conductivity (σ):	0.92	0.90	2.51	5
	Head 850	e'	41.9000	Relative Permittivity (ϵ_r):	41.90	41.50	0.96	5
		e"	19.6900	Conductivity (σ):	0.93	0.92	1.71	5
12-23-2021	Head 1750	e'	39.6200	Relative Permittivity (ϵ_r):	39.62	40.08	-1.16	5
		e"	14.0500	Conductivity (σ):	1.37	1.37	-0.13	5
	Head 1710	e'	39.7000	Relative Permittivity (ϵ_r):	39.70	40.15	-1.11	5
		e"	14.3500	Conductivity (σ):	1.36	1.35	1.34	5
	Head 1755	e'	39.6100	Relative Permittivity (ϵ_r):	39.61	40.08	-1.17	5
		e"	14.0100	Conductivity (σ):	1.37	1.37	-0.34	5
12-23-2021	Head 1900	e'	39.3600	Relative Permittivity (ϵ_r):	39.36	40.00	-1.60	5
		e"	13.6700	Conductivity (σ):	1.44	1.40	3.16	5
	Head 1850	e'	39.3400	Relative Permittivity (ϵ_r):	39.34	40.00	-1.65	5
		e"	13.8900	Conductivity (σ):	1.43	1.40	2.06	5
	Head 1910	e'	39.3800	Relative Permittivity (ϵ_r):	39.38	40.00	-1.55	5
		e"	13.6300	Conductivity (σ):	1.45	1.40	3.40	5
12-23-2021	Head 2450	e'	38.5400	Relative Permittivity (ϵ_r):	38.54	39.20	-1.68	5
		e"	13.2900	Conductivity (σ):	1.81	1.80	0.58	5
	Head 2400	e'	38.5700	Relative Permittivity (ϵ_r):	38.57	39.30	-1.85	5
		e"	13.3200	Conductivity (σ):	1.78	1.75	1.48	5
	Head 2480	e'	38.5900	Relative Permittivity (ϵ_r):	38.59	39.16	-1.46	5
		e"	13.1500	Conductivity (σ):	1.81	1.83	-1.04	5

SAR 2 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-15-2021	Head 5250	e'	36.2500	Relative Permittivity (ϵ_r):	36.25	35.93	0.88	5
		e"	16.3800	Conductivity (σ):	4.78	4.70	1.69	5
	Head 5260	e'	36.2300	Relative Permittivity (ϵ_r):	36.23	35.92	0.86	5
		e"	16.3900	Conductivity (σ):	4.79	4.71	1.72	5
	Head 5600	e'	35.7400	Relative Permittivity (ϵ_r):	35.74	35.53	0.58	5
		e"	16.5100	Conductivity (σ):	5.14	5.06	1.59	5
	Head 5750	e'	35.5300	Relative Permittivity (ϵ_r):	35.53	35.36	0.47	5
		e"	16.5800	Conductivity (σ):	5.30	5.21	1.67	5
	Head 5800	e'	35.4600	Relative Permittivity (ϵ_r):	35.46	35.30	0.45	5
		e"	16.6000	Conductivity (σ):	5.35	5.27	1.58	5
	Head 5925	e'	35.2900	Relative Permittivity (ϵ_r):	35.29	35.20	0.26	5
		e"	16.6500	Conductivity (σ):	5.49	5.40	1.58	5
12-20-2021	Head 5250	e'	36.1400	Relative Permittivity (ϵ_r):	36.14	35.93	0.58	5
		e"	16.1500	Conductivity (σ):	4.71	4.70	0.26	5
	Head 5260	e'	36.1900	Relative Permittivity (ϵ_r):	36.19	35.92	0.75	5
		e"	16.2000	Conductivity (σ):	4.74	4.71	0.54	5
	Head 5600	e'	35.9300	Relative Permittivity (ϵ_r):	35.93	35.53	1.11	5
		e"	16.1300	Conductivity (σ):	5.02	5.06	-0.75	5
	Head 5750	e'	35.7300	Relative Permittivity (ϵ_r):	35.73	35.36	1.04	5
		e"	16.2600	Conductivity (σ):	5.20	5.21	-0.29	5
	Head 5825	e'	35.7600	Relative Permittivity (ϵ_r):	35.76	35.30	1.30	5
		e"	16.0700	Conductivity (σ):	5.20	5.27	-1.24	5

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-6-2021	Head 750	e'	42.5300	Relative Permittivity (ϵ_r):	42.53	41.96	1.35	5
		e"	21.7600	Conductivity (σ):	0.91	0.89	1.61	5
	Head 700	e'	42.6500	Relative Permittivity (ϵ_r):	42.65	42.22	1.02	5
		e"	22.9300	Conductivity (σ):	0.89	0.89	0.37	5
	Head 790	e'	42.4500	Relative Permittivity (ϵ_r):	42.45	41.76	1.66	5
		e"	20.9200	Conductivity (σ):	0.92	0.90	2.54	5
12-6-2021	Head 835	e'	42.2300	Relative Permittivity (ϵ_r):	42.23	41.50	1.76	5
		e"	20.1800	Conductivity (σ):	0.94	0.90	4.10	5
	Head 820	e'	42.3000	Relative Permittivity (ϵ_r):	42.30	41.60	1.68	5
		e"	20.3600	Conductivity (σ):	0.93	0.90	3.32	5
	Head 850	e'	42.1900	Relative Permittivity (ϵ_r):	42.19	41.50	1.66	5
		e"	19.8500	Conductivity (σ):	0.94	0.92	2.53	5
12-29-2021	Head 1750	e'	41.4600	Relative Permittivity (ϵ_r):	41.46	40.08	3.43	5
		e"	13.9000	Conductivity (σ):	1.35	1.37	-1.20	5
	Head 1710	e'	41.6400	Relative Permittivity (ϵ_r):	41.64	40.15	3.72	5
		e"	14.0400	Conductivity (σ):	1.33	1.35	-0.85	5
	Head 1755	e'	41.4400	Relative Permittivity (ϵ_r):	41.44	40.08	3.40	5
		e"	13.9000	Conductivity (σ):	1.36	1.37	-1.12	5
12-29-2021	Head 1900	e'	41.1300	Relative Permittivity (ϵ_r):	41.13	40.00	2.83	5
		e"	13.4700	Conductivity (σ):	1.42	1.40	1.65	5
	Head 1850	e'	41.2500	Relative Permittivity (ϵ_r):	41.25	40.00	3.13	5
		e"	13.5700	Conductivity (σ):	1.40	1.40	-0.29	5
	Head 1910	e'	41.1300	Relative Permittivity (ϵ_r):	41.13	40.00	2.83	5
		e"	13.4700	Conductivity (σ):	1.43	1.40	2.18	5

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-20-2021	Head 5250	e'	36.2800	Relative Permittivity (ε_r):	36.28	35.93	0.97	5
		e"	16.0100	Conductivity (σ):	4.67	4.70	-0.61	5
	Head 5260	e'	36.2100	Relative Permittivity (ε_r):	36.21	35.92	0.80	5
		e"	16.0400	Conductivity (σ):	4.69	4.71	-0.45	5
	Head 5600	e'	36.0700	Relative Permittivity (ε_r):	36.07	35.53	1.51	5
		e"	16.1200	Conductivity (σ):	5.02	5.06	-0.81	5
	Head 5750	e'	35.6900	Relative Permittivity (ε_r):	35.69	35.36	0.93	5
		e"	16.0500	Conductivity (σ):	5.13	5.21	-1.58	5
	Head 5825	e'	35.4200	Relative Permittivity (ε_r):	35.42	35.30	0.34	5
		e"	16.3600	Conductivity (σ):	5.30	5.27	0.55	5
12-22-2021	Head 2450	e'	38.2700	Relative Permittivity (ε_r):	38.27	39.20	-2.37	5
		e"	13.2200	Conductivity (σ):	1.80	1.80	0.05	5
	Head 2400	e'	38.3700	Relative Permittivity (ε_r):	38.37	39.30	-2.36	5
		e"	13.3000	Conductivity (σ):	1.77	1.75	1.32	5
	Head 2480	e'	38.1800	Relative Permittivity (ε_r):	38.18	39.16	-2.51	5
		e"	13.2500	Conductivity (σ):	1.83	1.83	-0.29	5

SAR 7 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
12-16-2021	Head 1750	e'	38.6200	Relative Permittivity (ε_r):	38.62	40.08	-3.65	5
		e"	14.6000	Conductivity (σ):	1.42	1.37	3.78	5
	Head 1710	e'	38.7500	Relative Permittivity (ε_r):	38.75	40.15	-3.48	5
		e"	14.7500	Conductivity (σ):	1.40	1.35	4.16	5
	Head 1755	e'	38.6000	Relative Permittivity (ε_r):	38.60	40.08	-3.69	5
		e"	14.5800	Conductivity (σ):	1.42	1.37	3.72	5
12-16-2021	Head 2600	e'	37.4500	Relative Permittivity (ε_r):	37.45	39.01	-4.00	5
		e"	13.8100	Conductivity (σ):	2.00	1.96	1.75	5
	Head 2500	e'	37.5600	Relative Permittivity (ε_r):	37.56	39.14	-4.03	5
		e"	13.7600	Conductivity (σ):	1.91	1.85	3.17	5
	Head 2700	e'	37.2600	Relative Permittivity (ε_r):	37.26	38.88	-4.18	5
		e"	13.8500	Conductivity (σ):	2.08	2.07	0.44	5
12-20-2021	Head 835	e'	41.6100	Relative Permittivity (ε_r):	41.61	41.50	0.27	5
		e"	19.9400	Conductivity (σ):	0.93	0.90	2.87	5
	Head 820	e'	41.6600	Relative Permittivity (ε_r):	41.66	41.60	0.14	5
		e"	20.0900	Conductivity (σ):	0.92	0.90	1.95	5
	Head 850	e'	41.6100	Relative Permittivity (ε_r):	41.61	41.50	0.27	5
		e"	19.8400	Conductivity (σ):	0.94	0.92	2.48	5
12-20-2021	Head 1900	e'	39.4600	Relative Permittivity (ε_r):	39.46	40.00	-1.35	5
		e"	13.6800	Conductivity (σ):	1.45	1.40	3.23	5
	Head 1850	e'	39.4100	Relative Permittivity (ε_r):	39.41	40.00	-1.48	5
		e"	13.8400	Conductivity (σ):	1.42	1.40	1.69	5
	Head 1910	e'	39.4600	Relative Permittivity (ε_r):	39.46	40.00	-1.35	5
		e"	13.6600	Conductivity (σ):	1.45	1.40	3.62	5

8.2. System Check

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

System Performance Check Measurement Conditions:

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

Reference Target SAR Values

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

System Dipole	Serial No.	Cal. Date	Cal. Due.Date	Freq. (MHz)	Target SAR Values (W/kg)	
					1g/10g	Head
D750V3	1122	2-24-2020	2-24-2022	750	1g	8.54
					10g	5.59
D835V2	4d194	3-20-2020	3-20-2022	835	1g	9.76
					10g	6.42
D1750V2	1125	2-21-2020	2-21-2022	1750	1g	36.50
					10g	19.20
D1900V2	5d199	3-19-2020	3-19-2022	1900	1g	40.50
					10g	21.00
D2450V2	960	3-20-2020	3-20-2022	2450	1g	53.20
					10g	24.80
D2600V2	1097	9-29-2021	9-29-2023	2600	1g	57.10
					10g	25.50
D5GHzV2	1184	12-3-2020	12-3-2022	5250	1g	79.10
					10g	22.70
				5600	1g	82.40
					10g	23.30
				5750	1g	79.90
					10g	22.60
D5GHzV2	1209	11-24-2021	11-24-2023	5800	1g	79.00
					10g	22.40

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations.

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			
12-20-2021	D5GHzV2	1184	Head	1g	8.03	80.3	79.90	0.50	
				10g	2.35	23.5	22.60	3.98	
12-22-2021	D5GHzV2	1184	Head	1g	8.35	83.5	79.90	4.51	
				10g	2.42	24.2	22.60	7.08	
12-23-2021	D835V2	4d194	Head	1g	1.06	10.6	9.76	8.61	1, 2
				10g	0.68	6.8	6.42	5.61	
12-23-2021	D1750V2	1125	Head	1g	3.74	37.4	36.50	2.47	3, 4
				10g	1.97	19.7	19.20	2.60	
12-23-2021	D1900V2	5d199	Head	1g	4.13	41.3	40.50	1.98	
				10g	2.12	21.2	21.00	0.95	
12-23-2021	D2450V2	960	Head	1g	5.44	54.4	53.20	2.26	
				10g	2.55	25.5	24.80	2.82	

SAR 2 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			
12-15-2021	D5GHzV2	1209	Head	1g	7.67	76.7	79.00	-2.91	5, 6
				10g	2.17	21.7	22.40	-3.13	
12-20-2021	D5GHzV2	1184	Head	1g	8.10	81.0	82.40	-1.70	
				10g	2.27	22.7	23.30	-2.58	

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			
12-6-2021	D750V3	1122	Head	1g	0.89	8.9	8.54	4.10	7, 8
				10g	0.61	6.1	5.59	8.23	
12-6-2021	D835V2	4d194	Head	1g	1.00	10.0	9.76	2.46	
				10g	0.68	6.8	6.42	5.14	
12-29-2021	D1750V2	1125	Head	1g	3.58	35.8	36.50	-1.92	
				10g	1.96	19.6	19.20	2.08	
12-29-2021	D1900V2	5d199	Head	1g	4.08	40.8	40.50	0.74	
				10g	2.17	21.7	21.00	3.33	

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			
12-20-2021	D5GHzV2	1184	Head	1g	7.40	74.0	79.10	-6.45	9, 10
				10g	2.10	21.0	22.70	-7.49	
12-22-2021	D2450V2	960	Head	1g	5.11	51.1	53.20	-3.95	11, 12
				10g	2.36	23.6	24.80	-4.84	

SAR 7 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			
12-16-2021	D1750V2	1125	Head	1g	3.68	36.8	36.5	0.82	
				10g	1.94	19.4	19.2	1.04	
12-16-2021	D2600V2	1097	Head	1g	5.73	57.3	57.1	0.35	13
				10g	2.57	25.7	25.5	0.78	
12-20-2021	D835V2	4d194	Head	1g	0.94	9.4	9.8	-4.00	
				10g	0.60	6.0	6.4	-6.23	
12-20-2021	D1900V2	5d199	Head	1g	3.83	38.3	40.5	-5.43	14
				10g	1.96	19.6	21.0	-6.67	

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	31.9	22.8	34.0	25.0
			190	836.6	32.6	23.6		
			251	848.8	32.9	23.9		
GPRS (GMSK)	CS1	1	128	824.2	32.0	22.9	34.0	25.0
			190	836.6	32.7	23.6		
			251	848.8	33.0	24.0		
		2	128	824.2	29.3	23.3	31.5	25.5
			190	836.6	30.1	24.1		
			251	848.8	30.8	24.8		
		3	128	824.2	27.9	23.6	30.0	**25.7**
			190	836.6	28.5	24.2		
			251	848.8	29.0	24.8		
		4	128	824.2	26.5	23.5	28.5	25.5
			190	836.6	27.0	24.0		
			251	848.8	27.4	24.4		
EGPRS (8PSK)	MCS5	1	128	824.2	25.9	16.9	27.5	18.5
			190	836.6	26.5	17.4		
			251	848.8	27.1	18.1		
		2	128	824.2	23.7	17.7	24.5	18.5
			190	836.6	24.3	18.3		
			251	848.8	24.5	18.4		
		3	128	824.2	22.4	18.1	23.0	18.7
			190	836.6	22.9	18.6		
			251	848.8	23.0	18.7		
		4	128	824.2	20.6	17.5	22.0	19.0
			190	836.6	20.0	17.0		
			251	848.8	20.4	17.4		

Notes:

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

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

GSM1900 Measured Results

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)				Reduced Average Power (dBm) Hotspot back-off				Reduced Average Power (dBm) Proximity sensor back-off			
					Measured		Tune-up Limit		Measured		Tune-up Limit		Measured		Tune-up Limit	
					Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr	Burst Pwr	Frame Pwr
GSM (Voice)	CS1	1	512	1850.2	30.2	21.2	31.0	22.0	28.8	19.7	29.3	20.3	28.2	19.1	29.3	20.3
			661	1880.0	30.1	21.0			28.5	19.5			27.9	18.9		
			810	1909.8	30.1	21.1			28.3	19.3			27.7	18.7		
GPRS (GMSK)	CS1	1	512	1850.2	30.0	21.0	31.0	22.0	28.6	19.6	29.3	20.3	28.1	19.0	29.3	20.3
			661	1880.0	29.9	20.9			27.7	18.7			27.7	18.6		
			810	1909.8	29.9	20.9			27.3	18.3			27.3	18.3		
		2	512	1850.2	27.6	21.6	28.5	**22.5**	26.0	20.0	26.3	20.3	25.5	19.5	26.3	20.3
			661	1880.0	27.3	21.3			25.2	19.2			25.1	19.1		
			810	1909.8	27.2	21.1			24.8	18.8			24.7	18.7		
		3	512	1850.2	25.8	21.6	26.5	22.2	23.9	19.6	24.3	20.0	23.8	19.5	24.3	20.0
			661	1880.0	25.3	21.0			23.3	19.0			23.3	19.0		
			810	1909.8	24.9	20.6			22.8	18.6			22.9	18.6		
		4	512	1850.2	24.8	21.8	25.0	22.0	22.8	19.8	23.3	**20.3**	23.0	20.0	23.3	**20.3**
			661	1880.0	24.5	21.5			22.5	19.5			22.5	19.5		
			810	1909.8	24.1	21.1			22.0	19.0			22.0	19.0		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.3	16.2	25.5	16.5	23.3	14.3	23.3	14.3	23.3	14.2	23.3	14.3
			661	1880.0	25.0	16.0			22.2	13.2			22.3	13.3		
			810	1909.8	24.9	15.8			22.2	13.2			22.3	13.2		
		2	512	1850.2	23.3	17.3	23.5	17.5	21.0	15.0	21.3	15.3	21.0	15.0	21.3	15.3
			661	1880.0	23.1	17.1			20.3	14.3			20.2	14.2		
			810	1909.8	22.9	16.9			20.2	14.1			20.2	14.1		
		3	512	1850.2	21.8	17.6	22.0	17.7	19.1	14.8	19.8	15.5	19.1	14.8	19.8	15.5
			661	1880.0	21.6	17.4			18.7	14.4			18.7	14.5		
			810	1909.8	21.5	17.2			18.6	14.4			18.6	14.4		
		4	512	1850.2	20.5	17.5	20.5	17.5	17.9	14.9	19.3	16.3	17.9	14.9	19.3	16.3
			661	1880.0	20.1	17.1			17.7	14.7			17.7	14.7		
			810	1909.8	20.0	17.0			17.8	14.8			17.8	14.8		

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

9.2. W-CDMA

Release 99 Setup Procedures used to establish the test signals

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

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

HSDPA Setup Procedures used to establish the test signals

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

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	11/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs=βhs/βc	30/15			

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

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

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	βc	11/15	6/15	15/15	2/15	15/15
	βd	15/15	15/15	9/15	15/15	0
	βec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	-
	βhs	22/15	12/15	30/15	4/15	5/15
	βed	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	E-DPDCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

DC-HSDPA Setup Procedures used to establish the test signals

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

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

Table E.5.0: Levels for HSDPA connection setup

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

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

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

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

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

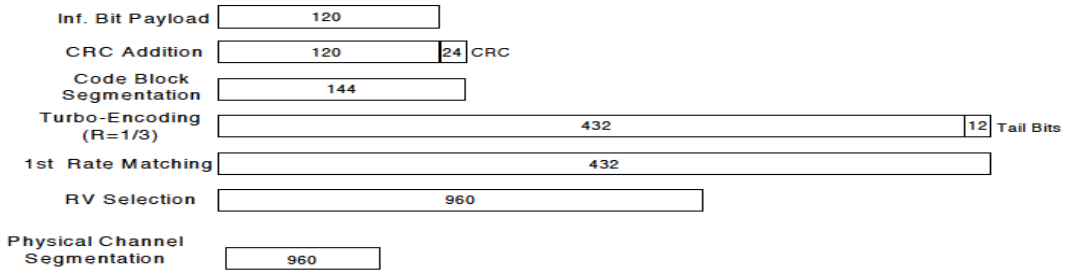


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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

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

HSPA+

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

W W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot back-off			Reduced Average Power (dBm) Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	24.2	N/A	25.0	19.2	N/A	20.0	19.2	N/A	20.0
		9400	1880.0	24.5			19.4			19.4		
		9538	1907.6	24.0			19.6			19.6		
HSDPA	Subtest 1	9262	1852.4	22.9	0	24.0	19.1	0	20.0	19.2	0	20.0
		9400	1880.0	23.5			19.4			19.5		
		9538	1907.6	23.4			19.6			19.7		
	Subtest 2	9262	1852.4	22.9	0	24.0	19.1	0	20.0	19.2	0	20.0
		9400	1880.0	23.5			19.4			19.4		
		9538	1907.6	23.3			19.6			19.6		
	Subtest 3	9262	1852.4	21.9	0.5	23.5	19.2	0.0	20.0	19.2	0.0	20.0
		9400	1880.0	22.5			19.4			19.4		
		9538	1907.6	22.7			19.6			19.6		
	Subtest 4	9262	1852.4	22.4	0.5	23.5	19.1	0.0	20.0	19.2	0.0	20.0
		9400	1880.0	23.0			19.4			19.4		
		9538	1907.6	23.0			19.6			19.6		
HSUPA	Subtest 1	9262	1852.4	23.2	0	23.5	18.1	0	19.5	18.2	0	19.5
		9400	1880.0	23.2			18.3			18.3		
		9538	1907.6	23.4			18.5			18.5		
	Subtest 2	9262	1852.4	21.1	2	21.5	18.1	0	19.5	18.1	0	19.5
		9400	1880.0	21.2			18.3			18.3		
		9538	1907.6	21.4			18.5			18.5		
	Subtest 3	9262	1852.4	22.2	1	22.5	18.1	0	19.5	18.1	0	19.5
		9400	1880.0	22.2			18.3			18.3		
		9538	1907.6	22.4			18.5			18.5		
	Subtest 4	9262	1852.4	21.1	0	23.5	18.1	0	19.5	18.1	0	19.5
		9400	1880.0	21.2			18.3			18.3		
		9538	1907.6	21.4			18.5			18.4		
	Subtest 5	9262	1852.4	23.4	0	23.5	19.3	0	19.5	19.3	0	19.5
		9400	1880.0	23.4			19.5			19.5		
		9538	1907.6	23.5			19.4			19.5		
DC-HSDPA	Subtest 1	9262	1852.4	22.9	0	24.0	19.3	0	20.0	19.2	0	20.0
		9400	1880.0	23.6			19.6			19.5		
		9538	1907.6	23.8			19.7			19.6		
	Subtest 2	9262	1852.4	23.0	0	24.0	19.2	0	20.0	19.1	0	20.0
		9400	1880.0	23.6			19.5			19.5		
		9538	1907.6	23.6			19.7			19.6		
	Subtest 3	9262	1852.4	21.5	0.5	23.5	19.1	0.0	20.0	19.2	0.0	20.0
		9400	1880.0	22.1			19.5			19.5		
		9538	1907.6	22.3			19.6			19.7		
	Subtest 4	9262	1852.4	22.5	0.5	23.5	19.2	0.0	20.0	19.1	0.0	20.0
		9400	1880.0	23.1			19.4			19.5		
		9538	1907.6	23.2			19.7			19.5		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot back-off			Reduced Average Power (dBm) Proximity sensor back-off		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	23.5	N/A	25.0	18.2	N/A	20.0	18.0	N/A	20.0
		1413	1732.6	23.9			18.2			18.2		
		1513	1752.6	24.0			18.6			18.8		
HSDPA	Subtest 1	1312	1712.4	22.7	0	24.0	17.8	0	19.5	17.9	0	19.5
		1413	1732.6	22.8			18.2			18.3		
		1513	1752.6	23.2			18.8			18.9		
	Subtest 2	1312	1712.4	23.2	0	24.0	17.9	0	19.5	18.0	0	19.5
		1413	1732.6	23.1			18.2			18.3		
		1513	1752.6	23.3			18.8			18.9		
	Subtest 3	1312	1712.4	22.4	0.5	23.5	17.9	0.0	19.5	17.9	0.0	19.5
		1413	1732.6	22.3			18.2			18.3		
		1513	1752.6	22.6			18.8			18.8		
	Subtest 4	1312	1712.4	22.4	0.5	23.5	17.9	0.0	19.5	18.0	0.0	19.5
		1413	1732.6	22.5			18.2			18.3		
		1513	1752.6	23.3			18.8			18.8		
HSUPA	Subtest 1	1312	1712.4	22.7	0	24.0	17.0	0	19.5	17.0	0	19.5
		1413	1732.6	22.9			17.0			17.1		
		1513	1752.6	23.6			17.7			17.8		
	Subtest 2	1312	1712.4	20.6	2	22.0	16.7	1	18.5	16.8	1	18.5
		1413	1732.6	20.8			17.0			17.1		
		1513	1752.6	21.5			17.7			17.8		
	Subtest 3	1312	1712.4	21.7	1	23.0	16.7	1	18.5	16.8	1	18.5
		1413	1732.6	21.9			17.0			17.1		
		1513	1752.6	22.5			17.7			17.8		
	Subtest 4	1312	1712.4	22.2	0	24.0	16.7	1	18.5	16.8	1	18.5
		1413	1732.6	22.1			17.0			17.1		
		1513	1752.6	22.6			17.7			17.8		
	Subtest 5	1312	1712.4	22.8	0	24.0	18.1	0	19.5	18.2	0	19.5
		1413	1732.6	23.0			18.3			18.4		
		1513	1752.6	23.7			18.9			18.9		
DC-HSDPA	Subtest 1	1312	1712.4	23.0	0	24.0	17.8	0	19.5	18.0	0	19.5
		1413	1732.6	23.2			18.4			18.4		
		1513	1752.6	23.1			18.8			18.7		
	Subtest 2	1312	1712.4	23.1	0	24.0	18.1	0	19.5	18.0	0	19.5
		1413	1732.6	23.0			18.5			18.4		
		1513	1752.6	23.0			18.8			18.7		
	Subtest 3	1312	1712.4	21.5	0.5	23.5	17.9	0.5	19.0	18.0	0.5	19.0
		1413	1732.6	21.8			18.3			18.4		
		1513	1752.6	21.9			18.6			18.7		
	Subtest 4	1312	1712.4	22.6	0.5	23.5	17.9	0.5	19.0	18.0	0.5	19.0
		1413	1732.6	22.8			18.3			18.4		
		1513	1752.6	22.7			18.7			18.7		

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	22.8	N/A	24.5
		4183	836.6	22.8		
		4233	846.6	22.8		
HSDPA	Subtest 1	4132	826.4	22.8	0	23.5
		4183	836.6	22.9		
		4233	846.6	22.7		
	Subtest 2	4132	826.4	22.8	0	23.5
		4183	836.6	22.8		
		4233	846.6	22.6		
	Subtest 3	4132	826.4	21.9	0.5	23.0
		4183	836.6	22.4		
		4233	846.6	21.7		
	Subtest 4	4132	826.4	22.6	0.5	23.0
		4183	836.6	22.8		
		4233	846.6	22.2		
HSUPA	Subtest 1	4132	826.4	21.8	0	23.0
		4183	836.6	21.9		
		4233	846.6	21.9		
	Subtest 2	4132	826.4	18.3	3	20.0
		4183	836.6	18.8		
		4233	846.6	18.5		
	Subtest 3	4132	826.4	21.3	1	22.0
		4183	836.6	21.9		
		4233	846.6	21.9		
	Subtest 4	4132	826.4	18.3	3	20.0
		4183	836.6	18.9		
		4233	846.6	19.1		
	Subtest 5	4132	826.4	22.4	0	23.0
		4183	836.6	22.9		
		4233	846.6	22.8		
DC-HSDPA	Subtest 1	4132	826.4	22.7	0	23.5
		4183	836.6	22.8		
		4233	846.6	22.4		
	Subtest 2	4132	826.4	22.7	0	23.5
		4183	836.6	22.9		
		4233	846.6	22.4		
	Subtest 3	4132	826.4	21.9	0.5	23.0
		4183	836.6	22.1		
		4233	846.6	21.2		
	Subtest 4	4132	826.4	22.8	0.5	23.0
		4183	836.6	22.9		
		4233	846.6	21.9		

9.3. LTE

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

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

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

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

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

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

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

Maximum Output Power (Tune-up Limit) for LTE

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

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

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

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

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

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

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

1. Max power

LTE Band 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	23.3	22.8	23.7	0.0	24.0
		1	49	23.5	23.4	23.7	0.0	24.0
		1	99	23.2	23.1	23.7	0.0	24.0
		50	0	21.2	21.4	21.7	2.0	22.0
		50	24	21.3	21.5	21.7	2.0	22.0
		50	50	21.4	21.5	21.7	2.0	22.0
		100	0	21.3	21.5	21.7	2.0	22.0
	16QAM	1	0	21.3	21.1	21.9	2.0	22.0
		1	49	21.6	21.4	22.0	2.0	22.0
		1	99	21.6	21.1	21.7	2.0	22.0
		50	0	20.3	20.5	20.7	3.0	21.0
		50	24	20.3	20.6	20.8	3.0	21.0
		50	50	20.4	20.5	20.8	3.0	21.0
		100	0	20.4	20.5	20.8	3.0	21.0
	64QAM	1	0	20.1	20.2	20.3	3.0	21.0
		1	49	20.3	20.3	20.6	3.0	21.0
		1	99	20.4	20.2	20.5	3.0	21.0
		50	0	19.3	19.6	19.8	4.0	20.0
		50	24	19.4	19.6	19.8	4.0	20.0
		50	50	19.5	19.5	19.8	4.0	20.0
		100	0	19.4	19.5	19.8	4.0	20.0
	256QAM	1	0	19.4	19.3	19.2	4.0	20.0
		1	49	19.6	19.4	19.3	4.0	20.0
		1	99	19.7	19.4	19.4	4.0	20.0
		50	0	18.3	18.5	18.7	4.0	20.0
		50	24	18.4	18.5	18.7	4.0	20.0
		50	50	18.4	18.4	18.7	4.0	20.0
		100	0	18.3	18.5	18.7	4.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	23.3	23.5	23.5	0.0	24.0
		1	37	23.2	23.4	23.6	0.0	24.0
		1	74	23.4	23.6	22.3	0.0	24.0
		36	0	21.8	21.8	21.7	2.0	22.0
		36	20	21.8	21.8	21.8	2.0	22.0
		36	39	21.8	21.8	21.8	2.0	22.0
		75	0	21.8	21.8	21.8	2.0	22.0
	16QAM	1	0	21.7	21.9	22.0	2.0	22.0
		1	37	21.7	21.9	22.0	2.0	22.0
		1	74	21.9	21.9	20.8	2.0	22.0
		36	0	20.8	20.8	20.7	3.0	21.0
		36	20	20.8	20.8	20.7	3.0	21.0
		36	39	20.9	20.8	20.8	3.0	21.0
		75	0	20.8	20.8	20.8	3.0	21.0
	64QAM	1	0	20.5	20.7	20.5	3.0	21.0
		1	37	20.6	20.6	20.5	3.0	21.0
		1	74	20.8	20.7	20.5	3.0	21.0
		36	0	19.7	19.8	19.8	4.0	20.0
		36	20	19.8	19.8	19.8	4.0	20.0
		36	39	19.8	19.8	19.8	4.0	20.0
		75	0	19.8	19.7	19.9	4.0	20.0
	256QAM	1	0	19.4	20.0	19.8	4.0	20.0
		1	37	19.5	19.9	19.9	4.0	20.0
		1	74	19.6	20.0	19.9	4.0	20.0
		36	0	18.7	18.8	18.9	4.0	20.0
		36	20	18.7	18.8	18.9	4.0	20.0
		36	39	18.7	18.8	18.9	4.0	20.0
		75	0	18.7	18.7	18.9	4.0	20.0

LTE Band 2 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	23.4	23.6	23.6	0.0	24.0
		1	25	23.5	23.6	23.6	0.0	24.0
		1	49	23.6	23.6	22.5	0.0	24.0
		25	0	21.8	21.8	22.0	2.0	22.0
		25	12	21.8	21.8	22.0	2.0	22.0
		25	25	21.8	21.8	21.9	2.0	22.0
		50	0	21.8	21.8	22.0	2.0	22.0
	16QAM	1	0	21.7	21.9	22.0	2.0	22.0
		1	25	21.8	21.9	21.9	2.0	22.0
		1	49	21.7	21.9	21.0	2.0	22.0
		25	0	20.8	20.8	20.8	3.0	21.0
		25	12	20.8	20.7	20.9	3.0	21.0
		25	25	20.8	20.9	20.9	3.0	21.0
		50	0	20.8	20.9	20.9	3.0	21.0
	64QAM	1	0	20.7	20.6	20.4	3.0	21.0
		1	25	20.7	20.7	20.5	3.0	21.0
		1	49	20.7	20.6	20.7	3.0	21.0
		25	0	19.9	19.9	19.9	4.0	20.0
		25	12	19.9	19.9	20.0	4.0	20.0
		25	25	19.9	19.9	20.0	4.0	20.0
		50	0	19.9	19.8	20.0	4.0	20.0
	256QAM	1	0	19.6	19.9	19.8	4.0	20.0
		1	25	19.7	19.9	19.9	4.0	20.0
		1	49	19.8	19.9	20.0	4.0	20.0
		25	0	18.8	18.9	18.9	4.0	20.0
		25	12	18.8	18.9	18.9	4.0	20.0
		25	25	18.8	18.8	18.9	4.0	20.0
		50	0	18.8	18.8	18.9	4.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	23.6	23.7	23.7	0.0	24.0
		1	12	23.6	23.7	23.6	0.0	24.0
		1	24	23.7	23.8	22.8	0.0	24.0
		12	0	21.6	21.6	21.7	2.0	22.0
		12	7	21.6	21.6	21.8	2.0	22.0
		12	13	21.6	21.6	21.8	2.0	22.0
		25	0	21.6	21.6	21.8	2.0	22.0
	16QAM	1	0	21.8	21.9	21.9	2.0	22.0
		1	12	21.7	21.8	21.7	2.0	22.0
		1	24	21.9	21.9	21.5	2.0	22.0
		12	0	20.6	20.6	20.8	3.0	21.0
		12	7	20.6	20.6	20.8	3.0	21.0
		12	13	20.6	20.6	20.8	3.0	21.0
		25	0	20.7	20.7	20.8	3.0	21.0
	64QAM	1	0	20.4	20.3	20.9	3.0	21.0
		1	12	20.4	20.3	20.8	3.0	21.0
		1	24	20.5	20.4	21.0	3.0	21.0
		12	0	19.7	19.7	19.9	4.0	20.0
		12	7	19.7	19.7	20.0	4.0	20.0
		12	13	19.8	19.7	20.0	4.0	20.0
		25	0	19.8	19.8	20.0	4.0	20.0
	256QAM	1	0	19.5	19.5	19.9	4.0	20.0
		1	12	19.5	19.4	19.8	4.0	20.0
		1	24	19.7	19.5	19.9	4.0	20.0
		12	0	18.8	18.8	19.0	4.0	20.0
		12	7	18.8	18.8	19.0	4.0	20.0
		12	13	18.8	18.8	19.0	4.0	20.0
		25	0	18.8	18.8	18.9	4.0	20.0

LTE Band 2 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	23.4	23.4	23.5	0.0	24.0
		1	8	23.3	23.2	23.3	0.0	24.0
		1	14	23.6	23.4	22.5	0.0	24.0
		8	0	21.6	21.6	21.8	2.0	22.0
		8	4	21.7	21.6	21.7	2.0	22.0
		8	7	21.7	21.6	21.5	2.0	22.0
		15	0	21.6	21.6	21.7	2.0	22.0
	16QAM	1	0	21.6	21.9	21.9	2.0	22.0
		1	8	21.5	21.8	21.9	2.0	22.0
		1	14	21.3	21.8	21.1	2.0	22.0
		8	0	20.6	20.7	20.7	3.0	21.0
		8	4	20.6	20.7	20.7	3.0	21.0
		8	7	20.6	20.6	20.7	3.0	21.0
		15	0	20.6	20.6	20.8	3.0	21.0
	64QAM	1	0	20.4	20.5	20.2	3.0	21.0
		1	8	20.4	20.4	20.2	3.0	21.0
		1	14	20.4	20.6	20.4	3.0	21.0
		8	0	19.7	19.5	19.8	4.0	20.0
		8	4	19.6	19.5	19.7	4.0	20.0
		8	7	19.7	19.5	19.8	4.0	20.0
		15	0	19.6	19.5	19.8	4.0	20.0
	256QAM	1	0	19.6	19.8	19.8	4.0	20.0
		1	8	19.5	19.8	19.7	4.0	20.0
		1	14	19.6	19.8	19.9	4.0	20.0
		8	0	18.6	18.7	18.8	4.0	20.0
		8	4	18.6	18.7	18.8	4.0	20.0
		8	7	18.6	18.7	18.8	4.0	20.0
		15	0	18.7	18.5	18.8	4.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	23.8	23.8	23.8	0.0	24.0
		1	3	23.7	23.6	23.5	0.0	24.0
		1	5	23.8	23.8	23.1	0.0	24.0
		3	0	23.9	23.9	23.3	0.0	24.0
		3	1	23.9	23.9	23.2	0.0	24.0
		3	3	23.8	23.8	23.1	0.0	24.0
		6	0	21.8	21.9	21.6	2.0	22.0
	16QAM	1	0	21.8	21.6	22.0	2.0	22.0
		1	3	21.9	21.8	21.9	2.0	22.0
		1	5	21.9	21.7	21.6	2.0	22.0
		3	0	22.0	21.9	21.9	2.0	22.0
		3	1	22.0	22.0	21.9	2.0	22.0
		3	3	21.9	21.9	21.8	2.0	22.0
		6	0	21.0	20.9	21.0	3.0	21.0
	64QAM	1	0	20.9	20.9	20.8	3.0	21.0
		1	3	20.8	20.8	21.0	3.0	21.0
		1	5	20.9	20.8	20.9	3.0	21.0
		3	0	21.0	20.9	20.9	3.0	21.0
		3	1	20.9	20.8	20.9	3.0	21.0
		3	3	21.0	20.8	20.9	3.0	21.0
		6	0	19.8	19.8	20.0	4.0	20.0
	256QAM	1	0	19.5	19.6	19.7	4.0	20.0
		1	3	19.4	19.6	19.6	4.0	20.0
		1	5	19.4	19.7	19.8	4.0	20.0
		3	0	19.7	19.5	19.8	4.0	20.0
		3	1	19.6	19.5	19.8	4.0	20.0
		3	3	19.6	19.6	19.7	4.0	20.0
		6	0	18.5	18.5	18.7	4.0	20.0

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				Measured Pwr (dBm)				
				23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0		24.6		0.0	25.5
		1	25		24.5		0.0	25.5
		1	49		24.6		0.0	25.5
		25	0		22.9		2.0	23.5
		25	12		22.8		2.0	23.5
		25	25		22.8		2.0	23.5
		50	0		22.8		2.0	23.5
	16QAM	1	0		23.1		2.0	23.5
		1	25		23.1		2.0	23.5
		1	49		23.0		2.0	23.5
		25	0		21.8		3.0	22.5
		25	12		21.8		3.0	22.5
		25	25		21.8		3.0	22.5
		50	0		21.7		3.0	22.5
	64QAM	1	0		21.7		3.0	22.5
		1	25		21.6		3.0	22.5
		1	49		21.5		3.0	22.5
		25	0		20.9		4.0	21.5
		25	12		20.9		4.0	21.5
		25	25		20.8		4.0	21.5
		50	0		20.8		4.0	21.5
	256QAM	1	0		20.9		4.0	21.5
		1	25		20.8		4.0	21.5
		1	49		20.8		4.0	21.5
		25	0		20.0		5.0	20.5
		25	12		20.0		5.0	20.5
		25	25		19.9		5.0	20.5
		50	0		19.9		5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	24.7	24.7	24.8	0.0	25.5
		1	12	24.6	24.6	24.8	0.0	25.5
		1	24	24.7	24.7	24.7	0.0	25.5
		12	0	22.7	22.8	22.9	2.0	23.5
		12	7	22.7	22.8	22.9	2.0	23.5
		12	13	22.7	22.8	22.8	2.0	23.5
		25	0	22.7	22.8	22.9	2.0	23.5
	16QAM	1	0	22.8	23.0	22.9	2.0	23.5
		1	12	22.7	22.7	22.8	2.0	23.5
		1	24	22.8	22.9	23.0	2.0	23.5
		12	0	21.6	21.8	21.7	3.0	22.5
		12	7	21.6	21.8	21.7	3.0	22.5
		12	13	21.6	21.8	21.7	3.0	22.5
		25	0	21.7	21.8	21.9	3.0	22.5
	64QAM	1	0	21.5	22.0	21.8	3.0	22.5
		1	12	21.4	21.8	21.8	3.0	22.5
		1	24	21.6	21.9	21.8	3.0	22.5
		12	0	20.6	20.8	20.8	4.0	21.5
		12	7	20.6	20.7	20.8	4.0	21.5
		12	13	20.6	20.7	20.8	4.0	21.5
		25	0	20.6	20.8	20.8	4.0	21.5
	256QAM	1	0	20.5	21.0	20.8	4.0	21.5
		1	12	20.3	20.9	20.7	4.0	21.5
		1	24	20.4	21.0	20.8	4.0	21.5
		12	0	19.7	19.9	19.9	5.0	20.5
		12	7	19.7	19.9	19.9	5.0	20.5
		12	13	19.7	19.9	19.9	5.0	20.5
		25	0	19.7	19.8	20.0	5.0	20.5

LTE Band 12 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	24.5	24.7	24.7	0.0	25.5
		1	8	24.4	24.5	24.5	0.0	25.5
		1	14	24.5	24.7	24.6	0.0	25.5
		8	0	22.8	22.9	22.9	2.0	23.5
		8	4	22.7	22.9	22.9	2.0	23.5
		8	7	22.7	22.9	22.9	2.0	23.5
		15	0	22.7	22.8	22.9	2.0	23.5
	16QAM	1	0	22.7	22.7	23.0	2.0	23.5
		1	8	22.6	22.5	22.8	2.0	23.5
		1	14	22.7	22.6	23.0	2.0	23.5
		8	0	21.7	21.8	21.9	3.0	22.5
		8	4	21.6	21.9	21.8	3.0	22.5
		8	7	21.6	21.8	21.8	3.0	22.5
		15	0	21.6	21.8	21.8	3.0	22.5
	64QAM	1	0	21.6	21.8	21.7	3.0	22.5
		1	8	21.5	21.6	21.7	3.0	22.5
		1	14	21.5	21.8	21.8	3.0	22.5
		8	0	20.7	20.8	20.8	4.0	21.5
		8	4	20.7	20.7	20.8	4.0	21.5
		8	7	20.7	20.8	20.8	4.0	21.5
		15	0	20.7	20.7	20.8	4.0	21.5
	256QAM	1	0	20.6	21.1	20.8	4.0	21.5
		1	8	20.4	21.1	20.6	4.0	21.5
		1	14	20.6	21.1	20.8	4.0	21.5
		8	0	19.8	19.9	20.0	5.0	20.5
		8	4	19.8	19.9	20.0	5.0	20.5
		8	7	19.8	19.9	20.0	5.0	20.5
		15	0	19.8	19.8	19.9	5.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	24.8	24.9	25.0	0.0	25.5
		1	3	24.7	24.6	24.7	0.0	25.5
		1	5	24.8	24.8	24.9	0.0	25.5
		3	0	24.8	24.9	24.9	0.0	25.5
		3	1	24.7	24.9	24.9	0.0	25.5
		3	3	24.7	24.8	25.0	0.0	25.5
		6	0	22.8	23.0	23.0	2.0	23.5
	16QAM	1	0	22.5	23.0	22.7	2.0	23.5
		1	3	22.6	23.2	23.0	2.0	23.5
		1	5	22.6	23.1	22.8	2.0	23.5
		3	0	22.7	22.8	23.0	2.0	23.5
		3	1	22.6	22.9	22.9	2.0	23.5
		3	3	22.7	22.9	22.9	2.0	23.5
		6	0	21.8	21.8	22.0	3.0	22.5
	64QAM	1	0	22.0	21.9	21.6	3.0	22.5
		1	3	21.8	21.7	21.7	3.0	22.5
		1	5	21.9	21.8	21.7	3.0	22.5
		3	0	21.8	21.9	21.8	3.0	22.5
		3	1	21.8	21.8	21.7	3.0	22.5
		3	3	21.7	21.8	21.8	3.0	22.5
		6	0	20.7	20.9	20.8	4.0	21.5
	256QAM	1	0	20.8	21.0	21.0	4.0	21.5
		1	3	20.8	20.8	20.9	4.0	21.5
		1	5	20.8	21.0	21.0	4.0	21.5
		3	0	20.8	21.0	20.8	4.0	21.5
		3	1	20.7	21.0	20.9	4.0	21.5
		3	3	20.6	21.0	20.9	4.0	21.5
		6	0	19.8	20.0	19.9	5.0	20.5

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				MPR	Tune-up Limit
				Measured Pwr (dBm)					
				26765	26790	26865	26965		
				821.5 MHz	824 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0	23.8	23.5	23.8		0.0	24.5
		1	37	23.6	23.3	23.6		0.0	24.5
		1	74	23.7	23.4	23.7		0.0	24.5
		36	0	22.0	21.7	22.0		2.0	22.5
		36	20	22.0	21.7	22.0		2.0	22.5
		36	39	22.0	21.7	21.9		2.0	22.5
		75	0	22.0	21.7	22.0		2.0	22.5
	16QAM	1	0	22.1	21.9	22.2		2.0	22.5
		1	37	21.9	21.9	21.9		2.0	22.5
		1	74	22.0	21.8	22.0		2.0	22.5
		36	0	20.9	20.8	20.9		3.0	21.5
		36	20	20.9	20.8	20.9		3.0	21.5
		36	39	20.9	20.7	20.9		3.0	21.5
		75	0	21.0	20.7	20.9		3.0	21.5
	64QAM	1	0	20.8	20.6	20.7		3.0	21.5
		1	37	20.6	20.5	20.5		3.0	21.5
		1	74	20.7	20.5	20.6		3.0	21.5
		36	0	20.0	19.8	20.0		4.0	20.5
		36	20	19.9	19.8	19.9		4.0	20.5
		36	39	19.9	19.8	19.9		4.0	20.5
		75	0	19.9	19.7	19.9		4.0	20.5
	256QAM	1	0	20.1	19.7	20.1		4.0	20.5
		1	37	20.0	19.6	19.9		4.0	20.5
		1	74	20.0	19.6	20.0		4.0	20.5
		36	0	19.0	18.7	19.0		5.0	19.5
		36	20	18.9	18.7	19.0		5.0	19.5
		36	39	18.9	18.7	18.9		5.0	19.5
		75	0	18.9	18.7	18.9		5.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit
				26740	26790	26865	26990		
				819 MHz	824 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	23.4	23.6	23.7	24.0	0.0	24.5
		1	25	23.3	23.5	23.7	23.9	0.0	24.5
		1	49	23.4	23.5	23.6	23.9	0.0	24.5
		25	0	21.7	21.7	21.9	22.3	2.0	22.5
		25	12	21.7	21.7	21.9	22.3	2.0	22.5
		25	25	21.6	21.7	21.9	22.3	2.0	22.5
		50	0	21.7	21.7	21.9	22.3	2.0	22.5
	16QAM	1	0	21.4	21.8	22.1	22.5	2.0	22.5
		1	25	21.4	21.8	22.1	22.4	2.0	22.5
		1	49	21.3	21.8	22.1	22.4	2.0	22.5
		25	0	20.6	20.7	20.9	21.3	3.0	21.5
		25	12	20.6	20.7	20.9	21.3	3.0	21.5
		25	25	20.6	20.7	20.9	21.2	3.0	21.5
		50	0	20.6	20.6	20.8	21.2	3.0	21.5
	64QAM	1	0	20.5	20.6	20.8	21.1	3.0	21.5
		1	25	20.5	20.6	20.7	21.1	3.0	21.5
		1	49	20.4	20.5	20.8	21.0	3.0	21.5
		25	0	19.7	19.8	19.9	20.3	4.0	20.5
		25	12	19.7	19.8	19.9	20.3	4.0	20.5
		25	25	19.8	19.7	19.9	20.3	4.0	20.5
		50	0	19.7	19.7	19.8	20.3	4.0	20.5
	256QAM	1	0	19.8	19.6	19.9	20.3	4.0	20.5
		1	25	19.7	19.5	19.9	20.2	4.0	20.5
		1	49	19.8	19.5	19.9	20.1	4.0	20.5
		25	0	18.7	18.8	19.0	19.3	5.0	19.5
		25	12	18.7	18.8	18.9	19.3	5.0	19.5
		25	25	18.7	18.7	18.9	19.3	5.0	19.5
		50	0	18.7	18.7	18.9	19.3	5.0	19.5

Notes:

For Orange box's output power results, There are measured for the test of Part.90.

LTE Band 26 Measured Results _(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit
				26715	26790	26865	27015		
				816.5 MHz	824 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.5	23.4	23.7	24.2	0.0	24.5
		1	12	23.3	23.4	23.7	24.2	0.0	24.5
		1	24	23.5	23.5	23.8	24.2	0.0	24.5
		12	0	21.6	21.7	21.9	22.3	2.0	22.5
		12	7	21.6	21.6	21.9	22.3	2.0	22.5
		12	13	21.6	21.6	21.9	22.3	2.0	22.5
		25	0	21.7	21.7	21.9	22.3	2.0	22.5
	16QAM	1	0	21.8	21.7	22.0	22.3	2.0	22.5
		1	12	21.6	21.5	21.9	22.3	2.0	22.5
		1	24	21.8	21.7	22.0	22.4	2.0	22.5
		12	0	20.7	20.6	20.8	21.2	3.0	21.5
		12	7	20.7	20.6	20.8	21.2	3.0	21.5
		12	13	20.7	20.6	20.8	21.2	3.0	21.5
		25	0	20.6	20.7	20.8	21.2	3.0	21.5
	64QAM	1	0	20.4	20.7	20.5	21.4	3.0	21.5
		1	12	20.4	20.5	20.4	21.2	3.0	21.5
		1	24	20.5	20.6	20.5	21.3	3.0	21.5
		12	0	19.7	19.7	19.8	20.2	4.0	20.5
		12	7	19.6	19.7	19.8	20.2	4.0	20.5
		12	13	19.6	19.7	19.8	20.2	4.0	20.5
		25	0	19.6	19.7	19.8	20.3	4.0	20.5
	256QAM	1	0	19.7	19.9	19.6	20.4	4.0	20.5
		1	12	19.6	19.8	19.4	20.4	4.0	20.5
		1	24	19.7	19.9	19.6	20.4	4.0	20.5
		12	0	18.7	18.8	18.9	19.3	5.0	19.5
		12	7	18.7	18.7	18.9	19.3	5.0	19.5
		12	13	18.7	18.7	18.9	19.3	5.0	19.5
		25	0	18.7	18.6	18.9	19.3	5.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit
				26705	26790	26865	27025		
				815.5 MHz	824 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.5	23.5	23.7	24.1	0.0	24.5
		1	8	23.2	23.3	23.5	24.0	0.0	24.5
		1	14	23.5	23.4	23.6	24.1	0.0	24.5
		8	0	21.7	21.7	22.0	22.4	2.0	22.5
		8	4	21.7	21.7	22.0	22.4	2.0	22.5
		8	7	21.7	21.7	21.9	22.4	2.0	22.5
		15	0	21.7	21.7	21.9	22.3	2.0	22.5
	16QAM	1	0	21.5	21.9	22.1	22.3	2.0	22.5
		1	8	21.3	21.8	21.9	22.5	2.0	22.5
		1	14	21.4	22.0	22.1	22.5	2.0	22.5
		8	0	20.7	20.7	20.9	21.3	3.0	21.5
		8	4	20.7	20.7	20.9	21.3	3.0	21.5
		8	7	20.7	20.7	20.9	21.3	3.0	21.5
		15	0	20.7	20.6	20.8	21.3	3.0	21.5
	64QAM	1	0	20.5	20.6	21.0	21.2	3.0	21.5
		1	8	20.4	20.5	20.8	21.1	3.0	21.5
		1	14	20.4	20.7	21.0	21.3	3.0	21.5
		8	0	19.7	19.7	20.0	20.3	4.0	20.5
		8	4	19.7	19.7	19.9	20.3	4.0	20.5
		8	7	19.7	19.7	19.9	20.3	4.0	20.5
		15	0	19.6	19.8	19.7	20.3	4.0	20.5
	256QAM	1	0	19.5	19.9	20.1	20.2	4.0	20.5
		1	8	19.4	19.8	20.0	20.2	4.0	20.5
		1	14	19.4	19.9	20.0	20.2	4.0	20.5
		8	0	18.8	18.7	19.1	19.3	5.0	19.5
		8	4	18.8	18.6	19.0	19.3	5.0	19.5
		8	7	18.8	18.7	19.0	19.3	5.0	19.5
		15	0	18.7	18.7	18.8	19.3	5.0	19.5

Notes:

For Orange box's output power results, There are measured for the test of Part.90.

LTE Band 26 Measured Results _(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit
				26697	26790	26865	27033		
				814.7 MHz	824 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.7	23.8	23.6	24.1	0.0	24.5
		1	3	23.4	23.5	23.6	24.1	0.0	24.5
		1	5	23.5	23.7	23.6	24.1	0.0	24.5
		3	0	23.8	23.8	23.9	24.4	0.0	24.5
		3	1	23.8	23.8	23.9	24.3	0.0	24.5
		3	3	23.8	23.7	23.9	24.3	0.0	24.5
		6	0	21.7	21.8	21.9	22.4	1.0	23.5
	16QAM	1	0	21.7	22.0	22.2	22.3	1.0	23.5
		1	3	21.8	22.1	22.2	22.3	1.0	23.5
		1	5	21.8	22.1	22.2	22.3	1.0	23.5
		3	0	21.8	21.7	21.9	22.3	1.0	23.5
		3	1	21.7	21.8	21.8	22.3	1.0	23.5
		3	3	21.7	21.8	21.8	22.3	1.0	23.5
		6	0	21.6	20.8	21.9	22.3	2.0	22.5
	64QAM	1	0	22.0	20.8	20.9	21.2	2.0	22.5
		1	3	20.8	20.7	20.9	21.2	2.0	22.5
		1	5	20.8	20.7	20.9	21.2	2.0	22.5
		3	0	20.9	20.9	20.9	21.3	2.0	22.5
		3	1	21.0	20.8	20.9	21.3	2.0	22.5
		3	3	21.0	20.8	20.9	21.3	2.0	22.5
		6	0	21.0	19.8	20.9	21.2	3.0	21.5
	256QAM	1	0	20.2	19.9	19.8	20.1	4.0	20.5
		1	3	20.2	19.8	19.7	20.1	4.0	20.5
		1	5	20.2	19.9	19.7	20.1	4.0	20.5
		3	0	20.1	19.7	20.1	20.3	4.0	20.5
		3	1	20.1	19.7	20.1	20.3	4.0	20.5
		3	3	20.1	19.7	20.1	20.3	4.0	20.5
		6	0	20.0	18.7	20.0	20.3	4.0	20.5

Notes:

For Orange box's output power results, There are measured for the test of Part.90.

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	23.7	24.4	24.3	0.0	24.5
		1	49	23.9	24.4	24.5	0.0	24.5
		1	99	24.1	24.4	23.3	0.0	24.5
		50	0	22.3	23.0	23.4	1.0	23.5
		50	24	22.4	23.0	23.4	1.0	23.5
		50	50	22.4	23.0	23.5	1.0	23.5
		100	0	22.4	22.9	23.4	1.0	23.5
	16QAM	1	0	22.2	22.7	23.1	1.0	23.5
		1	49	22.4	23.0	23.2	1.0	23.5
		1	99	22.5	22.7	22.5	1.0	23.5
		50	0	21.4	22.0	22.4	2.0	22.5
		50	24	21.4	22.0	22.4	2.0	22.5
		50	50	21.4	22.0	22.4	2.0	22.5
		100	0	21.4	21.9	22.4	2.0	22.5
	64QAM	1	0	20.7	21.2	21.9	2.5	22
		1	49	20.9	21.5	21.9	2.5	22
		1	99	21.1	21.3	21.9	2.5	22
		50	0	20.2	20.8	21.3	3.0	21.5
		50	24	20.3	20.8	21.3	3.0	21.5
		50	50	20.3	20.8	21.3	3.0	21.5
		100	0	20.3	20.8	21.3	3.0	21.5
	256QAM	1	0	20.4	20.8	20.9	3.0	21.5
		1	49	20.6	20.9	21.0	3.0	21.5
		1	99	20.6	20.8	21.0	3.0	21.5
		50	0	19.3	19.8	20.3	4.0	20.5
		50	24	19.4	19.8	20.3	4.0	20.5
		50	50	19.4	19.8	20.3	4.0	20.5
		100	0	19.3	19.8	20.2	4.0	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	23.7	24.4	24.5	0.0	24.5
		1	37	23.7	24.4	24.4	0.0	24.5
		1	74	24.0	24.4	23.9	0.0	24.5
		36	0	22.3	22.9	23.3	1.0	23.5
		36	20	22.3	22.8	23.3	1.0	23.5
		36	39	22.3	22.8	23.3	1.0	23.5
		75	0	22.3	22.8	23.3	1.0	23.5
	16QAM	1	0	22.1	22.9	23.4	1.0	23.5
		1	37	22.2	22.8	23.4	1.0	23.5
		1	74	22.3	22.8	23.1	1.0	23.5
		36	0	21.3	21.8	22.2	2.0	22.5
		36	20	21.3	21.8	22.2	2.0	22.5
		36	39	21.3	21.8	22.2	2.0	22.5
		75	0	21.3	21.8	22.2	2.0	22.5
	64QAM	1	0	21.0	21.3	21.6	2.5	22
		1	37	21.1	21.3	21.5	2.5	22
		1	74	21.3	21.3	21.7	2.5	22
		36	0	20.2	20.7	21.2	3.0	21.5
		36	20	20.2	20.7	21.2	3.0	21.5
		36	39	20.2	20.7	21.2	3.0	21.5
		75	0	20.2	20.6	21.1	3.0	21.5
	256QAM	1	0	19.9	20.6	20.9	3.0	21.5
		1	37	20.0	20.6	20.9	3.0	21.5
		1	74	20.2	20.7	21.0	3.0	21.5
		36	0	19.2	19.7	20.1	4.0	20.5
		36	20	19.2	19.7	20.0	4.0	20.5
		36	39	19.2	19.7	20.1	4.0	20.5
		75	0	19.2	19.6	20.0	4.0	20.5

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	23.7	24.3	24.4	0.0	24.5
		1	25	23.8	24.4	24.5	0.0	24.5
		1	49	24.0	24.4	24.3	0.0	24.5
		25	0	22.2	22.8	23.2	1.0	23.5
		25	12	22.2	22.8	23.2	1.0	23.5
		25	25	22.2	22.7	23.2	1.0	23.5
		50	0	22.2	22.7	23.2	1.0	23.5
	16QAM	1	0	22.1	22.8	23.3	1.0	23.5
		1	25	22.2	22.9	23.4	1.0	23.5
		1	49	22.1	22.9	23.4	1.0	23.5
		25	0	21.2	21.7	22.2	2.0	22.5
		25	12	21.2	21.7	22.1	2.0	22.5
		25	25	21.2	21.7	22.1	2.0	22.5
		50	0	21.2	21.7	22.1	2.0	22.5
	64QAM	1	0	20.8	21.2	21.7	2.5	22
		1	25	20.9	21.2	21.8	2.5	22
		1	49	21.0	21.2	21.9	2.5	22
		25	0	20.1	20.8	21.1	3.0	21.5
		25	12	20.1	20.8	21.1	3.0	21.5
		25	25	20.1	20.8	21.2	3.0	21.5
		50	0	20.1	20.7	21.1	3.0	21.5
	256QAM	1	0	20.0	20.6	21.3	3.0	21.5
		1	25	20.1	20.5	21.2	3.0	21.5
		1	49	20.2	20.6	21.3	3.0	21.5
		25	0	19.1	19.7	20.1	4.0	20.5
		25	12	19.1	19.7	20.2	4.0	20.5
		25	25	19.1	19.6	20.2	4.0	20.5
		50	0	19.1	19.6	20.1	4.0	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	23.7	24.4	24.4	0.0	24.5
		1	12	23.7	24.5	24.5	0.0	24.5
		1	24	23.9	24.4	24.3	0.0	24.5
		12	0	22.0	22.7	23.2	1.0	23.5
		12	7	22.0	22.7	23.2	1.0	23.5
		12	13	22.1	22.7	23.2	1.0	23.5
		25	0	22.1	22.7	23.2	1.0	23.5
	16QAM	1	0	22.2	22.9	23.2	1.0	23.5
		1	12	22.1	22.7	23.0	1.0	23.5
		1	24	22.3	22.8	23.2	1.0	23.5
		12	0	21.0	21.6	22.2	2.0	22.5
		12	7	21.0	21.6	22.2	2.0	22.5
		12	13	21.0	21.6	22.2	2.0	22.5
		25	0	21.1	21.6	22.2	2.0	22.5
	64QAM	1	0	20.5	21.7	21.4	2.5	22
		1	12	20.6	21.6	21.5	2.5	22
		1	24	20.8	21.6	21.6	2.5	22
		12	0	19.8	20.5	21.0	3.0	21.5
		12	7	19.9	20.5	21.0	3.0	21.5
		12	13	19.9	20.5	21.0	3.0	21.5
		25	0	20.0	20.7	21.1	3.0	21.5
	256QAM	1	0	19.4	20.6	20.8	3.0	21.5
		1	12	19.4	20.5	20.8	3.0	21.5
		1	24	19.5	20.6	20.9	3.0	21.5
		12	0	19.0	19.7	20.0	4.0	20.5
		12	7	19.0	19.6	20.0	4.0	20.5
		12	13	19.0	19.6	20.0	4.0	20.5
		25	0	19.0	19.5	20.1	4.0	20.5

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	23.6	24.4	24.5	0.0	24.5
		1	8	23.5	24.3	24.4	0.0	24.5
		1	14	23.9	24.4	24.3	0.0	24.5
		8	0	22.1	22.7	23.3	1.0	23.5
		8	4	22.1	22.7	23.3	1.0	23.5
		8	7	22.1	22.7	23.3	1.0	23.5
		15	0	22.1	22.7	23.2	1.0	23.5
	16QAM	1	0	21.9	22.9	23.2	1.0	23.5
		1	8	21.6	22.8	23.1	1.0	23.5
		1	14	21.8	22.9	23.2	1.0	23.5
		8	0	21.1	21.7	22.2	2.0	22.5
		8	4	21.1	21.7	22.1	2.0	22.5
		8	7	21.0	21.7	22.1	2.0	22.5
		15	0	21.0	21.6	22.2	2.0	22.5
	64QAM	1	0	20.7	21.7	22.0	2.0	22.5
		1	8	20.6	21.6	21.9	2.0	22.5
		1	14	20.9	21.6	22.2	2.0	22.5
		8	0	19.9	20.7	21.1	3.0	21.5
		8	4	19.9	20.6	21.1	3.0	21.5
		8	7	19.9	20.7	21.1	3.0	21.5
		15	0	20.0	20.6	21.1	3.0	21.5
	256QAM	1	0	19.8	20.7	21.2	3.0	21.5
		1	8	19.7	20.7	21.1	3.0	21.5
		1	14	19.8	20.7	21.2	3.0	21.5
		8	0	19.0	19.7	20.2	4.0	20.5
		8	4	19.0	19.6	20.1	4.0	20.5
		8	7	19.0	19.6	20.1	4.0	20.5
		15	0	19.0	19.7	19.9	4.0	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	23.4	24.3	23.7	0.0	24.5
		1	3	23.4	24.3	23.5	0.0	24.5
		1	5	23.6	24.3	23.4	0.0	24.5
		3	0	23.7	24.4	24.5	0.0	24.5
		3	1	23.5	24.5	24.1	0.0	24.5
		3	3	23.4	24.5	23.8	0.0	24.5
		6	0	23.3	23.1	22.4	0.0	24.5
	16QAM	1	0	22.0	22.5	23.2	1.0	23.5
		1	3	22.1	22.4	23.1	1.0	23.5
		1	5	22.1	22.4	23.1	1.0	23.5
		3	0	21.8	22.5	23.0	1.0	23.5
		3	1	21.8	22.5	23.0	1.0	23.5
		3	3	21.8	22.6	23.0	1.0	23.5
		6	0	21.7	22.4	22.4	2.0	22.5
	64QAM	1	0	21.2	21.3	21.7	2.0	22.5
		1	3	21.4	21.6	22.0	2.0	22.5
		1	5	21.3	21.7	22.1	2.0	22.5
		3	0	21.6	21.6	22.2	2.0	22.5
		3	1	21.5	21.8	22.1	2.0	22.5
		3	3	21.5	21.6	22.1	2.0	22.5
		6	0	20.5	20.6	21.2	3.0	21.5
	256QAM	1	0	20.5	20.7	20.4	3.0	21.5
		1	3	20.6	20.5	20.4	3.0	21.5
		1	5	20.5	20.3	20.5	3.0	21.5
		3	0	20.7	20.6	20.7	3.0	21.5
		3	1	20.7	20.6	20.6	3.0	21.5
		3	3	20.4	20.6	20.6	3.0	21.5
		6	0	19.5	19.7	19.6	4.0	20.5

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	22.8	23.3	23.6	23.4	23.3	0.0	25.0
		1	49	23.4	23.3	23.6	23.4	22.9	0.0	25.0
		1	99	23.4	23.3	23.6	23.4	22.7	0.0	25.0
		50	0	21.7	21.5	21.6	21.7	21.6	2.0	23.0
		50	24	21.7	21.5	21.6	21.7	21.5	2.0	23.0
		50	50	21.7	21.5	21.8	21.7	21.2	2.0	23.0
		100	0	21.7	21.5	21.6	21.7	21.5	2.0	23.0
	16QAM	1	0	21.4	21.5	21.3	21.6	21.3	2.0	23.0
		1	49	22.2	21.4	21.4	21.7	21.6	2.0	23.0
		1	99	21.5	21.4	21.6	21.5	20.7	2.0	23.0
		50	0	20.6	20.4	20.7	20.6	20.5	3.0	22.0
		50	24	20.6	20.5	20.6	20.6	20.5	3.0	22.0
		50	50	20.6	20.4	20.6	20.6	20.5	3.0	22.0
		100	0	20.6	20.5	20.6	20.7	20.5	3.0	22.0
	64QAM	1	0	20.5	20.2	20.2	20.4	20.8	3.0	22.0
		1	49	20.5	20.3	20.1	20.7	20.2	3.0	22.0
		1	99	20.7	20.5	20.2	20.5	20.3	3.0	22.0
		50	0	19.7	19.5	19.7	19.8	19.5	4.0	21.0
		50	24	19.8	19.5	19.7	19.8	19.6	4.0	21.0
		50	50	19.8	19.5	19.6	19.8	19.5	4.0	21.0
		100	0	19.7	19.5	19.7	19.7	19.5	4.0	21.0
	256QAM	1	0	19.8	19.5	19.3	19.4	19.6	4.0	21.0
		1	49	19.3	19.6	19.7	19.8	19.3	4.0	21.0
		1	99	19.8	19.6	19.3	19.9	19.6	4.0	21.0
		50	0	18.7	18.5	18.6	18.8	18.6	5.0	20.0
		50	24	18.7	18.5	18.7	18.7	18.6	5.0	20.0
		50	50	18.7	18.5	18.6	18.7	18.6	5.0	20.0
		100	0	18.7	18.5	18.7	18.8	18.6	5.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	23.5	23.4	23.8	23.8	23.7	0.0	25.0
		1	37	23.7	23.4	23.5	23.7	23.4	0.0	25.0
		1	74	23.7	23.5	23.7	23.8	22.5	0.0	25.0
		36	0	21.8	21.6	21.7	21.8	21.7	2.0	23.0
		36	20	21.8	21.6	21.7	21.8	21.7	2.0	23.0
		36	39	21.8	21.6	21.7	21.8	21.6	2.0	23.0
		75	0	21.8	21.6	21.7	21.8	21.7	2.0	23.0
	16QAM	1	0	21.5	21.0	21.6	21.9	21.3	2.0	23.0
		1	37	21.7	21.0	21.3	21.3	21.3	2.0	23.0
		1	74	21.9	21.3	21.3	21.3	21.2	2.0	23.0
		36	0	20.8	20.5	20.6	20.8	20.6	3.0	22.0
		36	20	20.8	20.5	20.6	20.8	20.6	3.0	22.0
		36	39	20.7	20.6	20.6	20.8	20.6	3.0	22.0
		75	0	20.7	20.5	20.7	20.8	20.6	3.0	22.0
	64QAM	1	0	20.5	20.3	20.7	20.5	20.3	3.0	22.0
		1	37	20.5	20.0	20.1	20.5	20.2	3.0	22.0
		1	74	20.4	20.3	20.7	20.8	20.3	3.0	22.0
		36	0	19.7	19.6	19.7	19.7	19.7	4.0	21.0
		36	20	19.7	19.5	19.7	19.7	19.6	4.0	21.0
		36	39	19.7	19.6	19.7	19.8	19.6	4.0	21.0
		75	0	19.7	19.5	19.7	19.7	19.6	4.0	21.0
	256QAM	1	0	19.8	19.6	19.5	19.7	19.5	4.0	21.0
		1	37	19.7	19.5	19.4	19.9	19.8	4.0	21.0
		1	74	19.5	19.4	19.5	19.7	19.5	4.0	21.0
		36	0	18.7	18.6	18.7	18.8	18.6	5.0	20.0
		36	20	18.7	18.5	18.7	18.7	18.7	5.0	20.0
		36	39	18.7	18.6	18.7	18.8	18.6	5.0	20.0
		75	0	18.7	18.5	18.7	18.8	18.6	5.0	20.0

LTE Band 41 Measured Results _(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	23.8	23.6	23.8	23.8	23.1	0.0	25.0
		1	25	23.7	23.5	23.7	23.9	22.5	0.0	25.0
		1	49	23.7	23.5	23.6	23.7	22.6	0.0	25.0
		25	0	21.7	21.5	21.7	21.7	21.2	2.0	23.0
		25	12	21.7	21.5	21.7	21.7	21.0	2.0	23.0
		25	25	21.7	21.5	21.7	21.7	20.9	2.0	23.0
		50	0	21.7	21.5	21.7	21.8	21.1	2.0	23.0
	16QAM	1	0	21.8	21.5	21.7	21.2	21.3	2.0	23.0
		1	25	21.8	21.5	21.7	21.2	21.1	2.0	23.0
		1	49	21.8	21.6	21.7	21.1	20.9	2.0	23.0
		25	0	20.6	20.4	20.7	20.8	20.5	3.0	22.0
		25	12	20.6	20.5	20.7	20.7	20.5	3.0	22.0
		25	25	20.7	20.5	20.7	20.7	20.4	3.0	22.0
		50	0	20.7	20.5	20.7	20.7	20.5	3.0	22.0
	64QAM	1	0	20.3	20.1	20.5	20.8	20.2	3.0	22.0
		1	25	20.1	20.0	20.5	20.8	20.0	3.0	22.0
		1	49	20.3	20.2	20.4	20.6	20.2	3.0	22.0
		25	0	19.7	19.6	19.8	19.8	19.6	4.0	21.0
		25	12	19.7	19.5	19.8	19.8	19.6	4.0	21.0
		25	25	19.7	19.6	19.8	19.8	19.6	4.0	21.0
		50	0	19.7	19.6	19.7	19.7	19.6	4.0	21.0
	256QAM	1	0	19.5	19.4	19.7	19.4	19.6	4.0	21.0
		1	25	19.6	19.5	19.5	19.3	19.6	4.0	21.0
		1	49	19.5	19.4	19.6	19.4	19.6	4.0	21.0
		25	0	18.8	18.6	18.8	18.8	18.6	5.0	20.0
		25	12	18.7	18.6	18.8	18.8	18.6	5.0	20.0
		25	25	18.7	18.6	18.8	18.8	18.6	5.0	20.0
		50	0	18.8	18.6	18.8	18.8	18.6	5.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	23.6	23.3	23.8	23.6	23.3	0.0	25.0
		1	12	23.4	23.1	23.6	23.3	23.2	0.0	25.0
		1	24	23.5	23.2	23.7	23.5	23.2	0.0	25.0
		12	0	21.7	21.5	21.7	21.7	21.6	2.0	23.0
		12	7	21.7	21.5	21.7	21.7	21.6	2.0	23.0
		12	13	21.7	21.5	21.6	21.7	21.6	2.0	23.0
		25	0	21.7	21.5	21.7	21.8	21.6	2.0	23.0
	16QAM	1	0	21.2	21.4	21.6	21.3	21.4	2.0	23.0
		1	12	21.2	21.3	21.4	21.2	21.3	2.0	23.0
		1	24	21.3	21.5	21.6	21.3	21.4	2.0	23.0
		12	0	20.5	20.5	20.7	20.5	20.5	3.0	22.0
		12	7	20.5	20.5	20.7	20.5	20.5	3.0	22.0
		12	13	20.5	20.5	20.7	20.5	20.5	3.0	22.0
		25	0	20.7	20.6	20.7	20.7	20.6	3.0	22.0
	64QAM	1	0	20.3	20.5	20.8	20.3	20.5	3.0	22.0
		1	12	20.2	20.5	20.6	20.2	20.4	3.0	22.0
		1	24	20.1	20.6	20.7	20.2	20.5	3.0	22.0
		12	0	19.6	19.5	19.7	19.7	19.5	4.0	21.0
		12	7	19.6	19.5	19.6	19.7	19.5	4.0	21.0
		12	13	19.6	19.5	19.7	19.7	19.5	4.0	21.0
		25	0	19.7	19.6	19.6	19.8	19.6	4.0	21.0
	256QAM	1	0	19.6	19.4	19.8	19.6	19.6	4.0	21.0
		1	12	19.6	19.2	19.6	19.6	19.3	4.0	21.0
		1	24	19.6	19.3	19.7	19.6	19.5	4.0	21.0
		12	0	18.7	18.6	18.7	18.8	18.6	5.0	20.0
		12	7	18.7	18.6	18.7	18.8	18.6	5.0	20.0
		12	13	18.7	18.5	18.8	18.8	18.6	5.0	20.0
		25	0	18.7	18.5	18.8	18.8	18.6	5.0	20.0

2. Reduced power

LTE Band 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100			18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz			1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	17.9	18.0	18.5	0.0	20.0	17.9	18.1	18.5	0.0	20.0
		1	49	18.0	18.1	18.6	0.0	20.0	18.3	18.2	18.6	0.0	20.0
		1	99	18.2	18.0	18.6	0.0	20.0	18.2	18.1	18.6	0.0	20.0
		50	0	18.2	18.4	18.6	0.0	20.0	18.2	18.4	18.6	0.0	20.0
		50	24	18.3	18.4	18.6	0.0	20.0	18.3	18.5	18.7	0.0	20.0
		50	50	18.4	18.4	18.7	0.0	20.0	18.4	18.4	18.7	0.0	20.0
		100	0	18.3	18.4	18.6	0.0	20.0	18.3	18.4	18.6	0.0	20.0
	16QAM	1	0	18.2	18.0	18.9	0.0	20.0	18.4	18.0	18.8	0.0	20.0
		1	49	18.5	18.3	19.2	0.0	20.0	18.7	18.4	19.0	0.0	20.0
		1	99	18.5	18.0	19.0	0.0	20.0	18.6	18.0	18.9	0.0	20.0
		50	0	18.3	18.5	18.7	0.0	20.0	18.3	18.5	18.7	0.0	20.0
		50	24	18.3	18.5	18.7	0.0	20.0	18.4	18.5	18.7	0.0	20.0
		50	50	18.4	18.5	18.7	0.0	20.0	18.4	18.5	18.7	0.0	20.0
		100	0	18.4	18.5	18.7	0.0	20.0	18.4	18.5	18.7	0.0	20.0
	64QAM	1	0	18.0	18.3	18.5	0.0	20.0	18.2	18.5	18.3	0.0	20.0
		1	49	18.4	18.5	18.6	0.0	20.0	18.3	18.6	18.3	0.0	20.0
		1	99	18.3	18.3	18.7	0.0	20.0	18.4	18.5	18.4	0.0	20.0
		50	0	18.3	18.5	18.7	0.0	20.0	18.3	18.6	18.7	0.0	20.0
		50	24	18.4	18.5	18.7	0.0	20.0	18.4	18.6	18.8	0.0	20.0
		50	50	18.5	18.4	18.8	0.0	20.0	18.5	18.5	18.8	0.0	20.0
		100	0	18.4	18.5	18.7	0.0	20.0	18.4	18.6	18.8	0.0	20.0
	256QAM	1	0	18.1	18.1	18.8	0.0	20.0	18.3	18.4	18.7	0.0	20.0
		1	49	18.2	18.2	18.9	0.0	20.0	18.5	18.5	18.8	0.0	20.0
		1	99	18.3	18.2	18.9	0.0	20.0	18.5	18.4	18.8	0.0	20.0
		50	0	18.3	18.4	18.6	0.0	20.0	18.2	18.5	18.6	0.0	20.0
		50	24	18.3	18.5	18.7	0.0	20.0	18.3	18.5	18.7	0.0	20.0
		50	50	18.4	18.4	18.7	0.0	20.0	18.4	18.5	18.7	0.0	20.0
		100	0	18.3	18.5	18.6	0.0	20.0	18.3	18.5	18.7	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125			18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz			1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	18.1	18.3	18.3	0.0	20.0	18.2	18.4	18.2	0.0	20.0
		1	37	18.1	18.2	18.3	0.0	20.0	18.1	18.3	18.2	0.0	20.0
		1	74	18.3	18.4	18.5	0.0	20.0	18.3	18.4	18.4	0.0	20.0
		36	0	18.5	18.6	18.6	0.0	20.0	18.5	18.5	18.6	0.0	20.0
		36	20	18.6	18.6	18.7	0.0	20.0	18.5	18.6	18.7	0.0	20.0
		36	39	18.6	18.6	18.7	0.0	20.0	18.6	18.5	18.7	0.0	20.0
		75	0	18.5	18.5	18.7	0.0	20.0	18.5	18.5	18.7	0.0	20.0
	16QAM	1	0	18.5	19.0	19.0	0.0	20.0	18.5	18.8	18.9	0.0	20.0
		1	37	18.5	19.0	19.0	0.0	20.0	18.6	18.8	19.0	0.0	20.0
		1	74	18.7	18.9	19.1	0.0	20.0	18.7	18.7	19.1	0.0	20.0
		36	0	18.5	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		36	20	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		36	39	18.6	18.6	18.8	0.0	20.0	18.7	18.6	18.8	0.0	20.0
		75	0	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
	64QAM	1	0	18.5	18.8	18.7	0.0	20.0	18.2	18.4	18.6	0.0	20.0
		1	37	18.5	18.7	18.6	0.0	20.0	18.7	18.3	18.5	0.0	20.0
		1	74	18.7	18.7	18.8	0.0	20.0	18.8	18.4	18.7	0.0	20.0
		36	0	18.5	18.7	18.8	0.0	20.0	18.6	18.6	18.9	0.0	20.0
		36	20	18.6	18.7	18.9	0.0	20.0	18.6	18.7	18.9	0.0	20.0
		36	39	18.6	18.7	18.9	0.0	20.0	18.6	18.6	18.9	0.0	20.0
		75	0	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
	256QAM	1	0	18.4	18.8	18.6	0.0	20.0	18.4	18.6	18.7	0.0	20.0
		1	37	18.4	18.8	18.6	0.0	20.0	18.4	18.7	18.7	0.0	20.0
		1	74	18.6	18.8	18.8	0.0	20.0	18.5	18.6	18.9	0.0	20.0
		36	0	18.6	18.6	18.7	0.0	20.0	18.5	18.6	18.7	0.0	20.0
		36	20	18.6	18.6	18.8	0.0	20.0	18.5	18.6	18.7	0.0	20.0
		36	39	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
		75	0	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0

LTE Band 2 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18650	18900	19150			18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz			1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	18.2	18.4	18.3	0.0	20.0	18.1	18.4	18.5	0.0	20.0
		1	25	18.2	18.4	18.3	0.0	20.0	18.1	18.4	18.6	0.0	20.0
		1	49	18.4	18.4	18.5	0.0	20.0	18.3	18.4	18.7	0.0	20.0
		25	0	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		25	12	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		25	25	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
		50	0	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
	16QAM	1	0	18.6	18.7	19.0	0.0	20.0	18.8	18.4	18.8	0.0	20.0
		1	25	18.7	18.8	19.1	0.0	20.0	18.9	18.5	18.9	0.0	20.0
		1	49	18.6	18.7	19.1	0.0	20.0	18.9	18.4	18.9	0.0	20.0
		25	0	18.7	18.8	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		25	12	18.7	18.8	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		25	25	18.7	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		50	0	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
	64QAM	1	0	18.4	18.6	18.5	0.0	20.0	18.2	18.3	18.4	0.0	20.0
		1	25	18.5	18.6	18.7	0.0	20.0	18.3	18.4	18.4	0.0	20.0
		1	49	18.5	18.6	18.7	0.0	20.0	18.3	18.4	18.5	0.0	20.0
		25	0	18.8	18.8	18.8	0.0	20.0	18.7	18.8	18.8	0.0	20.0
		25	12	18.8	18.8	18.8	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		25	25	18.8	18.8	18.9	0.0	20.0	18.8	18.7	18.8	0.0	20.0
		50	0	18.7	18.7	18.9	0.0	20.0	18.7	18.7	18.9	0.0	20.0
	256QAM	1	0	18.6	18.9	18.6	0.0	20.0	18.5	18.8	18.7	0.0	20.0
		1	25	18.6	18.8	18.6	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		1	49	18.8	18.8	18.7	0.0	20.0	18.7	18.8	18.8	0.0	20.0
		25	0	18.7	18.8	18.8	0.0	20.0	18.7	18.7	18.7	0.0	20.0
		25	12	18.7	18.8	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		25	25	18.7	18.7	18.8	0.0	20.0	18.7	18.7	18.7	0.0	20.0
		50	0	18.7	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175			18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz			1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	18.3	18.5	18.6	0.0	20.0	18.4	18.5	18.5	0.0	20.0
		1	12	18.2	18.4	18.6	0.0	20.0	18.4	18.5	18.4	0.0	20.0
		1	24	18.4	18.5	18.7	0.0	20.0	18.5	18.6	18.7	0.0	20.0
		12	0	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		12	7	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		12	13	18.6	18.6	18.7	0.0	20.0	18.6	18.6	18.8	0.0	20.0
		25	0	18.7	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
	16QAM	1	0	18.7	18.9	19.0	0.0	20.0	18.7	19.0	19.0	0.0	20.0
		1	12	18.5	18.8	18.9	0.0	20.0	18.6	18.8	18.8	0.0	20.0
		1	24	18.7	19.0	19.1	0.0	20.0	18.8	18.9	19.1	0.0	20.0
		12	0	18.7	18.6	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		12	7	18.7	18.6	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		12	13	18.7	18.6	18.9	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		25	0	18.8	18.7	18.8	0.0	20.0	18.8	18.7	18.8	0.0	20.0
	64QAM	1	0	18.2	18.3	18.7	0.0	20.0	18.6	18.5	18.5	0.0	20.0
		1	12	18.2	18.2	18.6	0.0	20.0	18.5	18.5	18.5	0.0	20.0
		1	24	18.3	18.4	18.7	0.0	20.0	18.6	18.5	18.7	0.0	20.0
		12	0	18.7	18.7	18.8	0.0	20.0	18.6	18.8	18.8	0.0	20.0
		12	7	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		12	13	18.7	18.7	18.8	0.0	20.0	18.6	18.8	18.8	0.0	20.0
		25	0	18.7	18.7	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
	256QAM	1	0	18.4	18.4	18.9	0.0	20.0	18.7	18.8	18.7	0.0	20.0
		1	12	18.3	18.4	18.8	0.0	20.0	18.7	18.7	18.6	0.0	20.0
		1	24	18.4	18.4	19.0	0.0	20.0	18.8	18.8	18.7	0.0	20.0
		12	0	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		12	7	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		12	13	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		25	0	18.7	18.6	18.7	0.0	20.0	18.6	18.7	18.8	0.0	20.0

LTE Band 2 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18615	18900	19185			18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz			1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	18.4	18.3	18.7	0.0	20.0	18.4	18.4	18.5	0.0	20.0
		1	8	18.2	18.2	18.4	0.0	20.0	18.3	18.3	18.3	0.0	20.0
		1	14	18.4	18.4	18.8	0.0	20.0	18.5	18.5	18.5	0.0	20.0
		8	0	18.5	18.7	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
		8	4	18.5	18.6	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		8	7	18.5	18.6	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		15	0	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
	16QAM	1	0	18.9	18.9	18.6	0.0	20.0	18.8	18.5	19.0	0.0	20.0
		1	8	18.8	18.8	18.5	0.0	20.0	18.7	18.4	19.0	0.0	20.0
		1	14	19.0	18.8	18.6	0.0	20.0	18.8	18.4	19.2	0.0	20.0
		8	0	18.7	18.7	18.7	0.0	20.0	18.6	18.6	18.8	0.0	20.0
		8	4	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.7	0.0	20.0
		8	7	18.7	18.7	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		15	0	18.7	18.7	18.9	0.0	20.0	18.7	18.7	18.8	0.0	20.0
	64QAM	1	0	18.8	18.4	18.7	0.0	20.0	18.8	18.6	18.7	0.0	20.0
		1	8	18.7	18.2	18.6	0.0	20.0	18.7	18.5	18.6	0.0	20.0
		1	14	18.7	18.5	18.8	0.0	20.0	18.9	18.5	18.8	0.0	20.0
		8	0	18.7	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		8	4	18.7	18.7	18.7	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		8	7	18.7	18.7	18.8	0.0	20.0	18.7	18.7	18.9	0.0	20.0
		15	0	18.7	18.6	18.9	0.0	20.0	18.7	18.7	18.8	0.0	20.0
	256QAM	1	0	18.4	18.9	18.6	0.0	20.0	18.5	18.7	18.9	0.0	20.0
		1	8	18.3	18.8	18.5	0.0	20.0	18.4	18.6	18.8	0.0	20.0
		1	14	18.5	18.9	18.7	0.0	20.0	18.5	18.7	18.9	0.0	20.0
		8	0	18.8	18.8	18.9	0.0	20.0	18.7	18.7	18.9	0.0	20.0
		8	4	18.7	18.8	18.9	0.0	20.0	18.6	18.6	18.9	0.0	20.0
		8	7	18.8	18.8	18.9	0.0	20.0	18.7	18.6	18.9	0.0	20.0
		15	0	18.7	18.6	18.8	0.0	20.0	18.6	18.7	18.7	0.0	20.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193			18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz			1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	18.7	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		1	3	18.5	18.6	18.5	0.0	20.0	18.4	18.6	18.4	0.0	20.0
		1	5	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		3	0	18.6	18.7	18.8	0.0	20.0	18.6	18.7	18.8	0.0	20.0
		3	1	18.6	18.6	18.8	0.0	20.0	18.7	18.6	18.8	0.0	20.0
		3	3	18.7	18.6	18.6	0.0	20.0	18.7	18.6	18.7	0.0	20.0
		6	0	18.6	18.6	18.8	0.0	20.0	18.6	18.6	18.8	0.0	20.0
	16QAM	1	0	18.6	18.6	19.1	0.0	20.0	18.7	18.6	18.9	0.0	20.0
		1	3	18.8	18.7	19.2	0.0	20.0	18.9	18.8	19.1	0.0	20.0
		1	5	18.7	18.7	19.2	0.0	20.0	18.8	18.7	19.0	0.0	20.0
		3	0	18.9	18.9	18.8	0.0	20.0	19.0	18.8	18.9	0.0	20.0
		3	1	18.8	18.8	18.9	0.0	20.0	18.9	18.7	18.9	0.0	20.0
		3	3	18.8	18.9	18.9	0.0	20.0	18.9	18.8	18.9	0.0	20.0
		6	0	18.7	18.8	18.8	0.0	20.0	18.7	18.7	18.7	0.0	20.0
	64QAM	1	0	18.8	19.0	18.9	0.0	20.0	19.0	18.9	18.8	0.0	20.0
		1	3	19.0	18.8	18.7	0.0	20.0	18.9	18.8	18.9	0.0	20.0
		1	5	18.9	18.9	18.8	0.0	20.0	18.9	18.8	18.9	0.0	20.0
		3	0	18.7	19.0	18.9	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		3	1	18.7	18.9	18.9	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		3	3	18.6	18.8	18.8	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		6	0	18.7	18.7	18.8	0.0	20.0	18.8	18.6	18.9	0.0	20.0
	256QAM	1	0	18.6	18.7	18.8	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		1	3	18.5	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		1	5	18.6	18.6	18.9	0.0	20.0	18.8	18.8	18.8	0.0	20.0
		3	0	18.8	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0
		3	1	18.9	18.7	18.8	0.0	20.0	18.7	18.6	18.8	0.0	20.0
		3	3	18.8	18.7	18.8	0.0	20.0	18.6	18.6	18.7	0.0	20.0
		6	0	18.6	18.7	18.8	0.0	20.0	18.7	18.7	18.8	0.0	20.0

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572			132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	19.7	20.4	21.1	0.0	21.5	19.6	20.3	21.0	0.0	21.5
		1	49	19.8	20.5	21.2	0.0	21.5	19.8	20.4	21.1	0.0	21.5
		1	99	20.0	20.4	21.2	0.0	21.5	20.0	20.3	21.1	0.0	21.5
		50	0	20.1	20.8	21.2	0.0	21.5	20.1	20.7	21.2	0.0	21.5
		50	24	20.2	20.8	21.3	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		50	50	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.4	0.0	21.5
		100	0	20.2	20.8	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
	16QAM	1	0	20.2	20.4	21.3	0.0	21.5	20.2	20.4	21.3	0.0	21.5
		1	49	20.4	20.8	21.4	0.0	21.5	20.4	20.7	21.5	0.0	21.5
		1	99	20.4	20.5	21.4	0.0	21.5	20.4	20.4	21.4	0.0	21.5
		50	0	20.2	20.8	21.3	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		50	24	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.3	0.0	21.5
		50	50	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.3	0.0	21.5
		100	0	20.4	20.8	21.3	0.0	21.5	20.3	20.8	21.3	0.0	21.5
	64QAM	1	0	19.6	20.5	20.9	0.0	21.5	19.5	20.3	20.8	0.0	21.5
		1	49	19.9	20.7	21.1	0.0	21.5	19.7	20.4	21.0	0.0	21.5
		1	99	20.0	20.6	20.9	0.0	21.5	19.9	20.3	20.9	0.0	21.5
		50	0	20.2	20.8	21.3	0.0	21.5	20.1	20.7	21.3	0.0	21.5
		50	24	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.3	0.0	21.5
		50	50	20.4	20.8	21.3	0.0	21.5	20.3	20.8	21.3	0.0	21.5
		100	0	20.3	20.8	21.2	0.0	21.5	20.3	20.7	21.2	0.0	21.5
	256QAM	1	0	20.0	20.6	21.1	0.0	21.5	20.1	20.4	21.0	0.0	21.5
		1	49	20.1	20.7	21.2	0.0	21.5	20.3	20.6	21.2	0.0	21.5
		1	99	20.3	20.7	21.1	0.0	21.5	20.4	20.5	21.1	0.0	21.5
		50	0	19.3	19.8	20.3	1.0	20.5	19.3	19.8	20.2	1.0	20.5
		50	24	19.4	19.8	20.3	1.0	20.5	19.4	19.8	20.2	1.0	20.5
		50	50	19.4	19.7	20.2	1.0	20.5	19.4	19.7	20.2	1.0	20.5
		100	0	19.3	19.8	20.2	1.0	20.5	19.3	19.8	20.2	0.0	21.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597			132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	19.8	20.6	20.7	0.0	21.5	20.2	20.9	20.7	0.0	21.5
		1	37	19.7	20.5	20.7	0.0	21.5	20.1	20.9	20.7	0.0	21.5
		1	74	20.0	20.6	20.8	0.0	21.5	20.3	21.0	20.8	0.0	21.5
		36	0	20.2	20.8	21.2	0.0	21.5	20.4	20.8	21.2	0.0	21.5
		36	20	20.2	20.8	21.2	0.0	21.5	20.5	20.8	21.3	0.0	21.5
		36	39	20.3	20.8	21.2	0.0	21.5	20.5	20.8	21.3	0.0	21.5
		75	0	20.3	20.8	21.2	0.0	21.5	20.3	20.8	21.2	0.0	21.5
	16QAM	1	0	20.2	20.9	21.5	0.0	21.5	20.3	20.5	21.3	0.0	21.5
		1	37	20.2	20.9	21.5	0.0	21.5	20.4	20.5	21.4	0.0	21.5
		1	74	20.3	20.9	21.5	0.0	21.5	20.5	20.5	21.4	0.0	21.5
		36	0	20.3	20.8	21.2	0.0	21.5	19.3	19.8	20.3	0.0	21.5
		36	20	20.3	20.8	21.3	0.0	21.5	19.3	19.8	20.2	0.0	21.5
		36	39	20.3	20.8	21.3	0.0	21.5	19.3	19.8	20.2	0.0	21.5
		75	0	20.3	20.8	21.2	0.0	21.5	19.3	19.8	20.2	0.0	21.5
	64QAM	1	0	20.2	20.5	21.0	0.0	21.5	19.9	20.6	20.8	0.0	21.5
		1	37	20.3	20.3	20.9	0.0	21.5	19.8	20.5	20.8	0.0	21.5
		1	74	20.4	20.5	21.0	0.0	21.5	20.0	20.5	20.8	0.0	21.5
		36	0	20.2	20.8	21.3	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		36	20	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.2	0.0	21.5
		36	39	20.3	20.8	21.3	0.0	21.5	20.3	20.8	21.2	0.0	21.5
		75	0	20.3	20.8	21.2	0.0	21.5	20.3	20.8	21.2	0.0	21.5
	256QAM	1	0	19.9	20.8	21.0	0.0	21.5	20.3	20.9	21.4	0.0	21.5
		1	37	19.9	20.8	21.0	0.0	21.5	20.2	20.9	21.4	0.0	21.5
		1	74	20.1	20.8	21.1	0.0	21.5	20.4	20.9	21.4	0.0	21.5
		36	0	19.2	19.8	20.2	1.0	20.5	19.3	19.8	20.2	1.0	20.5
		36	20	19.2	19.8	20.2	1.0	20.5	19.3	19.8	20.2	1.0	20.5
		36	39	19.3	19.7	20.2	1.0	20.5	19.4	19.8	20.2	1.0	20.5
		75	0	19.3	19.7	20.2	1.0	20.5	19.3	19.8	20.3	1.0	20.5

LTE Band 66 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	19.7	20.5	20.9	0.0	21.5	20.0	20.7	21.0	0.0	21.5
		1	25	19.6	20.5	21.0	0.0	21.5	20.1	20.7	21.1	0.0	21.5
		1	49	19.8	20.5	21.0	0.0	21.5	20.1	20.7	21.1	0.0	21.5
		25	0	20.2	20.8	21.2	0.0	21.5	20.3	20.9	21.2	0.0	21.5
		25	12	20.2	20.8	21.2	0.0	21.5	20.3	20.9	21.2	0.0	21.5
		25	25	20.2	20.8	21.2	0.0	21.5	20.4	20.9	21.2	0.0	21.5
		50	0	20.2	20.8	21.2	0.0	21.5	20.3	20.8	21.2	0.0	21.5
	16QAM	1	0	20.4	20.7	21.2	0.0	21.5	20.2	20.9	21.1	0.0	21.5
		1	25	20.5	20.7	21.3	0.0	21.5	20.2	20.9	21.2	0.0	21.5
		1	49	20.5	20.6	21.3	0.0	21.5	20.3	20.9	21.2	0.0	21.5
		25	0	20.2	20.7	21.2	0.0	21.5	19.3	19.9	20.2	0.0	21.5
		25	12	20.2	20.7	21.3	0.0	21.5	19.3	19.9	20.2	0.0	21.5
		25	25	20.2	20.7	21.3	0.0	21.5	19.3	19.9	20.2	0.0	21.5
		50	0	20.2	20.8	21.2	0.0	21.5	19.3	19.8	20.2	0.0	21.5
	64QAM	1	0	19.8	20.6	20.9	0.0	21.5	19.8	20.6	20.7	0.0	21.5
		1	25	19.9	20.6	21.0	0.0	21.5	19.9	20.7	20.6	0.0	21.5
		1	49	19.8	20.7	21.1	0.0	21.5	20.0	20.6	20.8	0.0	21.5
		25	0	20.3	20.9	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		25	12	20.3	20.9	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		25	25	20.4	20.9	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		50	0	20.3	20.8	21.2	0.0	21.5	20.3	20.8	21.2	0.0	21.5
	256QAM	1	0	20.2	21.0	20.9	0.0	21.5	20.1	20.7	21.5	0.0	21.5
		1	25	20.2	20.9	20.9	0.0	21.5	20.2	20.9	21.1	0.0	21.5
		1	49	20.3	20.9	20.9	0.0	21.5	20.1	20.9	21.5	0.0	21.5
		25	0	19.3	19.9	20.2	1.0	20.5	19.2	19.9	20.2	1.0	20.5
		25	12	19.3	19.9	20.2	1.0	20.5	19.2	19.9	20.2	1.0	20.5
		25	25	19.3	19.9	20.2	1.0	20.5	19.2	19.9	20.2	1.0	20.5
		50	0	19.3	19.8	20.2	1.0	20.5	19.3	19.8	20.1	1.0	20.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647			131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	19.9	20.7	20.9	0.0	21.5	21.1	20.7	20.7	0.0	21.5
		1	12	19.9	20.6	20.7	0.0	21.5	21.1	20.7	20.6	0.0	21.5
		1	24	20.0	20.7	21.0	0.0	21.5	21.3	20.7	20.8	0.0	21.5
		12	0	20.1	20.7	21.1	0.0	21.5	21.2	20.8	21.1	0.0	21.5
		12	7	20.1	20.7	21.1	0.0	21.5	21.2	20.7	21.1	0.0	21.5
		12	13	20.1	20.7	21.2	0.0	21.5	21.2	20.8	21.1	0.0	21.5
		25	0	20.1	20.8	21.2	0.0	21.5	21.3	20.7	21.2	0.0	21.5
	16QAM	1	0	20.2	20.9	21.3	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		1	12	20.2	20.7	21.1	0.0	21.5	20.8	20.6	20.9	0.0	21.5
		1	24	20.3	20.8	21.3	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		12	0	20.1	20.7	21.3	0.0	21.5	20.3	19.8	20.2	0.0	21.5
		12	7	20.1	20.7	21.3	0.0	21.5	20.3	19.7	20.2	0.0	21.5
		12	13	20.1	20.7	21.3	0.0	21.5	20.3	19.7	20.2	0.0	21.5
		25	0	20.1	20.7	21.2	0.0	21.5	20.3	19.8	20.2	0.0	21.5
	64QAM	1	0	19.8	20.8	20.9	0.0	21.5	19.6	20.5	20.9	0.0	21.5
		1	12	19.6	20.7	20.9	0.0	21.5	19.7	20.3	20.8	0.0	21.5
		1	24	19.7	20.8	21.0	0.0	21.5	19.8	20.5	21.0	0.0	21.5
		12	0	20.0	20.7	21.1	0.0	21.5	19.9	20.7	21.1	0.0	21.5
		12	7	20.0	20.7	21.1	0.0	21.5	20.0	20.7	21.1	0.0	21.5
		12	13	20.0	20.7	21.1	0.0	21.5	20.0	20.7	21.1	0.0	21.5
		25	0	20.1	20.8	21.1	0.0	21.5	20.0	20.8	21.2	0.0	21.5
	256QAM	1	0	19.7	20.9	20.8	0.0	21.5	20.1	21.0	21.3	0.0	21.5
		1	12	19.5	20.7	20.7	0.0	21.5	20.0	20.8	21.3	0.0	21.5
		1	24	19.7	20.9	20.9	0.0	21.5	20.2	21.0	21.4	0.0	21.5
		12	0	19.1	19.8	20.1	1.0	20.5	19.0	19.8	20.1	1.0	20.5
		12	7	19.1	19.8	20.1	1.0	20.5	19.0	19.8	20.1	1.0	20.5
		12	13	19.1	19.7	20.1	1.0	20.5	19.0	19.8	20.1	1.0	20.5
		25	0	19.1	19.7	20.2	1.0	20.5	19.1	19.8	20.2	1.0	20.5

LTE Band 66 Measured Results_(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	20.2	20.5	20.9	0.0	21.5	20.0	20.6	21.1	0.0	21.5
		1	8	20.1	20.2	20.8	0.0	21.5	20.0	20.4	21.1	0.0	21.5
		1	14	20.3	20.4	21.0	0.0	21.5	20.0	20.7	21.3	0.0	21.5
		8	0	20.6	20.7	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		8	4	20.6	20.7	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		8	7	20.7	20.7	21.3	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		15	0	20.7	20.7	21.2	0.0	21.5	20.1	20.7	21.3	0.0	21.5
	16QAM	1	0	20.9	21.0	21.4	0.0	21.5	20.1	20.9	20.9	0.0	21.5
		1	8	20.8	20.9	21.3	0.0	21.5	20.1	20.8	20.8	0.0	21.5
		1	14	21.0	21.1	21.3	0.0	21.5	20.2	20.8	21.0	0.0	21.5
		8	0	20.8	20.8	21.2	0.0	21.5	19.2	19.9	20.3	0.0	21.5
		8	4	20.7	20.8	21.2	0.0	21.5	19.2	19.8	20.3	0.0	21.5
		8	7	20.7	20.8	21.2	0.0	21.5	19.2	19.8	20.3	0.0	21.5
		15	0	20.7	20.7	21.2	0.0	21.5	19.2	19.7	20.3	0.0	21.5
	64QAM	1	0	19.8	21.0	20.9	0.0	21.5	19.9	20.6	20.9	0.0	21.5
		1	8	19.8	20.9	20.9	0.0	21.5	19.7	20.4	20.8	0.0	21.5
		1	14	19.8	21.1	21.1	0.0	21.5	20.0	20.5	21.0	0.0	21.5
		8	0	20.1	20.8	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		8	4	20.1	20.8	21.1	0.0	21.5	20.2	20.8	21.2	0.0	21.5
		8	7	20.1	20.9	21.2	0.0	21.5	20.2	20.8	21.3	0.0	21.5
		15	0	20.1	20.7	21.2	0.0	21.5	20.2	20.8	21.2	0.0	21.5
	256QAM	1	0	20.1	20.8	21.1	0.0	21.5	20.1	21.0	21.4	0.0	21.5
		1	8	20.0	20.7	21.0	0.0	21.5	19.9	20.9	21.3	0.0	21.5
		1	14	20.1	20.8	21.1	0.0	21.5	20.1	21.0	21.3	0.0	21.5
		8	0	19.2	19.9	20.3	1.0	20.5	19.2	19.8	20.2	1.0	20.5
		8	4	19.2	19.8	20.2	1.0	20.5	19.2	19.8	20.2	1.0	20.5
		8	7	19.2	19.8	20.2	1.0	20.5	19.2	19.7	20.2	1.0	20.5
		15	0	19.2	19.7	20.3	1.0	20.5	19.2	19.7	20.2	1.0	20.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665			131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	20.0	20.8	21.2	0.0	21.5	20.1	21.0	21.0	0.0	21.5
		1	3	19.9	20.5	20.9	0.0	21.5	20.1	20.8	21.2	0.0	21.5
		1	5	20.1	20.7	21.2	0.0	21.5	20.2	20.9	21.2	0.0	21.5
		3	0	20.2	20.9	21.3	0.0	21.5	20.1	21.0	21.2	0.0	21.5
		3	1	20.1	20.9	21.3	0.0	21.5	20.0	20.9	21.2	0.0	21.5
		3	3	20.1	20.8	21.4	0.0	21.5	20.1	20.9	21.2	0.0	21.5
		6	0	20.1	20.8	21.2	0.0	21.5	20.2	20.7	21.3	0.0	21.5
	16QAM	1	0	20.2	21.0	21.1	0.0	21.5	20.1	20.8	21.2	0.0	21.5
		1	3	20.3	21.2	21.4	0.0	21.5	20.1	20.7	21.3	0.0	21.5
		1	5	20.3	21.1	21.3	0.0	21.5	20.1	20.9	21.3	0.0	21.5
		3	0	20.3	20.8	21.5	0.0	21.5	20.3	20.9	21.4	0.0	21.5
		3	1	20.3	20.8	21.4	0.0	21.5	20.2	20.8	21.4	0.0	21.5
		3	3	20.3	20.8	21.3	0.0	21.5	20.2	20.9	21.3	0.0	21.5
		6	0	20.2	20.8	21.3	0.0	21.5	19.2	19.9	20.4	0.0	21.5
	64QAM	1	0	20.1	20.9	21.0	0.0	21.5	19.8	20.7	21.1	0.0	21.5
		1	3	20.0	20.7	21.3	0.0	21.5	19.8	20.4	20.9	0.0	21.5
		1	5	20.1	20.8	21.2	0.0	21.5	19.9	20.7	21.1	0.0	21.5
		3	0	20.1	21.0	21.1	0.0	21.5	20.0	20.8	21.2	0.0	21.5
		3	1	20.0	21.0	21.2	0.0	21.5	20.0	20.8	21.3	0.0	21.5
		3	3	20.0	21.0	21.2	0.0	21.5	20.0	20.7	21.3	0.0	21.5
		6	0	20.1	20.7	21.3	0.0	21.5	20.1	20.8	21.2	0.0	21.5
	256QAM	1	0	19.9	20.9	21.2	0.0	21.5	19.9	21.2	21.1	0.0	21.5
		1	3	19.8	20.7	21.2	0.0	21.5	20.1	21.4	21.4	0.0	21.5
		1	5	20.0	20.8	21.2	0.0	21.5	20.0	21.2	21.3	0.0	21.5
		3	0	20.3	20.8	21.3	0.0	21.5	20.3	20.7	21.5	0.0	21.5
		3	1	20.2	20.7	21.3	0.0	21.5	20.2	20.8	21.5	0.0	21.5
		3	3	20.2	20.8	21.3	0.0	21.5	20.3	20.7	21.5	0.0	21.5
		6	0	19.1	19.9	20.3	0.0	21.5	20.2	20.8	21.3	0.0	21.5

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	20.4	20.2	20.5	20.2	20.3	0.0	22.0	20.4	20.4	20.1	20.4	20.4	0.0	22.0
		1	49	20.3	20.3	20.5	20.3	20.4	0.0	22.0	20.4	20.3	20.2	20.5	20.3	0.0	22.0
		1	99	20.3	20.2	20.6	20.2	20.4	0.0	22.0	20.4	20.3	20.5	20.3	20.4	0.0	22.0
		50	0	20.7	20.5	20.7	20.6	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		50	24	20.7	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		50	50	20.7	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.8	20.7	20.6	0.0	22.0
		100	0	20.7	20.5	20.6	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
	16QAM	1	0	20.6	20.4	20.5	21.0	20.7	0.0	22.0	20.5	20.1	20.7	20.4	20.1	0.0	22.0
		1	49	20.9	20.5	20.3	21.0	20.6	0.0	22.0	20.3	20.2	20.8	20.5	20.6	0.0	22.0
		1	99	20.5	20.4	20.6	20.4	20.2	0.0	22.0	20.4	20.5	20.5	20.4	20.2	0.0	22.0
		50	0	20.6	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		50	24	20.6	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.6	20.7	20.6	0.0	22.0
		50	50	20.7	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		100	0	20.7	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
	64QAM	1	0	20.7	20.3	20.3	20.7	20.1	0.0	22.0	20.6	20.5	20.8	20.4	20.4	0.0	22.0
		1	49	20.4	19.9	20.3	20.0	19.7	0.0	22.0	20.5	20.5	20.5	20.6	20.3	0.0	22.0
		1	99	20.6	20.5	20.3	20.8	20.6	0.0	22.0	20.5	20.3	20.4	20.5	20.5	0.0	22.0
		50	0	19.7	19.5	19.7	19.7	19.5	0.0	22.0	19.7	19.6	19.8	19.8	19.6	0.0	22.0
		50	24	19.6	19.5	19.8	19.7	19.5	0.0	22.0	19.7	19.6	19.7	19.8	19.5	0.0	22.0
		50	50	19.7	19.5	19.7	19.6	19.5	0.0	22.0	19.6	19.6	19.7	19.8	19.6	0.0	22.0
		100	0	19.6	19.5	19.7	19.7	19.6	0.0	22.0	19.6	19.5	19.7	19.8	19.6	0.0	22.0
	256QAM	1	0	19.5	19.3	19.7	19.6	19.4	1.0	21.0	19.8	19.4	19.9	19.8	19.8	1.0	21.0
		1	49	19.6	19.6	19.4	19.8	19.6	1.0	21.0	19.3	19.3	19.5	19.7	19.4	1.0	21.0
		1	99	19.5	19.3	19.5	19.7	19.6	1.0	21.0	19.7	19.4	19.7	19.7	19.3	1.0	21.0
		50	0	18.7	18.5	18.7	18.7	18.6	1.0	21.0	18.7	18.5	18.7	18.8	18.6	1.0	21.0
		50	24	18.7	18.5	18.7	18.7	18.6	1.0	21.0	18.7	18.6	18.7	18.7	18.6	1.0	21.0
		50	50	18.7	18.5	18.7	18.7	18.5	1.0	21.0	18.7	18.5	18.7	18.7	18.6	1.0	21.0
		100	0	18.7	18.5	18.7	18.7	18.6	1.0	21.0	18.7	18.5	18.7	18.7	18.6	1.0	21.0
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	20.6	20.5	20.6	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.6	20.6	0.0	22.0
		1	37	20.5	20.3	20.5	20.5	20.5	0.0	22.0	20.5	20.4	20.5	20.5	20.5	0.0	22.0
		1	74	20.6	20.5	20.5	20.6	20.6	0.0	22.0	20.6	20.5	20.7	20.7	20.6	0.0	22.0
		36	0	20.7	20.6	20.7	20.8	20.7	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0
		36	20	20.7	20.5	20.7	20.8	20.7	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
		36	39	20.7	20.5	20.7	20.8	20.7	0.0	22.0	20.7	20.6	20.7	20.7	20.7	0.0	22.0
		75	0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
	16QAM	1	0	20.7	20.4	19.9	20.4	20.3	0.0	22.0	20.4	20.4	20.2	20.7	20.3	0.0	22.0
		1	37	20.7	20.3	20.0	21.0	20.4	0.0	22.0	20.5	20.2	20.3	20.4	20.5	0.0	22.0
		1	74	21.2	20.3	19.9	20.5	20.6	0.0	22.0	20.6	20.3	20.1	20.5	20.4	0.0	22.0
		36	0	20.8	20.4	20.8	20.9	20.6	0.0	22.0	20.8	20.5	20.7	20.9	20.6	0.0	22.0
		36	20	20.8	20.5	20.7	20.8	20.6	0.0	22.0	20.9	20.5	20.7	20.8	20.6	0.0	22.0
		36	39	20.8	20.5	20.7	20.8	20.5	0.0	22.0	20.7	20.4	20.7	20.9	20.6	0.0	22.0
		75	0	20.7	20.5	20.8	20.8	20.6	0.0	22.0	20.7	20.5	20.8	20.7	20.6	0.0	22.0
	64QAM	1	0	20.6	20.6	20.2	20.5	20.6	0.0	22.0	20.7	20.3	20.3	20.6	20.3	0.0	22.0
		1	37	20.4	20.4	20.3	20.4	20.7	0.0	22.0	20.6	20.1	20.2	20.5	20.3	0.0	22.0
		1	74	20.1	20.2	20.3	20.3	20.4	0.0	22.0	20.6	20.4	19.9	20.1	20.6	0.0	22.0
		36	0	19.8	19.5	19.8	19.8	19.6	0.0	22.0	19.7	19.6	19.8	19.8	19.6	0.0	22.0
		36	20	19.8	19.6	19.7	19.9	19.6	0.0	22.0	19.8	19.6	19.7	19.9	19.6	0.0	22.0
		36	39	19.7	19.5	19.8	19.8	19.6	0.0	22.0	19.8	19.6	19.8	19.8	19.5	0.0	22.0
		75	0	19.7	19.5	19.7	19.7	19.6	0.0	22.0	19.7	19.6	19.7	19.7	19.6	0.0	22.0
	256QAM	1	0	19.6	19.8	19.8	19.3	19.6	1.0	21.0	19.2	19.7	20.0	19.7	19.7	1.0	21.0
		1	37	19.3	19.1	19.8	18.9	19.5	1.0	21.0	19.2	19.6	19.6	19.4	19.4	1.0	21.0
		1	74	19.6	19.7	19.8	19.7	20.0	1.0	21.0	19.6	19.7	19.9	19.0	19.6	1.0	21.0
		36	0	18.7	18.6	18.8	18.8	18.7	1.0	21.0	18.7	18.6	18.7	18.8	18.7	1.0	21.0
		36	20	18.8	18.6	18.7	18.8	18.7	1.0	21.0	18.7	18.5	18.8	18.8	18.6	1.0	21.0
		36	39	18.7	18.6	18.7	18.8	18.7	1.0	21.0	18.7	18.6	18.7	18.8	18.7	1.0	21.0
		75	0	18.7	18.6	18.7	18.8	18.7	1.0	21.0	18.7	18.6	18.7	18.8	18.7	1.0	21.0

LTE Band 41 Measured Results _(Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MPR	Tune-up Limit	Measured Pwr (dBm)					MPR	Tune-up Limit
				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	20.7	20.4	20.8	20.8	20.6	0.0	22.0	20.7	20.5	20.6	20.8	20.6	0.0	22.0
		1	25	20.6	20.5	20.8	20.6	20.5	0.0	22.0	20.6	20.3	20.7	20.8	20.4	0.0	22.0
		1	49	20.6	20.4	20.7	20.7	20.5	0.0	22.0	20.6	20.4	20.6	20.7	20.5	0.0	22.0
		25	0	20.7	20.5	20.8	20.8	20.6	0.0	22.0	20.7	20.6	20.7	20.8	20.6	0.0	22.0
		25	12	20.7	20.5	20.8	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
		25	25	20.7	20.5	20.8	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
		50	0	20.7	20.5	20.7	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
	16QAM	1	0	20.7	20.0	20.4	20.7	20.6	0.0	22.0	20.7	20.5	20.2	20.5	20.5	0.0	22.0
		1	25	20.7	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.4	20.1	20.5	20.5	0.0	22.0
		1	49	20.8	20.0	20.4	20.8	20.6	0.0	22.0	20.7	20.5	20.2	20.5	20.6	0.0	22.0
		25	0	20.7	20.6	20.7	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		25	12	20.7	20.6	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		25	25	20.7	20.6	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		50	0	20.7	20.6	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
	64QAM	1	0	20.3	20.3	20.6	20.4	20.4	0.0	22.0	20.4	20.3	20.6	20.4	20.3	0.0	22.0
		1	25	20.2	20.1	20.5	20.4	20.2	0.0	22.0	20.3	20.2	20.6	20.5	20.1	0.0	22.0
		1	49	20.4	20.3	20.5	20.4	20.4	0.0	22.0	20.5	20.4	20.6	20.4	20.3	0.0	22.0
		25	0	19.7	19.6	19.7	19.8	19.6	0.0	22.0	19.8	19.6	19.7	19.8	19.6	0.0	22.0
		25	12	19.7	19.6	19.7	19.8	19.6	0.0	22.0	19.7	19.6	19.7	19.8	19.6	0.0	22.0
		25	25	19.7	19.6	19.7	19.8	19.6	0.0	22.0	19.8	19.6	19.7	19.8	19.6	0.0	22.0
		50	0	19.7	19.6	19.7	19.8	19.6	0.0	22.0	19.7	19.6	19.7	19.8	19.6	0.0	22.0
	256QAM	1	0	19.5	19.5	19.6	19.8	19.5	1.0	21.0	19.3	19.4	19.4	19.8	19.3	1.0	21.0
		1	25	19.5	19.5	19.5	19.7	19.6	1.0	21.0	19.3	19.5	19.2	19.7	19.4	1.0	21.0
		1	49	19.5	19.4	19.6	19.7	19.4	1.0	21.0	19.2	19.4	19.4	19.8	19.3	1.0	21.0
		25	0	18.7	18.6	18.8	18.9	18.6	1.0	21.0	18.7	18.6	18.8	18.9	18.6	1.0	21.0
		25	12	18.7	18.6	18.8	18.9	18.6	1.0	21.0	18.7	18.6	18.8	18.9	18.6	1.0	21.0
		25	25	18.7	18.6	18.8	18.8	18.6	1.0	21.0	18.7	18.6	18.8	18.9	18.6	1.0	21.0
		50	0	18.7	18.6	18.7	18.9	18.7	1.0	21.0	18.8	18.6	18.7	18.8	18.6	1.0	21.0

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	20.4	20.1	20.7	20.5	20.2	0.0	22.0	20.5	20.6	20.4	20.3	20.6	0.0	22.0
		1	12	20.2	20.0	20.6	20.2	20.0	0.0	22.0	20.3	20.4	20.2	20.1	20.5	0.0	22.0
		1	24	20.3	20.0	20.7	20.4	20.1	0.0	22.0	20.4	20.5	20.4	20.2	20.5	0.0	22.0
		12	0	20.7	20.5	20.7	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.8	20.6	0.0	22.0
		12	7	20.7	20.5	20.7	20.8	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		12	13	20.6	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.5	20.7	20.7	20.6	0.0	22.0
		25	0	20.7	20.5	20.7	20.8	20.6	0.0	22.0	20.7	20.6	20.8	20.8	20.6	0.0	22.0
	16QAM	1	0	20.2	20.4	20.7	20.3	20.3	0.0	22.0	20.1	20.5	20.2	20.6	20.5	0.0	22.0
		1	12	20.1	20.3	20.5	20.2	20.2	0.0	22.0	20.0	20.3	20.1	20.4	20.4	0.0	22.0
		1	24	20.4	20.4	20.6	20.4	20.4	0.0	22.0	20.2	20.4	20.3	20.6	20.5	0.0	22.0
		12	0	20.5	20.5	20.7	20.6	20.6	0.0	22.0	20.5	20.5	20.5	20.8	20.6	0.0	22.0
		12	7	20.4	20.5	20.7	20.6	20.5	0.0	22.0	20.5	20.5	20.5	20.7	20.6	0.0	22.0
		12	13	20.5	20.5	20.7	20.5	20.6	0.0	22.0	20.5	20.5	20.5	20.8	20.6	0.0	22.0
		25	0	20.7	20.5	20.7	20.7	20.6	0.0	22.0	20.7	20.6	20.7	20.8	20.7	0.0	22.0
	64QAM	1	0	20.3	20.6	20.5	20.2	20.7	0.0	22.0	20.6	20.5	20.2	20.8	20.2	0.0	22.0
		1	12	20.0	20.4	20.3	20.0	20.4	0.0	22.0	20.3	20.4	20.0	20.6	20.0	0.0	22.0
		1	24	20.1	20.4	20.6	20.1	20.5	0.0	22.0	20.5	20.5	20.1	20.7	20.0	0.0	22.0
		12	0	19.7	19.5	19.8	19.8	19.6	0.0	22.0	19.6	19.5	19.7	19.6	19.6	0.0	22.0
		12	7	19.7	19.6	19.8	19.8	19.6	0.0	22.0	19.6	19.5	19.6	19.6	19.6	0.0	22.0
		12	13	19.7	19.6	19.8	19.7	19.6	0.0	22.0	19.7	19.5	19.6	19.6	19.6	0.0	22.0
		25	0	19.7	19.6	19.8	19.8	19.5	0.0	22.0	19.6	19.6	19.8	19.7	19.7	0.0	22.0
	256QAM	1	0	19.6	19.6	19.8	19.7	19.6	1.0	21.0	19.7	19.4	19.6	19.8	19.4	1.0	21.0
		1	12	19.4	19.5	19.6	19.5	19.6	1.0	21.0	19.6	19.2	19.5	19.6	19.3	1.0	21.0
		1	24	19.5	19.6	19.7	19.6	19.6	1.0	21.0	19.7	19.3	19.6	19.7	19.4	1.0	21.0
		12	0	18.7	18.5	18.8	18.8	18.6	1.0	21.0	18.7	18.5	18.7	18.7	18.6	1.0	21.0
		12	7	18.7	18.5	18.8	18.8	18.6	1.0	21.0	18.7	18.5	18.7	18.7	18.6	1.0	21.0
		12	13	18.7	18.5	18.7	18.8	18.6	1.0	21.0	18.7	18.5	18.7	18.7	18.6	1.0	21.0
		25	0	18.7	18.6	18.7	18.8	18.7	1.0	21.0	18.7	18.5	18.7	18.8	18.6	1.0	21.0

9.4. Wi-Fi 2.4 GHz (DTS Band)

Normal WLAN SISO output power results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	WLAN mode power					
					Max.Average Power			Reduced Average Power		
					Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi 2.4G Ant.1	802.11b	1 Mbps	1	2412.0	17.5	19.0	Yes	15.0	16.0	Yes
			6	2437.0	17.8			15.6		
			11	2462.0	18.1			14.9		
			12	2467.0	17.9			15.8		
			13	2472.0	16.8			14.8		
	802.11g	6 Mbps	1	2412.0	Not required	18.0	No	Not required	16.0	Yes
			6	2437.0						
			13	2472.0						
	802.11bn	6.5 Mbps	1	2412.0	Not required	18.0	No	Not required	16.0	Yes
			6	2437.0						
			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 measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.

9.5. Wi-Fi 5GHz (U-NII Bands)

Normal WLAN SISO output power results

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	WLAN mode power					
						Max. Average Power			Reduced Average Power		
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5GHz SISO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11n (HT40)	13.5 Mbps	54	5270	12.0	13.0	Yes	12.0	13.0	Yes
				62	5310	11.4			11.4		
		802.11ac (VHT20)	6.5 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			7.0	No	Not Required	7.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	15.0	16.0	Yes	Not Required	14.0	No
				120	5600	15.3					
				124	5620	14.6					
				144	5720	14.5					
		802.11n (HT20)	6.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	102	5510	Not Required	14.0	No	13.4	14.0	Yes
				118	5590				13.2		
				126	5630				13.1		
				142	5710				13.2		
		802.11ac (VHT20)	6.5 Mbps	Not Required			16.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			14.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			13.0	No	Not Required	13.0	No
	5.8 (UNII 3)	802.11a	6 Mbps	Not Required			15.0	No	Not Required	14.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			15.0	No	Not Required	14.0	No
		802.11n (HT40)	13.5 Mbps	151	5755	13.2	15.0	Yes	12.9	14.0	Yes
				159	5795	13.1			13.0		
		802.11ac (VHT20)	6.5 Mbps	Not Required			15.0	No	Not Required	14.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			15.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			13.0	No	Not Required	13.0	Yes
	5.9 (U-NII 4)	802.11a	6 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11n (HT20)	6.5 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11n (HT40)	13.5 Mbps	167	5835	14.0	15.0	Yes	13.3	14.0	Yes
				175	5875	14.0			12.9		
		802.11ac (VHT20)	6.5 Mbps	Not Required			13.0	No	Not Required	13.0	No
		802.11ac (VHT40)	13.5 Mbps	Not Required			15.0	No	Not Required	14.0	No
		802.11ac (VHT80)	29.3 Mbps	Not Required			13.0	No	Not Required	13.0	Yes

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.

9.6. Bluetooth

Bluetooth SISO Measured Results

Band (GHz)	Antenna	Mode	Ch #	Freq. (MHz)	Maximum Average Power (dBm)		Reduced Average Power (dBm)	
					Meas Pwr	Tune-up Limit	Meas Pwr	Tune-up Limit
2.4	BT SISO Ant.1	GFSK	0	2402	16.8	17.0	11.4	12.0
			39	2441	16.2		11.9	
			78	2480	15.3		10.4	
		EDR	0	2402	12.5	13.0	9.3	12.0
			39	2441	11.9		9.6	
			78	2480	11.0		8.1	
		LE 1M	0	2402	16.3	16.5	4.9	12.0
			19	2440	16.0		5.1	
			39	2480	14.9		3.7	
		LE 2M	0	2402	16.4	16.5	7.9	12.0
			19	2440	16.2		8.5	
			39	2480	14.9		6.8	

Note(s):

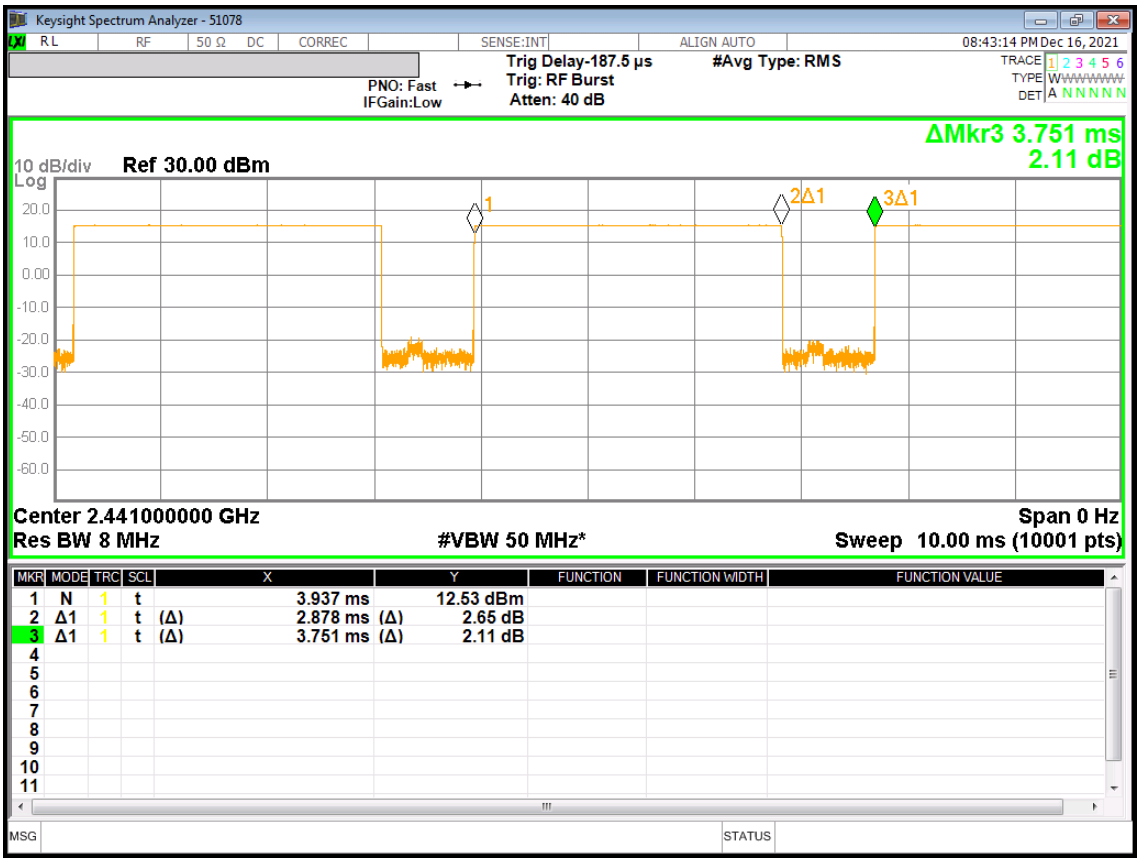
For All exposure conditions, SAR test is evaluated at GFSK mode in Bluetooth using maximum power condition.

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.878	3.751	76.7%	1.30

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

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

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 648474 D04 Handset SAR:

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

KDB 648474 D04 Handset SAR (Phablet Only):

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

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

KDB 941225 D01 SAR test for 3G devices:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11:

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

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

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

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

Spot-Check Verification Procedures :

Spot-check verification proceeds as follows, as suggested by the manufacturer.
Spot-check verification perform using Variant model at the highest configurations in each RF exposure conditions in Reference model.

Condition.1 If Highest SAR value is less than 0.4 or 1.0 W/kg (1-g or 10-g respectively) in RF exposure condition, then Spot check perform at highest configuration in RF exposure condition. and If SAR measured values are less than 0.4 W/kg, no further tests are performed even if the deviation was more than 30%.

Condition.2 If Highest SAR value is same or greater than 0.4 or 1.0 W/kg (1-g or 10-g respectively) in RF exposure condition, Spot check perform in All positions above 0.4 or 1.0 W/kg (1-g or 10-g respectively).

Condition.3 For some test positions in condition.2, If Variant model's SAR level deviated higher than 30% from Reference model's SAR level according to Spot-check results, Additional SAR test perform for other configurations at the position.

10.1. GSM 850

Data referencing from Reference model

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	GPRS 3 Slots	N/A	0	Left Touch	251	848.8	30.0	29.5	0.230	0.257
					Left Tilt	251	848.8	30.0	29.5	0.125	0.140
					Right Touch	251	848.8	30.0	29.5	0.283	0.316
					Right Tilt	251	848.8	30.0	29.5	0.116	0.130
	Body-worn	GPRS 3 Slots	N/A	15	Rear	251	848.8	30.0	29.5	0.276	0.308
					Front	251	848.8	30.0	29.5	0.244	0.273
	Hotspot	GPRS 3 Slots	N/A	10	Rear	251	848.8	30.0	29.5	0.703	0.781
					Front	251	848.8	30.0	29.5	0.285	0.317
					Edge 2	251	848.8	30.0	29.5	0.359	0.399
					Edge 3	251	848.8	30.0	29.5	0.257	0.286
					Edge 4	251	848.8	30.0	29.5	0.161	0.179

Spot check results for Variant model

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 Slots	N/A	0	Right Touch	251	848.8	30.0	29.0	0.278	0.346	1
	Body-worn	GPRS 3 Slots	N/A	15	Rear	251	848.8	30.0	29.0	0.290	0.361	2
	Hotspot	GPRS 3 Slots	N/A	10	Rear	251	848.8	30.0	29.0	0.551	0.687	3

10.2. GSM 1900

Data referencing from Reference model

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	GPRS 2 Slots	Off	0	Left Touch	661	1880.0	28.5	26.9	0.028	0.041
					Left Tilt	661	1880.0	28.5	26.9	0.020	0.029
					Right Touch	661	1880.0	28.5	26.9	0.038	0.055
					Right Tilt	661	1880.0	28.5	26.9	0.021	0.030
	Body-worn	GPRS 2 Slots	Off	15	Rear	661	1880.0	28.5	26.9	0.351	0.512
					Front	661	1880.0	28.5	26.9	0.170	0.248
	Hotspot	GPRS 4 Slots	On	10	Rear	512	1850.2	23.3	22.7	0.400	0.457
					Front	512	1850.2	23.3	22.7	0.220	0.251
					Edge 2	512	1850.2	23.3	22.7	0.040	0.045
					Edge 3	512	1850.2	23.3	22.7	0.452	0.517
					Edge 4	512	1850.2	23.3	22.7	0.021	0.024

Spot check results for Variant model

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 Slots	Off	0	Right Touch	661	1880.0	28.5	27.3	0.029	0.038	4
	Body-worn	GPRS 2 Slots	Off	15	Rear	661	1880.0	28.5	27.3	0.262	0.346	5
	Hotspot	GPRS 4 Slots	On	10	Rear	512	1850.2	23.3	22.8	0.290	0.326	
					Edge 3	512	1850.2	23.3	22.8	0.456	0.512	6

10.3. WCDMA Band II

Data referencing from Reference model

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	9400	1880.0	25.0	24.2	0.085	0.101
					Left Tilt	9400	1880.0	25.0	24.2	0.101	0.121
					Right Touch	9400	1880.0	25.0	24.2	0.154	0.185
					Rightt Tilt	9400	1880.0	25.0	24.2	0.083	0.099
	Body-worn	Rel 99 RMC	Off	15	Rear	9262	1852.4	25.0	24.0	0.686	0.871
						9400	1880.0	25.0	24.2	0.714	0.857
						9538	1907.6	25.0	24.1	0.646	0.801
					Front	9400	1880.0	25.0	24.2	0.420	0.504
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	20.0	19.2	0.416	0.501
					Front	9400	1880.0	20.0	19.2	0.227	0.273
					Edge 2	9400	1880.0	20.0	19.2	0.026	0.031
					Edge 3	9400	1880.0	20.0	19.2	0.590	0.710
					Edge 4	9400	1880.0	20.0	19.2	0.052	0.063
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	10	Rear	9400	1880.0	25.0	24.2	0.769	0.922
				12	Edge 3	9400	1880.0	25.0	24.2	0.938	1.125
			On	0	Rear	9400	1880.0	20.0	19.2	1.050	1.270
					Edge 3	9400	1880.0	20.0	19.2	1.500	1.814

Spot check results for Variant model

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	Right Touch	9400	1880.0	25.0	24.5	0.116	0.130	7
	Body-worn	Rel 99 RMC	Off	15	Rear	9262	1852.4	25.0	24.2	0.573	0.689	
						9400	1880.0	25.0	24.5	0.651	0.731	
						9538	1907.6	25.0	24.0	0.629	0.785	8
					Front	9400	1880.0	25.0	24.5	0.416	0.467	
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	20.0	19.4	0.356	0.411	
					Edge 3	9400	1880.0	20.0	19.4	0.538	0.621	9
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	12	Edge 3	9400	1880.0	25.0	24.5	0.757	0.850	
			On	0	Rear	9400	1880.0	20.0	19.4	0.902	1.034	
					Edge 3	9400	1880.0	20.0	19.4	1.350	1.547	10

10.4. WCDMA Band IV

Data referencing from Reference model

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	1513	1752.6	25.0	24.5	0.074	0.084
					Left Tilt	1513	1752.6	25.0	24.5	0.050	0.056
					Right Touch	1513	1752.6	25.0	24.5	0.104	0.117
					Rightt Tilt	1513	1752.6	25.0	24.5	0.045	0.051
	Body-worn	Rel 99 RMC	Off	15	Rear	1513	1752.6	25.0	24.5	0.657	0.740
					Front	1513	1752.6	25.0	24.5	0.403	0.454
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.0	18.2	0.412	0.627
					Front	1413	1732.6	20.0	18.2	0.288	0.438
					Edge 2	1413	1732.6	20.0	18.2	0.054	0.082
					Edge 3	1312	1712.4	20.0	18.0	0.570	0.903
						1413	1732.6	20.0	18.2	0.598	0.910
						1513	1752.6	20.0	18.2	0.683	1.025
					Edge 4	1413	1732.6	20.0	18.2	0.051	0.078
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	10	Rear	1513	1752.6	25.0	24.5	0.911	1.027
				6	Front	1513	1752.6	25.0	24.5	1.100	1.240
				12	Edge 3	1513	1752.6	25.0	24.5	0.925	1.042
			On	0	Rear	1413	1732.6	20.0	18.2	0.742	1.115
					Front	1413	1732.6	20.0	18.2	0.400	0.601
					Edge 3	1312	1712.4	20.0	18.0	1.420	2.250
						1413	1732.6	20.0	18.2	1.500	2.254
						1513	1752.6	20.0	18.3	1.590	2.361

Spot check results for Variant model

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	Right Touch	1513	1752.6	25.0	24.0	0.122	0.155	11
	Body-worn	Rel 99 RMC	Off	15	Rear	1312	1712.4	25.0	23.5	0.718	1.026	
						1413	1732.6	25.0	23.9	0.838	1.085	
						1513	1752.6	25.0	24.0	0.877	1.116	12
					Front	1513	1752.6	25.0	24.0	0.526	0.669	
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.0	18.2	0.405	0.620	
					Front	1413	1732.6	20.0	18.2	0.250	0.383	
					Edge 3	1312	1712.4	20.0	18.2	0.535	0.805	
						1413	1732.6	20.0	18.2	0.668	1.022	13
						1513	1752.6	20.0	18.6	0.594	0.813	
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	10	Rear	1513	1752.6	25.0	24.0	0.855	1.088	
				6	Front	1513	1752.6	25.0	24.0	1.150	1.463	
				12	Edge 3	1513	1752.6	25.0	24.0	1.070	1.361	
			On	0	Rear	1413	1732.6	20.0	18.8	1.220	1.599	
					Front	1413	1732.6	20.0	18.8	0.764	1.001	
					Edge 3	1312	1712.4	20.0	18.0	1.400	2.209	14
						1413	1732.6	20.0	18.2	1.420	2.126	
						1513	1752.6	20.0	18.8	1.580	2.071	

10.5. WCDMA Band V

Data referencing from Reference model

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)	
								Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	Rel 99 RMC	N/A	0	Left Touch	4183	836.6	24.5	22.6	0.168	0.259
					Left Tilt	4183	836.6	24.5	22.6	0.108	0.167
					Right Touch	4183	836.6	24.5	22.6	0.255	0.393
					Rightt Tilt	4183	836.6	24.5	22.6	0.127	0.196
	Body-worn	Rel 99 RMC	N/A	15	Rear	4183	836.6	24.5	22.6	0.284	0.438
					Front	4183	836.6	24.5	22.6	0.208	0.321
	Hotspot	Rel 99 RMC	N/A	10	Rear	4132	826.4	24.5	22.6	0.571	0.876
						4183	836.6	24.5	22.6	0.593	0.915
						4233	846.6	24.5	22.5	0.590	0.930
					Front	4183	836.6	24.5	22.6	0.330	0.509
					Edge 2	4183	836.6	24.5	22.6	0.224	0.346
					Edge 3	4183	836.6	24.5	22.6	0.363	0.560
					Edge 4	4183	836.6	24.5	22.6	0.053	0.081

Spot check results for Variant model

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	Right Touch	4183	836.6	24.5	22.8	0.189	0.276	15
	Body-worn	Rel 99 RMC	N/A	15	Rear	4183	836.6	24.5	22.8	0.173	0.253	16
	Hotspot	Rel 99 RMC	N/A	10	Rear	4132	826.4	24.5	22.8	0.394	0.582	
						4183	836.6	24.5	22.8	0.359	0.525	
						4233	846.6	24.5	22.8	0.427	0.627	17
					Front	4183	836.6	24.5	22.8	0.202	0.295	
					Edge 3	4183	836.6	24.5	22.8	0.173	0.253	

10.6. LTE Band 2 (20MHz Bandwidth)

Data referencing from Reference model

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	18900	1880.0	1	49	24.0	23.5	0.044	0.050
								50	24	22.0	21.6	0.028	0.031
					Left Tilt	18900	1880.0	1	49	24.0	23.5	0.031	0.035
								50	24	22.0	21.6	0.019	0.021
					Right Touch	18900	1880.0	1	49	24.0	23.5	0.065	0.073
								50	24	22.0	21.6	0.040	0.043
					Right Tilt	18900	1880.0	1	49	24.0	23.5	0.025	0.028
								50	24	22.0	21.6	0.013	0.014
	Body-worn	QPSK	Off	15	Rear	18900	1880.0	1	49	24.0	23.5	0.595	0.667
								50	24	22.0	21.6	0.391	0.424
					Front	18900	1880.0	1	49	24.0	23.5	0.373	0.418
								50	24	22.0	21.6	0.243	0.263
	Hotspot	QPSK	On	10	Rear	18900	1880.0	1	49	20.0	18.5	0.401	0.568
								50	24	20.0	18.6	0.418	0.579
					Front	18900	1880.0	1	49	20.0	18.5	0.203	0.287
								50	24	20.0	18.6	0.213	0.295
					Edge 2	18900	1880.0	1	49	20.0	18.5	0.022	0.031
								50	24	20.0	18.6	0.023	0.031
					Edge 3	18900	1880.0	1	49	20.0	18.5	0.453	0.641
								50	24	20.0	18.6	0.476	0.659
					Edge 4	18900	1880.0	1	49	20.0	18.5	0.038	0.053
								50	24	20.0	18.6	0.040	0.056
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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Product specific 10-g	QPSK	Off	10	Rear	18900	1880.0	1	49	24.0	23.5	0.625	0.701
				12	Edge 3			1	49	24.0	23.5	0.577	0.647
			On	0	Rear	18900	1880.0	1	49	20.0	18.5	0.961	1.370
					Edge 3			1	49	20.0	18.5	1.140	1.626

Spot check results for Variant model

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	Right Touch	18900	1880.0	1	49	24.0	23.4	0.087	0.100	18
	Body-worn	QPSK	Off	15	Rear	18900	1880.0	1	49	24.0	23.4	0.500	0.574	19
								50	24	22.0	21.5	0.338	0.381	
					Front	18900	1880.0	1	49	24.0	23.4	0.273	0.313	
	Hotspot	QPSK	On	10	Rear	18900	1880.0	1	49	20.0	18.1	0.305	0.470	
								50	24	20.0	18.4	0.325	0.470	
					Edge 3	18900	1880.0	1	49	20.0	18.1	0.483	0.744	
								50	24	20.0	18.4	0.518	0.750	20
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	On	0	Rear	18900	1880.0	1	49	20.0	18.2	0.725	1.094	
				0	Edge 3			1	49	20.0	18.2	1.040	1.570	21

10.7. LTE Band 12 (10MHz Bandwidth)

Data referencing from Reference model

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23095	707.5	1	0	25.5	24.1	0.085	0.119
								25	0	23.5	22.2	0.059	0.079
					Left Tilt	23095	707.5	1	0	25.5	24.1	0.046	0.064
								25	0	23.5	22.2	0.032	0.043
					Right Touch	23095	707.5	1	0	25.5	24.1	0.123	0.172
								25	0	23.5	22.2	0.082	0.111
					Right Tilt	23095	707.5	1	0	25.5	24.1	0.056	0.078
								25	0	23.5	22.2	0.034	0.045
	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	0	25.5	24.1	0.177	0.247
								25	0	23.5	22.2	0.121	0.163
					Front	23095	707.5	1	0	25.5	24.1	0.144	0.201
								25	0	23.5	22.2	0.098	0.132
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	0	25.5	24.1	0.230	0.321
								25	0	23.5	22.2	0.153	0.206
					Front	23095	707.5	1	0	25.5	24.1	0.139	0.194
								25	0	23.5	22.2	0.093	0.125
					Edge 2	23095	707.5	1	0	25.5	24.1	0.137	0.191
								25	0	23.5	22.2	0.082	0.110
					Edge 3	23095	707.5	1	0	25.5	24.1	0.112	0.156
								25	0	23.5	22.2	0.075	0.100
					Edge 4	23095	707.5	1	0	25.5	24.1	0.081	0.113
								25	0	23.5	22.2	0.053	0.071

Spot check results for Variant model

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	Right Touch	23095	707.5	1	0	25.5	25.0	0.185	0.206	22
	Body-worn	QPSK	N/A	15	Rear	23095	707.5	1	0	25.5	25.0	0.282	0.313	23
	Hotspot	QPSK	N/A	10	Rear	23095	707.5	1	0	25.5	25.0	0.294	0.327	24

10.8. LTE Band 26 (15MHz Bandwidth)

Data referencing from Reference model

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	26865	831.5	1	0	24.5	23.4	0.150	0.195
								36	0	22.5	21.7	0.103	0.125
					Left Tilt	26865	831.5	1	0	24.5	23.4	0.073	0.095
								36	0	22.5	21.7	0.052	0.064
					Right Touch	26865	831.5	1	0	24.5	23.4	0.199	0.259
								36	0	22.5	21.7	0.137	0.167
					Right Tilt	26865	831.5	1	0	24.5	23.4	0.078	0.101
								36	0	22.5	21.7	0.059	0.071
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	0	24.5	23.4	0.276	0.359
								36	0	22.5	21.7	0.191	0.232
					Front	26865	831.5	1	0	24.5	23.4	0.210	0.273
								36	0	22.5	21.7	0.145	0.176
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	0	24.5	23.4	0.528	0.686
								36	0	22.5	21.7	0.362	0.440
					Front	26865	831.5	1	0	24.5	23.4	0.295	0.383
								36	0	22.5	21.7	0.203	0.247
					Edge 2	26865	831.5	1	0	24.5	23.4	0.259	0.337
								36	0	22.5	21.7	0.184	0.224
					Edge 3	26865	831.5	1	0	24.5	23.4	0.249	0.324
								36	0	22.5	21.7	0.168	0.204
					Edge 4	26865	831.5	1	0	24.5	23.4	0.097	0.126
								36	0	22.5	21.7	0.070	0.085

Spot check results for Variant model

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	Right Touch	26865	831.5	1	0	24.5	24.2	0.221	0.239	25
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	0	24.5	24.2	0.259	0.280	26
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	0	24.5	24.2	0.485	0.525	27
								36	0	23.5	22.4	0.308	0.393	

10.9. LTE Band 41 (20MHz Bandwidth)

Data referencing from Reference model

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	40620	2593.0	1	99	25.0	23.9	0.104	0.133
								50	50	23.0	22.0	0.069	0.086
					Left Tilt	40620	2593.0	1	99	25.0	23.9	0.036	0.046
								50	50	23.0	22.0	0.021	0.027
					Right Touch	40620	2593.0	1	99	25.0	23.9	0.047	0.060
								50	50	23.0	22.0	0.031	0.038
					Right Tilt	40620	2593.0	1	99	25.0	23.9	0.031	0.039
								50	50	23.0	22.0	0.017	0.021
	Body-worn	QPSK	Off	15	Rear	40620	2593.0	1	99	25.0	23.9	0.155	0.198
								50	50	23.0	22.0	0.104	0.130
					Front	40620	2593.0	1	99	25.0	23.9	0.107	0.136
								50	50	23.0	22.0	0.070	0.087
	Hotspot	QPSK	On	10	Rear	40620	2593.0	1	99	22.0	20.7	0.135	0.182
								50	50	22.0	21.0	0.140	0.177
					Front	40620	2593.0	1	99	22.0	20.7	0.087	0.117
								50	50	22.0	21.0	0.089	0.113
					Edge 3	40620	2593.0	1	99	22.0	20.7	0.301	0.406
								50	50	22.0	21.0	0.321	0.406
					Edge 4	40620	2593.0	1	99	22.0	20.7	0.077	0.104
								50	50	22.0	21.0	0.076	0.096

Spot check results for Variant model

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	40620	2593.0	1	99	25.0	23.6	0.219	0.299	28
	Body-worn	QPSK	Off	15	Rear	40620	2593.0	1	99	25.0	23.6	0.172	0.235	29
	Hotspot	QPSK	On	10	Edge 3	40620	2593.0	1	99	22.0	20.6	0.347	0.477	
								50	50	22.0	20.7	0.394	0.527	30

10.10. LTE Band 66 (20MHz Bandwidth)

Data referencing from Reference model

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	132572	1770.0	1	49	24.5	24.3	0.067	0.070
								50	50	22.5	22.4	0.046	0.047
					Left Tilt	132572	1770.0	1	49	24.5	24.3	0.028	0.029
								50	50	22.5	22.4	0.016	0.017
					Right Touch	132572	1770.0	1	49	24.5	24.3	0.076	0.079
								50	50	22.5	22.4	0.054	0.056
					Right Tilt	132572	1770.0	1	49	24.5	24.3	0.036	0.037
								50	50	22.5	22.4	0.021	0.022
	Body-worn	QPSK	Off	15	Rear	132572	1770.0	1	49	24.5	24.3	0.630	0.653
								50	50	22.5	22.4	0.430	0.445
					Front	132572	1770.0	1	49	24.5	24.3	0.336	0.348
								50	50	22.5	22.4	0.233	0.241
	Hotspot	QPSK	On	10	Rear	132072	1720.0	1	49	21.5	20.1	0.826	1.135
								50	50	21.5	20.3	0.886	1.156
						132322	1745.0	1	49	21.5	20.4	0.873	1.116
								50	50	21.5	20.7	0.887	1.063
						132572	1770.0	1	49	21.5	20.9	0.813	0.930
								50	50	21.5	21.3	0.906	0.951
								100	0	21.5	21.2	0.924	0.994
					Front	132572	1770.0	1	49	21.5	20.9	0.453	0.518
								50	50	21.5	21.3	0.466	0.489
					Edge 2	132572	1770.0	1	49	21.5	20.9	0.085	0.098
								50	50	21.5	21.3	0.090	0.094
					Edge 3	132072	1720.0	1	49	21.5	20.1	0.788	1.082
								50	50	21.5	20.3	0.899	1.173
						132322	1745.0	1	49	21.5	20.4	0.946	1.210
								50	50	21.5	20.7	1.010	1.210
						132572	1770.0	1	49	21.5	20.9	0.861	0.985
								50	50	21.5	21.3	1.030	1.081
								100	0	21.5	21.2	1.010	1.086
					Edge 4	132572	1770.0	1	49	21.5	20.9	0.081	0.093
								50	50	21.5	21.3	0.087	0.091

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)	
										Tune-up limit	Meas.	Meas.	Scaled
Main 1 Ant.	Product Specific 10-g	QPSK	Off	12	Rear	132572	1770.0	1	49	24.5	24.3	0.935	0.969
				10	Edge 3	132572	1770.0	1	49	24.5	24.3	0.813	0.843
								50	50	22.5	22.4	0.501	0.518
			On	0	Rear	132572	1770.0	1	49	21.5	21.0	1.510	1.706
					Edge 3	132572	1770.0	1	49	21.5	21.0	1.450	1.638
								50	50	21.5	21.2	1.560	1.670

LTE Band 66 (20MHz Bandwidth) (Continued)

Spot check results for Variant model

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	Right Touch	132572	1770.0	1	49	24.5	24.5	0.110	0.111	31
	Body-worn	QPSK	Off	15	Rear	132072	1720.0	1	49	24.5	23.9	0.799	0.912	32
						132322	1745.0	1	49	24.5	24.4	0.820	0.835	
						132572	1770.0	1	49	24.5	24.5	0.796	0.805	
								50	50	23.5	23.5	0.547	0.548	
					Front	132572	1770.0	1	49	24.5	24.5	0.373	0.377	
								50	50	23.5	23.5	0.249	0.250	
	Hotspot	QPSK	On	10	Rear	132072	1720.0	1	49	21.5	19.8	0.650	0.959	
								50	50	21.5	20.3	0.736	0.978	
						132322	1745.0	1	49	21.5	20.5	0.700	0.880	
								50	50	21.5	20.8	0.810	0.958	
						132572	1770.0	1	49	21.5	21.2	0.616	0.659	
								50	50	21.5	21.3	0.593	0.619	
								100	0	21.5	21.2	0.692	0.734	
					Front	132572	1770.0	1	49	21.5	21.2	0.331	0.354	
								50	50	21.5	21.3	0.371	0.387	
					Edge 3	132072	1720.0	1	49	21.5	19.8	0.764	1.128	
								50	50	21.5	20.3	0.887	1.179	33
						132322	1745.0	1	49	21.5	20.5	0.918	1.155	
								50	50	21.5	20.8	0.983	1.163	
						132572	1770.0	1	49	21.5	21.2	0.917	0.981	
								50	50	21.5	21.3	0.964	1.005	
								100	0	21.5	21.2	0.929	0.986	

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	On	0	Rear	132572	1770.0	1	49	21.5	21.1	1.280	1.399	
				0	Edge 3	132572	1770.0	1	49	21.5	21.1	1.730	1.890	
								50	50	21.5	21.4	1.940	1.994	34

10.11. Wi-Fi (DTS Band)

Data referencing from Reference model

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
											Tune-up limit	Meas.	Meas.	Scaled	
WLAN	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	6	2437.0	0.402	99.1%	16.0	15.5			
						Left Tilt	6	2437.0	0.570	99.1%	16.0	15.5			
						Right Touch	6	2437.0	0.741	99.1%	16.0	15.5	0.587	0.663	2
						Rightt Tilt	6	2437.0	0.853	99.1%	16.0	15.5	0.500	0.565	
			Body-worn	Off	15	Rear	1	2412.0	0.057	99.1%	19.0	18.7	0.010	0.011	1
						Front	1	2412.0	0.048	99.1%	19.0	18.7			
			Hotspot	Off	10	Rear	1	2412.0	0.117	99.1%	19.0	18.7	0.077	0.083	4
						Front	1	2412.0	0.098	99.1%	19.0	18.7			
						Edge 1	1	2412.0	0.201	99.1%	19.0	18.7	0.127	0.137	1
						Edge 4	1	2412.0	0.014	99.1%	19.0	18.7			

Spot check results for Variant model

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		
WLAN	2.4GHz	802.11b 1 Mbps	Head	On	0	Right Touch	6	2437.0	0.810	99.1%	16.0	15.6	0.652	0.715		35
						Right Tilt	6	2437.0	1.126	99.1%	16.0	15.6	0.623	0.683		
			Body-worn	Off	15	Rear	1	2412.0	0.039	99.1%	19.0	17.5	0.027	0.038		36
			Hotspot	Off	10	Edge 1	1	2412.0	0.178	99.1%	19.0	17.5	0.111	0.158		37

Note(s):

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

10.12. Bluetooth

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)	
										Tune-up limit	Meas.	Meas.	Scaled
BT	2.4 GHz	GFSK	Head	On	0	Left Touch	39	2441.0	76.7%	12.0	11.9	0.061	0.081
						Left Tilt	39	2441.0	76.7%	12.0	11.9	0.082	0.110
						Right Touch	39	2441.0	76.7%	12.0	11.9	0.119	0.159
						Right Tilt	39	2441.0	76.7%	12.0	11.9	0.116	0.155
		GFSK	Body-worn	Off	15	Rear	0	2402.0	76.7%	17.0	16.4	0.029	0.043
						Front	0	2402.0	76.7%	17.0	16.4	0.027	0.040
		GFSK	Hotspot	Off	10	Rear	0	2402.0	76.7%	17.0	16.4	0.050	0.075
						Front	0	2402.0	76.7%	17.0	16.4	0.045	0.068
						Edge 1	0	2402.0	76.7%	17.0	16.4	0.074	0.109
						Edge 4	0	2402.0	76.7%	17.0	16.4	0.019	0.028

Spot check results for Variant model

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	2.4 GHz	GFSK	Head	On	0	Right Touch	39	2441.0	76.7%	12.0	11.9	0.177	0.236	38
		GFSK	Body-worn	Off	15	Rear	0	2402.0	76.7%	17.0	16.8	0.011	0.015	39
		GFSK	Hotspot	Off	10	Edge 1	0	2402.0	76.7%	17.0	16.8	0.022	0.030	40

10.13. Wi-Fi (U-NII Bands)

Data referencing from Reference model

Normal U-NII 2A Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
WLAN	5.3 GHz U-NII 2A	802.11n (HT40) MCS0	Head	On	0	Left Touch	54	5270.0	0.116	95.9%	13.0	12.0					
						Left Tilt	54	5270.0	0.085	95.9%	13.0	12.0					
						Right Touch	54	5270.0	0.499	95.9%	13.0	12.0	0.226	0.294			1
						Right Tilt	54	5270.0	0.313	95.9%	13.0	12.0	0.125	0.163			4
		802.11n (HT40) MCS0	Body-worn	Off	15	Rear	54	5270.0	0.105	95.9%	13.0	12.0	0.039	0.051			1
						Front	54	5270.0	0.052	95.9%	13.0	12.0					
			Product Specific 10-g	Off	0	Rear	54	5270.0	1.954	95.9%	13.0	12.0					
						Front	54	5270.0	1.665	95.9%	13.0	12.0					
						Edge 1	54	5270.0	0.726	95.9%	13.0	12.0					
						Edge 4	54	5270.0	3.442	95.9%	13.0	12.0			0.348	0.453	1

Normal U-NII 2C Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
WLAN	5.5 GHz U-NII 2C	802.11n MCS0 HT40	Head	On	0	Left Touch	126	5630.0	0.111	95.9%	14.0	13.8					
						Left Tilt	126	5630.0	0.096	95.9%	14.0	13.8					
						Right Touch	126	5630.0	0.542	95.9%	14.0	13.8	0.239	0.264			1
						Right Tilt	126	5630.0	0.135	95.9%	14.0	13.8	0.052	0.058			4
		802.11a 6 Mbps	Body-worn	Off	15	Rear	120	5600.0	0.218	96.3%	16.0	15.4	0.079	0.093			1
						Front	120	5600.0	0.086	96.3%	16.0	15.4					
			Product Specific 10-g	Off	0	Rear	120	5600.0	3.185	96.3%	16.0	15.4					
						Front	120	5600.0	1.998	96.3%	16.0	15.4					
						Edge 1	120	5600.0	0.233	96.3%	16.0	15.4					
						Edge 4	120	5600.0	8.779	96.3%	16.0	15.4			0.608	0.722	1

Normal U-NII 3 Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note
											Tune-up limit	Meas.	Meas.	Scaled	
WLAN	5.8 GHz U-NII 3	802.11n MCS0 HT40	Head	On	0	Left Touch	159	5795.0	0.124	95.9%	14.0	13.5			
						Left Tilt	159	5795.0	0.134	95.9%	14.0	13.5			
						Right Touch	159	5795.0	0.489	95.9%	14.0	13.5	0.164	0.191	1
						Right Tilt	159	5795.0	0.137	95.9%	14.0	13.5	0.058	0.067	4
		802.11n MCS0 HT40	Body-worn	Off	15	Rear	159	5795.0	0.177	95.9%	15.0	13.5	0.066	0.097	1
						Front	159	5795.0	0.151	95.9%	15.0	13.5			
			Hotspot	Off	10	Rear	151	5755.0	0.264	95.9%	15.0	13.4	0.110	0.166	1
						Front	151	5755.0	0.059	95.9%	15.0	13.4			
						Edge 1	151	5755.0	0.019	95.9%	15.0	13.4	0.006	0.008	4
						Edge 4	151	5755.0	0.252	95.9%	15.0	13.4	0.125	0.188	4

Normal U-NII 4 Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
WLAN	5.9 GHz U-NII 4	802.11n (HT40) MCS0	Head	On	0	Left Touch	167	5835.0	0.065	95.9%	14.0	13.6					
						Left Tilt	167	5835.0	0.075	95.9%	14.0	13.6					
						Right Touch	167	5835.0	0.224	95.9%	14.0	13.6	0.069	0.079			1
						Right Tilt	167	5835.0	0.090	95.9%	14.0	13.6	0.041	0.047			4
		802.11n (HT40) MCS0	Body-worn	Off	15	Rear	167	5835.0	0.099	95.9%	15.0	13.6	0.034	0.049			1
						Front	167	5835.0	0.123	95.9%	15.0	13.6					
			Product Specific 10-g	Off	0	Rear	167	5835.0	1.107	95.9%	15.0	13.6			0.136	0.195	4
						Front	167	5835.0	0.864	95.9%	15.0	13.6					
						Edge 1	167	5835.0	0.126	95.9%	15.0	13.6			0.013	0.018	4
						Edge 4	167	5835.0	4.448	95.9%	15.0	13.6			0.399	0.573	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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Spot check results for Variant model

Normal U-NII 2A Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN	5.3 GHz U-NII 2A	802.11n (HT40) MCS0	Head	On	0	Right Touch	54	5270.0	0.352	95.9%	13.0	12.0	0.174	0.228				41
		802.11n (HT40) MCS0	Body-worn	Off	15	Rear	54	5270.0	0.139	95.9%	13.0	12.0	0.055	0.072				42
			Product Specific 10-g	Off	0	Edge 4	54	5270.0	4.173	95.9%	13.0	12.0			0.658	0.862		43

Normal U-NII 2C Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN	5.5 GHz U-NII 2C	802.11n MCS0 HT40	Head	On	0	Right Touch	126	5630.0	0.418	95.9%	14.0	13.1	0.162	0.208				44
		802.11a 6 Mbps	Body-worn	Off	15	Rear	120	5600.0	0.174	96.3%	16.0	15.3	0.070	0.085				45
			Product Specific 10-g	Off	0	Edge 4	120	5600.0	4.523	96.3%	16.0	15.3			0.503	0.612		46

Normal U-NII 3 Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
WLAN	5.8 GHz U-NII 3	802.11n MCS0 HT40	Head	On	0	Right Touch	159	5795.0	0.374	95.9%	14.0	13.0	0.179	0.234		47
		802.11n MCS0 HT40	Body-worn	Off	15	Rear	159	5795.0	0.136	95.9%	15.0	13.1	0.051	0.082		48
			Hotspot	Off	10	Edge 4	151	5755.0	0.156	95.9%	15.0	13.2	0.070	0.111		49

Normal U-NII 4 Results

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled		
WLAN	5.9 GHz U-NII 4	802.11n (HT40) MCS0	Head	On	0	Right Touch	167	5835.0	0.161	95.9%	14.0	13.3	0.077	0.096				50
		802.11n (HT40) MCS0	Body-worn	Off	15	Rear	167	5835.0	0.082	95.9%	15.0	13.4	0.031	0.046				51
			Product Specific 10-g	Off	0	Edge 4	167	5835.0	3.210	95.9%	15.0	13.4			0.282	0.425		52

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.

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	0.294	N/A	N/A
835	GSM 850	Hotspot	Rear	No	0.551	N/A	N/A
	WCDMA Band V	Hotspot	Rear	No	0.427	N/A	N/A
	LTE Band 26	Hotspot	Rear	No	0.485	N/A	N/A
1750	WCDMA Band IV	Body-worn	Rear	No	0.877	N/A	N/A
	LTE Band 66	Hotspot	Edge 3	Yes	0.983	0.937	1.05
1900	GSM 1900	Hotspot	Edge 3	No	0.456	N/A	N/A
	WCDMA Band II	Body-worn	Rear	No	0.651	N/A	N/A
	LTE Band 2	Hotspot	Edge 3	No	0.518	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Head	Right Touch	No	0.652	N/A	N/A
	Bluetooth	Head	Right Touch	No	0.177	N/A	N/A
2600	LTE Band 41	Hotspot	Edge 3	No	0.394	N/A	N/A
5300	Wi-Fi 802.11a/n	Head	Right Touch	No	0.174	N/A	N/A
5500	Wi-Fi 802.11a/n	Head	Right Touch	No	0.162	N/A	N/A
5800	Wi-Fi 802.11a/n	Head	Right Touch	No	0.179	N/A	N/A
5900	Wi-Fi 802.11a/n	Head	Right Touch	No	0.077	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 10-g	Edge 3	No	1.580	N/A	N/A
	LTE Band 66	Product Specific 10-g	Edge 3	No	1.940	N/A	N/A
1900	WCDMA Band II	Product Specific 10-g	Edge 3	No	1.350	N/A	N/A
	LTE Band 2	Product Specific 10-g	Edge 3	No	1.040	N/A	N/A
5300	Wi-Fi 802.11a/n	Product Specific 10-g	Edge 4	No	0.658	N/A	N/A
5500	Wi-Fi 802.11a/n	Product Specific 10-g	Edge 4	No	0.503	N/A	N/A
5900	Wi-Fi 802.11a/n	Product Specific 10-g	Edge 4	No	0.282	N/A	N/A

Note(s):

1. Second Repeated Measurement is not required since the ratio of the largest to smallest SAR for the original and first repeated measurement is not > 1.20.
2. Only consider about Variant model's SAR results.

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations					
Head & Body-worn & Hotspot & Phablet-10g	1	WWAN (2G/3G/LTE)	+	DTS			Scenarios
	2	WWAN (2G/3G/LTE)	+	UNII			
	3	WWAN (2G/3G/LTE)	+	BT			
	4	WWAN (2G/3G/LTE)	+	UNII	+	BT	

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 Radio cannot transmit simultaneously with UNII Radio.
6. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
7. BT tethering is considered about each RF exposure conditions.

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.

12.1. Sum of the SAR for WWAN & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)				Sum of SAR (W/kg)			
		WWAN	DTS	UNII	BT	WWAN + DTS	WWAN + UNII	WWAN + BT	WWAN + UNII + BT
		1	2	3	4	1 + 2	1+3	1+4	1+3+4
Head (1-g SAR)	All positions	0.393	0.715	0.294	0.236	1.108	0.687	0.629	0.923
Body-Worn (1-g SAR)	All positions	1.116	0.038	0.097	0.188	1.154	1.213	1.304	1.401
Hotspot (1-g SAR)	All positions	1.210	0.158	0.188	0.109	1.368	1.398	1.319	1.507
Product Specific 10-g (10-g SAR)	All positions	2.361		0.862			3.223		

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with "Sum of SAR".

Appendixes

Refer to separated files for the following appendixes.

4790160839-S1 FCC Report SAR_App A_Photos & Ant. Locations

4790160839-S1 FCC Report SAR_App B_Highest SAR Test Plots

4790160839-S1 FCC Report SAR_App C_System Check Plots

4790160839-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4790160839-S1 FCC Report SAR_App E_Probe Cal. Certificates

4790160839-S1 FCC Report SAR_App F_Dipole Cal. Certificates

4790160839-S1 FCC Report SAR_App G_Proximity Sensor feature

4790160839-S1 FCC Report SAR_App H_LTE Carrier Aggregation

END OF REPORT