



**FCC 47 CFR § 2.1093
IEEE Std 1528-2013**

SAR EVALUATION REPORT

FOR

GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, WPT and NFC

MODEL NUMBER: SM-G991B/DS, SM-G991B

FCC ID: A3LSMG991B

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Testing Laboratory

TL-637

Revision History

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V1	11/18/2020	Initial Issue	--
V2	11/27/2020	Added "note.4" at WLAM mode power tables in Sec 6.3. Revised WLAN mode power tables in Sec.9.5.	Sunghoon.kim

Table of Contents

1.	Attestation of Test Results	6
1.1.	<i>The Highest Reported SAR for RF exposure conditions for each bands</i>	<i>7</i>
2.	Test Specification, Methods and Procedures.....	8
3.	Facilities and Accreditation	8
4.	SAR Measurement System & Test Equipment	9
4.1.	<i>SAR Measurement System.....</i>	<i>9</i>
4.2.	<i>SAR Scan Procedures</i>	<i>10</i>
4.3.	<i>Test Equipment.....</i>	<i>12</i>
5.	Measurement Uncertainty.....	13
5.1.	<i>DECISION RULE.....</i>	<i>13</i>
6.	Device Under Test (DUT) Information	13
6.1.	<i>DUT Description</i>	<i>13</i>
6.2.	<i>Wireless Technologies.....</i>	<i>14</i>
6.3.	<i>Nominal and Maximum Output Power.....</i>	<i>15</i>
6.4.	<i>Power Back-off Operation.....</i>	<i>19</i>
6.5.	<i>General LTE SAR Test and Reporting Considerations.....</i>	<i>20</i>
6.6.	<i>General 5G NR (FR1) SAR Test and Reporting Considerations</i>	<i>22</i>
6.7.	<i>LTE (TDD) Considerations.....</i>	<i>23</i>
6.8.	<i>LTE Carrier Aggregation</i>	<i>24</i>
6.9.	<i>Proximity Sensor feature.....</i>	<i>28</i>
6.9.1.	<i>Proximity Sensor Triggering Distance (KDB 616217 §6.2).....</i>	<i>29</i>
6.9.2.	<i>Proximity Sensor Coverage (KDB 616217 §6.3)</i>	<i>33</i>
6.9.3.	<i>Proximity Sensor Tilt Angle Assessment (KDB 616217 §6.4).....</i>	<i>33</i>
6.9.4.	<i>Resulting test positions for SAR measurements</i>	<i>33</i>
7.	RF Exposure Conditions (Test Configurations).....	34
8.	Dielectric Property Measurements & System Check	35
8.1.	<i>Dielectric Property Measurements</i>	<i>35</i>
8.2.	<i>System Check.....</i>	<i>43</i>
9.	Conducted Output Power Measurements.....	47
9.1.	<i>GSM</i>	<i>47</i>
9.2.	<i>W-CDMA</i>	<i>49</i>
9.3.	<i>LTE.....</i>	<i>55</i>
9.3.1.	<i>LTE Rel. 10 Carrier Aggregation.....</i>	<i>93</i>
9.4.	<i>5G NR (FR1)</i>	<i>98</i>

9.5.	Wi-Fi 2.4 GHz (DTS Band).....	105
9.6.	Wi-Fi 5GHz (U-NII Bands).....	107
9.7.	Bluetooth	110
10.	Measured and Reported (Scaled) SAR Results.....	111
10.1.	GSM 850.....	113
10.2.	GSM 1900.....	113
10.3.	W-CDMA Band II.....	114
10.4.	W-CDMA Band IV	114
10.5.	W-CDMA Band V	115
10.6.	LTE Band 2 (20MHz Bandwidth)	115
10.7.	LTE Band 5 (10MHz Bandwidth)	116
10.8.	LTE Band 12 (10MHz Bandwidth)	116
10.9.	LTE Band 13 (10MHz Bandwidth)	117
10.10.	LTE Band 25 (20MHz Bandwidth)	117
10.11.	LTE Band 26 (15MHz Bandwidth)	118
10.12.	LTE Band 41 (20MHz Bandwidth)	118
10.13.	LTE Band 66 (20MHz Bandwidth)	120
10.14.	NR Band n5 (20MHz Bandwidth).....	121
10.15.	NR Band n66 (20MHz Bandwidth).....	122
10.16.	Wi-Fi (DTS Band).....	123
10.17.	Wi-Fi (U-NII Bands).....	125
10.18.	Bluetooth.....	128
11.	SAR Measurement Variability.....	129
12.	Simultaneous Transmission SAR Analysis.....	130
12.1.	Sum of the SAR for GSM 850 & Wi-Fi & BT.....	134
12.2.	Sum of the SAR for GSM 1900 & Wi-Fi & BT.....	134
12.3.	Sum of the SAR for WCDMA Band II & Wi-Fi & BT	135
12.4.	Sum of the SAR for WCDMA Band IV & Wi-Fi & BT.....	135
12.5.	Sum of the SAR for WCDMA Band V & Wi-Fi & BT.....	135
12.6.	Sum of the SAR for LTE Band 2 & Wi-Fi & BT	136
12.7.	Sum of the SAR for LTE Band 5 & Wi-Fi & BT	136
12.8.	Sum of the SAR for LTE Band 12 & Wi-Fi & BT	136
12.9.	Sum of the SAR for LTE Band 13 & Wi-Fi & BT	137
12.10.	Sum of the SAR for LTE Band 25 & Wi-Fi & BT	137
12.11.	Sum of the SAR for LTE Band 26 & Wi-Fi & BT	137
12.12.	Sum of the SAR for LTE Band 41 & Wi-Fi & BT	138



12.13.	Sum of the SAR for LTE Band 66 & Wi-Fi & BT	138
12.14.	Sum of the SAR for EN-DC(LTE Band 2 & NR Band n5) & Wi-Fi & BT	139
12.15.	Sum of the SAR for EN-DC(LTE Band 5 & NR Band n66) & Wi-Fi & BT	140
12.16.	Sum of the SAR for EN-DC(LTE Band 12 & NR Band n66) & Wi-Fi & BT	140
12.17.	Sum of the SAR for EN-DC(LTE Band 66 & NR Band n5) & Wi-Fi & BT	141
12.18.	Volume Scan Results	142
Appendixes	171
	4789651209-S1 FCC Report SAR_App A_Photos & Ant. Locations	171
	4789651209-S1 FCC Report SAR_App B_Highest SAR Test Plots	171
	4789651209-S1 FCC Report SAR_App C_System Check Plots	171
	4789651209-S1 FCC Report SAR_App D_SAR Tissue Ingredients.....	171
	4789651209-S1 FCC Report SAR_App E_Probe Cal. Certificates.....	171
	4789651209-S1 FCC Report SAR_App F_Dipole Cal. Certificates	171
	4789651209-S1 FCC Report SAR_App G_Volume Scan Results.....	171

1. Attestation of Test Results

Applicant Name		SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID		A3LSMG991B			
Model Number		SM-G991B/DS, SM-G991B			
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		0.42	1.03	0.41	0.89
Body-worn		0.94	0.32	0.24	0.13
Hotspot		1.34	1.06	0.78	0.38
Product Specific 10g		2.37	N/A	2.31	N/A
Simultaneous TX	Head	1.59	1.54	1.59	1.59
	Body-worn	1.59	1.54	1.59	1.59
	Hotspot	1.59	1.59	1.59	1.59
	Product Specific 10g	3.96	N/A	3.96	N/A
Date Tested		10/5/2020 to 11/17/2020			
Test Results		Pass			

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

Note: SM-G991B/DS and SM-G991B have the same hardware but number of SIM card slot is different. SM-G991B is single SIM version and SM-G991B/DS is dual SIM version. This application was tested with SM-G991B/DS in all bands. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

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

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

Equipment Class	Band	The Highest Reported SAR (W/kg)			
		1g of tissue			10g of tissue
		Head Exposure condition	Body-worn Exposure condition	Hotspot Exposure condition	Product Specific Exposure condition
PCE	GSM 850	0.420	0.538	0.918	N/A
	GSM 1900	0.105	0.202	1.033	1.744
	WCDMA Band II	0.202	0.732	1.171	2.367
	WCDMA Band IV	0.231	0.939	1.148	1.823
	WCDMA Band V	0.351	0.415	0.775	N/A
	LTE Band 2	0.173	0.611	1.093	1.631
	LTE Band 4	N/A	N/A	N/A	N/A
	LTE Band 5	0.345	0.408	0.755	N/A
	LTE Band 12	0.109	0.143	0.237	N/A
	LTE Band 13	0.189	0.253	0.443	N/A
	LTE Band 17	N/A	N/A	N/A	N/A
	LTE Band 25	0.178	0.640	1.344	2.022
	LTE Band 26	0.341	0.389	0.639	N/A
	LTE Band 41	0.120	0.223	0.278	N/A
	LTE Band 66	0.226	0.757	1.024	1.567
	NR Band n5	0.333	0.456	0.799	N/A
NR Band n66	0.208	0.719	0.792	1.528	
DTS	2.4GHz WLAN	1.026	0.323	1.058	N/A
UNII	5GHz WLAN	0.410	0.243	0.776	2.305
DSS	Bluetooth	0.886	0.134	0.376	N/A

2. Test Specification, Methods and Procedures

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

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

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

- [TCB workshop](#) October, 2014; Page 36, RF Exposure Procedures Update (Overlapping LTE Bands)
- [TCB workshop](#) October, 2014; Page 37, RF Exposure Procedures Update (Other LTE Considerations)
- [TCB workshop](#) October, 2016; Page 7, RF Exposure Procedures (Bluetooth Duty Factor)
- [TCB workshop](#) October, 2016; Page 18, RF Exposure Procedures (DUT Holder Perturbations)
- [TCB workshop](#) May, 2017; Page 6, RF Exposure Procedures (LTE Test Conditions)
- [TCB workshop](#) May, 2017; Page 7, RF Exposure Procedures (LTE Band 41 Power Class 2)
- [TCB workshop](#) April, 2018; Page 3, RF Exposure Procedures (LTE DL CA SAR Test Exclusion Update)
- [TCB workshop](#) April, 2019 Page 19, RF Exposure Procedures (Tissue Simulating Liquids (TSL))
- [TCB workshop](#) November, 2019 Page 5, RF Exposure Procedures (SPLSR Hotspot Combination)
- [TCB workshop](#) November, 2019 Page 3, RF Exposure Policy Updates (5G NR FR1 NSA EN-DC UE SAR Evaluations)

3. Facilities and Accreditation

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

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

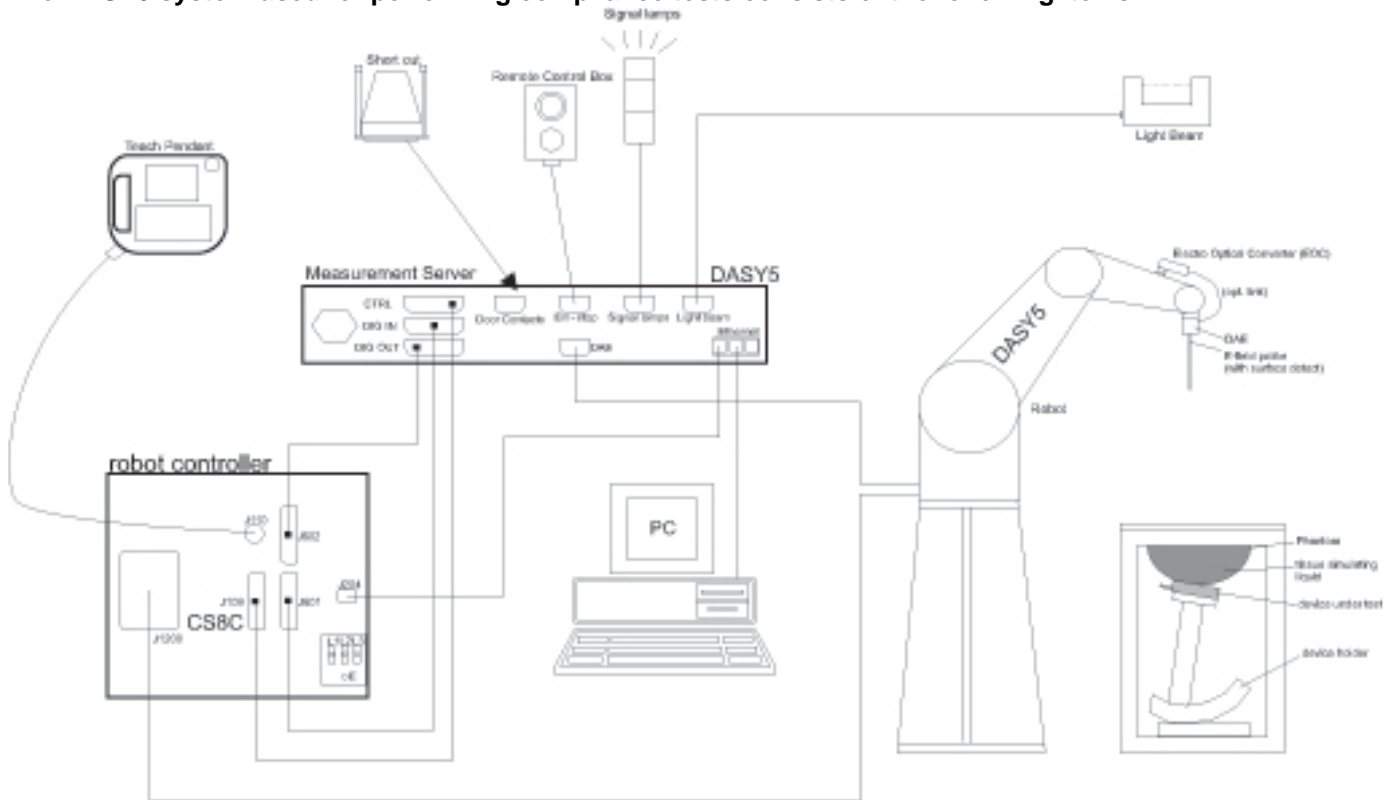
UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637.

The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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



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

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

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

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
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 \leq 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: $\Delta x_{Zoom}, \Delta y_{Zoom}$			≤ 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 1 st 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 <i>reported</i> SAR from the <i>area scan based 1-g SAR estimation</i> 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	8-4-2021
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	7-17-2021
Shorting block	SPEAG	DAK-3.5 Short	SM DAK 200 BA	N/A
Thermometer	LKM	DTM3000	3424	8-11-2021

System Check

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
MXG Analog Signal Generator	Agilent	N5181A	MY50145882	8-4-2021
Power Sensor	Agilent	U2000A	MY60180020	9-9-2021
Power Sensor	Agilent	U2000A	MY54260007	8-7-2021
Power Amplifier	EXODUS	1410025-AMP2027-10003	10003	8-4-2021
Directional Coupler	Agilent	772D	MY52180193	8-4-2021
Directional Coupler	Agilent	778D	MY52180432	8-4-2021
Low Pass Filter	MICROLAB	LA-15N	3943	8-4-2021
Low Pass Filter	FILTRON	L14012FL	1410003S	8-4-2021
Low Pass Filter	MICROLAB	LA-60N	3942	8-4-2021
Attenuator	Agilent	8491B/003	MY39269292	8-4-2021
Attenuator	Agilent	8491B/003	MY39271969	9-9-2021
Attenuator	Agilent	8491B/010	MY39271981	9-9-2021
Attenuator	Agilent	8491B/020	MY39271973	9-9-2021
E-Field Probe (SAR1, 4)	SPEAG	EX3DV4	7376	7-31-2021
E-Field Probe (SAR1, 3, 4)	SPEAG	EX3DV4	7330	2-21-2021
E-Field Probe (SAR3)	SPEAG	EX3DV4	7313	2-25-2021
E-Field Probe (SAR3)	SPEAG	EX3DV4	7314	5-29-2021
E-Field Probe (SAR5)	SPEAG	EX3DV4	3871	8-28-2021
Data Acquisition Electronics (SAR1)	SPEAG	DAE4	1447	3-20-2021
Data Acquisition Electronics (SAR1)	SPEAG	DAE4	1468	8-25-2021
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	1494	7-23-2021
Data Acquisition Electronics (SAR4)	SPEAG	DAE4	1591	8-25-2021
Data Acquisition Electronics (SAR5)	SPEAG	DAE4	1343	8-25-2021
System Validation Dipole	SPEAG	D750V3	1122	2-24-2022
System Validation Dipole	SPEAG	D835V2	4d174	2-24-2022
System Validation Dipole	SPEAG	D1750V2	1125	2-21-2022
System Validation Dipole	SPEAG	D1900V2	5d199	3-19-2022
System Validation Dipole	SPEAG	D2450V2	939	7-25-2021
System Validation Dipole	SPEAG	D2600V2	1097	9-19-2021
System Validation Dipole	SPEAG	D5GHzV2	1209	2-27-2022
Thermometer (SAR1)	Lutron	MHB-382SD	AH.50215	8-11-2021
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-11-2021
Thermometer (SAR4, 5)	Lutron	MHB-382SD	AH.91463	8-11-2021

Others

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Base Station Simulator	R & S	CMW500	150313	8-4-2021
Base Station Simulator	R & S	CMW500	150314	8-4-2021
Base Station Simulator	R & S	CMW500	162790	8-4-2021
Wireless Connectivity Tester	R & S	CMW270	100982	8-3-2021

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D2450V2 (SN : 939), D2600V2 (SN : 1097))

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 $\leq 30\%$, 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	<input checked="" type="checkbox"/> The Back Cover is not removable.		
Battery Options	<input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) <input checked="" type="checkbox"/> Mobile Hotspot (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20MHz)/Ch.151(40MHz)/Ch.155(80MHz)))		
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other <input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 2.4 GHz : Ch.1 – Ch.11) <input checked="" type="checkbox"/> Wi-Fi Direct (Wi-Fi 5.8 GHz_UNII-3 (Ch.149(20MHz)/Ch.151(40MHz)/Ch.155(80MHz)))		
Test Sample Information	No.	S/N	Notes
	1	494a4ea13c1f7ece	Main Conducted
	2	494a4ea03e1f7ece	Main Conducted
	3	R3CNA0K9ZRY	Main Conducted
	4	R3CN90N19ER	Main Conducted
	5	R3CN80HSZ6E	Wi-Fi & BT Conducted
	6	R3CN90P9D2H	SAR
	7	R3CN9046Q8E	SAR
	8	R3CN90P974E	SAR
	9	R3CN90P97MW	SAR
	10	R3CNA0F9GEL	SAR
	11	R3CNA0F9GHX	SAR
	12	R3CNA0F9HSD	SAR
	13	R3CNA0F9HNJ	SAR
	14	R3CNA0F9G9Z	SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode		Duty Cycle used for SAR testing
GSM	850 1900	Voice (GMSK)	GPRS Multi-Slot Class:	GSM Voice: 12.5% (E)GPRS: 1 Slot: 12.5% 2 Slots: 25% 3 Slots: 37.5% 4 Slots: 50%
		GPRS (GMSK)	<input type="checkbox"/> Class 8 - 1 Up, 4 Down	
		EGPRS (8PSK)	<input type="checkbox"/> Class 10 - 2 Up, 4 Down	
			<input type="checkbox"/> Class 12 - 4 Up, 4 Down	
			<input checked="" type="checkbox"/> Class 33 - 4 Up, 5 Down	
Does this device support DTM (Dual Transfer Mode)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
W-CDMA (UMTS)	Band II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 24) HSUPA (Category 6) DC-HSDPA (Category 24) HSPA+ (DL only)		100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 12 FDD Band 13 FDD Band 17 FDD Band 25 FDD Band 26 FDD Band 66 TDD Band 41 ³	QPSK		100% (FDD) 63.3% (TDD) <small>Power Class 3</small> 43.3% (TDD) <small>Power Class 2</small> Refer to Sec.6.7
		16QAM		
		64QAM		
		256QAM		
		Rel. 15 Carrier Aggregation (1 Uplink and 4 Downlinks)		
Does this device support SV-LTE (1xRTT-LTE)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
5G NR	FDD Band n5 FDD Band n66	DFT-s-OFDM: $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM		100% (FDD)
Wi-Fi	2.4 GHz	802.11b		SISO mode : 99.5% <small>(802.11b)</small> MIMO mode : 96.5% <small>(802.11g)</small>
		802.11g		
	802.11n (HT20)			
	5 GHz	802.11ax (HE20)		
		802.11a		<u>MIMO mode:</u> 96.6% <small>(802.11a)</small> 98.2% <small>(802.11n 40MHz BW)</small> 92.8% <small>(802.11ac 80MHz BW)</small>
		802.11n (HT20)		
		802.11n (HT40)		
		802.11ac (VHT20)		
		802.11ac (VHT40)		
		802.11ac (VHT80)		
	802.11ax (HE20)			
	802.11ax (HE40)			
	802.11ax (HE80)			
Does this device support bands 5.60 ~ 5.65 GHz? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Does this device support Band gap channel(s)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
Bluetooth	2.4 GHz	Version 5.0 LE		76.9% (DH5)
NFC	13.56 MHz	Type A/B/F		N/A ⁴

Notes:

1. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.9% and was considered and used for SAR Testing.
2. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.
3. This device supports Power Class 2 (HPUE) and Power Class 3 for LTE Band 41.
4. 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 (dBm)	
				Tune-up Limit	Frame Power	Tune-up Limit	Frame Power
GSM850	Main 1 Ant.	Voice	1	34.0	25.0		
		GPRS	1	34.0	25.0		
		GPRS	2	31.0	25.0		
		GPRS	3	30.0	25.7		
		GPRS	4	28.0	25.0		
		EGPRS	1	27.0	18.0		
		EGPRS	2	25.0	19.0		
		EGPRS	3	24.0	19.7		
		EGPRS	4	23.0	20.0		
GSM1900	Main 1 Ant.	Voice	1	31.0	22.0	29.0	20.0
		GPRS	1	31.0	22.0	29.0	20.0
		GPRS	2	28.0	22.0	27.0	21.0
		GPRS	3	27.0	22.7	25.5	21.2
		GPRS	4	25.0	22.0	24.0	21.0
		EGPRS	1	27.0	18.0	26.5	17.5
		EGPRS	2	25.5	19.5	25.5	19.5
		EGPRS	3	24.0	19.7	24.0	19.7
		EGPRS	4	23.0	20.0	23.0	20.0

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
W-CDMA Band II	Main 1 Ant.	R99	25.0	21.5
		HSDPA	24.0	21.5
		HSUPA	24.5	21.0
		DC-HSDPA	24.0	21.5
W-CDMA Band IV	Main 1 Ant.	R99	24.5	20.5
		HSDPA	24.0	20.5
		HSUPA	24.2	20.5
		DC-HSDPA	24.5	20.5
W-CDMA Band V	Main 1 Ant.	R99	25.3	
		HSDPA	24.0	
		HSUPA	24.0	
		DC-HSDPA	24.0	

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
LTE Band 2	Main 1 Ant.	QPSK	24.5	21.0
LTE Band 4	Main 1 Ant.	QPSK	24.0	20.0
LTE Band 5	Main 1 Ant.	QPSK	25.5	
LTE Band 12	Main 1 Ant.	QPSK	25.3	
LTE Bands 13	Main 1 Ant.	QPSK	25.3	
LTE Band 17	Main 1 Ant.	QPSK	25.3	
LTE Band 25	Main 1 Ant.	QPSK	25.0	21.5
LTE Band 26	Main 1 Ant.	QPSK	25.5	
LTE Band 66	Main 1 Ant.	QPSK	24.0	20.0
LTE Band 41 Power Class 3	Main 2 Ant.	QPSK	25.0	22.0
LTE Band 41 Power Class 2	Main 2 Ant.	QPSK	26.2	22.0

RF Air interface	Antenna	Mode	Max. RF Output Power (dBm)	Reduced. RF Output Power (dBm)
NR Band n5	Main 1 Ant.	DFT-s-OFDM QPSK	25.5	
NR Band n66	Main 1 Ant.	DFT-s-OFDM QPSK	24.0	19.5

Normal WLAN mode

Maximum Power

Mode	Band		Max. RF Output Power (dBm)																	
			WLAN Ant.1 of SISO & MIMO					WLAN Ant.2 of SISO & MIMO					MIMO (WLAN Ant.1 + WLAN Ant.2)							
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	g	n	ac	ax	
2.4GHz	DTS	2450 MHz		21 Ch12:12 Ch13:6	18 Ch12:16 Ch11:14 Ch12:12 Ch13:6	18 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		21 Ch12:12 Ch13:6	18 Ch12:16 Ch11:14 Ch12:12 Ch13:6	18 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		21 Ch12:19 Ch11:17 Ch12:15 Ch13:9	21 Ch12/8/9:19 Ch10/11:17 Ch12:15 Ch13:9		17 Ch12:15 Ch13:9	
5GHz (20MHz)	UNII-1	5200 MHz	18			18	18	13	18			18	18	13	21		21	21	21	16
	UNII-2A	5300 MHz	18			18	18	13	18			18	18	13	21		21	21	21	16
	UNII-2C	5500 MHz	15			15	15	13	15			15	15	13	18		18	18	16	
	UNII-3	5800 MHz	18			18	18	13	18			18	18	13	21		21	21	16	
5GHz (40MHz)	UNII-1	5200 MHz				16	16	11				16	16	11			19	19	14	
	UNII-2A	5300 MHz				16	16	11				16	16	11			19	19	14	
	UNII-2C	5500 MHz				16	16	11				16	16	11			19	19	14	
	UNII-3	5800 MHz				16	16	11				16	16	11			19	19	14	
5GHz (80MHz)	UNII-1	5200 MHz					15	10					15	10					18	13
	UNII-2A	5300 MHz					15	10					15	10					18	13
	UNII-2C	5500 MHz					15	10					15	10					18	13
	UNII-3	5800 MHz					15	10					15	10					18	13

Reduced Power – Receiver Active

Mode	Band		Max. RF Output Power (dBm)																	
			WLAN Ant.1 of SISO & MIMO					WLAN Ant.2 of SISO & MIMO					MIMO (WLAN Ant.1 + WLAN Ant.2)							
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	g	n	ac	ax	
2.4GHz	DTS	2450 MHz		17 Ch12:12 Ch13:6	17 Ch12:16 Ch11:14 Ch12:12 Ch13:6	17 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		17 Ch12:12 Ch13:6	17 Ch12:16 Ch11:14 Ch12:12 Ch13:6	17 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		20 Ch12:19 Ch11:17 Ch12:15 Ch13:9	20 Ch12/8/9:19 Ch10/11:17 Ch12:15 Ch13:9		17 Ch12:15 Ch13:9	
5GHz (20MHz)	UNII-1	5200 MHz	12			12	12	12	12			12	12	12	15		15	15	15	
	UNII-2A	5300 MHz	12			12	12	12	12			12	12	12	15		15	15	15	
	UNII-2C	5500 MHz	12			12	12	12	12			12	12	12	15		15	15	15	
	UNII-3	5800 MHz	12			12	12	12	12			12	12	12	15		15	15	15	
5GHz (40MHz)	UNII-1	5200 MHz				12	12	11				12	12	11			15	15	14	
	UNII-2A	5300 MHz				12	12	11				12	12	11			15	15	14	
	UNII-2C	5500 MHz				12	12	11				12	12	11			15	15	14	
	UNII-3	5800 MHz				12	12	11				12	12	11			15	15	14	
5GHz (80MHz)	UNII-1	5200 MHz					12	10					12	10					15	13
	UNII-2A	5300 MHz					12	10					12	10					15	13
	UNII-2C	5500 MHz					12	10					12	10					15	13
	UNII-3	5800 MHz					12	10					12	10					15	13

Note(s):

1. This device uses an independent fixed level power reduction mechanism for WLAN mode operations during RCV operated. Detailed descriptions of the power reduction mechanism are included in the operational description.
2. The per stream (antenna) power is the same for SISO and MIMO, but the total MIMO power is 3 dB higher than the individual stream (antenna) power. But this should not impact the simultaneous evaluation because it is already adding the SAR values, per stream (antenna)
3. For 5GHz bands, SISO mode is not support for each antennas. Both Antenna only works MIMO mode.
4. For 2.4GHz Bands, 802.11b mode is only support SISO mode. And Other modes are only works MIMO mode.

RSDB WLAN mode

Maximum Power

Mode	Band		Max. RF Output Power (dBm)																	
			WLAN Ant.1 of SISO & MIMO						WLAN Ant.2 of SISO & MIMO						MIMO (WLAN Ant.1 + WLAN Ant.2)					
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	g	n	ac	ax	
2.4GHz	DTS	2450 MHz		17 Ch12:12 Ch13:6	17 Ch12:16 Ch11:14 Ch12:12 Ch13:6	17 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		17 Ch12:12 Ch13:6	17 Ch11:14 Ch12:12 Ch13:6	17 Ch12/8/9:16 Ch10/11:14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		20 Ch12:19 Ch11:17 Ch12:15 Ch13:9	20 Ch12/8/9:19 Ch10/11:17 Ch12:15 Ch13:9		17 Ch12:15 Ch13:9	
5GHz (20MHz)	UNII-1	5200 MHz	14			14	14	13	14				14	14	13	17		17	17	16
	UNII-2A	5300 MHz	14			14	14	13	14				14	14	13	17		17	17	16
	UNII-2C	5500 MHz	14			14	14	13	14				14	14	13	17		17	17	16
	UNII-3	5800 MHz	14			14	14	13	14				14	14	13	17		17	17	16
5GHz (40MHz)	UNII-1	5200 MHz				14	14	11					14	14	11			17	17	14
	UNII-2A	5300 MHz				14	14	11					14	14	11			17	17	14
	UNII-2C	5500 MHz				14	14	11					14	14	11			17	17	14
	UNII-3	5800 MHz				14	14	11					14	14	11			17	17	14
5GHz (80MHz)	UNII-1	5200 MHz					14	10						14	10			17	13	
	UNII-2A	5300 MHz					14	10						14	10			17	13	
	UNII-2C	5500 MHz					14	10						14	10			17	13	
	UNII-3	5800 MHz					14	10						14	10			17	13	

Reduced Power – RSDB with Receiver Active

Mode	Band		Max. RF Output Power (dBm)																	
			WLAN Ant.1 of SISO & MIMO						WLAN Ant.2 of SISO & MIMO						MIMO (WLAN Ant.1 + WLAN Ant.2)					
			a	b	g	n	ac	ax	a	b	g	n	ac	ax	a	g	n	ac	ax	
2.4GHz	DTS	2450 MHz		14 Ch12:12 Ch13:6	14 Ch12:12 Ch13:6	14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6	14 Ch12:12 Ch13:6	14 Ch12:12 Ch13:6		14 Ch12:12 Ch13:6		17 Ch12:15 Ch13:9	17 Ch12:15 Ch13:9		17 Ch12:15 Ch13:9	
5GHz (20MHz)	UNII-1	5200 MHz	12			12	12	12	12				12	12	12	15		15	15	15
	UNII-2A	5300 MHz	12			12	12	12	12				12	12	12	15		15	15	15
	UNII-2C	5500 MHz	12			12	12	12	12				12	12	12	15		15	15	15
	UNII-3	5800 MHz	12			12	12	12	12				12	12	12	15		15	15	15
5GHz (40MHz)	UNII-1	5200 MHz				12	12	11					12	12	11			15	15	14
	UNII-2A	5300 MHz				12	12	11					12	12	11			15	15	14
	UNII-2C	5500 MHz				12	12	11					12	12	11			15	15	14
	UNII-3	5800 MHz				12	12	11					12	12	11			15	15	14
5GHz (80MHz)	UNII-1	5200 MHz					12	10						12	10			15	13	
	UNII-2A	5300 MHz					12	10						12	10			15	13	
	UNII-2C	5500 MHz					12	10						12	10			15	13	
	UNII-3	5800 MHz					12	10						12	10			15	13	

Note(s):

1. This device uses an independent fixed level power reduction mechanism for WLAN mode operations during RCV operated. Detailed descriptions of the power reduction mechanism are included in the operational description.
2. The per stream (antenna) power is the same for SISO and MIMO, but the total MIMO power is 3 dB higher than the individual stream (antenna) power. But this should not impact the simultaneous evaluation because it is already adding the SAR values, per stream (antenna)
3. For 5GHz bands, SISO mode is not support for each antennas. Both Antenna only works MIMO mode.
4. For 2.4GHz Bands, 802.11b mode is only support SISO mode. And Other modes are only works MIMO mode.
5. WLAN mode supports RSDB operation. Detail of RSDB operation scenario is mentioned in Sec.13.

Bluetooth mode

Antenna	RF Air interface	Max. RF Output Power (dBm)
BT Ant.1	Bluetooth (BDR)	17.0
	Bluetooth (EDR)	13.0
	Bluetooth LE 1Mbps	9.0
	Bluetooth LE 2Mbps	9.0

6.4. Power Back-off Operation

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

Power Back-off mode	Technologies Supported	Exposure Conditions Active			
		Head	Body-worn	Hotspot	Product Specific 10-g
WWAN (Ear-jack)	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66 NR B66	N/A	✓	N/A	✓
WWAN (Hotspot) ¹	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66 NR B66	N/A	N/A	✓	N/A
WWAN (Proximity sensor) ¹	GSM 1900 W-CDMA B2/4 LTE B2/4/25/41/66 NR B66	N/A	N/A	N/A	✓
WLAN (RCV)	Wi-Fi 2.4GHz Wi-Fi 5GHz	✓	N/A	N/A	N/A

Note(s):

1. Tune-up Limits for WWAN (Hotspot) and WWAN (Proximity Sensor) are all Reduced Average Powers. Please refer to Sec.9 for all conducted power measurements.
2. Body-worn SAR with ear-jack connected at reduced power 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	22.7	21.2	1.41	0.850
W-CDMA B2	25.0	21.5	2.24	0.536
W-CDMA B4	24.5	20.5	2.51	0.478
LTE B2	24.5	21.0	2.24	0.536
LTE B4	24.0	20.0	2.51	0.478
LTE B25	25.0	21.5	2.24	0.536
LTE B66	24.0	20.0	2.51	0.478
LTE B41	25.0	22.0	2.00	0.601
NR B66	24.0	19.5	2.82	0.426

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 & NR 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 = $10^{((\text{Max tune-up limit} - \text{Reduced tune-up limit})/10)}$)

6.5. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700/ 1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 12	Frequency range: 699 - 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7	
Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5	
High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3	
Band 13	Frequency range: 777 - 787 MHz						
	Channel Bandwidth						
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz	
Low				23205/ 779.5			
Mid			23230/ 782	23230/ 782			
High				23255/ 784.5			
Band 17	Frequency range: 704 - 716 MHz						
	Channel Bandwidth						
	20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz	
Low			23780/ 709	23755/ 706.5			
Mid			23790/ 710	23790/ 710			
High			23800/ 711	23825/ 713.5			

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 25	Frequency range: 1850 - 1915 MHz																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
	Low	26140/ 1860	26115/ 1857.5	26090/ 1855	26065/ 1852.5	26055/ 1851.5	26047/ 1850.7																																																													
	Mid	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5	26365/ 1882.5																																																													
	High	26590/ 1905	26615/ 1907.5	26640/ 1910	26665/ 1912.5	26675/ 1913.5	26683/ 1914.3																																																													
	Band 26	Frequency range: 814 - 849 MHz																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
	Low		26765/ 821.5	26740/ 819	26715/ 816.5	26705/ 815.5	26697/ 814.7																																																													
	Mid		26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5	26865/ 831.5																																																													
	High		26965/ 841.5	26990/ 844	27015/ 846.5	27025/ 847.5	27033/ 848.3																																																													
	Band 66	Frequency range: 1710 - 1780 MHz																																																																		
		Channel Bandwidth																																																																		
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																													
	Low	132072/ 1720	132047/ 1717.5	132022/ 1715	131997/ 1712.5	131987/ 1711.5	131979/ 1710.7																																																													
	Mid	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745	132322/ 1745																																																													
	High	132572/ 1770	132597/ 1772.5	132622/ 1775	132647/ 1777.5	132657/ 1778.5	132665/ 1779.3																																																													
	Band 41	Frequency range: 2496 - 2690 MHz																																																																		
		Channel Bandwidth																																																																		
20 MHz		15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz																																																														
Low	39750 / 2506.0																																																																			
Low-Mid	40185 / 2549.5																																																																			
Mid	40620 / 2593.0																																																																			
Mid-High	41055 / 2636.5																																																																			
High	41490 / 2680.0																																																																			
LTE transmitter and antenna implementation	Refer to Appendix A.																																																																			
Maximum power reduction (MPR)	<p align="center">Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3</p> <table border="1"> <thead> <tr> <th rowspan="2">Modulation</th> <th colspan="6">Channel bandwidth / Transmission bandwidth (N_{RB})</th> <th rowspan="2">MPR (dB)</th> </tr> <tr> <th>1.4 MHz</th> <th>3.0 MHz</th> <th>5 MHz</th> <th>10 MHz</th> <th>15 MHz</th> <th>20 MHz</th> </tr> </thead> <tbody> <tr> <td>QPSK</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 1</td> </tr> <tr> <td>16 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>≤ 5</td> <td>≤ 4</td> <td>≤ 8</td> <td>≤ 12</td> <td>≤ 16</td> <td>≤ 18</td> <td>≤ 2</td> </tr> <tr> <td>64 QAM</td> <td>> 5</td> <td>> 4</td> <td>> 8</td> <td>> 12</td> <td>> 16</td> <td>> 18</td> <td>≤ 3</td> </tr> <tr> <td>256 QAM</td> <td colspan="6">≥ 1</td> <td>≤ 5</td> </tr> </tbody> </table> <p>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</p>						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
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																																																													
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:

- 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 Band 41 test channels in accordance with October 2014 TCB workshop for all channels bandwidths.
- SAR Testing for LTE was performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

6.6. General 5G NR (FR1) SAR Test and Reporting Considerations

Item	Description				
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band n5	Frequency range: 824 - 849 MHz			
		Channel Bandwidth			
		20 MHz	15 MHz	10 MHz	5 MHz
	Low	166800/ 834	166300/ 831.5	165800/ 829	165300/ 826.5
	Mid	167300/ 836.5	167300/ 836.5	167300/ 836.5	167300/ 836.5
	High	167800/ 839	168300/ 841.5	168800/ 844	169300/ 846.5
	Band n66	Frequency range: 1710 - 1780 MHz			
		Channel Bandwidth			
		20 MHz	15 MHz	10 MHz	5 MHz
	Low	344000/ 1720	343500/ 1717.5	343000/ 1715	342500/ 1712.5
	Mid	349000/ 1745	349000/ 1745	349000/ 1745	349000/ 1745
	High	354000/ 1770	354500/ 1772.5	355000/ 1775	355500/ 1777.5
	SCS	15 kHz			
Modulations Supported in UL	DFT-s-OFDM: $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM / CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM				
A-MPR (Additional MPR) disabled for SAR Testing?	Yes				
EN-DC Carrier Aggregation Possible Combinations					
LTE Anchor Bands for NR Band n5	LTE Band 2 / 66				
LTE Anchor Bands for NR Band n66 of	LTE Band 5 / 12				

Notes:

- SAR test for NR bands and LTE anchor Bands were performed separately due to limitations in SAR probe calibration factors. And, Due to test setup limitations, SAR testing for NR was performed using test mode software to establish the connection.
- NR configurations of SAR test were determined according to Section 5.2 of KDB 941225 D05.

6.7. 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	$26336 \cdot T_s$			$7680 \cdot T_s$		
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
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 $\times (T_s) \times \#$ of S + $\#$ of U

Example for Calculated Duty Cycle for Uplink-Downlink Configuration 0:

Calculated Duty Cycle = $5120 \times [1/(15000 \times 2048)] \times 2 + 6 \text{ ms} = 63.33\%$

where

$T_s = 1/(15000 \times 2048)$ 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% (Power Class 3) and configuration 1 at 43.3% (Power Class 2) duty cycle.

6.8. LTE Carrier Aggregation

DL Inter-Band

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_2A-4A(0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 4			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 4			Yes	Yes	Yes	Yes	
CA_2A-5A(0)(1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 5			Yes	Yes			
CA_2A-12A (0)(1)(2)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 12		Yes	Yes	Yes			
	Band 2			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
CA_2A-13A(0)(1)	Band 2			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 2			Yes	Yes			20 MHz
	Band 13				Yes			
CA_2A-17A(0)	Band 2			Yes	Yes			20 MHz
	Band 17			Yes	Yes			
CA_2A-66A (0)(1)(2)	Band 2	Yes	Yes	Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 2			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 2			Yes	Yes	Yes	Yes	40 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_4A-5A(0)(1)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 5			Yes	Yes			
	Band 4			Yes	Yes			20 MHz
	Band 5			Yes	Yes			

DL Inter-Band (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_4A-12A (0)(1)(2)(3)(4)(5)	Band 4	Yes	Yes	Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4	Yes	Yes	Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes			20 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 12			Yes	Yes			
	Band 4			Yes	Yes	Yes		20 MHz
	Band 12			Yes				
CA_4A-13A(0)(1)	Band 4			Yes	Yes	Yes	Yes	30 MHz
	Band 13				Yes			
	Band 4			Yes	Yes			20 MHz
	Band 13				Yes			
CA_4A-17A(0)	Band 4			Yes	Yes			20 MHz
	Band 17			Yes	Yes			
CA_5A-41A(0)	Band 5			Yes	Yes			30 MHz
	Band 41						Yes	
CA_5A-66A(0)	Band 5			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
CA_12A-66A(0)(1)(2)(3)(4)(5)	Band 12			Yes	Yes			20 MHz
	Band 66	Yes	Yes	Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66	Yes	Yes	Yes	Yes	Yes	Yes	
	Band 12		Yes	Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes	Yes			20 MHz
	Band 66			Yes	Yes			
	Band 12			Yes	Yes			30 MHz
	Band 66			Yes	Yes	Yes	Yes	
	Band 12			Yes				20 MHz
	Band 66			Yes	Yes	Yes		

DL Inter-Band (Continued)

E-UTRA CA configuration (BCS)	E-UTRA Band	Bandwidth						Max Aggregated BW
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
CA_26A-41A(0)	Band 26			Yes	Yes	Yes		35 MHz
	Band 41			Yes	Yes	Yes	Yes	
CA_2A-4A-5A(0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 5			Yes	Yes			
CA_2A-4A-13A(0)	Band 2			Yes	Yes	Yes	Yes	50 MHz
	Band 4			Yes	Yes	Yes	Yes	
	Band 13				Yes			
CA_4A-4A-12A(0)	Band 4	4A-4A BCS 0						50 MHz
	Band 12			Yes	Yes			
CA_4A-4A-17A(0)	Band 4	See CA_4A-4A (0)						50 MHz
	Band 17				Yes			
CA_5A-66A-66A(0)	Band 5			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_12A-66A-66A(0)	Band 12			Yes	Yes			50 MHz
	Band 66	66A-66A BCS 0						
CA_26A-41C(0)	Band 26			Yes	Yes	Yes		55 MHz
	Band 41	41C BCS 1						

DL Inter-Band (Non-Contiguous)

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

DL Intra-Band (Contiguous)

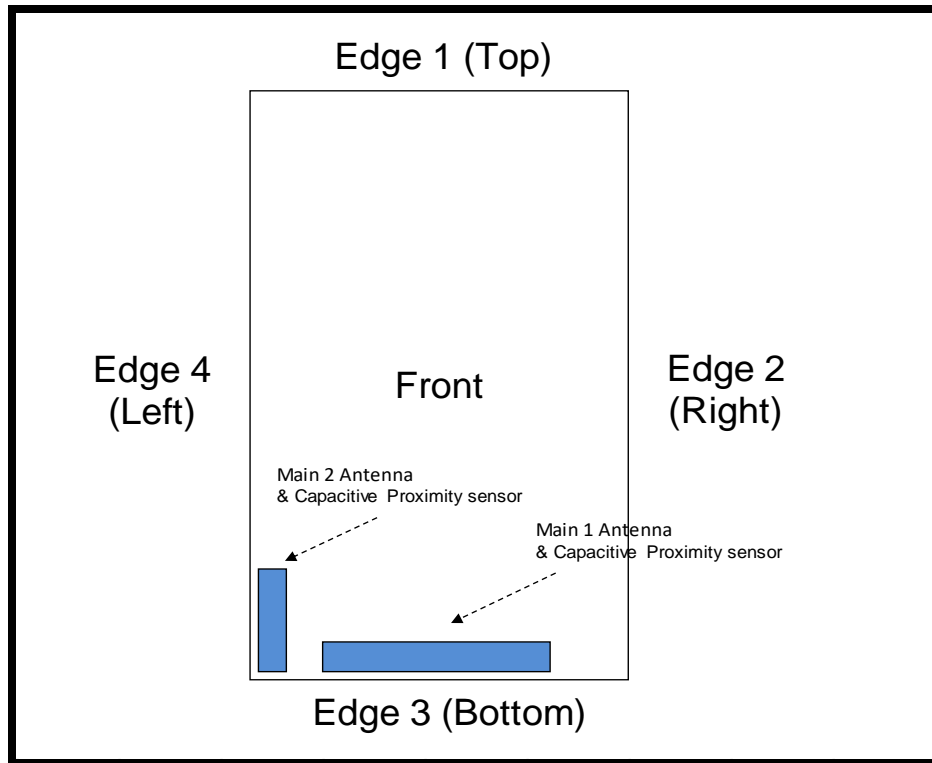
E-UTRA CA configuration (BCS)	E-UTRA Band	Allowed Channel BW Per Carrier (MHz)					Max Aggregated BW
		1st Carrier	2nd Carrier	3rd Carrier	4th Carrier	5th Carrier	
CA_2C(0)	Band 2	5	20				40 MHz
		10	15,20				
		15	10,15,20				
		20	5,10,15,20				
CA_66B(0)	Band 66	5	5, 10, 15				20 MHz
		10	5, 10				
		15	5				
CA_66C(0)	Band 66	5	20				40 MHz
		10	15, 20				
		15	10, 15, 20				
		20	5, 10, 15, 20				
CA_41C(0),(1),(2),(3)	Band 41	10	20				40 MHz
		15	15,20				
		20	10,15,20				
	Band 41	5,10	20				40 MHz
		15	15,20				
		20	5,10,15,20				
	Band 41	10	15,20				40 MHz
		15	10,15,20				
		20	10,15,20				
	Band 41	10	20				40 MHz
		20	20				
	CA_41D(0)	Band 41	10	20	15		
10			15,20	20			
15			20	10,15			
15			10,15,20	20			
20			15,20	10			
20			10,15,20	15,20			
CA_41E(0)	Band 41	15,20	15,20	15,20	20		80 MHz

Note(s):

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

6.9. Proximity Sensor feature

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

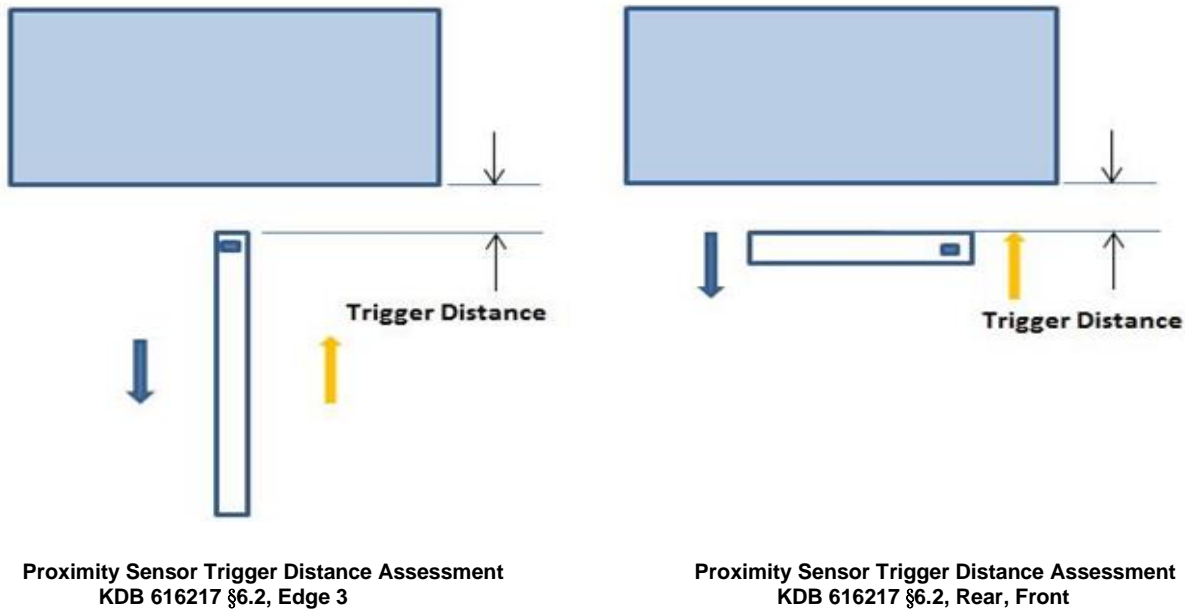


6.9.1. Proximity Sensor Triggering Distance (KDB 616217 §6.2)

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

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

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



LEGEND

- ➔ Direction of DUT travel for determination of power reduction triggering point
- ➔ Direction of DUT travel for determination of full power resumption triggering point

Summary of Trigger Distances

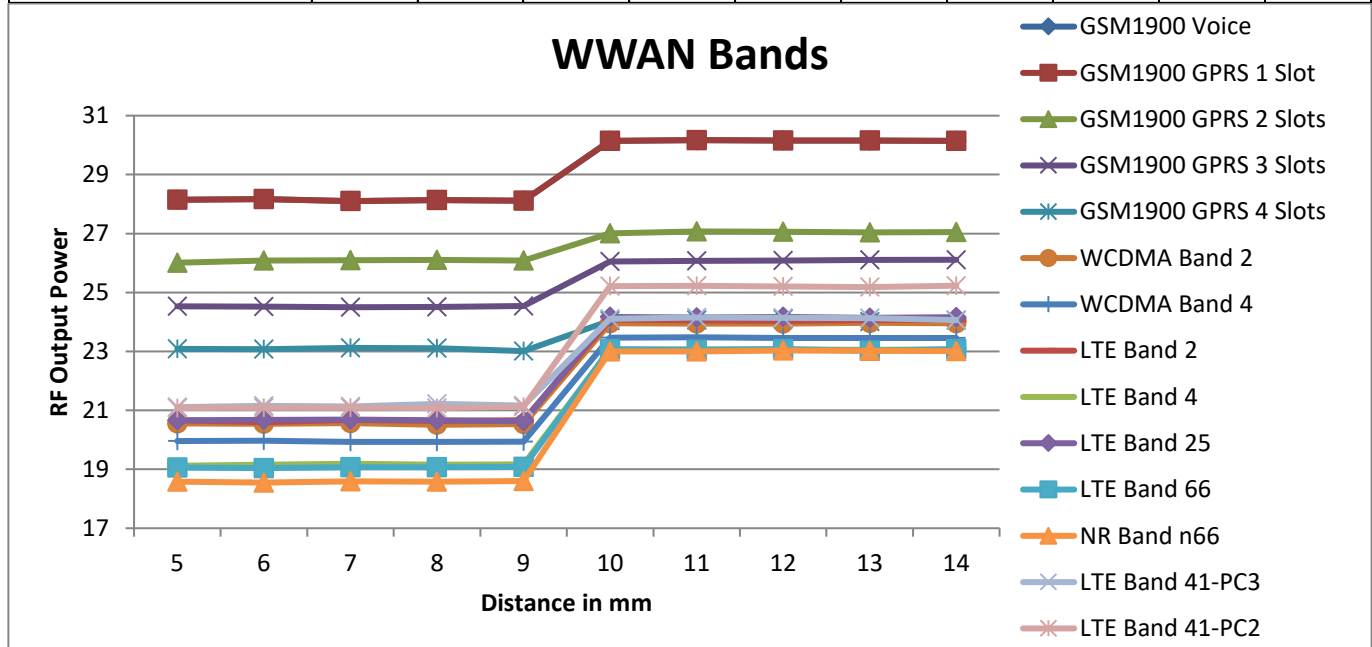
Tissue simulating liquid	Antenna	Trigger distance – Rear		Trigger distance - Front		Trigger distance – Edge 3	
		Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
1750 Head	Main 1 Ant.	9 mm	9 mm	7 mm	7 mm	11 mm	11 mm
1900 Head	Main 1 Ant.	9 mm	9 mm	7 mm	7 mm	11 mm	11 mm
2600 Head	Main 2 Ant.	9 mm	9 mm	7 mm	7 mm	11 mm	11 mm

Proximity Sensor Triggering Distance Measurement Results

WWAN Bands

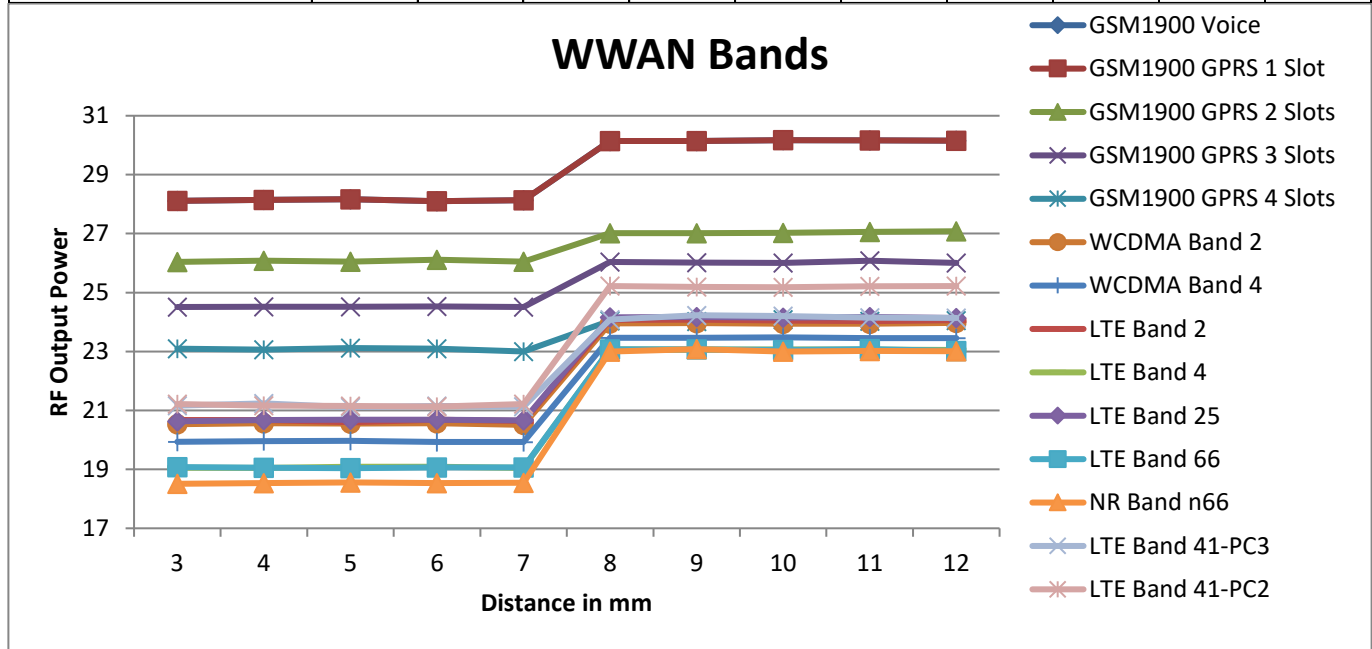
Rear, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	5	6	7	8	9	10	11	12	13	14
GSM1900 Voice	28.2	28.2	28.1	28.1	28.1	30.1	30.2	30.2	30.2	30.1
GSM1900 GPRS 1 Slot	28.2	28.2	28.1	28.1	28.1	30.1	30.2	30.2	30.2	30.1
GSM1900 GPRS 2 Slots	26.0	26.1	26.1	26.1	26.1	27.0	27.1	27.1	27.0	27.1
GSM1900 GPRS 3 Slots	24.5	24.5	24.5	24.5	24.5	26.1	26.1	26.1	26.1	26.1
GSM1900 GPRS 4 Slots	23.1	23.1	23.1	23.1	23.0	24.0	24.1	24.1	24.0	24.1
WCDMA Band 2	20.6	20.6	20.6	20.5	20.5	24.0	23.9	23.9	24.0	24.0
WCDMA Band 4	20.0	20.0	19.9	19.9	19.9	23.5	23.5	23.5	23.5	23.5
LTE Band 2	20.7	20.6	20.7	20.6	20.7	24.1	24.1	24.0	24.1	24.1
LTE Band 4	19.1	19.2	19.2	19.2	19.2	23.1	23.1	23.1	23.1	23.1
LTE Band 25	20.7	20.7	20.7	20.7	20.6	24.2	24.2	24.2	24.1	24.2
LTE Band 66	19.1	19.0	19.1	19.1	19.1	23.1	23.1	23.1	23.0	23.1
NR Band n66	18.6	18.6	18.6	18.6	18.6	23.0	23.0	23.0	23.0	23.0
LTE Band 41-PC3	21.1	21.2	21.1	21.2	21.2	24.1	24.2	24.1	24.1	24.1
LTE Band 41-PC2	21.1	21.1	21.1	21.1	21.1	25.2	25.2	25.2	25.2	25.2



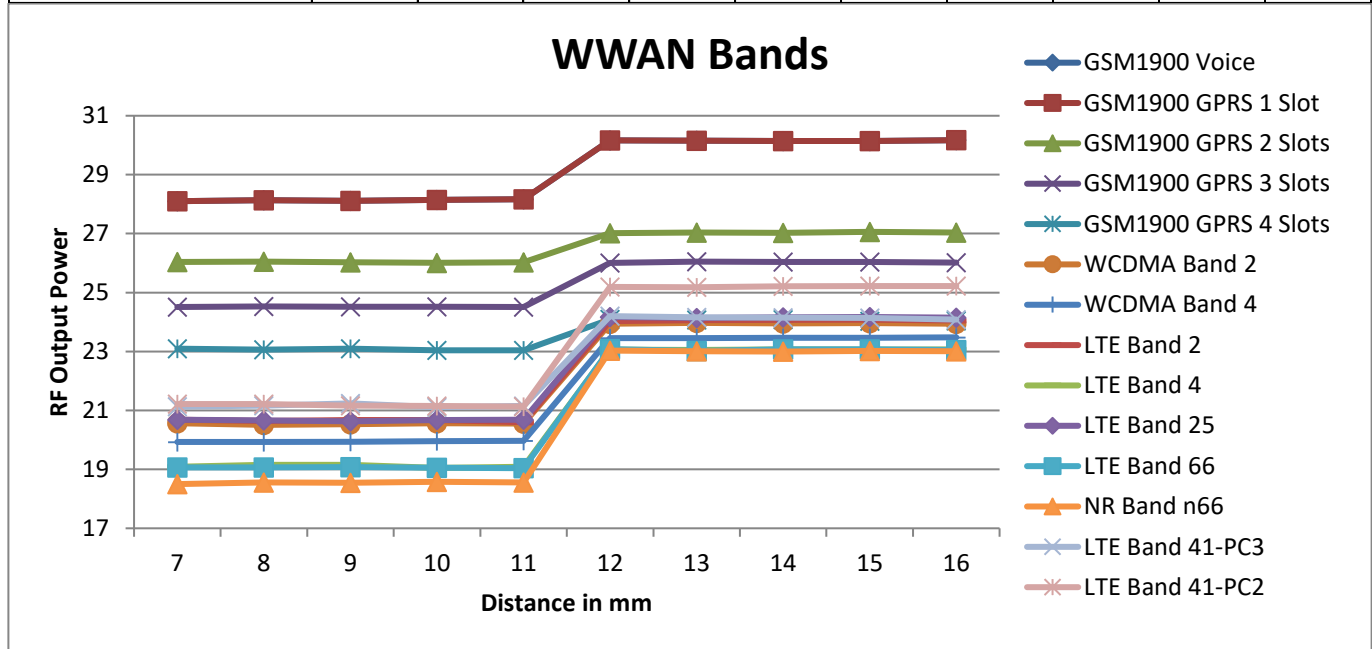
Front, DUT Moving Toward (Trigger) and Away (Release) from the Phantom

Distance to DUT vs. Output Power in dBm										
Distance (mm)	3	4	5	6	7	8	9	10	11	12
GSM1900 Voice	28.1	28.2	28.2	28.1	28.1	30.1	30.1	30.2	30.2	30.2
GSM1900 GPRS 1 Slot	28.1	28.2	28.2	28.1	28.1	30.1	30.1	30.2	30.2	30.2
GSM1900 GPRS 2 Slots	26.0	26.1	26.1	26.1	26.1	27.0	27.0	27.0	27.1	27.1
GSM1900 GPRS 3 Slots	24.5	24.5	24.5	24.5	24.5	26.0	26.0	26.0	26.1	26.0
GSM1900 GPRS 4 Slots	23.1	23.1	23.1	23.1	23.0	24.0	24.0	24.1	24.0	24.1
WCDMA Band 2	20.5	20.6	20.6	20.6	20.5	24.0	24.0	23.9	23.9	24.0
WCDMA Band 4	19.9	20.0	20.0	19.9	19.9	23.5	23.5	23.5	23.5	23.5
LTE Band 2	20.7	20.7	20.6	20.7	20.6	24.1	24.1	24.1	24.0	24.1
LTE Band 4	19.1	19.1	19.1	19.1	19.1	23.1	23.1	23.1	23.1	23.1
LTE Band 25	20.6	20.7	20.7	20.7	20.7	24.2	24.2	24.2	24.2	24.1
LTE Band 66	19.1	19.1	19.0	19.1	19.1	23.1	23.1	23.1	23.1	23.0
NR Band n66	18.5	18.5	18.6	18.5	18.6	23.0	23.1	23.0	23.0	23.0
LTE Band 41-PC3	21.2	21.2	21.1	21.2	21.1	24.1	24.2	24.2	24.2	24.1
LTE Band 41-PC2	21.2	21.2	21.2	21.1	21.2	25.2	25.2	25.2	25.2	25.2



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

Distance to DUT vs. Output Power in dBm										
Distance (mm)	7	8	9	10	11	12	13	14	15	16
GSM1900 Voice	28.1	28.1	28.1	28.2	28.2	30.2	30.2	30.1	30.1	30.2
GSM1900 GPRS 1 Slot	28.1	28.1	28.1	28.2	28.2	30.2	30.2	30.1	30.1	30.2
GSM1900 GPRS 2 Slots	26.0	26.1	26.0	26.0	26.0	27.0	27.0	27.0	27.1	27.0
GSM1900 GPRS 3 Slots	24.5	24.5	24.5	24.5	24.5	26.0	26.1	26.0	26.0	26.0
GSM1900 GPRS 4 Slots	23.1	23.1	23.1	23.0	23.0	24.1	24.1	24.1	24.0	24.0
WCDMA Band 2	20.6	20.5	20.5	20.6	20.6	23.9	24.0	24.0	24.0	23.9
WCDMA Band 4	19.9	19.9	19.9	20.0	20.0	23.5	23.5	23.5	23.5	23.5
LTE Band 2	20.7	20.6	20.7	20.7	20.6	24.0	24.1	24.1	24.1	24.1
LTE Band 4	19.1	19.2	19.2	19.1	19.1	23.1	23.1	23.1	23.1	23.1
LTE Band 25	20.7	20.7	20.6	20.7	20.7	24.2	24.1	24.2	24.2	24.2
LTE Band 66	19.1	19.1	19.1	19.1	19.0	23.1	23.0	23.1	23.1	23.1
NR Band n66	18.5	18.6	18.6	18.6	18.6	23.0	23.0	23.0	23.0	23.0
LTE Band 41-PC3	21.1	21.2	21.2	21.1	21.2	24.2	24.2	24.2	24.1	24.1
LTE Band 41-PC2	21.2	21.2	21.2	21.2	21.1	25.2	25.2	25.2	25.2	25.2



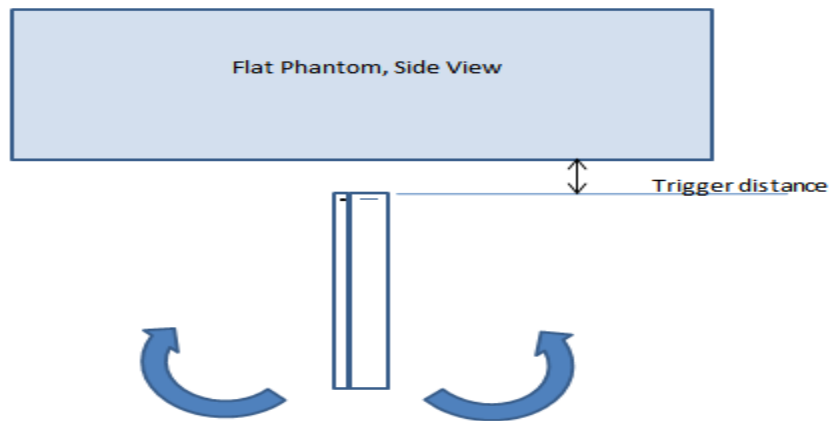
6.9.2. Proximity Sensor Coverage (KDB 616217 §6.3)

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

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

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

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



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

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

Band (MHz)	Minimum trigger distance measured according to KDB 616217 §6.2	Minimum distance at which power reduction was maintained over +/-45°	Power reduction status											
			-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°	
1750	11 mm	11 mm	On	On	On	On	On	On	On	On	On	On	On	On
1900	11 mm	11 mm	On	On	On	On	On	On	On	On	On	On	On	On
2600	11 mm	11 mm	On	On	On	On	On	On	On	On	On	On	On	On

6.9.4. Resulting test positions for SAR measurements

Wireless technologies	DUT Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance for SAR
WWAN (Main 1 Ant & Main 2 Ant)	Rear	9 mm	N/A	N/A	8 mm
	Front	7 mm	N/A	N/A	6 mm
	Edge 3	11 mm	N/A	11 mm	10 mm

7. RF Exposure Conditions (Test Configurations)

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

Wireless technologies	RF Exposure Conditions	Antenna	DUT-to-User Separation	Test Position	Antenna-to-edge/surface	SAR Required	Note
WWAN	Head	Main 1 Ant. & Main 2 Ant.	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body	Main 1 Ant. & Main 2 Ant.	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	Main 1 Ant.	10 mm	Rear	< 25 mm	Yes	1
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	1
				Edge 2 (Right)	< 25 mm	Yes	
				Edge 3 (Bottom)	< 25 mm	Yes	
		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	
	Product Specific 10-g	Main 1 Ant. & Main 2 Ant.	0 mm	Rear	Refer to notes 2 & 3		
				Front			
				Edge 1 (Top)			
				Edge 2 (Right)			
Edge 3 (Bottom)							
Edge 4 (Left)							
WLAN & BT	Head	WLAN & BT Ant.1 & WLAN Ant.2	0 mm	Left Touch	N/A	Yes	
				Left Tilt (15°)	N/A	Yes	
				Right Touch	N/A	Yes	
				Right Tilt (15°)	N/A	Yes	
	Body	WLAN & BT Ant.1 & WLAN Ant.2	15 mm	Rear	N/A	Yes	
				Front	N/A	Yes	
	Hotspot	2.4G WLAN & BT Ant.1 & 5G WLAN Ant.2	10 mm	Rear	< 25 mm	Yes	1
				Front	< 25 mm	Yes	
				Edge 1 (Top)	> 25 mm	No	1
				Edge 2 (Right)	> 25 mm	No	1
				Edge 3 (Bottom)	> 25 mm	No	1
		2.4G WLAN Ant.2 & 5G WLAN Ant.1	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
	Product Specific 10-g	WLAN & BT Ant.1 & WLAN Ant.2	0 mm	Rear	Refer to notes 2 & 4		
				Front			
				Edge 1 (Top)			
				Edge 2 (Right)			
Edge 3 (Bottom)							
Edge 4 (Left)							

Notes:

- SAR is not required because the distance from the antenna to the edge is > 25 mm as per KDB 941225 D06 Hot Spot SAR.
- 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.
- 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.
- 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 $\pm 2^\circ\text{C}$ of the temperature when the tissue parameters are characterized.

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

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

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

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

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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:

SAR 1 Room

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)		
11-2-2020	Head 5250	e'	36.4400	Relative Permittivity (ϵ_r):	36.44	35.93	1.41	5	
		e"	15.8100	Conductivity (σ):	4.62	4.70	-1.85	5	
	Head 5260	e'	36.4200	Relative Permittivity (ϵ_r):	36.42	35.92	1.39	5	
		e"	15.8300	Conductivity (σ):	4.63	4.71	-1.75	5	
	Head 5600	e'	35.8100	Relative Permittivity (ϵ_r):	35.81	35.53	0.78	5	
		e"	16.1400	Conductivity (σ):	5.03	5.06	-0.68	5	
	Head 5750	e'	35.5600	Relative Permittivity (ϵ_r):	35.56	35.36	0.56	5	
		e"	16.2900	Conductivity (σ):	5.21	5.21	-0.11	5	
	Head 5825	e'	35.4200	Relative Permittivity (ϵ_r):	35.42	35.30	0.34	5	
		e"	16.3500	Conductivity (σ):	5.30	5.27	0.49	5	
	11-4-2020	Head 5250	e'	36.5800	Relative Permittivity (ϵ_r):	36.58	35.93	1.80	5
			e"	16.1800	Conductivity (σ):	4.72	4.70	0.45	5
Head 5260		e'	36.5600	Relative Permittivity (ϵ_r):	36.56	35.92	1.78	5	
		e"	16.1800	Conductivity (σ):	4.73	4.71	0.42	5	
Head 5600		e'	36.0000	Relative Permittivity (ϵ_r):	36.00	35.53	1.31	5	
		e"	16.3400	Conductivity (σ):	5.09	5.06	0.55	5	
Head 5750		e'	35.6900	Relative Permittivity (ϵ_r):	35.69	35.36	0.93	5	
		e"	16.3900	Conductivity (σ):	5.24	5.21	0.51	5	
Head 5825		e'	35.4900	Relative Permittivity (ϵ_r):	35.49	35.30	0.54	5	
		e"	16.3800	Conductivity (σ):	5.31	5.27	0.67	5	
11-8-2020		Head 5250	e'	36.9200	Relative Permittivity (ϵ_r):	36.92	35.93	2.75	5
			e"	16.1900	Conductivity (σ):	4.73	4.70	0.51	5
	Head 5260	e'	36.8900	Relative Permittivity (ϵ_r):	36.89	35.92	2.70	5	
		e"	16.2000	Conductivity (σ):	4.74	4.71	0.54	5	
	Head 5600	e'	36.2800	Relative Permittivity (ϵ_r):	36.28	35.53	2.10	5	
		e"	16.3100	Conductivity (σ):	5.08	5.06	0.36	5	
	Head 5750	e'	36.0700	Relative Permittivity (ϵ_r):	36.07	35.36	2.00	5	
		e"	16.3700	Conductivity (σ):	5.23	5.21	0.38	5	
	Head 5825	e'	35.9700	Relative Permittivity (ϵ_r):	35.97	35.30	1.90	5	
		e"	16.4000	Conductivity (σ):	5.31	5.27	0.79	5	
	11-9-2020	Head 5250	e'	35.7700	Relative Permittivity (ϵ_r):	35.77	35.93	-0.45	5
			e"	15.7900	Conductivity (σ):	4.61	4.70	-1.97	5
Head 5260		e'	35.7600	Relative Permittivity (ϵ_r):	35.76	35.92	-0.45	5	
		e"	15.8000	Conductivity (σ):	4.62	4.71	-1.94	5	
Head 5600		e'	35.3000	Relative Permittivity (ϵ_r):	35.30	35.53	-0.66	5	
		e"	15.9200	Conductivity (σ):	4.96	5.06	-2.04	5	
Head 5750		e'	35.0600	Relative Permittivity (ϵ_r):	35.06	35.36	-0.86	5	
		e"	15.9800	Conductivity (σ):	5.11	5.21	-2.01	5	
Head 5825		e'	35.0300	Relative Permittivity (ϵ_r):	35.03	35.30	-0.76	5	
		e"	16.0300	Conductivity (σ):	5.19	5.27	-1.48	5	

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
10-7-2020	Head 1750	e'	39.9900	Relative Permittivity (ϵ_r):	39.99	40.08	-0.24	5
		e"	13.9900	Conductivity (σ):	1.36	1.37	-0.56	5
	Head 1710	e'	40.1300	Relative Permittivity (ϵ_r):	40.13	40.15	-0.04	5
		e"	14.1300	Conductivity (σ):	1.34	1.35	-0.22	5
	Head 1755	e'	39.9700	Relative Permittivity (ϵ_r):	39.97	40.08	-0.27	5
		e"	13.9600	Conductivity (σ):	1.36	1.37	-0.69	5
10-7-2020	Head 1900	e'	39.3300	Relative Permittivity (ϵ_r):	39.33	40.00	-1.68	5
		e"	13.6000	Conductivity (σ):	1.44	1.40	2.63	5
	Head 1850	e'	39.5500	Relative Permittivity (ϵ_r):	39.55	40.00	-1.13	5
		e"	13.6700	Conductivity (σ):	1.41	1.40	0.44	5
	Head 1910	e'	39.2700	Relative Permittivity (ϵ_r):	39.27	40.00	-1.82	5
		e"	13.5900	Conductivity (σ):	1.44	1.40	3.09	5
10-12-2020	Head 1900	e'	39.9300	Relative Permittivity (ϵ_r):	39.93	40.00	-0.18	5
		e"	13.8000	Conductivity (σ):	1.46	1.40	4.14	5
	Head 1850	e'	40.0400	Relative Permittivity (ϵ_r):	40.04	40.00	0.10	5
		e"	13.9100	Conductivity (σ):	1.43	1.40	2.20	5
	Head 1910	e'	39.9200	Relative Permittivity (ϵ_r):	39.92	40.00	-0.20	5
		e"	13.7800	Conductivity (σ):	1.46	1.40	4.53	5
10-12-2020	Head 2600	e'	38.3600	Relative Permittivity (ϵ_r):	38.36	39.01	-1.67	5
		e"	13.7100	Conductivity (σ):	1.98	1.96	1.01	5
	Head 2500	e'	38.5500	Relative Permittivity (ϵ_r):	38.55	39.14	-1.50	5
		e"	13.6500	Conductivity (σ):	1.90	1.85	2.34	5
	Head 2700	e'	38.1500	Relative Permittivity (ϵ_r):	38.15	38.88	-1.89	5
		e"	13.7400	Conductivity (σ):	2.06	2.07	-0.36	5
10-21-2020	Head 2450	e'	37.5700	Relative Permittivity (ϵ_r):	37.57	39.20	-4.16	5
		e"	13.2500	Conductivity (σ):	1.81	1.80	0.28	5
	Head 2400	e'	37.6100	Relative Permittivity (ϵ_r):	37.61	39.30	-4.29	5
		e"	13.2500	Conductivity (σ):	1.77	1.75	0.94	5
	Head 2480	e'	37.5400	Relative Permittivity (ϵ_r):	37.54	39.16	-4.14	5
		e"	13.2800	Conductivity (σ):	1.83	1.83	-0.06	5
10-26-2020	Head 1900	e'	38.9200	Relative Permittivity (ϵ_r):	38.92	40.00	-2.70	5
		e"	13.4900	Conductivity (σ):	1.43	1.40	1.80	5
	Head 1850	e'	39.0200	Relative Permittivity (ϵ_r):	39.02	40.00	-2.45	5
		e"	13.5500	Conductivity (σ):	1.39	1.40	-0.44	5
	Head 1910	e'	38.9000	Relative Permittivity (ϵ_r):	38.90	40.00	-2.75	5
		e"	13.4800	Conductivity (σ):	1.43	1.40	2.26	5
10-26-2020	Head 2450	e'	38.1400	Relative Permittivity (ϵ_r):	38.14	39.20	-2.70	5
		e"	13.1200	Conductivity (σ):	1.79	1.80	-0.71	5
	Head 2410	e'	38.2000	Relative Permittivity (ϵ_r):	38.20	39.28	-2.75	5
		e"	13.1200	Conductivity (σ):	1.76	1.76	-0.13	5
	Head 2475	e'	38.1000	Relative Permittivity (ϵ_r):	38.10	39.17	-2.73	5
		e"	13.1400	Conductivity (σ):	1.81	1.83	-1.03	5
10-28-2020	Head 1900	e'	38.6600	Relative Permittivity (ϵ_r):	38.66	40.00	-3.35	5
		e"	13.6200	Conductivity (σ):	1.44	1.40	2.78	5
	Head 1850	e'	38.7400	Relative Permittivity (ϵ_r):	38.74	40.00	-3.15	5
		e"	13.6800	Conductivity (σ):	1.41	1.40	0.51	5
	Head 1910	e'	38.6300	Relative Permittivity (ϵ_r):	38.63	40.00	-3.42	5
		e"	13.6100	Conductivity (σ):	1.45	1.40	3.24	5
11-1-2020	Head 2450	e'	38.0500	Relative Permittivity (ϵ_r):	38.05	39.20	-2.93	5
		e"	13.1900	Conductivity (σ):	1.80	1.80	-0.18	5
	Head 2400	e'	38.1100	Relative Permittivity (ϵ_r):	38.11	39.30	-3.02	5
		e"	13.1800	Conductivity (σ):	1.76	1.75	0.41	5
	Head 2480	e'	38.0000	Relative Permittivity (ϵ_r):	38.00	39.16	-2.97	5
		e"	13.2000	Conductivity (σ):	1.82	1.83	-0.67	5

SAR 3 Room (Continued)

Date	Freq. (MHz)		Liquid Parameters	Measured	Target	Delta (%)	Limit ±(%)		
11-4-2020	Head 835	e'	41.7300	Relative Permittivity (ϵ_r):	41.73	41.50	0.55	5	
		e"	19.4500	Conductivity (σ):	0.90	0.90	0.34	5	
	Head 820	e'	41.7700	Relative Permittivity (ϵ_r):	41.77	41.60	0.40	5	
		e"	19.6700	Conductivity (σ):	0.90	0.90	-0.18	5	
	Head 850	e'	41.6900	Relative Permittivity (ϵ_r):	41.69	41.50	0.46	5	
		e"	19.2300	Conductivity (σ):	0.91	0.92	-0.67	5	
11-4-2020	Head 1750	e'	39.9300	Relative Permittivity (ϵ_r):	39.93	40.08	-0.39	5	
		e"	13.7200	Conductivity (σ):	1.34	1.37	-2.48	5	
	Head 1710	e'	39.9500	Relative Permittivity (ϵ_r):	39.95	40.15	-0.49	5	
		e"	13.8000	Conductivity (σ):	1.31	1.35	-2.55	5	
	Head 1755	e'	39.9200	Relative Permittivity (ϵ_r):	39.92	40.08	-0.39	5	
		e"	13.7100	Conductivity (σ):	1.34	1.37	-2.47	5	
11-4-2020	Head 2450	e'	38.8300	Relative Permittivity (ϵ_r):	38.83	39.20	-0.94	5	
		e"	13.3600	Conductivity (σ):	1.82	1.80	1.11	5	
	Head 2410	e'	38.8900	Relative Permittivity (ϵ_r):	38.89	39.28	-0.99	5	
		e"	13.3500	Conductivity (σ):	1.79	1.76	1.62	5	
	Head 2475	e'	38.7800	Relative Permittivity (ϵ_r):	38.78	39.17	-0.99	5	
		e"	13.3800	Conductivity (σ):	1.84	1.83	0.78	5	
11-5-2020	Head 5250	e'	35.7600	Relative Permittivity (ϵ_r):	35.76	35.93	-0.48	5	
		e"	16.0500	Conductivity (σ):	4.69	4.70	-0.36	5	
	Head 5260	e'	35.7300	Relative Permittivity (ϵ_r):	35.73	35.92	-0.53	5	
		e"	16.0400	Conductivity (σ):	4.69	4.71	-0.45	5	
	Head 5600	e'	35.0500	Relative Permittivity (ϵ_r):	35.05	35.53	-1.36	5	
		e"	16.3300	Conductivity (σ):	5.08	5.06	0.49	5	
	Head 5750	e'	34.8400	Relative Permittivity (ϵ_r):	34.84	35.36	-1.48	5	
		e"	16.4200	Conductivity (σ):	5.25	5.21	0.69	5	
	Head 5825	e'	34.5900	Relative Permittivity (ϵ_r):	34.59	35.30	-2.01	5	
		e"	16.3700	Conductivity (σ):	5.30	5.27	0.61	5	
	11-8-2020	Head 835	e'	41.1200	Relative Permittivity (ϵ_r):	41.12	41.50	-0.92	5
			e"	19.3900	Conductivity (σ):	0.90	0.90	0.03	5
Head 820		e'	41.1400	Relative Permittivity (ϵ_r):	41.14	41.60	-1.11	5	
		e"	19.6200	Conductivity (σ):	0.89	0.90	-0.43	5	
Head 850		e'	41.1000	Relative Permittivity (ϵ_r):	41.10	41.50	-0.96	5	
		e"	19.1800	Conductivity (σ):	0.91	0.92	-0.93	5	
11-8-2020	Head 1750	e'	39.0200	Relative Permittivity (ϵ_r):	39.02	40.08	-2.66	5	
		e"	13.8000	Conductivity (σ):	1.34	1.37	-1.91	5	
	Head 1710	e'	39.0600	Relative Permittivity (ϵ_r):	39.06	40.15	-2.71	5	
		e"	13.9200	Conductivity (σ):	1.32	1.35	-1.70	5	
	Head 1755	e'	39.0200	Relative Permittivity (ϵ_r):	39.02	40.08	-2.64	5	
		e"	13.7900	Conductivity (σ):	1.35	1.37	-1.90	5	
11-8-2020	Head 1900	e'	38.9500	Relative Permittivity (ϵ_r):	38.95	40.00	-2.62	5	
		e"	13.5800	Conductivity (σ):	1.43	1.40	2.48	5	
	Head 1850	e'	38.9600	Relative Permittivity (ϵ_r):	38.96	40.00	-2.60	5	
		e"	13.6000	Conductivity (σ):	1.40	1.40	-0.07	5	
	Head 1910	e'	38.9300	Relative Permittivity (ϵ_r):	38.93	40.00	-2.68	5	
		e"	13.5800	Conductivity (σ):	1.44	1.40	3.02	5	
11-8-2020	Head 2450	e'	38.0300	Relative Permittivity (ϵ_r):	38.03	39.20	-2.98	5	
		e"	13.3300	Conductivity (σ):	1.82	1.80	0.88	5	
	Head 2400	e'	38.0900	Relative Permittivity (ϵ_r):	38.09	39.30	-3.07	5	
		e"	13.3100	Conductivity (σ):	1.78	1.75	1.40	5	
	Head 2480	e'	37.9700	Relative Permittivity (ϵ_r):	37.97	39.16	-3.04	5	
		e"	13.3600	Conductivity (σ):	1.84	1.83	0.54	5	

SAR 3 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)		
11-10-2020	Head 5250	e'	35.4100	Relative Permittivity (ϵ_r):	35.41	35.93	-1.46	5	
		e"	15.6200	Conductivity (σ):	4.56	4.70	-3.03	5	
	Head 5260	e'	35.3900	Relative Permittivity (ϵ_r):	35.39	35.92	-1.48	5	
		e"	15.6200	Conductivity (σ):	4.57	4.71	-3.05	5	
	Head 5600	e'	34.7700	Relative Permittivity (ϵ_r):	34.77	35.53	-2.15	5	
		e"	15.8600	Conductivity (σ):	4.94	5.06	-2.41	5	
	Head 5800	e'	34.4100	Relative Permittivity (ϵ_r):	34.41	35.30	-2.52	5	
		e"	16.0400	Conductivity (σ):	5.17	5.27	-1.84	5	
	Head 5825	e'	34.3500	Relative Permittivity (ϵ_r):	34.35	35.30	-2.69	5	
		e"	16.0700	Conductivity (σ):	5.20	5.27	-1.24	5	
	11-11-2020	Head 2450	e'	38.9200	Relative Permittivity (ϵ_r):	38.92	39.20	-0.71	5
			e"	13.0000	Conductivity (σ):	1.77	1.80	-1.61	5
Head 2400		e'	38.9800	Relative Permittivity (ϵ_r):	38.98	39.30	-0.81	5	
		e"	12.9800	Conductivity (σ):	1.73	1.75	-1.11	5	
Head 2480		e'	38.8700	Relative Permittivity (ϵ_r):	38.87	39.16	-0.75	5	
		e"	13.0300	Conductivity (σ):	1.80	1.83	-1.95	5	
11-15-2020	Head 835	e'	41.4700	Relative Permittivity (ϵ_r):	41.47	41.50	-0.07	5	
		e"	19.2000	Conductivity (σ):	0.89	0.90	-0.95	5	
	Head 820	e'	41.4600	Relative Permittivity (ϵ_r):	41.46	41.60	-0.34	5	
		e"	19.4200	Conductivity (σ):	0.89	0.90	-1.45	5	
	Head 850	e'	41.4500	Relative Permittivity (ϵ_r):	41.45	41.50	-0.12	5	
		e"	19.0200	Conductivity (σ):	0.90	0.92	-1.76	5	
11-15-2020	Head 1750	e'	39.5200	Relative Permittivity (ϵ_r):	39.52	40.08	-1.41	5	
		e"	13.8100	Conductivity (σ):	1.34	1.37	-1.84	5	
	Head 1710	e'	39.6000	Relative Permittivity (ϵ_r):	39.60	40.15	-1.36	5	
		e"	13.8700	Conductivity (σ):	1.32	1.35	-2.05	5	
	Head 1755	e'	39.5100	Relative Permittivity (ϵ_r):	39.51	40.08	-1.41	5	
		e"	13.8000	Conductivity (σ):	1.35	1.37	-1.83	5	
11-16-2020	Head 2450	e'	38.1900	Relative Permittivity (ϵ_r):	38.19	39.20	-2.58	5	
		e"	13.3200	Conductivity (σ):	1.81	1.80	0.81	5	
	Head 2400	e'	38.2700	Relative Permittivity (ϵ_r):	38.27	39.30	-2.61	5	
		e"	13.3100	Conductivity (σ):	1.78	1.75	1.40	5	
	Head 2480	e'	38.1400	Relative Permittivity (ϵ_r):	38.14	39.16	-2.61	5	
		e"	13.3300	Conductivity (σ):	1.84	1.83	0.31	5	

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
11-2-2020	Head 2450	e'	37.8800	Relative Permittivity (ϵ_r):	37.88	39.20	-3.37	5
		e"	13.3500	Conductivity (σ):	1.82	1.80	1.04	5
	Head 2400	e'	37.6200	Relative Permittivity (ϵ_r):	37.62	39.30	-4.27	5
		e"	13.0600	Conductivity (σ):	1.74	1.75	-0.50	5
	Head 2480	e'	38.0100	Relative Permittivity (ϵ_r):	38.01	39.16	-2.94	5
		e"	13.5000	Conductivity (σ):	1.86	1.83	1.59	5
11-4-2020	Head 1750	e'	41.1400	Relative Permittivity (ϵ_r):	41.14	40.08	2.63	5
		e"	13.5700	Conductivity (σ):	1.32	1.37	-3.55	5
	Head 1710	e'	41.3000	Relative Permittivity (ϵ_r):	41.30	40.15	2.87	5
		e"	13.5000	Conductivity (σ):	1.28	1.35	-4.67	5
	Head 1755	e'	41.1200	Relative Permittivity (ϵ_r):	41.12	40.08	2.60	5
		e"	13.5800	Conductivity (σ):	1.33	1.37	-3.40	5
11-8-2020	Head 1750	e'	40.9800	Relative Permittivity (ϵ_r):	40.98	40.08	2.23	5
		e"	13.6800	Conductivity (σ):	1.33	1.37	-2.76	5
	Head 1710	e'	41.1500	Relative Permittivity (ϵ_r):	41.15	40.15	2.50	5
		e"	13.6700	Conductivity (σ):	1.30	1.35	-3.46	5
	Head 1755	e'	40.9700	Relative Permittivity (ϵ_r):	40.97	40.08	2.23	5
		e"	13.6800	Conductivity (σ):	1.33	1.37	-2.69	5

SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
10-5-2020	Head 750	e'	41.6600	Relative Permittivity (ϵ_r):	41.66	41.96	-0.72	5
		e"	21.0000	Conductivity (σ):	0.88	0.89	-1.94	5
	Head 700	e'	41.8300	Relative Permittivity (ϵ_r):	41.83	42.22	-0.92	5
		e"	22.1200	Conductivity (σ):	0.86	0.89	-3.18	5
	Head 790	e'	41.5200	Relative Permittivity (ϵ_r):	41.52	41.76	-0.57	5
		e"	20.3300	Conductivity (σ):	0.89	0.90	-0.35	5
10-12-2020	Head 750	e'	41.5500	Relative Permittivity (ϵ_r):	41.55	41.96	-0.98	5
		e"	21.4600	Conductivity (σ):	0.89	0.89	0.21	5
	Head 700	e'	41.6800	Relative Permittivity (ϵ_r):	41.68	42.22	-1.27	5
		e"	22.5700	Conductivity (σ):	0.88	0.89	-1.21	5
	Head 790	e'	41.4200	Relative Permittivity (ϵ_r):	41.42	41.76	-0.81	5
		e"	20.6400	Conductivity (σ):	0.91	0.90	1.17	5
10-12-2020	Head 835	e'	41.3600	Relative Permittivity (ϵ_r):	41.36	41.50	-0.34	5
		e"	19.8700	Conductivity (σ):	0.92	0.90	2.50	5
	Head 820	e'	41.3800	Relative Permittivity (ϵ_r):	41.38	41.60	-0.53	5
		e"	20.1000	Conductivity (σ):	0.92	0.90	2.00	5
	Head 850	e'	41.3300	Relative Permittivity (ϵ_r):	41.33	41.50	-0.41	5
		e"	19.6500	Conductivity (σ):	0.93	0.92	1.50	5
10-20-2020	Head 5250	e'	37.0000	Relative Permittivity (ϵ_r):	37.00	35.93	2.97	5
		e"	15.5100	Conductivity (σ):	4.53	4.70	-3.71	5
	Head 5260	e'	36.9800	Relative Permittivity (ϵ_r):	36.98	35.92	2.95	5
		e"	15.5200	Conductivity (σ):	4.54	4.71	-3.68	5
	Head 5600	e'	36.3900	Relative Permittivity (ϵ_r):	36.39	35.53	2.41	5
		e"	15.7900	Conductivity (σ):	4.92	5.06	-2.84	5
	Head 5750	e'	36.1900	Relative Permittivity (ϵ_r):	36.19	35.36	2.34	5
		e"	15.9400	Conductivity (σ):	5.10	5.21	-2.25	5
	Head 5825	e'	36.1000	Relative Permittivity (ϵ_r):	36.10	35.30	2.27	5
		e"	15.8800	Conductivity (σ):	5.14	5.27	-2.40	5
10-23-2020	Head 835	e'	41.1300	Relative Permittivity (ϵ_r):	41.13	41.50	-0.89	5
		e"	20.0100	Conductivity (σ):	0.93	0.90	3.23	5
	Head 820	e'	41.1600	Relative Permittivity (ϵ_r):	41.16	41.60	-1.06	5
		e"	20.2300	Conductivity (σ):	0.92	0.90	2.66	5
	Head 850	e'	41.0800	Relative Permittivity (ϵ_r):	41.08	41.50	-1.01	5
		e"	19.7900	Conductivity (σ):	0.94	0.92	2.22	5
10-25-2020	Head 835	e'	42.2100	Relative Permittivity (ϵ_r):	42.21	41.50	1.71	5
		e"	19.5500	Conductivity (σ):	0.91	0.90	0.85	5
	Head 820	e'	42.2400	Relative Permittivity (ϵ_r):	42.24	41.60	1.53	5
		e"	19.7900	Conductivity (σ):	0.90	0.90	0.43	5
	Head 850	e'	42.1700	Relative Permittivity (ϵ_r):	42.17	41.50	1.61	5
		e"	19.3200	Conductivity (σ):	0.91	0.92	-0.21	5
10-25-2020	Head 1750	e'	40.5300	Relative Permittivity (ϵ_r):	40.53	40.08	1.11	5
		e"	13.5900	Conductivity (σ):	1.32	1.37	-3.40	5
	Head 1710	e'	40.6000	Relative Permittivity (ϵ_r):	40.60	40.15	1.13	5
		e"	13.6900	Conductivity (σ):	1.30	1.35	-3.32	5
	Head 1755	e'	40.5200	Relative Permittivity (ϵ_r):	40.52	40.08	1.11	5
		e"	13.5800	Conductivity (σ):	1.33	1.37	-3.40	5

SAR 5 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
10-28-2020	Head 835	e'	41.0600	Relative Permittivity (ϵ_r):	41.06	41.50	-1.06	5
		e"	20.0900	Conductivity (σ):	0.93	0.90	3.64	5
	Head 820	e'	41.0900	Relative Permittivity (ϵ_r):	41.09	41.60	-1.23	5
		e"	20.3300	Conductivity (σ):	0.93	0.90	3.17	5
	Head 850	e'	41.0300	Relative Permittivity (ϵ_r):	41.03	41.50	-1.13	5
		e"	19.8600	Conductivity (σ):	0.94	0.92	2.58	5
10-28-2020	Head 1750	e'	38.9600	Relative Permittivity (ϵ_r):	38.96	40.08	-2.81	5
		e"	14.0200	Conductivity (σ):	1.36	1.37	-0.35	5
	Head 1710	e'	39.0300	Relative Permittivity (ϵ_r):	39.03	40.15	-2.78	5
		e"	14.1300	Conductivity (σ):	1.34	1.35	-0.22	5
	Head 1755	e'	38.9600	Relative Permittivity (ϵ_r):	38.96	40.08	-2.79	5
		e"	14.0100	Conductivity (σ):	1.37	1.37	-0.34	5
11-2-2020	Head 750	e'	41.2700	Relative Permittivity (ϵ_r):	41.27	41.96	-1.65	5
		e"	21.5100	Conductivity (σ):	0.90	0.89	0.44	5
	Head 700	e'	41.4600	Relative Permittivity (ϵ_r):	41.46	42.22	-1.80	5
		e"	22.5800	Conductivity (σ):	0.88	0.89	-1.17	5
	Head 790	e'	41.1600	Relative Permittivity (ϵ_r):	41.16	41.76	-1.43	5
		e"	20.6900	Conductivity (σ):	0.91	0.90	1.42	5
11-2-2020	Head 835	e'	41.0300	Relative Permittivity (ϵ_r):	41.03	41.50	-1.13	5
		e"	19.9200	Conductivity (σ):	0.92	0.90	2.76	5
	Head 820	e'	41.0900	Relative Permittivity (ϵ_r):	41.09	41.60	-1.23	5
		e"	20.1500	Conductivity (σ):	0.92	0.90	2.26	5
	Head 850	e'	40.9800	Relative Permittivity (ϵ_r):	40.98	41.50	-1.25	5
		e"	19.7100	Conductivity (σ):	0.93	0.92	1.81	5
11-3-2020	Head 835	e'	41.5200	Relative Permittivity (ϵ_r):	41.52	41.50	0.05	5
		e"	19.5500	Conductivity (σ):	0.91	0.90	0.85	5
	Head 820	e'	41.5400	Relative Permittivity (ϵ_r):	41.54	41.60	-0.15	5
		e"	19.7800	Conductivity (σ):	0.90	0.90	0.38	5
	Head 850	e'	41.5100	Relative Permittivity (ϵ_r):	41.51	41.50	0.02	5
		e"	19.3400	Conductivity (σ):	0.91	0.92	-0.10	5
11-3-2020	Head 1750	e'	39.7600	Relative Permittivity (ϵ_r):	39.76	40.08	-0.81	5
		e"	13.6600	Conductivity (σ):	1.33	1.37	-2.91	5
	Head 1710	e'	39.7900	Relative Permittivity (ϵ_r):	39.79	40.15	-0.89	5
		e"	13.7500	Conductivity (σ):	1.31	1.35	-2.90	5
	Head 1755	e'	39.7600	Relative Permittivity (ϵ_r):	39.76	40.08	-0.79	5
		e"	13.6500	Conductivity (σ):	1.33	1.37	-2.90	5
11-3-2020	Head 1900	e'	39.5300	Relative Permittivity (ϵ_r):	39.53	40.00	-1.18	5
		e"	13.4400	Conductivity (σ):	1.42	1.40	1.42	5
	Head 1850	e'	39.6200	Relative Permittivity (ϵ_r):	39.62	40.00	-0.95	5
		e"	13.5200	Conductivity (σ):	1.39	1.40	-0.66	5
	Head 1910	e'	39.5100	Relative Permittivity (ϵ_r):	39.51	40.00	-1.23	5
		e"	13.4200	Conductivity (σ):	1.43	1.40	1.80	5
11-5-2020	Head 1750	e'	39.4200	Relative Permittivity (ϵ_r):	39.42	40.08	-1.66	5
		e"	14.0400	Conductivity (σ):	1.37	1.37	-0.20	5
	Head 1710	e'	39.5200	Relative Permittivity (ϵ_r):	39.52	40.15	-1.56	5
		e"	14.0900	Conductivity (σ):	1.34	1.35	-0.50	5
	Head 1755	e'	39.4100	Relative Permittivity (ϵ_r):	39.41	40.08	-1.66	5
		e"	14.0300	Conductivity (σ):	1.37	1.37	-0.20	5

SAR 5 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters		Measured	Target	Delta (%)	Limit ±(%)	
11-5-2020	Head 1900	e'	39.0900	Relative Permittivity (ϵ_r):	39.09	40.00	-2.27	5
		e"	13.7600	Conductivity (σ):	1.45	1.40	3.83	5
	Head 1850	e'	39.2000	Relative Permittivity (ϵ_r):	39.20	40.00	-2.00	5
		e"	13.8300	Conductivity (σ):	1.42	1.40	1.62	5
	Head 1910	e'	39.0700	Relative Permittivity (ϵ_r):	39.07	40.00	-2.33	5
		e"	13.7600	Conductivity (σ):	1.46	1.40	4.38	5
11-9-2020	Head 750	e'	42.7200	Relative Permittivity (ϵ_r):	42.72	41.96	1.81	5
		e"	20.9600	Conductivity (σ):	0.87	0.89	-2.13	5
	Head 700	e'	42.7900	Relative Permittivity (ϵ_r):	42.79	42.22	1.35	5
		e"	21.9800	Conductivity (σ):	0.86	0.89	-3.79	5
	Head 790	e'	42.6500	Relative Permittivity (ϵ_r):	42.65	41.76	2.14	5
		e"	20.2000	Conductivity (σ):	0.89	0.90	-0.99	5
11-9-2020	Head 835	e'	42.6200	Relative Permittivity (ϵ_r):	42.62	41.50	2.70	5
		e"	19.4700	Conductivity (σ):	0.90	0.90	0.44	5
	Head 820	e'	42.6100	Relative Permittivity (ϵ_r):	42.61	41.60	2.42	5
		e"	19.6900	Conductivity (σ):	0.90	0.90	-0.08	5
	Head 850	e'	42.6200	Relative Permittivity (ϵ_r):	42.62	41.50	2.70	5
		e"	19.2700	Conductivity (σ):	0.91	0.92	-0.46	5
11-9-2020	Head 1900	e'	40.3900	Relative Permittivity (ϵ_r):	40.39	40.00	0.98	5
		e"	13.4300	Conductivity (σ):	1.42	1.40	1.34	5
	Head 1850	e'	40.3900	Relative Permittivity (ϵ_r):	40.39	40.00	0.98	5
		e"	13.4700	Conductivity (σ):	1.39	1.40	-1.03	5
	Head 1910	e'	40.3900	Relative Permittivity (ϵ_r):	40.39	40.00	0.98	5
		e"	13.4300	Conductivity (σ):	1.43	1.40	1.88	5
11-9-2020	Head 2600	e'	39.3900	Relative Permittivity (ϵ_r):	39.39	39.01	0.97	5
		e"	13.1700	Conductivity (σ):	1.90	1.96	-2.97	5
	Head 2500	e'	39.5400	Relative Permittivity (ϵ_r):	39.54	39.14	1.03	5
		e"	13.1500	Conductivity (σ):	1.83	1.85	-1.41	5
	Head 2700	e'	39.2200	Relative Permittivity (ϵ_r):	39.22	38.88	0.86	5
		e"	13.2200	Conductivity (σ):	1.98	2.07	-4.13	5

8.2. System Check

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

System Performance Check Measurement Conditions:

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

Reference Target SAR Values

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

System Dipole	Serial No.	Cal. Date	Freq. (MHz)	Target SAR Values (W/kg)	
				1g/10g	Head
D750V3	1122	2-24-2020	750	1g	8.54
				10g	5.59
D835V2	4d174	2-24-2020	835	1g	9.59
				10g	6.24
D1750V2	1125	2-21-2020	1750	1g	36.50
				10g	19.20
D1900V2	5d199	3-19-2020	1900	1g	40.50
				10g	21.00
D2450V2	939	7-25-2019	2450	1g	53.20
				10g	25.10
D2600V2	1097	9-19-2019	2600	1g	57.30
				10g	25.70
D5GHzV2	1209	2-27-2020	5250	1g	79.90
				10g	22.60
			5600	1g	83.60
				10g	23.60
			5750	1g	80.20
				10g	22.60

Note(s):

Refer to Appendix F that mentioned about justification for Extended SAR Dipole Calibrations. (D2450V2 (SN : 939), D2600V2 (SN : 1097))

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				
11-2-2020	D5GHzV2 (5250)	1209	Head	1g	8.42	84.2	79.90	5.38	
				10g	2.40	24.0	22.60	6.19	
11-2-2020	D5GHzV2 (5600)	1209	Head	1g	8.77	87.7	83.60	4.90	
				10g	2.47	24.7	23.60	4.66	
11-2-2020	D5GHzV2 (5750)	1209	Head	1g	8.66	86.6	80.20	7.98	1, 2
				10g	2.44	24.4	22.60	7.96	
11-4-2020	D5GHzV2 (5250)	1209	Head	1g	7.60	76.0	79.90	-4.88	
				10g	2.17	21.7	22.60	-3.98	
11-4-2020	D5GHzV2 (5600)	1209	Head	1g	8.28	82.8	83.60	-0.96	
				10g	2.33	23.3	23.60	-1.27	
11-4-2020	D5GHzV2 (5750)	1209	Head	1g	8.19	81.9	80.20	2.12	
				10g	2.33	23.3	22.60	3.10	
11-8-2020	D5GHzV2 (5250)	1209	Head	1g	7.48	74.8	80.20	-6.73	
				10g	2.12	21.2	22.60	-6.19	
11-9-2020	D5GHzV2 (5600)	1209	Head	1g	7.47	74.7	79.90	-6.51	
				10g	2.10	21.0	22.60	-7.08	
11-9-2020	D5GHzV2 (5750)	1209	Head	1g	8.44	84.4	83.60	0.96	
				10g	2.38	23.8	23.60	0.85	

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				
10-7-2020	D1750V2	1125	Head	1g	3.40	34.0	36.50	-6.85	3, 4
				10g	1.82	18.2	19.20	-5.21	
10-7-2020	D1900V2	5d199	Head	1g	3.75	37.5	40.50	-7.41	5, 6
				10g	1.95	19.5	21.00	-7.14	
10-12-2020	D1900V2	5d199	Head	1g	3.86	38.6	40.50	-4.69	
				10g	2.01	20.1	21.00	-4.29	
10-12-2020	D2600V2	1097	Head	1g	5.36	53.6	57.30	-6.46	7, 8
				10g	2.44	24.4	25.70	-5.06	
10-21-2020	D2450V2	939	Head	1g	5.03	50.3	53.20	-5.45	
				10g	2.35	23.5	25.10	-6.37	
10-26-2020	D1900V2	5d199	Head	1g	3.80	38.0	40.50	-6.17	
				10g	1.99	19.9	21.00	-5.24	
10-26-2020	D2450V2	939	Head	1g	4.90	49.0	53.20	-7.89	9, 10
				10g	2.29	22.9	25.10	-8.76	
10-28-2020	D1900V2	5d199	Head	1g	3.82	38.2	40.50	-5.68	
				10g	1.99	19.9	21.00	-5.24	
11-1-2020	D2450V2	939	Head	1g	5.10	51.0	53.20	-4.14	
				10g	2.38	23.8	25.10	-5.18	
11-4-2020	D835V2	4d174	Head	1g	0.90	9.0	9.59	-6.47	
				10g	0.59	5.9	6.24	-4.97	
11-4-2020	D1750V2	1125	Head	1g	3.58	35.8	36.50	-1.92	
				10g	1.92	19.2	19.20	0.00	
11-4-2020	D2450V2	939	Head	1g	5.64	56.4	53.20	6.02	
				10g	2.65	26.5	25.10	5.58	
11-5-2020	D5GHzV2 (5250)	1209	Head	1g	8.45	84.5	80.20	5.36	
				10g	2.42	24.2	22.60	7.08	
11-8-2020	D835V2	4d174	Head	1g	0.95	9.5	9.59	-0.94	
				10g	0.63	6.3	6.24	0.64	
11-8-2020	D1750V2	1125	Head	1g	3.74	37.4	36.50	2.47	
				10g	2.00	20.0	19.20	4.17	
11-8-2020	D1900V2	5d199	Head	1g	4.11	41.1	40.50	1.48	
				10g	2.15	21.5	21.00	2.38	
11-8-2020	D2450V2	939	Head	1g	5.70	57.0	53.20	7.14	
				10g	2.66	26.6	25.10	5.98	
11-10-2020	D5GHzV2 (5250)	1209	Head	1g	7.91	79.1	80.20	-1.37	
				10g	2.26	22.6	22.60	0.00	
11-11-2020	D2450V2	939	Head	1g	5.16	51.6	53.20	-3.01	
				10g	2.42	24.2	25.10	-3.59	
11-15-2020	D835V2	4d174	Head	1g	0.97	9.7	9.59	0.63	
				10g	0.64	6.4	6.24	1.76	
11-15-2020	D1750V2	1125	Head	1g	3.58	35.8	36.50	-1.92	
				10g	1.92	19.2	19.20	0.00	
11-16-2020	D2450V2	939	Head	1g	5.51	55.1	53.20	3.57	
				10g	2.60	26.0	25.10	3.59	

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				
11-2-2020	D2450V2	939	Head	1g	5.25	52.5	53.20	-1.32	
				10g	2.37	23.7	25.10	-5.58	
11-4-2020	D1750V2	1125	Head	1g	3.67	36.7	36.50	0.55	
				10g	1.91	19.1	19.20	-0.52	
11-8-2020	D1750V2	1125	Head	1g	3.46	34.6	36.50	-5.21	11, 12
				10g	1.81	18.1	19.20	-5.73	

SAR 5 Room

Date Tested	System Dipole		T.S. Liquid	Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.	
	Type	Serial #		Zoom Scan to 100 mW	Normalize to 1 W				
10-5-2020	D750V3	1122	Head	1g	0.82	8.2	8.54	-4.22	13, 14
				10g	0.54	5.4	5.59	-3.40	
10-12-2020	D750V3	1122	Head	1g	0.82	8.2	8.54	-3.51	
				10g	0.54	5.4	5.59	-3.40	
10-12-2020	D835V2	4d174	Head	1g	0.97	9.7	9.59	0.83	
				10g	0.63	6.3	6.24	0.96	
10-20-2020	D5GHzV2 (5250)	1209	Head	1g	7.96	79.6	79.90	-0.38	
				10g	2.31	23.1	22.60	2.21	
10-20-2020	D5GHzV2 (5600)	1209	Head	1g	8.87	88.7	83.60	6.10	
				10g	2.56	25.6	23.60	8.47	
10-20-2020	D5GHzV2 (5750)	1209	Head	1g	8.56	85.6	80.20	6.73	
				10g	2.46	24.6	22.60	8.85	
10-23-2020	D835V2	4d174	Head	1g	0.99	9.9	9.59	3.65	
				10g	0.65	6.5	6.24	4.17	
10-25-2020	D835V2	4d174	Head	1g	0.98	9.8	9.59	1.67	
				10g	0.64	6.4	6.24	2.56	
10-25-2020	D1750V2	1125	Head	1g	3.71	37.1	36.50	1.64	
				10g	1.99	19.9	19.20	3.65	
10-28-2020	D835V2	4d174	Head	1g	1.00	10.0	9.59	4.28	
				10g	0.66	6.6	6.24	5.13	
10-28-2020	D1750V2	1125	Head	1g	3.77	37.7	36.50	3.29	
				10g	2.03	20.3	19.20	5.73	
11-2-2020	D750V3	1122	Head	1g	0.84	8.4	8.54	-1.99	
				10g	0.54	5.4	5.59	-3.04	
11-2-2020	D835V2	4d174	Head	1g	0.94	9.4	9.59	-1.56	
				10g	0.61	6.1	6.24	-1.92	
11-3-2020	D835V2	4d174	Head	1g	0.90	9.0	9.59	-5.74	15, 16
				10g	0.59	5.9	6.24	-5.13	
11-3-2020	D1750V2	1125	Head	1g	3.62	36.2	36.50	-0.82	
				10g	1.95	19.5	19.20	1.56	
11-3-2020	D1900V2	5d199	Head	1g	4.19	41.9	40.50	3.46	
				10g	2.20	22.0	21.00	4.76	
11-5-2020	D1750V2	1125	Head	1g	3.66	36.6	36.50	0.27	
				10g	1.96	19.6	19.20	2.08	
11-5-2020	D1900V2	5d199	Head	1g	4.27	42.7	40.50	5.43	
				10g	2.23	22.3	21.00	6.19	
11-9-2020	D750V3	1122	Head	1g	0.84	8.4	8.54	-2.11	
				10g	0.56	5.6	5.59	-0.54	
11-9-2020	D835V2	4d174	Head	1g	0.99	9.9	9.59	3.02	
				10g	0.65	6.5	6.24	4.65	
11-9-2020	D1900V2	5d199	Head	1g	4.11	41.1	40.50	1.48	
				10g	2.18	21.8	21.00	3.81	
11-9-2020	D2600V2	1097	Head	1g	5.68	56.8	57.30	-0.87	
				10g	2.65	26.5	25.70	3.11	

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	33.1	24.1	34.0	25.0
			190	836.6	33.2	24.2		
			251	848.8	33.6	24.5		
GPRS (GMSK)	CS1	1	128	824.2	33.1	24.1	34.0	25.0
			190	836.6	32.9	23.9		
			251	848.8	33.2	24.2		
		2	128	824.2	30.3	24.3	31.0	25.0
			190	836.6	29.9	23.8		
			251	848.8	30.2	24.2		
		3	128	824.2	28.3	24.1	30.0	25.7
			190	836.6	28.7	24.5		
			251	848.8	29.2	24.9		
		4	128	824.2	27.4	24.4	28.0	25.0
			190	836.6	27.4	24.3		
			251	848.8	28.0	25.0		
EGPRS (8PSK)	MCS5	1	128	824.2	26.3	17.3	27.0	18.0
			190	836.6	26.3	17.3		
			251	848.8	26.9	17.9		
		2	128	824.2	24.3	18.3	25.0	19.0
			190	836.6	24.5	18.5		
			251	848.8	25.0	19.0		
		3	128	824.2	23.0	18.7	24.0	19.7
			190	836.6	23.0	18.8		
			251	848.8	23.7	19.4		
		4	128	824.2	22.1	19.1	23.0	20.0
			190	836.6	22.1	19.1		
			251	848.8	22.6	19.6		

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 $\leq 1/4$ dB higher than GMSK GPRS or the adjusted SAR of the highest reported SAR of GMSK GPRS is ≤ 1.2 W/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	21.1	31.0	22.0	28.4	19.3	29.0	20.0	28.4	19.4	29.0	20.0
			661	1880.0	30.1	21.1			28.1	19.0			28.3	19.3		
			810	1909.8	30.0	21.0			28.1	19.1			28.4	19.3		
GPRS (GMSK)	CS1	1	512	1850.2	30.2	21.2	31.0	22.0	28.3	19.3	29.0	20.0	28.3	19.3	29.0	20.0
			661	1880.0	30.1	21.1			28.2	19.2			28.2	19.1		
			810	1909.8	30.0	20.9			28.2	19.2			28.2	19.2		
		2	512	1850.2	27.7	21.7	28.0	22.0	26.7	20.7	27.0	21.0	26.7	20.7	27.0	21.0
			661	1880.0	27.5	21.5			26.6	20.6			26.8	20.8		
			810	1909.8	27.6	21.6			26.7	20.7			26.9	20.9		
		3	512	1850.2	26.1	21.9	27.0	22.7	24.5	20.3	25.5	21.2	24.8	20.5	25.5	21.2
			661	1880.0	26.0	21.7			24.4	20.2			24.6	20.4		
			810	1909.8	26.1	21.9			24.6	20.3			24.8	20.5		
		4	512	1850.2	24.4	21.4	25.0	22.0	23.5	20.5	24.0	21.0	23.7	20.7	24.0	21.0
			661	1880.0	24.3	21.2			23.4	20.4			23.6	20.6		
			810	1909.8	24.4	21.4			23.6	20.6			23.8	20.8		
EGPRS (8PSK)	MCS5	1	512	1850.2	25.6	16.6	27.0	18.0	25.8	16.8	26.5	17.5	25.7	16.7	26.5	17.5
			661	1880.0	25.6	16.6			25.6	16.5			25.7	16.7		
			810	1909.8	26.1	17.0			26.0	17.0			26.1	17.1		
		2	512	1850.2	23.9	17.9	25.5	19.5	23.8	17.8	25.5	19.5	23.7	17.7	25.5	19.5
			661	1880.0	23.7	17.6			23.5	17.5			23.7	17.7		
			810	1909.8	23.9	17.9			23.8	17.8			23.9	17.9		
		3	512	1850.2	22.6	18.3	24.0	19.7	22.4	18.2	24.0	19.7	22.6	18.3	24.0	19.7
			661	1880.0	22.5	18.2			22.4	18.1			22.5	18.3		
			810	1909.8	22.8	18.5			22.7	18.4			22.6	18.3		
		4	512	1850.2	21.4	18.4	23.0	20.0	21.4	18.3	23.0	20.0	21.3	18.2	23.0	20.0
			661	1880.0	21.2	18.2			21.1	18.1			21.3	18.2		
			810	1909.8	21.4	18.4			21.4	18.3			21.5	18.5		

Notes:

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

- GMSK (GPRS) mode with 3 time slot for Max power & 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
	β_c/β_d	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	Subtest	HSDPA	HSDPA	HSDPA	HSDPA
		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			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	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			
$A_{hs}=\beta_{hs}/\beta_c$	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
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	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				
	A _{hs} = β_{hs}/β_c	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.		

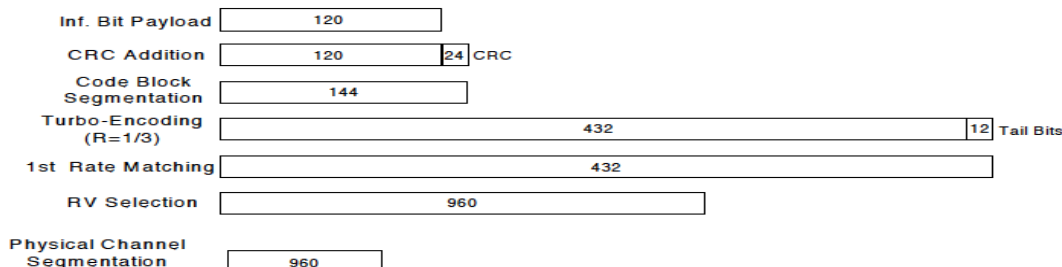


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

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			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (SF)	64			
	β_c/β_d	2/15	11/15	15/8	15/4
	β_{hs}	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			
	A _{hs} = β_{hs}/β_c	30/15			

HSPA+

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

W-CDMA Band II Measured Results

Mode	UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			Reduced Average Power (dBm) Hotspot back-off			Reduced Average Power (dBm) Proximity sensor back-off			
			Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit	
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	23.8	NA	25.0	20.7	NA	21.5	20.6	NA	21.5
		9400	1880.0	23.8			20.6			20.4		
		9538	1907.6	24.2			20.9			20.8		
HSDPA	Subtest 1	9262	1852.4	23.3	0.0	24.0	20.7	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	23.3			20.6			20.5		
		9538	1907.6	23.6			20.9			20.8		
	Subtest 2	9262	1852.4	23.0	0.0	24.0	20.6	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	22.9			20.5			20.5		
		9538	1907.6	23.2			20.8			20.8		
	Subtest 3	9262	1852.4	22.4	0.5	23.5	20.6	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	22.3			20.7			20.5		
		9538	1907.6	22.7			21.0			20.8		
	Subtest 4	9262	1852.4	22.4	0.5	23.5	20.6	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	22.2			20.8			20.5		
		9538	1907.6	22.7			21.0			20.8		
HSUPA	Subtest 1	9262	1852.4	23.0	0.0	24.5	19.9	0.0	21.0	19.6	0.0	21.0
		9400	1880.0	22.8			19.5			19.4		
		9538	1907.6	23.2			20.0			19.8		
	Subtest 2	9262	1852.4	20.4	2.0	22.5	19.6	0.0	21.0	19.6	0.0	21.0
		9400	1880.0	20.3			19.8			19.4		
		9538	1907.6	20.6			20.0			19.8		
	Subtest 3	9262	1852.4	22.4	1.0	23.5	19.6	0.0	21.0	19.6	0.0	21.0
		9400	1880.0	22.2			19.7			19.4		
		9538	1907.6	22.7			20.0			19.8		
	Subtest 4	9262	1852.4	20.4	2.0	22.5	19.6	0.0	21.0	19.6	0.0	21.0
		9400	1880.0	20.2			19.8			19.4		
		9538	1907.6	20.6			20.0			19.8		
	Subtest 5	9262	1852.4	23.8	0.0	24.5	20.6	0.0	21.0	20.6	0.0	21.0
		9400	1880.0	23.6			20.7			20.5		
		9538	1907.6	24.1			21.0			20.8		
DC-HSDPA	Subtest 1	9262	1852.4	23.4	0.0	24.0	20.6	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	23.3			20.6			20.5		
		9538	1907.6	23.6			21.0			20.7		
	Subtest 2	9262	1852.4	23.0	0.0	24.0	21.0	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	22.9			20.8			20.4		
		9538	1907.6	23.2			21.0			20.7		
	Subtest 3	9262	1852.4	21.5	0.5	23.5	21.0	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	21.3			20.9			20.5		
		9538	1907.6	21.6			21.0			20.7		
	Subtest 4	9262	1852.4	22.5	0.5	23.5	21.0	0.0	21.5	20.6	0.0	21.5
		9400	1880.0	22.4			20.9			20.4		
		9538	1907.6	22.8			21.0			20.5		

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	24.3	NA	24.5	20.2	NA	20.5	20.3	NA	20.5
		1413	1732.6	24.0			20.0			20.0		
		1513	1752.6	24.0			20.0			20.0		
HSDPA	Subtest 1	1312	1712.4	23.8	0.0	24.0	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	23.5			20.0			20.0		
		1513	1752.6	23.5			20.0			20.0		
	Subtest 2	1312	1712.4	23.3	0.0	24.0	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	22.9			20.1			20.0		
		1513	1752.6	22.9			20.0			20.0		
	Subtest 3	1312	1712.4	22.7	0.5	23.5	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	22.3			20.1			20.1		
		1513	1752.6	22.3			20.1			20.1		
	Subtest 4	1312	1712.4	22.8	0.5	23.5	20.4	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	22.4			20.1			20.1		
		1513	1752.6	22.4			20.1			20.1		
HSUPA	Subtest 1	1312	1712.4	22.7	0.0	24.2	19.2	0.0	20.5	19.2	0.0	20.5
		1413	1732.6	22.3			18.9			18.9		
		1513	1752.6	21.7			19.0			19.0		
	Subtest 2	1312	1712.4	20.2	2.0	22.2	19.2	0.0	20.5	19.2	0.0	20.5
		1413	1732.6	19.8			18.9			19.0		
		1513	1752.6	19.8			19.0			19.0		
	Subtest 3	1312	1712.4	23.1	1.0	23.2	19.2	0.0	20.5	19.2	0.0	20.5
		1413	1732.6	22.8			18.9			18.9		
		1513	1752.6	22.8			19.0			18.9		
	Subtest 4	1312	1712.4	20.9	2.0	22.2	19.2	0.0	20.5	19.2	0.0	20.5
		1413	1732.6	20.6			18.9			18.9		
		1513	1752.6	19.9			19.0			19.0		
	Subtest 5	1312	1712.4	24.1	0.0	24.2	20.4	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	23.9			20.1			20.1		
		1513	1752.6	23.9			20.1			20.1		
DC-HSDPA	Subtest 1	1312	1712.4	24.1	0.0	24.5	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	23.8			20.0			20.1		
		1513	1752.6	23.7			20.0			20.1		
	Subtest 2	1312	1712.4	23.7	0.0	24.5	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	23.5			20.1			20.1		
		1513	1752.6	23.3			20.1			20.1		
	Subtest 3	1312	1712.4	23.2	0.5	24.0	20.3	0.0	20.5	20.3	0.0	20.5
		1413	1732.6	23.0			20.1			20.1		
		1513	1752.6	22.8			20.1			20.1		
	Subtest 4	1312	1712.4	23.3	0.5	24.0	20.3	0.0	20.5	20.4	0.0	20.5
		1413	1732.6	23.0			20.1			20.1		
		1513	1752.6	22.8			20.1			20.1		

W-CDMA Band V Measured Results

Mode	UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)			
			Measured Pwr	MPR	Tune-up Limit	
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	25.2	NA	25.3
		4183	836.6	25.3		
		4233	846.6	25.3		
HSDPA	Subtest 1	4132	826.4	23.4	0.0	24.0
		4183	836.6	23.6		
		4233	846.6	23.8		
	Subtest 2	4132	826.4	23.0	0.0	24.0
		4183	836.6	23.1		
		4233	846.6	23.3		
	Subtest 3	4132	826.4	22.5	0.5	23.5
		4183	836.6	22.6		
		4233	846.6	22.7		
	Subtest 4	4132	826.4	22.3	0.5	23.5
		4183	836.6	22.6		
		4233	846.6	22.6		
HSUPA	Subtest 1	4132	826.4	22.5	0.0	24.0
		4183	836.6	22.6		
		4233	846.6	22.8		
	Subtest 2	4132	826.4	20.4	2.0	22.0
		4183	836.6	20.5		
		4233	846.6	20.8		
	Subtest 3	4132	826.4	21.4	1.0	23.0
		4183	836.6	21.5		
		4233	846.6	21.8		
	Subtest 4	4132	826.4	20.4	2.0	22.0
		4183	836.6	20.5		
		4233	846.6	20.7		
	Subtest 5	4132	826.4	23.4	0.0	24.0
		4183	836.6	23.5		
		4233	846.6	23.8		
DC-HSDPA	Subtest 1	4132	826.4	23.4	0.0	24.0
		4183	836.6	23.8		
		4233	846.6	23.6		
	Subtest 2	4132	826.4	23.1	0.0	24.0
		4183	836.6	23.3		
		4233	846.6	23.2		
	Subtest 3	4132	826.4	22.1	0.5	23.5
		4183	836.6	22.4		
		4233	846.6	22.3		
	Subtest 4	4132	826.4	22.6	0.5	23.5
		4183	836.6	22.9		
		4233	846.6	22.8		

9.3. LTE

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

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

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

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

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

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

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

Maximum Output Power (Tune-up Limit) for LTE

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

- a) The maximum output power, including tolerance, for the smaller band must be ≤ the larger band to qualify for the SAR test exclusion.
- b) The channel bandwidth and other operating parameters for the smaller band must be fully supported by the larger band.
 - LTE Band 4 (1710 – 1755 MHz) is covered by LTE Band 66 (1710 – 1780 MHz)
 - LTE Band 17 (704 – 716 MHz) is covered by LTE Band 12 (699 – 716 MHz)

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

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

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

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

1. Max power Results

LTE Band 2 Measured Results

BW (MHz)	Mmode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				18700 1860 MHz	18900 1880 MHz	19100 1900 MHz		
20 MHz	QPSK	1	0	23.9	24.0	24.2	0.0	24.5
		1	49	23.9	24.0	24.3	0.0	24.5
		1	99	23.9	24.0	24.2	0.0	24.5
		50	0	23.0	23.1	23.3	1.0	23.5
		50	24	23.0	23.1	23.3	1.0	23.5
		50	50	22.9	23.0	23.2	1.0	23.5
	16QAM	100	0	23.0	23.1	23.2	1.0	23.5
		1	0	23.2	23.4	23.4	1.0	23.5
		1	49	23.3	23.4	23.4	1.0	23.5
		1	99	23.2	23.4	23.3	1.0	23.5
		50	0	21.9	22.1	22.2	2.0	22.5
		50	24	21.9	22.1	22.2	2.0	22.5
	64QAM	50	50	21.9	22.0	22.2	2.0	22.5
		100	0	21.9	22.1	22.2	2.0	22.5
		1	0	21.9	22.1	22.0	2.0	22.5
		1	49	22.0	22.0	22.0	2.0	22.5
		1	99	21.9	22.1	22.0	2.0	22.5
		50	0	20.8	20.9	21.1	3.0	21.5
	256QAM	50	24	20.8	20.9	21.1	3.0	21.5
		50	50	20.8	20.9	21.1	3.0	21.5
		100	0	20.8	20.9	21.1	3.0	21.5
		1	0	18.9	19.2	19.2	5.0	19.5
		1	49	18.9	19.3	19.2	5.0	19.5
		1	99	18.9	19.2	19.2	5.0	19.5
15 MHz	QPSK	50	0	18.8	18.9	19.1	5.0	19.5
		50	24	18.8	18.9	19.1	5.0	19.5
		50	50	18.8	18.9	19.1	5.0	19.5
		100	0	18.8	18.9	19.1	5.0	19.5
		1	0	24.0	24.1	24.2	0.0	24.5
		1	37	24.0	24.0	24.3	0.0	24.5
	16QAM	1	74	23.9	24.1	24.2	0.0	24.5
		36	0	23.1	23.2	23.3	1.0	23.5
		36	20	23.0	23.2	23.3	1.0	23.5
		36	39	23.0	23.1	23.3	1.0	23.5
		75	0	23.0	23.1	23.3	1.0	23.5
		1	0	23.1	23.3	23.1	1.0	23.5
	64QAM	1	37	23.1	23.1	23.1	1.0	23.5
		1	74	23.1	23.2	23.5	1.0	23.5
		36	0	22.0	22.1	22.3	2.0	22.5
		36	20	22.0	22.1	22.3	2.0	22.5
		36	39	21.9	22.1	22.3	2.0	22.5
		75	0	21.9	22.1	22.2	2.0	22.5
	256QAM	1	0	22.0	22.0	22.2	2.0	22.5
		1	37	22.0	22.0	22.2	2.0	22.5
		1	74	22.0	22.0	22.2	2.0	22.5
		36	0	20.8	20.9	21.0	3.0	21.5
		36	20	20.8	20.9	21.0	3.0	21.5
		36	39	20.8	20.9	21.0	3.0	21.5
QPSK	75	0	20.9	20.9	21.0	3.0	21.5	
	1	0	18.9	19.1	19.3	5.0	19.5	
	1	37	18.7	19.2	19.3	5.0	19.5	
	1	74	18.9	19.1	19.3	5.0	19.5	
	36	0	18.9	19.0	19.1	5.0	19.5	
	36	20	18.9	19.0	19.0	5.0	19.5	
16QAM	36	39	18.9	18.9	19.1	5.0	19.5	
	75	0	18.9	19.0	19.0	5.0	19.5	
	1	0	18.9	19.1	19.3	5.0	19.5	
	1	37	18.7	19.2	19.3	5.0	19.5	
	1	74	18.9	19.1	19.3	5.0	19.5	
	36	0	18.9	19.0	19.1	5.0	19.5	
64QAM	36	20	18.9	19.0	19.0	5.0	19.5	
	36	39	18.9	18.9	19.1	5.0	19.5	
	75	0	18.9	19.0	19.0	5.0	19.5	
	1	0	18.9	19.1	19.3	5.0	19.5	
	1	37	18.7	19.2	19.3	5.0	19.5	
	1	74	18.9	19.1	19.3	5.0	19.5	
256QAM	36	0	18.9	19.0	19.1	5.0	19.5	
	36	20	18.9	19.0	19.0	5.0	19.5	
	36	39	18.9	18.9	19.1	5.0	19.5	
	75	0	18.9	19.0	19.0	5.0	19.5	
	1	0	18.9	19.1	19.3	5.0	19.5	
	1	37	18.7	19.2	19.3	5.0	19.5	

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	24.0	24.0	24.1	0.0	24.5	
		1	25	23.9	24.0	24.1	0.0	24.5	
		1	49	24.0	24.0	24.1	0.0	24.5	
		25	0	23.0	23.1	23.1	1.0	23.5	
		25	12	22.9	23.0	23.1	1.0	23.5	
		25	25	22.9	23.1	23.1	1.0	23.5	
	16QAM	50	0	22.9	23.1	23.1	1.0	23.5	
		1	0	23.1	23.4	23.5	1.0	23.5	
		1	25	23.1	23.3	23.5	1.0	23.5	
		1	49	23.1	23.3	23.5	1.0	23.5	
		25	0	22.0	22.1	22.2	2.0	22.5	
		25	12	22.0	22.1	22.1	2.0	22.5	
	64QAM	25	25	22.0	22.1	22.2	2.0	22.5	
		50	0	21.9	22.0	22.1	2.0	22.5	
		1	0	21.8	22.0	22.0	2.0	22.5	
		1	25	21.7	22.0	22.0	2.0	22.5	
		1	49	21.8	22.0	21.9	2.0	22.5	
		25	0	20.8	20.9	20.9	3.0	21.5	
	256QAM	25	12	20.8	20.9	20.9	3.0	21.5	
		25	25	20.8	20.9	20.9	3.0	21.5	
		50	0	20.8	20.9	20.9	3.0	21.5	
		1	0	19.0	19.1	19.1	5.0	19.5	
		1	25	19.0	19.1	19.0	5.0	19.5	
		1	49	19.0	19.1	19.1	5.0	19.5	
5 MHz	QPSK	25	0	18.9	19.0	19.0	5.0	19.5	
		25	12	18.9	18.9	19.0	5.0	19.5	
		25	25	18.9	18.9	19.0	5.0	19.5	
		50	0	18.9	19.0	19.0	5.0	19.5	
		18625	18900	19175	MPR	Tune-up Limit			
		1852.5 MHz	1880 MHz	1907.5 MHz					
	1	0	23.9	24.1			24.0	0.0	24.5
	5 MHz	QPSK	1	12	24.0	24.1	24.1	0.0	24.5
			1	24	24.0	24.2	24.1	0.0	24.5
			12	0	22.9	23.0	22.9	1.0	23.5
			12	7	22.9	23.0	22.9	1.0	23.5
			12	13	22.9	22.9	23.0	1.0	23.5
			25	0	23.0	23.1	23.1	1.0	23.5
		16QAM	1	0	23.2	23.4	23.4	1.0	23.5
			1	12	23.3	23.4	23.4	1.0	23.5
			1	24	23.3	23.4	23.4	1.0	23.5
			12	0	21.9	21.9	22.0	2.0	22.5
			12	7	21.9	21.9	22.0	2.0	22.5
			12	13	21.9	21.9	21.9	2.0	22.5
		64QAM	25	0	22.0	21.9	22.0	2.0	22.5
			1	0	21.9	22.1	22.1	2.0	22.5
			1	12	21.9	22.1	22.1	2.0	22.5
			1	24	21.9	22.1	22.0	2.0	22.5
			12	0	20.8	20.9	21.0	3.0	21.5
12			7	20.8	20.8	21.0	3.0	21.5	
256QAM		12	13	20.8	20.9	21.0	3.0	21.5	
		25	0	20.8	20.9	20.9	3.0	21.5	
		1	0	18.8	19.2	18.8	5.0	19.5	
		1	12	18.7	19.1	18.7	5.0	19.5	
		1	24	18.8	19.2	18.9	5.0	19.5	
		12	0	18.9	19.0	19.0	5.0	19.5	
256QAM	12	7	18.8	19.0	19.0	5.0	19.5		
	12	13	18.8	18.9	19.0	5.0	19.5		
	25	0	18.9	18.9	18.9	5.0	19.5		

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	24.0	24.0	24.1	0.0	24.5
		1	8	23.9	23.9	24.0	0.0	24.5
		1	14	24.0	24.0	24.2	0.0	24.5
		8	0	23.0	23.1	23.1	1.0	23.5
		8	4	23.0	23.1	23.1	1.0	23.5
		8	7	23.0	23.1	23.1	1.0	23.5
	16QAM	15	0	23.0	23.0	23.1	1.0	23.5
		1	0	23.1	23.3	23.3	1.0	23.5
		1	8	22.9	23.1	23.3	1.0	23.5
		1	14	23.0	23.3	23.3	1.0	23.5
		8	0	22.1	22.1	22.1	2.0	22.5
		8	4	22.1	22.1	22.1	2.0	22.5
	64QAM	8	7	22.1	22.1	22.1	2.0	22.5
		15	0	22.0	22.0	22.1	2.0	22.5
		1	0	21.8	22.2	22.2	2.0	22.5
		1	8	21.8	22.1	22.1	2.0	22.5
		1	14	21.7	22.2	22.0	2.0	22.5
		8	0	20.8	20.9	20.9	3.0	21.5
	256QAM	8	4	20.8	20.9	20.8	3.0	21.5
		8	7	20.8	20.9	20.9	3.0	21.5
		15	0	20.9	20.9	20.9	3.0	21.5
		1	0	19.1	19.1	19.1	5.0	19.5
		1	8	18.9	19.0	19.0	5.0	19.5
		1	14	18.9	19.1	19.0	5.0	19.5
1.4 MHz	QPSK	8	0	18.9	19.0	19.0	5.0	19.5
		8	4	18.9	19.0	19.0	5.0	19.5
		8	7	18.9	19.0	19.0	5.0	19.5
		8	0	18.9	19.0	19.0	5.0	19.5
		8	4	18.9	19.0	19.0	5.0	19.5
		8	7	18.9	19.0	19.0	5.0	19.5
	16QAM	15	0	18.9	19.0	19.0	5.0	19.5
		1	0	24.0	24.1	24.1	0.0	24.5
		1	3	23.7	23.9	23.9	0.0	24.5
		1	5	24.0	24.1	24.1	0.0	24.5
		3	0	23.9	24.1	24.1	0.0	24.5
		3	1	23.9	24.0	24.0	0.0	24.5
	64QAM	3	3	23.9	23.9	24.1	0.0	24.5
		6	0	23.0	23.1	23.2	1.0	23.5
		1	0	23.0	22.7	22.9	1.0	23.5
		1	3	23.0	22.8	22.8	1.0	23.5
		1	5	23.0	22.8	22.8	1.0	23.5
		3	0	23.0	23.0	23.0	1.0	23.5
	256QAM	3	1	23.0	23.0	23.0	1.0	23.5
		3	3	23.0	23.1	23.2	1.0	23.5
		6	0	22.2	22.2	22.1	2.0	22.5
		1	0	21.9	22.0	22.0	2.0	22.5
		1	3	21.7	22.0	22.0	2.0	22.5
		1	5	22.0	22.0	22.0	2.0	22.5
1.4 MHz	64QAM	3	0	22.0	22.0	21.9	2.0	22.5
		3	1	22.0	22.0	22.0	2.0	22.5
		3	3	22.0	22.0	22.0	2.0	22.5
		6	0	21.1	21.0	20.9	3.0	21.5
		1	0	19.3	18.9	18.8	5.0	19.5
		1	3	19.0	19.0	18.6	5.0	19.5
	256QAM	1	5	19.1	18.8	18.8	5.0	19.5
		3	0	18.9	19.0	18.8	5.0	19.5
		3	1	18.9	18.9	18.9	5.0	19.5
		3	3	18.9	19.0	18.9	5.0	19.5
		6	0	19.0	19.0	19.0	5.0	19.5
		6	0	19.0	19.0	19.0	5.0	19.5

LTE Band 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					
				Measured Pwr (dBm)			MPR	Tune-up Limit	
				20450	20525	20600			
				829 MHz	836.5 MHz	844 MHz			
10 MHz	QPSK	1	0		24.6		0.0	25.5	
		1	25		24.3		0.0	25.5	
		1	49		24.3		0.0	25.5	
		25	0		22.4		2.0	23.5	
		25	12		22.4		2.0	23.5	
		25	25		22.3		2.0	23.5	
	16QAM	50	0		22.4		2.0	23.5	
		1	0		22.7		2.0	23.5	
		1	25		22.7		2.0	23.5	
		1	49		22.6		2.0	23.5	
		25	0		21.4		2.0	23.5	
		25	12		21.4		2.0	23.5	
	64QAM	25	25		21.4		2.0	23.5	
		50	0		21.3		2.0	23.5	
		1	0		21.5		2.0	23.5	
		1	25		21.6		2.0	23.5	
		1	49		21.5		2.0	23.5	
		25	0		21.6		3.0	22.5	
	256QAM	25	12		21.5		3.0	22.5	
		25	25		21.6		3.0	22.5	
		50	0		21.6		3.0	22.5	
		1	0		20.6		4.0	21.5	
		1	25		20.5		4.0	21.5	
		1	49		20.6		4.0	21.5	
5 MHz	QPSK	25	0		19.5		5.0	20.5	
		25	12		19.5		5.0	20.5	
		25	25		19.4		5.0	20.5	
		50	0		19.4		5.0	20.5	
		1	0		24.2	24.4	24.3	0.0	25.5
		1	12		24.1	24.3	24.2	0.0	25.5
	16QAM	1	24		24.2	24.3	24.3	0.0	25.5
		12	0		22.2	22.3	22.4	2.0	23.5
		12	7		22.2	22.4	22.4	2.0	23.5
		12	13		22.2	22.4	22.3	2.0	23.5
		25	0		22.2	22.4	22.4	2.0	23.5
		1	0		22.5	22.9	22.8	2.0	23.5
	64QAM	1	12		22.3	22.6	22.7	2.0	23.5
		1	24		22.5	22.8	22.8	2.0	23.5
		12	0		21.3	21.4	21.4	2.0	23.5
		12	7		21.3	21.4	21.3	2.0	23.5
		12	13		21.3	21.4	21.4	2.0	23.5
		25	0		21.3	21.4	21.4	2.0	23.5
	256QAM	1	0		21.4	21.7	21.6	2.0	23.5
		1	12		21.4	21.7	21.6	2.0	23.5
		1	24		21.4	21.6	21.6	2.0	23.5
		12	0		20.3	21.7	21.6	3.0	22.5
		12	7		20.3	21.7	21.6	3.0	22.5
		12	13		20.3	21.7	21.6	3.0	22.5
QPSK	25	0		20.3	21.6	21.6	3.0	22.5	
	1	0		20.3	20.8	20.5	4.0	21.5	
	1	12		20.2	20.7	20.4	4.0	21.5	
	1	24		20.3	20.8	20.5	4.0	21.5	
	12	0		19.3	19.5	19.5	5.0	20.5	
	12	7		19.3	19.5	19.5	5.0	20.5	
16QAM	12	13		19.3	19.4	19.5	5.0	20.5	
	25	0		19.3	19.4	19.5	5.0	20.5	
	1	0		24.2	24.4	24.3	0.0	25.5	
	1	12		24.1	24.3	24.2	0.0	25.5	
	1	24		24.2	24.3	24.3	0.0	25.5	
	12	0		22.2	22.3	22.4	2.0	23.5	
64QAM	12	7		22.2	22.4	22.4	2.0	23.5	
	12	13		22.2	22.4	22.3	2.0	23.5	
	25	0		22.2	22.4	22.4	2.0	23.5	
	1	0		22.5	22.9	22.8	2.0	23.5	
	1	12		22.3	22.6	22.7	2.0	23.5	
	1	24		22.5	22.8	22.8	2.0	23.5	
256QAM	12	0		21.3	21.4	21.4	2.0	23.5	
	12	7		21.3	21.4	21.3	2.0	23.5	
	12	13		21.3	21.4	21.4	2.0	23.5	
	25	0		21.3	21.4	21.4	2.0	23.5	
	1	0		21.4	21.7	21.6	2.0	23.5	
	1	12		21.4	21.7	21.6	2.0	23.5	
QPSK	1	24		21.4	21.6	21.6	2.0	23.5	
	12	0		20.3	21.7	21.6	3.0	22.5	
	12	7		20.3	21.7	21.6	3.0	22.5	
	12	13		20.3	21.7	21.6	3.0	22.5	
	25	0		20.3	21.6	21.6	3.0	22.5	
	1	0		20.3	20.8	20.5	4.0	21.5	
16QAM	1	12		20.2	20.7	20.4	4.0	21.5	
	1	24		20.3	20.8	20.5	4.0	21.5	
	12	0		19.3	19.5	19.5	5.0	20.5	
	12	7		19.3	19.5	19.5	5.0	20.5	
	12	13		19.3	19.4	19.5	5.0	20.5	
	25	0		19.3	19.4	19.5	5.0	20.5	

LTE Band 5 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	24.3	24.3	24.4	0.0	25.5
		1	8	24.0	24.2	24.4	0.0	25.5
		1	14	24.3	24.3	24.4	0.0	25.5
		8	0	22.3	22.3	22.4	2.0	23.5
		8	4	22.2	22.3	22.3	2.0	23.5
		8	7	22.2	22.3	22.3	2.0	23.5
	16QAM	15	0	22.2	22.4	22.3	2.0	23.5
		1	0	22.3	22.8	22.7	2.0	23.5
		1	8	22.1	22.6	22.6	2.0	23.5
		1	14	22.2	22.8	22.5	2.0	23.5
		8	0	21.3	21.5	21.4	2.0	23.5
		8	4	21.3	21.4	21.4	2.0	23.5
	64QAM	8	7	21.3	21.5	21.4	2.0	23.5
		15	0	21.2	21.4	21.4	2.0	23.5
		1	0	21.5	21.6	21.6	2.0	23.5
		1	8	21.3	21.2	21.6	2.0	23.5
		1	14	21.4	21.6	21.6	2.0	23.5
		8	0	20.3	21.5	21.6	3.0	22.5
	256QAM	8	4	20.3	21.5	21.5	3.0	22.5
		8	7	20.3	21.5	21.6	3.0	22.5
		15	0	20.2	21.5	21.6	3.0	22.5
		1	0	20.4	20.7	20.6	4.0	21.5
		1	8	20.3	20.6	20.5	4.0	21.5
		1	14	20.1	20.7	20.5	4.0	21.5
1.4 MHz	QPSK	8	0	19.4	19.5	19.5	5.0	20.5
		8	4	19.3	19.4	19.5	5.0	20.5
		8	7	19.4	19.5	19.4	5.0	20.5
		8	7	19.4	19.5	19.5	5.0	20.5
		15	0	19.3	19.5	19.5	5.0	20.5
		1	0	24.4	24.4	24.5	0.0	25.5
	16QAM	1	3	24.2	24.2	24.2	0.0	25.5
		1	5	24.3	24.4	24.5	0.0	25.5
		3	0	24.4	24.4	24.3	0.0	25.5
		3	1	24.3	24.4	24.3	0.0	25.5
		3	3	24.3	24.4	24.3	0.0	25.5
		6	0	22.4	22.5	22.4	1.0	24.5
	64QAM	1	0	22.3	22.8	22.4	1.0	24.5
		1	3	22.5	22.9	22.5	1.0	24.5
		1	5	22.4	22.9	22.3	1.0	24.5
		3	0	22.4	22.5	22.5	1.0	24.5
		3	1	22.4	22.4	22.5	1.0	24.5
		3	3	22.5	22.6	22.4	1.0	24.5
	256QAM	6	0	21.5	21.5	21.6	2.0	23.5
		1	0	21.5	21.7	21.4	2.0	23.5
		1	3	21.4	21.6	21.4	2.0	23.5
		1	5	21.5	21.6	21.4	2.0	23.5
		3	0	21.4	21.6	21.5	2.0	23.5
		3	1	21.4	21.6	21.4	2.0	23.5
256QAM	3	3	21.2	21.5	21.4	2.0	23.5	
	6	0	20.4	21.5	21.4	3.0	22.5	
	1	0	20.1	20.4	20.5	5.0	20.5	
	1	3	20.1	20.5	20.5	5.0	20.5	
	1	5	20.1	20.5	20.5	5.0	20.5	
	3	0	20.2	20.3	20.5	5.0	20.5	
256QAM	3	1	20.1	20.3	20.5	5.0	20.5	
	3	3	20.1	20.3	20.5	5.0	20.5	
	6	0	19.3	19.5	19.4	5.0	20.5	

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					
				Measured Pwr (dBm)			MPR	Tune-up Limit	
				23060	23095	23130			
				704 MHz	707.5 MHz	711 MHz			
10 MHz	QPSK	1	0		25.2		0.0	25.3	
		1	25		25.2		0.0	25.3	
		1	49		25.1		0.0	25.3	
		25	0		22.6		2.0	23.3	
		25	12		22.6		2.0	23.3	
		25	25		22.6		2.0	23.3	
	16QAM	50	0		22.6		2.0	23.3	
		1	0		22.9		2.0	23.3	
		1	25		23.0		2.0	23.3	
		1	49		22.9		2.0	23.3	
		25	0		21.7		3.0	22.3	
		25	12		21.7		3.0	22.3	
	64QAM	25	25		21.7		3.0	22.3	
		50	0		21.6		3.0	22.3	
		1	0		21.6		3.0	22.3	
		1	25		21.6		3.0	22.3	
		1	49		21.6		3.0	22.3	
		25	0		20.5		3.0	22.3	
	256QAM	25	12		20.5		3.0	22.3	
		25	25		20.5		3.0	22.3	
		50	0		20.5		3.0	22.3	
		1	0		20.8		4.0	21.3	
		1	25		20.6		4.0	21.3	
		1	49		20.7		4.0	21.3	
5 MHz	QPSK	25	0		19.5		5.0	20.3	
		25	12		19.5		5.0	20.3	
		25	25		19.5		5.0	20.3	
		50	0		19.4		5.0	20.3	
		1	0		25.2	25.2	25.1	0.0	25.3
		1	12		25.2	25.1	25.1	0.0	25.3
	16QAM	1	24		25.3	25.2	25.2	0.0	25.3
		12	0		22.8	22.7	22.7	2.0	23.3
		12	7		22.8	22.7	22.6	2.0	23.3
		12	13		22.8	22.7	22.6	2.0	23.3
		25	0		22.8	22.7	22.6	2.0	23.3
		1	0		23.1	23.2	23.0	2.0	23.3
	64QAM	1	12		22.9	22.9	22.8	2.0	23.3
		1	24		23.0	23.2	23.0	2.0	23.3
		12	0		21.8	21.8	21.7	3.0	22.3
		12	7		21.8	21.8	21.7	3.0	22.3
		12	13		21.8	21.9	21.7	3.0	22.3
		25	0		21.8	21.7	21.6	3.0	22.3
	256QAM	1	0		22.1	21.7	21.5	3.0	22.3
		1	12		21.9	21.7	21.5	3.0	22.3
		1	24		22.0	21.7	21.5	3.0	22.3
		12	0		20.7	20.4	20.4	4.0	21.3
		12	7		20.7	20.4	20.4	4.0	21.3
		12	13		20.7	20.4	20.4	4.0	21.3
QPSK	25	0		20.7	20.5	20.5	4.0	21.3	
	1	0		21.1	20.5	20.6	4.0	21.3	
	1	12		20.9	20.4	20.4	4.0	21.3	
	1	24		21.0	20.6	20.5	4.0	21.3	
	12	0		19.7	19.6	19.6	5.0	20.3	
	12	7		19.7	19.6	19.5	5.0	20.3	
16QAM	12	13		19.7	19.6	19.5	5.0	20.3	
	25	0		19.6	19.6	19.5	5.0	20.3	
	1	0		21.1	20.5	20.6	4.0	21.3	
	1	12		20.9	20.4	20.4	4.0	21.3	
	1	24		21.0	20.6	20.5	4.0	21.3	
	12	0		19.7	19.6	19.6	5.0	20.3	
64QAM	12	7		19.7	19.6	19.5	5.0	20.3	
	12	13		19.7	19.6	19.5	5.0	20.3	
	25	0		19.6	19.6	19.5	5.0	20.3	
	1	0		21.1	20.5	20.6	4.0	21.3	
	1	12		20.9	20.4	20.4	4.0	21.3	
	1	24		21.0	20.6	20.5	4.0	21.3	
256QAM	12	0		19.7	19.6	19.6	5.0	20.3	
	12	7		19.7	19.6	19.5	5.0	20.3	
	12	13		19.7	19.6	19.5	5.0	20.3	
	25	0		19.6	19.6	19.5	5.0	20.3	
	1	0		21.1	20.5	20.6	4.0	21.3	
	1	12		20.9	20.4	20.4	4.0	21.3	

LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	25.2	25.2	25.2	0.0	25.3
		1	8	25.2	25.1	25.2	0.0	25.3
		1	14	25.3	25.1	25.3	0.0	25.3
		8	0	22.8	22.7	22.7	2.0	23.3
		8	4	22.8	22.7	22.7	2.0	23.3
		8	7	22.8	22.7	22.7	2.0	23.3
	16QAM	15	0	22.8	22.7	22.7	2.0	23.3
		1	0	22.9	23.0	23.1	2.0	23.3
		1	8	22.7	22.9	23.0	2.0	23.3
		1	14	22.8	23.1	23.0	2.0	23.3
		8	0	21.9	21.8	21.7	3.0	22.3
		8	4	21.9	21.8	21.6	3.0	22.3
	64QAM	8	7	21.9	21.8	21.6	3.0	22.3
		15	0	21.8	21.7	21.6	3.0	22.3
		1	0	21.8	21.5	21.8	3.0	22.3
		1	8	21.7	21.5	21.8	3.0	22.3
		1	14	21.9	21.5	21.8	3.0	22.3
		8	0	20.6	20.6	20.7	4.0	21.3
	256QAM	8	4	20.6	20.6	20.6	4.0	21.3
		8	7	20.7	20.7	20.6	4.0	21.3
		15	0	20.6	20.7	20.6	4.0	21.3
		1	0	20.9	20.9	20.6	4.0	21.3
		1	8	20.8	20.7	20.5	4.0	21.3
		1	14	20.9	20.9	20.6	4.0	21.3
1.4 MHz	QPSK	8	0	19.7	19.7	19.6	5.0	20.3
		8	4	19.7	19.6	19.6	5.0	20.3
		8	7	19.7	19.7	19.5	5.0	20.3
		15	0	19.6	19.7	19.6	5.0	20.3
		1	0	25.1	25.2	25.2	0.0	25.3
		1	3	25.0	24.9	25.0	0.0	25.3
	16QAM	1	5	25.2	25.1	25.2	0.0	25.3
		3	0	25.2	25.2	25.0	0.0	25.3
		3	1	25.1	25.2	25.0	0.0	25.3
		3	3	25.1	25.1	25.0	0.0	25.3
		6	0	22.8	22.8	22.7	2.0	23.3
		1	0	22.7	22.9	22.7	2.0	23.3
	64QAM	1	3	22.8	23.1	22.8	2.0	23.3
		1	5	22.8	23.0	22.8	2.0	23.3
		3	0	22.9	22.7	22.7	2.0	23.3
		3	1	22.9	22.7	22.7	2.0	23.3
		3	3	22.9	22.8	22.6	2.0	23.3
		6	0	21.9	21.8	21.8	3.0	22.3
	256QAM	1	0	21.7	21.6	21.5	3.0	22.3
		1	3	21.5	21.6	21.5	3.0	22.3
		1	5	21.7	21.6	21.5	3.0	22.3
		3	0	21.8	21.6	21.5	3.0	22.3
		3	1	21.8	21.6	21.5	3.0	22.3
		3	3	21.7	21.7	21.5	3.0	22.3
QPSK	6	0	20.8	20.7	20.6	4.0	21.3	
	1	0	20.6	20.8	20.5	4.0	21.3	
	1	3	20.4	20.6	20.5	4.0	21.3	
	1	5	20.6	20.8	20.5	4.0	21.3	
	3	0	20.6	20.6	20.8	4.0	21.3	
	3	1	20.6	20.5	20.7	4.0	21.3	
16QAM	3	3	20.6	20.5	20.8	4.0	21.3	
	6	0	19.7	19.7	19.6	5.0	20.3	

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				23230	782 MHz			
10 MHz	QPSK	1	0	24.9	0.0	25.3		
		1	25	25.0	0.0	25.3		
		1	49	24.9	0.0	25.3		
		25	0	22.5	2.0	23.3		
		25	12	22.5	2.0	23.3		
		25	25	22.5	2.0	23.3		
	16QAM	50	0	22.5	2.0	23.3		
		1	0	22.9	2.0	23.3		
		1	25	22.9	2.0	23.3		
		1	49	22.8	2.0	23.3		
		25	0	21.6	3.0	22.3		
		25	12	21.5	3.0	22.3		
	64QAM	25	25	21.5	3.0	22.3		
		50	0	21.5	3.0	22.3		
		1	0	21.6	3.0	22.3		
		1	25	21.7	3.0	22.3		
		1	49	21.6	3.0	22.3		
		25	0	20.5	4.0	21.3		
	256QAM	25	12	20.5	4.0	21.3		
		25	25	20.5	4.0	21.3		
		50	0	20.5	4.0	21.3		
		1	0	20.8	4.0	21.3		
		1	25	20.8	4.0	21.3		
		1	49	20.8	4.0	21.3		
5 MHz	QPSK	25	0	19.5	5.0	20.3		
		25	12	19.5	5.0	20.3		
		25	25	19.5	5.0	20.3		
		50	0	19.5	5.0	20.3		
		1	0	25.0	0.0	25.3		
		1	12	24.9	0.0	25.3		
	16QAM	1	24	25.1	0.0	25.3		
		12	0	22.6	2.0	23.3		
		12	7	22.6	2.0	23.3		
		12	13	22.5	2.0	23.3		
		25	0	22.6	2.0	23.3		
		1	0	23.1	2.0	23.3		
	64QAM	1	12	22.7	2.0	23.3		
		1	24	23.0	2.0	23.3		
		12	0	21.7	3.0	22.3		
		12	7	21.7	3.0	22.3		
		12	13	21.7	3.0	22.3		
		25	0	21.6	3.0	22.3		
	256QAM	1	0	21.8	3.0	22.3		
		1	12	21.8	3.0	22.3		
		1	24	21.8	3.0	22.3		
		12	0	21.8	3.0	22.3		
		12	7	21.8	3.0	22.3		
		12	13	21.8	3.0	22.3		
	25	0	21.8	3.0	22.3			
	1	0	21.0	4.0	21.3			
	1	12	20.9	4.0	21.3			
	1	24	20.9	4.0	21.3			
	12	0	19.6	5.0	20.3			
	12	7	19.6	5.0	20.3			
	12	13	19.5	5.0	20.3			
	25	0	19.5	5.0	20.3			
	12	13	19.5	5.0	20.3			
	25	0	19.5	5.0	20.3			
	12	13	19.5	5.0	20.3			
	25	0	19.5	5.0	20.3			

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26140	26365	26590		
				1860 MHz	1882.5 MHz	1905 MHz		
20 MHz	QPSK	1	0	24.0	24.1	24.2	0.0	25.0
		1	49	24.0	24.1	24.2	0.0	25.0
		1	99	24.0	24.1	24.2	0.0	25.0
		50	0	22.1	22.2	22.3	2.0	23.0
		50	24	22.1	22.2	22.3	2.0	23.0
		50	50	22.0	22.2	22.3	2.0	23.0
	16QAM	100	0	22.1	22.2	22.3	2.0	23.0
		1	0	22.3	22.6	22.6	2.0	23.0
		1	49	22.4	22.6	22.6	2.0	23.0
		1	99	22.3	22.6	22.6	2.0	23.0
		50	0	21.0	21.2	21.2	2.0	23.0
		50	24	21.0	21.2	21.3	2.0	23.0
	64QAM	50	50	21.0	21.2	21.2	2.0	23.0
		100	0	21.0	21.2	21.2	2.0	23.0
		1	0	21.3	21.3	21.4	2.0	23.0
		1	49	21.3	21.3	21.4	2.0	23.0
		1	99	21.2	21.3	21.3	2.0	23.0
		50	0	20.0	21.3	21.3	3.0	22.0
	256QAM	50	24	20.1	21.3	21.4	3.0	22.0
		50	50	20.1	21.3	21.3	3.0	22.0
		100	0	20.0	21.3	21.3	3.0	22.0
		1	0	20.4	20.5	20.4	4.0	21.0
		1	49	20.4	20.5	20.3	4.0	21.0
		1	99	20.3	20.5	20.4	4.0	21.0
15 MHz	QPSK	50	0	19.1	19.1	19.2	5.0	20.0
		50	24	19.1	19.2	19.3	5.0	20.0
		50	50	19.0	19.2	19.2	5.0	20.0
		100	0	19.1	19.2	19.2	5.0	20.0
		1	0	24.1	24.1	24.2	0.0	25.0
		1	37	24.0	24.1	24.2	0.0	25.0
	16QAM	1	74	24.0	24.1	24.2	0.0	25.0
		36	0	22.1	22.2	22.2	2.0	23.0
		36	20	22.1	22.2	22.3	2.0	23.0
		36	39	22.1	22.2	22.2	2.0	23.0
		75	0	22.1	22.2	22.2	2.0	23.0
		1	0	22.4	22.5	22.6	2.0	23.0
	64QAM	1	37	22.3	22.4	22.6	2.0	23.0
		1	74	22.3	22.5	22.6	2.0	23.0
		36	0	21.1	21.2	21.2	2.0	23.0
		36	20	21.0	21.1	21.2	2.0	23.0
		36	39	21.0	21.2	21.2	2.0	23.0
		75	0	21.1	21.1	21.2	2.0	23.0
	256QAM	1	0	21.3	21.3	21.2	2.0	23.0
		1	37	21.2	21.3	21.2	2.0	23.0
		1	74	21.2	21.3	21.2	2.0	23.0
		36	0	20.1	21.3	21.2	3.0	22.0
		36	20	20.1	21.3	21.2	3.0	22.0
		36	39	20.1	21.3	21.2	3.0	22.0
QPSK	75	0	20.1	21.4	21.2	3.0	22.0	
	1	0	20.2	20.4	20.3	4.0	21.0	
	1	37	20.0	20.5	20.4	4.0	21.0	
	1	74	20.1	20.5	20.3	4.0	21.0	
	36	0	19.1	19.2	19.2	5.0	20.0	
	36	20	19.1	19.2	19.2	5.0	20.0	
16QAM	36	39	19.1	19.2	19.2	5.0	20.0	
	75	0	19.1	19.2	19.2	5.0	20.0	
	1	0	24.1	24.1	24.2	0.0	25.0	
	1	37	24.0	24.1	24.2	0.0	25.0	
	1	74	24.0	24.1	24.2	0.0	25.0	
	36	0	22.1	22.2	22.2	2.0	23.0	
64QAM	36	20	22.1	22.2	22.3	2.0	23.0	
	36	39	22.1	22.2	22.2	2.0	23.0	
	75	0	22.1	22.2	22.2	2.0	23.0	
	1	0	22.4	22.5	22.6	2.0	23.0	
	1	37	22.3	22.4	22.6	2.0	23.0	
	1	74	22.3	22.5	22.6	2.0	23.0	
256QAM	36	0	21.1	21.2	21.2	2.0	23.0	
	36	20	21.0	21.1	21.2	2.0	23.0	
	36	39	21.0	21.2	21.2	2.0	23.0	
	75	0	21.1	21.1	21.2	2.0	23.0	
	1	0	21.3	21.3	21.2	2.0	23.0	
	1	37	21.2	21.3	21.2	2.0	23.0	
QPSK	1	74	21.2	21.3	21.2	2.0	23.0	
	36	0	20.1	21.3	21.2	3.0	22.0	
	36	20	20.1	21.3	21.2	3.0	22.0	
	36	39	20.1	21.3	21.2	3.0	22.0	
	75	0	20.1	21.4	21.2	3.0	22.0	
	1	0	20.2	20.4	20.3	4.0	21.0	
16QAM	1	37	20.0	20.5	20.4	4.0	21.0	
	1	74	20.1	20.5	20.3	4.0	21.0	
	36	0	19.1	19.2	19.2	5.0	20.0	
	36	20	19.1	19.2	19.2	5.0	20.0	
	36	39	19.1	19.2	19.2	5.0	20.0	
	75	0	19.1	19.2	19.2	5.0	20.0	

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	24.1	24.1	24.1	0.0	25.0
		1	25	24.0	24.1	24.1	0.0	25.0
		1	49	24.1	24.1	24.1	0.0	25.0
		25	0	22.1	22.2	22.1	2.0	23.0
		25	12	22.1	22.1	22.1	2.0	23.0
		25	25	22.1	22.2	22.1	2.0	23.0
	16QAM	50	0	22.1	22.2	22.1	2.0	23.0
		1	0	22.2	22.4	22.4	2.0	23.0
		1	25	22.2	22.4	22.4	2.0	23.0
		1	49	22.2	22.4	22.4	2.0	23.0
		25	0	21.1	21.2	21.1	2.0	23.0
		25	12	21.1	21.2	21.1	2.0	23.0
	64QAM	25	25	21.1	21.2	21.1	2.0	23.0
		50	0	21.1	21.1	21.1	2.0	23.0
		1	0	21.2	21.3	20.9	2.0	23.0
		1	25	21.2	21.3	20.9	2.0	23.0
		1	49	21.2	21.3	20.9	2.0	23.0
		25	0	20.1	21.3	20.9	3.0	22.0
	256QAM	25	12	20.1	21.3	20.9	3.0	22.0
		25	25	20.1	21.3	20.9	3.0	22.0
		50	0	20.1	21.3	20.9	3.0	22.0
		1	0	20.2	20.4	20.3	4.0	21.0
		1	25	20.2	20.4	20.4	4.0	21.0
		1	49	20.2	20.4	20.3	4.0	21.0
5 MHz	QPSK	25	0	19.2	19.2	19.1	5.0	20.0
		25	12	19.2	19.2	19.1	5.0	20.0
		25	25	19.1	19.2	19.2	5.0	20.0
		50	0	19.1	19.2	19.1	5.0	20.0
		1	0	24.1	24.1	24.0	0.0	25.0
		1	12	24.1	24.1	23.9	0.0	25.0
	16QAM	1	24	24.1	24.1	24.0	0.0	25.0
		12	0	22.1	22.1	22.1	2.0	23.0
		12	7	22.1	22.1	22.1	2.0	23.0
		12	13	22.1	22.2	22.1	2.0	23.0
		25	0	22.1	22.2	22.1	2.0	23.0
		1	0	22.4	22.6	22.4	2.0	23.0
	64QAM	1	12	22.3	22.3	22.3	2.0	23.0
		1	24	22.4	22.7	22.4	2.0	23.0
		12	0	21.2	21.2	21.1	2.0	23.0
		12	7	21.2	21.2	21.1	2.0	23.0
		12	13	21.2	21.2	21.1	2.0	23.0
		25	0	21.2	21.1	21.1	2.0	23.0
	256QAM	1	0	21.1	21.4	21.2	2.0	23.0
		1	12	21.1	21.4	21.2	2.0	23.0
		1	24	21.1	21.4	21.2	2.0	23.0
		12	0	20.1	21.4	21.2	3.0	22.0
		12	7	20.1	21.4	21.2	3.0	22.0
		12	13	20.1	21.4	21.2	3.0	22.0
256QAM	25	0	20.1	21.4	21.2	3.0	22.0	
	1	0	20.1	20.5	20.1	4.0	21.0	
	1	12	20.0	20.4	20.0	4.0	21.0	
	12	0	19.2	19.2	19.1	5.0	20.0	
	12	7	19.2	19.2	19.1	5.0	20.0	
	12	13	19.2	19.2	19.1	5.0	20.0	
25	0	19.2	19.2	19.1	5.0	20.0		

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	24.2	24.1	24.0	0.0	25.0
		1	8	24.0	24.0	24.0	0.0	25.0
		1	14	24.2	24.0	24.1	0.0	25.0
		8	0	22.1	22.2	22.1	2.0	23.0
		8	4	22.1	22.1	22.0	2.0	23.0
		8	7	22.1	22.1	22.1	2.0	23.0
	16QAM	15	0	22.1	22.1	22.1	2.0	23.0
		1	0	22.2	22.4	22.4	2.0	23.0
		1	8	22.2	22.3	22.4	2.0	23.0
		1	14	22.2	22.5	22.3	2.0	23.0
		8	0	21.2	21.2	21.1	2.0	23.0
		8	4	21.2	21.2	21.1	2.0	23.0
	64QAM	8	7	21.2	21.2	21.1	2.0	23.0
		15	0	21.1	21.1	21.0	2.0	23.0
		1	0	21.3	21.4	21.0	2.0	23.0
		1	8	21.2	21.4	21.0	2.0	23.0
		1	14	21.2	21.4	20.9	2.0	23.0
		8	0	20.1	21.4	21.1	3.0	22.0
	256QAM	8	4	20.1	21.4	20.9	3.0	22.0
		8	7	20.2	21.4	21.1	3.0	22.0
		15	0	20.2	21.4	21.1	3.0	22.0
		1	0	20.2	20.4	20.4	4.0	21.0
		1	8	20.1	20.3	20.3	4.0	21.0
		1	14	20.3	20.4	20.2	4.0	21.0
1.4 MHz	QPSK	8	0	19.2	19.3	19.1	5.0	20.0
		8	4	19.2	19.3	19.1	5.0	20.0
		8	7	19.2	19.3	19.1	5.0	20.0
		15	0	19.2	19.2	19.1	5.0	20.0
		1	0	24.2	24.2	24.0	0.0	25.0
		1	3	24.0	23.9	23.7	0.0	25.0
	16QAM	1	5	24.2	24.2	24.0	0.0	25.0
		3	0	24.1	24.1	24.0	0.0	25.0
		3	1	24.1	24.1	23.9	0.0	25.0
		3	3	24.1	24.0	24.0	0.0	25.0
		6	0	22.1	22.2	22.1	1.0	24.0
		1	0	22.2	22.1	22.3	1.0	24.0
	64QAM	1	3	22.1	22.1	22.6	1.0	24.0
		1	5	22.3	22.3	22.4	1.0	24.0
		3	0	22.3	22.1	22.0	1.0	24.0
		3	1	22.3	22.2	22.0	1.0	24.0
		3	3	22.2	22.2	22.1	1.0	24.0
		6	0	21.3	21.3	21.1	2.0	23.0
	256QAM	1	0	21.5	21.2	21.4	2.0	23.0
		1	3	21.3	21.2	21.0	2.0	23.0
		1	5	21.2	21.1	21.4	2.0	23.0
		3	0	21.2	21.2	21.0	2.0	23.0
		3	1	21.2	21.2	21.2	2.0	23.0
		3	3	21.2	21.2	21.4	2.0	23.0
QPSK	6	0	20.4	21.2	21.3	3.0	22.0	
	1	0	20.3	20.1	20.2	4.0	21.0	
	1	3	20.1	20.3	20.0	4.0	21.0	
	3	0	20.1	20.3	19.9	4.0	21.0	
	3	1	20.1	20.2	20.0	4.0	21.0	
	3	3	20.1	20.3	19.9	4.0	21.0	
16QAM	6	0	19.2	19.2	19.1	5.0	20.0	
	1	0	24.2	24.2	24.0	0.0	25.0	
	1	3	24.0	23.9	23.7	0.0	25.0	
	1	5	24.2	24.2	24.0	0.0	25.0	
	3	0	24.1	24.1	24.0	0.0	25.0	
	3	1	24.1	24.1	23.9	0.0	25.0	
64QAM	3	3	24.1	24.0	24.0	0.0	25.0	
	6	0	22.1	22.2	22.1	1.0	24.0	
	1	0	22.2	22.1	22.3	1.0	24.0	
	1	3	22.1	22.1	22.6	1.0	24.0	
	1	5	22.3	22.3	22.4	1.0	24.0	
	3	0	22.3	22.1	22.0	1.0	24.0	
256QAM	3	1	22.3	22.2	22.0	1.0	24.0	
	3	3	22.2	22.2	22.1	1.0	24.0	
	6	0	21.3	21.3	21.1	2.0	23.0	
	1	0	21.5	21.2	21.4	2.0	23.0	
	1	3	21.3	21.2	21.0	2.0	23.0	
	1	5	21.2	21.1	21.4	2.0	23.0	
QPSK	3	0	21.2	21.2	21.0	2.0	23.0	
	3	1	21.2	21.2	21.2	2.0	23.0	
	3	3	21.2	21.2	21.4	2.0	23.0	
	6	0	20.4	21.2	21.3	3.0	22.0	
	1	0	20.3	20.1	20.2	4.0	21.0	
	1	3	20.1	20.3	20.0	4.0	21.0	
16QAM	3	0	20.1	20.3	19.9	4.0	21.0	
	3	1	20.1	20.2	20.0	4.0	21.0	
	3	3	20.1	20.3	19.9	4.0	21.0	
	6	0	19.2	19.2	19.1	5.0	20.0	
	1	0	24.2	24.2	24.0	0.0	25.0	
	1	3	24.0	23.9	23.7	0.0	25.0	
64QAM	1	5	24.2	24.2	24.0	0.0	25.0	
	3	0	24.1	24.1	24.0	0.0	25.0	
	3	1	24.1	24.1	23.9	0.0	25.0	
	3	3	24.1	24.0	24.0	0.0	25.0	
	6	0	22.1	22.2	22.1	1.0	24.0	
	1	0	22.2	22.1	22.3	1.0	24.0	
256QAM	1	3	22.1	22.1	22.6	1.0	24.0	
	1	5	22.3	22.3	22.4	1.0	24.0	
	3	0	22.3	22.1	22.0	1.0	24.0	
	3	1	22.3	22.2	22.0	1.0	24.0	
	3	3	22.2	22.2	22.1	1.0	24.0	
	6	0	21.3	21.3	21.1	2.0	23.0	
QPSK	1	0	21.5	21.2	21.4	2.0	23.0	
	1	3	21.3	21.2	21.0	2.0	23.0	
	1	5	21.2	21.1	21.4	2.0	23.0	
	3	0	21.2	21.2	21.0	2.0	23.0	
	3	1	21.2	21.2	21.2	2.0	23.0	
	3	3	21.2	21.2	21.4	2.0	23.0	
16QAM	6	0	20.4	21.2	21.3	3.0	22.0	
	1	0	20.3	20.1	20.2	4.0	21.0	
	1	3	20.1	20.3	20.0	4.0	21.0	
	3	0	20.1	20.3	19.9	4.0	21.0	
	3	1	20.1	20.2	20.0	4.0	21.0	
	3	3	20.1	20.3	19.9	4.0	21.0	
64QAM	6	0	19.2	19.2	19.1	5.0	20.0	
	1	0	24.2	24.2	24.0	0.0	25.0	
	1	3	24.0	23.9	23.7	0.0	25.0	
	1	5	24.2	24.2	24.0	0.0	25.0	
	3	0	24.1	24.1	24.0	0.0	25.0	
	3	1	24.1	24.1	23.9	0.0	25.0	
256QAM	3	3	24.1	24.0	24.0	0.0	25.0	
	6	0	22.1	22.2	22.1	1.0	24.0	
	1	0	22.2	22.1	22.3	1.0	24.0	
	1	3	22.1	22.1	22.6	1.0	24.0	
	1	5	22.3	22.3	22.4	1.0	24.0	
	3	0	22.3	22.1	22.0	1.0	24.0	
QPSK	3	1	22.3	22.2	22.0	1.0	24.0	
	3	3	22.2	22.2	22.1	1.0	24.0	
	6	0	21.3	21.3	21.1	2.0	23.0	
	1	0	21.5	21.2	21.4	2.0	23.0	
	1	3	21.3	21.2	21.0	2.0	23.0	
	1	5	21.2	21.1	21.4	2.0	23.0	
16QAM	3	0	21.2	21.2	21.0	2.0	23.0	
	3	1	21.2	21.2	21.2	2.0	23.0	
	3	3	21.2	21.2	21.4	2.0	23.0	
	6	0	20.4	21.2	21.3	3.0	22.0	
	1	0	20.3	20.1	20.2	4.0	21.0	
	1	3	20.1	20.3	20.0	4.0	21.0	
64QAM	3	0	20.1	20.3	19.9	4.0	21.0	
	3	1	20.1	20.2	20.0	4.0	21.0	
	3	3	20.1	20.3	19.9	4.0	21.0	
	6	0	19.2	19.2	19.1	5.0	20.0	
	1	0	24.2	24.2	24.0	0.0	25.0	
	1	3	24.0	23.9	23.7	0.0	25.0	
256QAM	1	5	24.2	24.2	24.0	0.0	25.0	
	3	0	24.1	24.1	24.0	0.0	25.0	
	3	1	24.1	24.1	23.9	0.0	25.0	
	3	3	24.1	24.0	24.0	0.0	25.0	
	6	0	22.1	22.2	22.1	1.0	24.0	
	1	0	22.2	22.1	22.3	1.0	24.0	
QPSK	1	3	22.1	22.1	22.6	1.0	24.0	
	1	5	22.3	22.3	22.4	1.0	24.0	
	3	0	22.3	22.1	22.0	1.0	24.0	
	3	1	22.3	22.2	22.0	1.0	24.0	
	3	3	22.2	22.2	22.1	1.0	24.0	
	6	0	21.3	21.3	21.1	2.0	23.0	
16QAM	1	0	21.5	21.2	21.4	2.0	23.0	
	1	3	21.3	21.2	21.0	2.0	23.0	
	1	5	21.2	21.1	21.4	2.0	23.0	
	3	0	21.2	21.2	21.0	2.0	23.0	
	3	1	21.2	21.2	21.2	2.0	23.0	
	3	3	21.2	21.2	21.4	2.0	23.0	
64QAM	6	0	20.4	21.2	21.3	3.0	22.0	
	1	0	20.3	20.1	20.2	4.0	21.0	
	1	3	20.1	20.3	20.0	4.0	21.0	
	3	0	20.1	20.3	19.9	4.0	21.0	
	3	1	20.1	20.2	20.0	4.0	21.0	
	3	3	20.1	20.3	19.9	4.0	21.0	
256QAM	6	0	19.2	19.2	19.1	5.0	20.0	
	1	0	24.2	24.2	24.0	0.0	25.0	
	1	3	24.0	23.9	23.7	0.0	25.0	
	1	5	24.2	24.2	24.0	0.0		

LTE Band 26 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				26765	26865	26965		
				821.5 MHz	831.5 MHz	841.5 MHz		
15 MHz	QPSK	1	0		24.6		0.0	25.5
		1	37		24.6		0.0	25.5
		1	74		24.7		0.0	25.5
		36	0		22.2		2.0	23.5
		36	20		22.2		2.0	23.5
		36	39		22.2		2.0	23.5
		75	0		22.2		2.0	23.5
	16QAM	1	0		22.4		2.0	23.5
		1	37		22.3		2.0	23.5
		1	74		22.4		2.0	23.5
		36	0		21.2		3.0	22.5
		36	20		21.2		3.0	22.5
		36	39		21.2		3.0	22.5
		75	0		21.2		3.0	22.5
	64QAM	1	0		21.4		3.0	22.5
		1	37		21.4		3.0	22.5
		1	74		21.4		3.0	22.5
		36	0		20.2		4.0	21.5
		36	20		20.2		4.0	21.5
		36	39		20.2		4.0	21.5
		75	0		20.2		4.0	21.5
	256QAM	1	0		20.3		4.0	21.5
		1	37		20.3		4.0	21.5
		1	74		20.4		4.0	21.5
36		0		19.2		5.0	20.5	
36		20		19.2		5.0	20.5	
36		39		19.2		5.0	20.5	
75		0		19.2		5.0	20.5	
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26740	26865	26990		
				819 MHz	831.5 MHz	844 MHz		
				10 MHz	QPSK	1	0	25.0
1	25	24.9	24.8			25.1	0.0	25.5
1	49	25.0	24.8			25.1	0.0	25.5
25	0	22.5	22.3			22.6	2.0	23.5
25	12	22.5	22.3			22.6	2.0	23.5
25	25	22.5	22.3			22.6	2.0	23.5
16QAM	50	0	22.5		22.3	22.6	2.0	23.5
	1	0	22.6		22.5	22.9	2.0	23.5
	1	25	22.6		22.7	22.9	2.0	23.5
	1	49	22.6		22.6	22.8	2.0	23.5
	25	0	21.5		21.3	21.6	3.0	22.5
	25	12	21.5		21.3	21.6	3.0	22.5
64QAM	25	25	21.4		21.4	21.6	3.0	22.5
	50	0	21.5		21.3	21.5	3.0	22.5
	1	0	21.6		21.2	21.4	3.0	22.5
	1	25	21.6		21.2	21.4	3.0	22.5
	1	49	21.5		21.2	21.4	3.0	22.5
	25	0	20.5		20.2	20.6	4.0	21.5
256QAM	25	12	20.4		20.2	20.6	4.0	21.5
	25	25	20.4		20.2	20.6	4.0	21.5
	50	0	20.4		20.2	20.6	4.0	21.5
	1	0	20.6		20.5	20.8	4.0	21.5
	1	25	20.5		20.5	20.7	4.0	21.5
	1	49	20.5		20.5	20.7	4.0	21.5
	25	0	19.5	19.3	19.6	5.0	20.5	
	25	12	19.5	19.3	19.5	5.0	20.5	
25	25	19.5	19.3	19.5	5.0	20.5		
50	0	19.4	19.3	19.5	5.0	20.5		

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				26715	26865	27015		
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	25.1	24.8	25.1	0.0	25.5
		1	12	25.1	24.8	25.0	0.0	25.5
		1	24	25.2	24.8	25.1	0.0	25.5
		12	0	22.7	22.3	22.6	2.0	23.5
		12	7	22.7	22.3	22.6	2.0	23.5
		12	13	22.6	22.3	22.6	2.0	23.5
	16QAM	25	0	22.7	22.3	22.6	2.0	23.5
		1	0	23.0	22.6	23.0	2.0	23.5
		1	12	22.8	22.4	22.7	2.0	23.5
		1	24	23.1	22.6	22.9	2.0	23.5
		12	0	21.7	21.3	21.7	3.0	22.5
		12	7	21.7	21.3	21.7	3.0	22.5
	64QAM	12	13	21.7	21.3	21.7	3.0	22.5
		25	0	21.6	21.3	21.6	3.0	22.5
		1	0	21.8	21.4	21.4	3.0	22.5
		1	12	21.7	21.4	21.4	3.0	22.5
		1	24	21.7	21.4	21.4	3.0	22.5
		12	0	20.6	20.1	20.5	4.0	21.5
	256QAM	12	7	20.6	20.1	20.4	4.0	21.5
		12	13	20.5	20.1	20.5	4.0	21.5
		25	0	20.5	20.2	20.5	4.0	21.5
		1	0	20.9	20.3	20.6	4.0	21.5
		1	12	20.5	20.2	20.5	4.0	21.5
		1	24	20.9	20.3	20.5	4.0	21.5
	3 MHz	QPSK	12	0	19.6	19.3	19.6	5.0
12			7	19.6	19.3	19.6	5.0	20.5
12			13	19.6	19.3	19.5	5.0	20.5
25			0	19.5	19.3	19.5	5.0	20.5
1			0	25.3	24.8	25.1	0.0	25.5
1			8	25.1	24.7	25.1	0.0	25.5
16QAM		1	14	25.3	24.8	25.2	0.0	25.5
		8	0	22.7	22.3	22.6	2.0	23.5
		8	4	22.7	22.3	22.6	2.0	23.5
		8	7	22.7	22.4	22.6	2.0	23.5
	15	0	22.7	22.3	22.6	2.0	23.5	
	1	0	22.9	22.8	22.9	2.0	23.5	
64QAM	1	8	22.7	22.7	22.8	2.0	23.5	
	1	14	22.8	22.9	22.8	2.0	23.5	
	8	0	21.7	21.4	21.6	3.0	22.5	
	8	4	21.7	21.4	21.5	3.0	22.5	
	8	7	21.7	21.3	21.5	3.0	22.5	
	15	0	21.7	21.3	21.5	3.0	22.5	
256QAM	1	0	21.7	21.4	21.6	3.0	22.5	
	1	8	21.7	21.4	21.6	3.0	22.5	
	1	14	21.7	21.4	21.6	3.0	22.5	
	8	0	20.6	20.4	20.4	4.0	21.5	
	8	4	20.6	20.4	20.4	4.0	21.5	
	8	7	20.7	20.3	20.4	4.0	21.5	
	15	0	20.6	20.4	20.5	4.0	21.5	
	1	0	20.7	20.3	20.6	4.0	21.5	
	1	8	20.6	20.3	20.5	4.0	21.5	
8	0	19.7	19.4	19.6	5.0	20.5		
8	4	19.7	19.4	19.5	5.0	20.5		
8	7	19.7	19.4	19.6	5.0	20.5		
15	0	19.7	19.3	19.6	5.0	20.5		

LTE Band 26 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
				26697	26865	27033		
				814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	25.2	24.8	25.1	0.0	25.5
		1	3	25.1	24.6	24.9	0.0	25.5
		1	5	25.2	24.8	25.1	0.0	25.5
		3	0	25.2	24.9	25.0	0.0	25.5
		3	1	25.2	24.9	25.0	0.0	25.5
		3	3	25.1	24.8	25.0	0.0	25.5
	16QAM	6	0	22.8	22.4	22.7	2.0	23.5
		1	0	22.6	22.6	22.5	2.0	23.5
		1	3	22.7	22.7	22.7	2.0	23.5
		1	5	22.7	22.7	22.6	2.0	23.5
		3	0	22.8	22.2	22.7	2.0	23.5
		3	1	22.8	22.3	22.6	2.0	23.5
	64QAM	3	3	22.9	22.3	22.6	2.0	23.5
		6	0	21.9	21.4	21.7	3.0	22.5
		1	0	22.0	21.3	21.4	3.0	22.5
		1	3	21.8	21.3	21.4	3.0	22.5
		1	5	21.9	21.3	21.4	3.0	22.5
		3	0	21.7	21.3	21.4	3.0	22.5
	256QAM	3	1	21.7	21.3	21.4	3.0	22.5
		3	3	21.7	21.3	21.4	3.0	22.5
		6	0	20.8	20.3	20.5	3.0	22.5
		1	0	20.7	20.4	20.5	4.0	21.5
		1	3	20.5	20.3	20.5	4.0	21.5
		1	5	20.6	20.5	20.4	4.0	21.5
		3	0	20.7	20.2	20.6	4.0	21.5
		3	1	20.7	20.1	20.5	4.0	21.5
		3	3	20.5	20.1	20.6	4.0	21.5
6		0	19.7	19.3	19.5	5.0	20.5	

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
				Measured Pwr (dBm)			MPR	Tune-up Limit
				132072 1720 MHz	132322 1745 MHz	132572 1770 MHz		
20 MHz	QPSK	1	0	23.3	23.2	23.6	0.0	24
		1	49	23.4	23.3	23.5	0.0	24
		1	99	23.4	23.2	23.4	0.0	24
		50	0	22.4	22.3	22.6	1.0	23
		50	24	22.5	22.3	22.5	1.0	23
		50	50	22.5	22.3	22.5	1.0	23
	16QAM	100	0	22.5	22.3	22.5	1.0	23
		1	0	22.7	22.6	22.7	1.0	23
		1	49	22.7	22.5	22.8	1.0	23
		1	99	22.7	22.4	22.6	1.0	23
		50	0	21.4	21.3	21.6	2.0	22
		50	24	21.4	21.3	21.5	2.0	22
	64QAM	50	50	21.4	21.2	21.4	2.0	22
		100	0	21.5	21.3	21.5	2.0	22
		1	0	21.6	21.5	21.7	2.0	22
		1	49	21.6	21.5	21.7	2.0	22
		1	99	21.6	21.5	21.4	2.0	22
		50	0	20.6	20.5	20.5	3.0	21
	256QAM	50	24	20.6	20.5	20.5	3.0	21
		50	50	20.6	20.5	20.4	3.0	21
		100	0	20.6	20.5	20.5	3.0	21
		1	0	18.5	18.7	18.7	5.0	19
		1	49	18.3	18.7	18.6	5.0	19
		1	99	18.5	18.6	18.5	5.0	19
15 MHz	QPSK	50	0	18.4	18.3	18.5	5.0	19
		50	24	18.4	18.3	18.5	5.0	19
		50	50	18.4	18.2	18.4	5.0	19
		100	0	18.4	18.2	18.5	5.0	19
		1	0	23.5	23.3	23.6	0.0	24
		1	37	23.5	23.3	23.5	0.0	24
	16QAM	1	74	23.5	23.2	23.4	0.0	24
		36	0	22.5	22.3	22.5	1.0	23
		36	20	22.6	22.3	22.5	1.0	23
		36	39	22.6	22.3	22.5	1.0	23
		75	0	22.6	22.3	22.6	1.0	23
		1	0	22.8	22.6	22.9	1.0	23
	64QAM	1	37	22.7	22.5	22.9	1.0	23
		1	74	22.7	22.4	22.8	1.0	23
		36	0	21.5	21.3	21.6	2.0	22
		36	20	21.5	21.3	21.6	2.0	22
		36	39	21.5	21.3	21.5	2.0	22
		75	0	21.5	21.3	21.5	2.0	22
	256QAM	1	0	21.7	21.4	21.5	2.0	22
		1	37	21.7	21.5	21.6	2.0	22
		1	74	21.8	21.5	21.6	2.0	22
		36	0	20.5	20.5	20.6	3.0	21
		36	20	20.5	20.5	20.6	3.0	21
		36	39	20.5	20.5	20.6	3.0	21
QPSK	75	0	20.5	20.5	20.6	3.0	21	
	1	0	18.5	18.5	18.7	5.0	19	
	1	37	18.3	18.5	18.6	5.0	19	
	1	74	18.5	18.4	18.5	5.0	19	
	36	0	18.5	18.3	18.4	5.0	19	
	36	20	18.5	18.3	18.4	5.0	19	
16QAM	36	39	18.5	18.2	18.4	5.0	19	
	75	0	18.5	18.3	18.4	5.0	19	
	1	0	23.5	23.3	23.6	0.0	24	
	1	37	23.5	23.3	23.5	0.0	24	
	1	74	23.5	23.2	23.4	0.0	24	
	36	0	22.5	22.3	22.5	1.0	23	
64QAM	36	20	22.6	22.3	22.5	1.0	23	
	36	39	22.6	22.3	22.5	1.0	23	
	75	0	22.6	22.3	22.6	1.0	23	
	1	0	22.8	22.6	22.9	1.0	23	
	1	37	22.7	22.5	22.9	1.0	23	
	1	74	22.7	22.4	22.8	1.0	23	
256QAM	36	0	21.5	21.3	21.6	2.0	22	
	36	20	21.5	21.3	21.6	2.0	22	
	36	39	21.5	21.3	21.5	2.0	22	
	75	0	21.5	21.3	21.5	2.0	22	
	1	0	21.7	21.4	21.5	2.0	22	
	1	37	21.7	21.5	21.6	2.0	22	
QPSK	1	74	21.8	21.5	21.6	2.0	22	
	36	0	20.5	20.5	20.6	3.0	21	
	36	20	20.5	20.5	20.6	3.0	21	
	36	39	20.5	20.5	20.6	3.0	21	
	75	0	20.5	20.5	20.6	3.0	21	
	1	0	18.5	18.5	18.7	5.0	19	
16QAM	1	37	18.3	18.5	18.6	5.0	19	
	1	74	18.5	18.4	18.5	5.0	19	
	36	0	18.5	18.3	18.4	5.0	19	
	36	20	18.5	18.3	18.4	5.0	19	
	36	39	18.5	18.2	18.4	5.0	19	
	75	0	18.5	18.3	18.4	5.0	19	

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	23.6	23.3	23.5	0.0	24
		1	25	23.5	23.3	23.4	0.0	24
		1	49	23.6	23.3	23.4	0.0	24
		25	0	22.7	22.3	22.5	1.0	23
		25	12	22.6	22.3	22.4	1.0	23
		25	25	22.6	22.3	22.4	1.0	23
	16QAM	50	0	22.6	22.3	22.4	1.0	23
		1	0	22.9	22.7	22.8	1.0	23
		1	25	22.9	22.7	22.7	1.0	23
		1	49	22.8	22.6	22.7	1.0	23
		25	0	21.7	21.4	21.5	2.0	22
		25	12	21.7	21.3	21.5	2.0	22
	64QAM	25	25	21.6	21.3	21.4	2.0	22
		50	0	21.6	21.3	21.4	2.0	22
		1	0	21.9	21.5	21.5	2.0	22
		1	25	21.8	21.4	21.6	2.0	22
		1	49	21.8	21.4	21.6	2.0	22
		25	0	20.7	20.4	20.6	3.0	21
	256QAM	25	12	20.7	20.4	20.5	3.0	21
		25	25	20.6	20.4	20.6	3.0	21
		50	0	20.6	20.4	20.6	3.0	21
		1	0	18.5	18.5	18.5	5.0	19
		1	25	18.5	18.3	18.4	5.0	19
		1	49	18.5	18.3	18.4	5.0	19
5 MHz	QPSK	25	0	18.7	18.3	18.5	5.0	19
		25	12	18.7	18.3	18.4	5.0	19
		25	25	18.6	18.3	18.4	5.0	19
		50	0	18.6	18.3	18.4	5.0	19
		1	0	23.6	23.3	23.4	0.0	24
		1	12	23.6	23.2	23.3	0.0	24
	16QAM	1	24	23.6	23.3	23.4	0.0	24
		12	0	22.7	22.3	22.4	1.0	23
		12	7	22.7	22.3	22.4	1.0	23
		12	13	22.7	22.3	22.4	1.0	23
		25	0	22.7	22.3	22.4	1.0	23
		1	0	22.9	22.6	22.8	1.0	23
	64QAM	1	12	22.8	22.5	22.6	1.0	23
		1	24	22.9	22.6	22.7	1.0	23
		12	0	21.8	21.3	21.4	2.0	22
		12	7	21.8	21.3	21.4	2.0	22
		12	13	21.8	21.3	21.5	2.0	22
		25	0	21.7	21.3	21.4	2.0	22
	256QAM	1	0	21.8	21.5	21.6	2.0	22
		1	12	21.8	21.5	21.6	2.0	22
		1	24	21.8	21.5	21.6	2.0	22
		12	0	20.6	20.5	20.6	3.0	21
		12	7	20.6	20.5	20.6	3.0	21
		12	13	20.6	20.5	20.6	3.0	21
QPSK	25	0	20.6	20.5	20.6	3.0	21	
	1	0	18.5	18.6	18.3	5.0	19	
	1	12	18.4	18.5	18.1	5.0	19	
	1	24	18.5	18.5	18.3	5.0	19	
	12	0	18.7	18.3	18.4	5.0	19	
	12	7	18.6	18.3	18.4	5.0	19	
16QAM	12	13	18.6	18.3	18.4	5.0	19	
	25	0	18.7	18.2	18.4	5.0	19	
	1	0	23.6	23.3	23.4	0.0	24	
	1	12	23.6	23.2	23.3	0.0	24	
	1	24	23.6	23.3	23.4	0.0	24	
	12	0	22.7	22.3	22.4	1.0	23	
64QAM	12	7	22.7	22.3	22.4	1.0	23	
	12	13	22.7	22.3	22.4	1.0	23	
	25	0	22.7	22.3	22.4	1.0	23	
	1	0	22.9	22.6	22.8	1.0	23	
	1	12	22.8	22.5	22.6	1.0	23	
	1	24	22.9	22.6	22.7	1.0	23	
256QAM	12	0	21.8	21.3	21.4	2.0	22	
	12	7	21.8	21.3	21.5	2.0	22	
	25	0	21.7	21.3	21.4	2.0	22	
	1	0	21.8	21.5	21.6	2.0	22	
	1	12	21.8	21.5	21.6	2.0	22	
	1	24	21.8	21.5	21.6	2.0	22	
QPSK	12	0	20.6	20.5	20.6	3.0	21	
	12	7	20.6	20.5	20.6	3.0	21	
	12	13	20.6	20.5	20.6	3.0	21	
	25	0	20.6	20.5	20.6	3.0	21	
	1	0	18.5	18.6	18.3	5.0	19	
	1	12	18.4	18.5	18.1	5.0	19	
16QAM	1	24	18.5	18.5	18.3	5.0	19	
	12	0	18.7	18.3	18.4	5.0	19	
	12	7	18.6	18.3	18.4	5.0	19	
	12	13	18.6	18.3	18.4	5.0	19	
	25	0	18.7	18.2	18.4	5.0	19	
	1	0	18.7	18.2	18.4	5.0	19	

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pw r (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	23.7	23.3	23.4	0.0	24
		1	8	23.6	23.3	23.4	0.0	24
		1	14	23.7	23.3	23.5	0.0	24
		8	0	22.7	22.4	22.4	1.0	23
		8	4	22.6	22.3	22.4	1.0	23
		8	7	22.7	22.3	22.4	1.0	23
	16QAM	15	0	22.7	22.3	22.4	1.0	23
		1	0	22.8	22.7	22.6	1.0	23
		1	8	22.7	22.5	22.7	1.0	23
		1	14	22.9	22.6	22.7	1.0	23
		8	0	21.8	21.4	21.5	2.0	22
		8	4	21.8	21.3	21.4	2.0	22
	64QAM	8	7	21.8	21.3	21.5	2.0	22
		15	0	21.7	21.3	21.4	2.0	22
		1	0	21.7	21.5	21.5	2.0	22
		1	8	21.9	21.5	21.4	2.0	22
		1	14	22.0	21.5	21.4	2.0	22
		8	0	20.7	20.4	20.4	3.0	21
	256QAM	8	4	20.7	20.4	20.4	3.0	21
		8	7	20.7	20.4	20.4	3.0	21
		15	0	20.7	20.3	20.4	3.0	21
		1	0	18.7	18.5	18.5	5.0	19
		1	8	18.6	18.3	18.4	5.0	19
		1	14	18.7	18.3	18.5	5.0	19
1.4 MHz	QPSK	8	0	18.7	18.4	18.4	5.0	19
		8	4	18.7	18.4	18.4	5.0	19
		8	7	18.7	18.4	18.4	5.0	19
		15	0	18.7	18.3	18.4	5.0	19
		1	0	23.7	23.4	23.4	0.0	24
		1	3	23.5	23.2	23.2	0.0	24
	16QAM	1	5	23.6	23.3	23.4	0.0	24
		3	0	23.7	23.3	23.3	0.0	24
		3	1	23.6	23.3	23.4	0.0	24
		3	3	23.6	23.3	23.3	0.0	24
		6	0	22.7	22.4	22.5	1.0	23
		1	0	22.6	22.7	22.5	1.0	23
	64QAM	1	3	22.5	22.8	22.5	1.0	23
		1	5	22.8	22.8	22.5	1.0	23
		3	0	22.7	22.3	22.5	1.0	23
		3	1	22.7	22.4	22.5	1.0	23
		3	3	22.7	22.4	22.4	1.0	23
		6	0	21.9	21.3	21.6	2.0	22
	256QAM	1	0	21.8	21.5	21.5	2.0	22
		1	3	21.9	21.5	21.5	2.0	22
		1	5	21.9	21.5	21.4	2.0	22
		3	0	21.7	21.5	21.4	2.0	22
		3	1	21.6	21.5	21.6	2.0	22
		3	3	21.7	21.6	21.5	2.0	22
QPSK	6	0	20.8	20.4	20.4	3.0	21	
	1	0	18.5	18.1	18.5	5.0	19	
	1	3	18.5	17.9	18.4	5.0	19	
	1	5	18.8	18.1	18.6	5.0	19	
	3	0	18.8	18.2	18.3	5.0	19	
	3	1	18.8	18.2	18.3	5.0	19	
16QAM	3	3	18.9	18.1	18.3	5.0	19	
	6	0	18.8	18.3	18.4	5.0	19	
	1	0	23.7	23.4	23.4	0.0	24	
	1	3	23.5	23.2	23.2	0.0	24	
	1	5	23.6	23.3	23.4	0.0	24	
	3	0	23.7	23.3	23.3	0.0	24	
64QAM	3	1	23.6	23.3	23.4	0.0	24	
	3	3	23.6	23.3	23.3	0.0	24	
	6	0	22.7	22.4	22.5	1.0	23	
	1	0	22.6	22.7	22.5	1.0	23	
	1	3	22.5	22.8	22.5	1.0	23	
	1	5	22.8	22.8	22.5	1.0	23	
256QAM	3	0	22.7	22.3	22.5	1.0	23	
	3	1	22.7	22.4	22.5	1.0	23	
	3	3	22.7	22.4	22.4	1.0	23	
	6	0	21.9	21.3	21.6	2.0	22	
	1	0	21.8	21.5	21.5	2.0	22	
	1	3	21.9	21.5	21.5	2.0	22	
QPSK	1	5	21.9	21.5	21.4	2.0	22	
	3	0	21.7	21.5	21.4	2.0	22	
	3	1	21.6	21.5	21.6	2.0	22	
	3	3	21.7	21.6	21.5	2.0	22	
	6	0	20.8	20.4	20.4	3.0	21	
	1	0	18.5	18.1	18.5	5.0	19	
16QAM	1	3	18.5	17.9	18.4	5.0	19	
	1	5	18.8	18.1	18.6	5.0	19	
	3	0	18.8	18.2	18.3	5.0	19	
	3	1	18.8	18.2	18.3	5.0	19	
	3	3	18.9	18.1	18.3	5.0	19	
	6	0	18.8	18.3	18.4	5.0	19	

2. Reduced power Results

LTE Band 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18700	18900	19100			18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz			1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	20.3	20.4	20.5	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		1	49	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		1	99	20.3	20.4	20.5	0.0	21.0	20.2	20.4	20.6	0.0	21.0
		50	0	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		50	24	20.3	20.5	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		50	50	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
	16QAM	100	0	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		1	0	20.5	20.8	21.0	0.0	21.0	20.5	20.7	20.8	0.0	21.0
		1	49	20.6	20.8	21.0	0.0	21.0	20.6	20.7	20.8	0.0	21.0
		1	99	20.4	20.7	21.0	0.0	21.0	20.5	20.6	20.7	0.0	21.0
		50	0	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		50	24	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
	64QAM	50	50	20.3	20.4	20.6	0.0	21.0	20.2	20.4	20.6	0.0	21.0
		100	0	20.3	20.4	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0
		1	0	20.6	20.6	20.6	0.0	21.0	20.3	20.4	20.8	0.0	21.0
		1	49	20.6	20.5	20.6	0.0	21.0	20.2	20.5	20.8	0.0	21.0
		1	99	20.5	20.5	20.6	0.0	21.0	20.3	20.4	20.8	0.0	21.0
		50	0	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.8	0.0	21.0
	256QAM	50	24	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		50	50	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		100	0	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		1	0	19.0	19.1	19.3	1.0	20.0	19.0	19.1	19.2	1.0	20.0
		1	49	19.0	19.2	19.3	1.0	20.0	19.0	19.2	19.1	1.0	20.0
		1	99	19.0	19.1	19.3	1.0	20.0	19.0	19.1	19.2	1.0	20.0
15 MHz	QPSK	50	0	18.8	18.9	19.1	1.0	20.0	18.8	18.9	19.1	1.0	20.0
		50	50	18.8	18.9	19.1	1.0	20.0	18.8	18.9	19.1	1.0	20.0
		100	0	18.8	18.9	19.1	1.0	20.0	18.8	18.9	19.1	1.0	20.0
		1	0	20.6	20.6	20.6	0.0	21.0	20.3	20.4	20.8	0.0	21.0
		1	49	20.6	20.5	20.6	0.0	21.0	20.2	20.5	20.8	0.0	21.0
		1	99	20.5	20.5	20.6	0.0	21.0	20.3	20.4	20.8	0.0	21.0
	16QAM	50	0	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.8	0.0	21.0
		50	24	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		50	50	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		100	0	20.3	20.5	20.6	0.0	21.0	20.2	20.5	20.7	0.0	21.0
		1	0	20.7	20.8	20.9	0.0	21.0	20.5	20.6	20.9	0.0	21.0
		1	37	20.6	20.7	20.8	0.0	21.0	20.5	20.5	20.9	0.0	21.0
	64QAM	1	74	20.6	20.7	20.9	0.0	21.0	20.5	20.6	20.9	0.0	21.0
		36	0	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		36	20	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		36	39	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		75	0	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.6	0.0	21.0
		1	0	20.5	20.7	20.5	0.0	21.0	20.4	20.5	20.6	0.0	21.0
	256QAM	1	37	20.5	20.7	20.5	0.0	21.0	20.4	20.5	20.7	0.0	21.0
		1	74	20.5	20.7	20.4	0.0	21.0	20.3	20.5	20.7	0.0	21.0
		36	0	20.3	20.7	20.5	0.0	21.0	20.3	20.5	20.6	0.0	21.0
		36	20	20.3	20.7	20.5	0.0	21.0	20.3	20.5	20.6	0.0	21.0
		36	39	20.3	20.7	20.4	0.0	21.0	20.3	20.5	20.6	0.0	21.0
		75	0	20.3	20.7	20.4	0.0	21.0	20.3	20.5	20.6	0.0	21.0
256QAM	1	0	19.0	19.1	19.2	1.0	20.0	19.0	19.2	19.2	1.0	20.0	
	1	37	18.8	19.1	19.2	1.0	20.0	18.8	19.2	19.2	1.0	20.0	
	1	74	18.9	19.1	19.2	1.0	20.0	18.9	19.2	19.2	1.0	20.0	
	36	0	18.8	19.0	19.1	1.0	20.0	18.8	19.0	19.1	1.0	20.0	
	36	20	18.8	19.0	19.0	1.0	20.0	18.8	19.0	19.1	1.0	20.0	
	36	39	18.8	19.0	19.0	1.0	20.0	18.8	18.9	19.0	1.0	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	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		1	25	20.4	20.4	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
		1	49	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		25	0	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		25	12	20.4	20.5	20.5	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
	16QAM	25	25	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		50	0	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		1	0	20.6	20.6	20.9	0.0	21.0	20.5	20.8	20.8	0.0	21.0	
		1	25	20.6	20.5	20.9	0.0	21.0	20.4	20.7	20.8	0.0	21.0	
		1	49	20.6	20.5	21.0	0.0	21.0	20.4	20.8	20.8	0.0	21.0	
	64QAM	25	0	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
		25	12	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.5	0.0	21.0	
		25	25	20.4	20.5	20.6	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
		50	0	20.4	20.5	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
		1	0	20.5	20.6	20.4	0.0	21.0	20.5	20.4	20.4	0.0	21.0	
	256QAM	1	25	20.4	20.6	20.5	0.0	21.0	20.5	20.4	20.4	0.0	21.0	
		1	49	20.3	20.6	20.4	0.0	21.0	20.6	20.4	20.4	0.0	21.0	
		25	0	20.4	20.5	20.4	0.0	21.0	20.4	20.4	20.4	0.0	21.0	
		25	12	20.3	20.6	20.4	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
		25	25	20.4	20.6	20.4	0.0	21.0	20.3	20.4	20.4	0.0	21.0	
	5 MHz	QPSK	50	0	20.3	20.6	20.4	0.0	21.0	20.3	20.4	20.5	0.0	21.0
			1	0	18.9	19.1	19.1	1.0	20.0	18.8	19.0	19.2	1.0	20.0
			1	25	18.9	19.1	19.0	1.0	20.0	18.9	19.0	19.1	1.0	20.0
			1	49	18.9	19.0	19.1	1.0	20.0	18.8	19.0	19.1	1.0	20.0
			25	0	18.9	19.0	19.0	1.0	20.0	18.9	19.0	19.0	1.0	20.0
16QAM		25	12	18.9	19.0	19.0	1.0	20.0	18.9	18.9	19.0	1.0	20.0	
		25	25	18.9	19.0	19.0	1.0	20.0	18.9	19.0	19.0	1.0	20.0	
		50	0	18.9	19.0	19.0	1.0	20.0	18.8	18.9	19.0	1.0	20.0	
		1	0	20.8	20.8	20.8	0.0	21.0	20.6	20.7	20.7	0.0	21.0	
		1	12	20.8	20.9	20.8	0.0	21.0	20.4	20.3	20.5	0.0	21.0	
64QAM	1	24	20.8	20.8	20.8	0.0	21.0	20.5	20.7	20.7	0.0	21.0		
	12	0	20.5	20.5	20.5	0.0	21.0	20.4	20.5	20.4	0.0	21.0		
	12	7	20.5	20.5	20.5	0.0	21.0	20.4	20.5	20.4	0.0	21.0		
	12	13	20.5	20.5	20.5	0.0	21.0	20.4	20.5	20.4	0.0	21.0		
	25	0	20.5	20.5	20.5	0.0	21.0	20.4	20.5	20.4	0.0	21.0		
256QAM	1	0	20.8	20.5	20.5	0.0	21.0	20.3	20.5	20.4	0.0	21.0		
	1	12	20.8	20.5	20.5	0.0	21.0	20.6	20.6	20.4	0.0	21.0		
	1	24	20.8	20.5	20.5	0.0	21.0	20.6	20.5	20.4	0.0	21.0		
	12	0	20.3	20.5	20.5	0.0	21.0	20.3	20.5	20.4	0.0	21.0		
	12	7	20.3	20.5	20.5	0.0	21.0	20.3	20.5	20.4	0.0	21.0		
256QAM	12	13	20.3	20.5	20.5	0.0	21.0	20.3	20.5	20.4	0.0	21.0		
	25	0	20.3	20.5	20.5	0.0	21.0	20.3	20.5	20.4	0.0	21.0		
	1	0	19.2	18.9	19.0	1.0	20.0	19.0	19.0	19.2	1.0	20.0		
	1	12	19.1	18.8	19.0	1.0	20.0	19.1	19.1	19.2	1.0	20.0		
	1	24	19.2	18.9	19.1	1.0	20.0	19.1	19.1	19.2	1.0	20.0		
256QAM	12	0	18.9	18.9	18.9	1.0	20.0	18.9	18.9	18.9	1.0	20.0		
	12	7	18.9	18.9	18.9	1.0	20.0	18.9	18.9	19.0	1.0	20.0		
	12	13	18.9	19.0	18.9	1.0	20.0	19.0	18.9	19.0	1.0	20.0		
25	0	18.8	18.9	19.0	1.0	20.0	18.9	18.9	18.9	1.0	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	20.5	20.6	20.5	0.0	21.0	20.4	20.4	20.5	0.0	21.0
		1	8	20.4	20.5	20.4	0.0	21.0	20.2	20.3	20.5	0.0	21.0
		1	14	20.5	20.6	20.5	0.0	21.0	20.4	20.3	20.5	0.0	21.0
		8	0	20.5	20.5	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0
		8	4	20.4	20.5	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0
		8	7	20.5	20.5	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0
	16QAM	15	0	20.4	20.5	20.5	0.0	21.0	20.3	20.4	20.4	0.0	21.0
		1	0	20.7	20.7	20.8	0.0	21.0	20.6	20.7	20.9	0.0	21.0
		1	8	20.5	20.6	20.7	0.0	21.0	20.3	20.5	20.8	0.0	21.0
		1	14	20.6	20.6	20.8	0.0	21.0	20.5	20.8	20.8	0.0	21.0
		8	0	20.4	20.5	20.6	0.0	21.0	20.4	20.5	20.5	0.0	21.0
		8	4	20.4	20.6	20.6	0.0	21.0	20.4	20.4	20.4	0.0	21.0
	64QAM	8	7	20.4	20.6	20.6	0.0	21.0	20.4	20.4	20.5	0.0	21.0
		15	0	20.4	20.5	20.5	0.0	21.0	20.4	20.4	20.5	0.0	21.0
		1	0	20.5	20.6	20.4	0.0	21.0	20.4	20.7	20.4	0.0	21.0
		1	8	20.5	20.6	20.4	0.0	21.0	20.4	20.5	20.3	0.0	21.0
		1	14	20.7	20.6	20.4	0.0	21.0	20.4	20.6	20.3	0.0	21.0
		8	0	20.4	20.5	20.4	0.0	21.0	20.3	20.7	20.5	0.0	21.0
	256QAM	8	4	20.3	20.8	20.4	0.0	21.0	20.3	20.5	20.5	0.0	21.0
		8	7	20.4	20.5	20.4	0.0	21.0	20.3	20.6	20.5	0.0	21.0
		15	0	20.3	20.6	20.4	0.0	21.0	20.3	20.7	20.5	0.0	21.0
1		0	18.7	19.2	19.2	1.0	20.0	18.9	19.1	19.1	1.0	20.0	
1		8	18.7	19.0	19.0	1.0	20.0	18.8	18.9	19.1	1.0	20.0	
1		14	18.9	19.0	19.0	1.0	20.0	18.8	19.0	19.0	1.0	20.0	
1.4 MHz	QPSK	8	0	19.0	19.0	19.0	1.0	20.0	19.0	19.0	19.0	1.0	20.0
		8	4	19.0	19.0	19.0	1.0	20.0	19.0	19.0	18.9	1.0	20.0
		8	7	18.9	19.0	19.0	1.0	20.0	19.0	19.0	19.0	1.0	20.0
		15	0	18.9	18.9	19.0	1.0	20.0	18.9	18.9	19.0	1.0	20.0
		1	0	20.5	20.6	20.7	0.0	21.0	20.6	20.5	20.5	0.0	21.0
		1	3	20.2	20.4	20.4	0.0	21.0	20.2	20.3	20.2	0.0	21.0
	16QAM	1	5	20.5	20.5	20.6	0.0	21.0	20.4	20.4	20.5	0.0	21.0
		3	0	20.4	20.6	20.6	0.0	21.0	20.4	20.5	20.5	0.0	21.0
		3	1	20.4	20.5	20.5	0.0	21.0	20.4	20.5	20.3	0.0	21.0
		3	3	20.4	20.5	20.6	0.0	21.0	20.4	20.4	20.4	0.0	21.0
		6	0	20.5	20.6	20.7	0.0	21.0	20.4	20.5	20.5	0.0	21.0
		1	0	20.4	20.5	21.0	0.0	21.0	20.6	20.4	20.8	0.0	21.0
	64QAM	1	3	20.6	20.5	20.9	0.0	21.0	20.5	20.3	20.8	0.0	21.0
		1	5	20.6	20.5	21.0	0.0	21.0	20.5	20.4	20.7	0.0	21.0
		3	0	20.6	20.4	20.5	0.0	21.0	20.5	20.4	20.5	0.0	21.0
		3	1	20.6	20.5	20.5	0.0	21.0	20.5	20.4	20.4	0.0	21.0
		3	3	20.6	20.5	20.7	0.0	21.0	20.4	20.5	20.5	0.0	21.0
		6	0	20.7	20.7	20.6	0.0	21.0	20.6	20.6	20.4	0.0	21.0
	256QAM	1	0	20.5	20.3	20.7	0.0	21.0	20.5	20.3	20.6	0.0	21.0
		1	3	20.4	20.2	20.7	0.0	21.0	20.4	20.3	20.8	0.0	21.0
		1	5	20.3	20.3	20.7	0.0	21.0	20.4	20.3	20.6	0.0	21.0
3		0	20.5	20.3	20.4	0.0	21.0	20.5	20.5	20.7	0.0	21.0	
3		1	20.5	20.3	20.6	0.0	21.0	20.5	20.3	20.6	0.0	21.0	
3		3	20.4	20.3	20.6	0.0	21.0	20.4	20.3	20.7	0.0	21.0	
256QAM	6	0	20.6	20.4	20.7	0.0	21.0	20.6	20.1	20.8	0.0	21.0	
	1	0	19.3	18.9	19.0	1.0	20.0	19.0	19.0	18.9	1.0	20.0	
	1	3	19.1	19.0	18.8	1.0	20.0	19.1	19.0	18.9	1.0	20.0	
	1	5	19.3	18.9	19.0	1.0	20.0	19.3	19.0	19.0	1.0	20.0	
	3	0	18.8	19.1	18.9	1.0	20.0	18.8	19.1	18.9	1.0	20.0	
	3	1	18.8	19.1	19.0	1.0	20.0	18.8	19.1	18.9	1.0	20.0	
1.4 MHz	QPSK	3	3	18.9	19.1	18.9	1.0	20.0	18.9	19.1	18.8	1.0	20.0
		6	0	19.0	19.0	19.0	1.0	20.0	18.9	19.0	19.0	1.0	20.0

LTE Band 25 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26140 1860 MHz	26365 1882.5 MHz	26590 1905 MHz			26140 1860 MHz	26365 1882.5 MHz	26590 1905 MHz		
20 MHz	QPSK	1	0	20.6	20.4	20.8	0.0	21.5	20.7	20.6	21.0	0.0	21.5
		1	49	20.6	20.4	21.0	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	99	20.6	20.4	20.7	0.0	21.5	20.8	20.6	20.9	0.0	21.5
		50	0	20.6	20.5	20.8	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		50	24	20.6	20.5	21.0	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		50	50	20.6	20.5	20.7	0.0	21.5	20.8	20.7	21.0	0.0	21.5
	16QAM	100	0	20.6	20.5	20.8	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	0	20.9	20.7	21.1	0.0	21.5	20.9	21.0	21.3	0.0	21.5
		1	49	21.0	20.8	21.0	0.0	21.5	21.1	21.1	21.2	0.0	21.5
		1	99	20.9	20.8	20.9	0.0	21.5	21.0	21.0	21.2	0.0	21.5
		50	0	20.5	20.4	20.8	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		50	24	20.6	20.4	20.7	0.0	21.5	20.9	20.7	21.0	0.0	21.5
	64QAM	50	50	20.6	20.4	20.7	0.0	21.5	20.9	20.7	20.9	0.0	21.5
		100	0	20.6	20.4	20.7	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	0	20.7	20.6	21.0	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	49	20.8	20.6	21.1	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	99	20.8	20.5	21.1	0.0	21.5	20.9	20.6	20.9	0.0	21.5
		50	0	20.6	20.6	21.0	0.0	21.5	20.8	20.7	21.0	0.0	21.5
	256QAM	50	24	20.7	20.6	21.1	0.0	21.5	20.8	20.7	20.9	0.0	21.5
		50	50	20.7	20.6	21.0	0.0	21.5	20.8	20.7	20.9	0.0	21.5
		100	0	20.6	20.6	21.0	0.0	21.5	20.8	20.7	20.9	0.0	21.5
		1	0	19.2	19.4	19.5	1.0	20.5	19.5	19.4	19.7	1.0	20.5
		1	49	19.3	19.4	19.4	1.0	20.5	19.6	19.4	19.7	1.0	20.5
		1	99	19.4	19.4	19.5	1.0	20.5	19.6	19.5	19.6	1.0	20.5
15 MHz	QPSK	50	0	19.1	19.0	19.3	1.0	20.5	19.3	19.2	19.5	1.0	20.5
		50	24	19.2	19.0	19.3	1.0	20.5	19.4	19.2	19.5	1.0	20.5
		50	50	19.2	19.0	19.3	1.0	20.5	19.4	19.2	19.5	1.0	20.5
		100	0	19.2	19.0	19.3	1.0	20.5	19.4	19.2	19.5	1.0	20.5
		1	0	20.6	20.5	21.0	0.0	21.5	20.8	20.7	21.1	0.0	21.5
		1	37	20.7	20.6	20.9	0.0	21.5	20.8	20.6	21.1	0.0	21.5
	16QAM	1	74	20.6	20.5	20.9	0.0	21.5	20.7	20.7	21.0	0.0	21.5
		36	0	20.7	20.6	21.0	0.0	21.5	20.8	20.7	21.1	0.0	21.5
		36	20	20.8	20.6	21.0	0.0	21.5	20.9	20.8	21.1	0.0	21.5
		36	39	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.1	0.0	21.5
		75	0	20.8	20.6	21.0	0.0	21.5	20.9	20.7	21.1	0.0	21.5
		1	0	21.0	21.0	21.2	0.0	21.5	20.9	21.0	21.4	0.0	21.5
	64QAM	1	37	21.0	21.0	21.1	0.0	21.5	20.9	20.9	21.3	0.0	21.5
		1	74	21.0	21.0	21.1	0.0	21.5	20.9	21.0	21.3	0.0	21.5
		36	0	20.7	20.6	20.9	0.0	21.5	20.8	20.8	21.1	0.0	21.5
		36	20	20.8	20.7	20.9	0.0	21.5	20.8	20.7	21.1	0.0	21.5
		36	39	20.8	20.6	20.9	0.0	21.5	20.8	20.7	21.1	0.0	21.5
		75	0	20.7	20.6	20.9	0.0	21.5	20.8	20.7	21.1	0.0	21.5
	256QAM	1	0	21.0	20.7	21.0	0.0	21.5	20.8	20.8	21.1	0.0	21.5
		1	37	21.0	20.7	21.0	0.0	21.5	20.9	20.8	20.9	0.0	21.5
		1	74	21.1	20.7	21.0	0.0	21.5	20.8	20.8	21.1	0.0	21.5
		36	0	20.8	20.7	21.0	0.0	21.5	20.9	20.8	21.0	0.0	21.5
		36	20	20.8	20.7	21.0	0.0	21.5	20.9	20.8	21.0	0.0	21.5
		36	39	20.8	20.7	21.0	0.0	21.5	20.9	20.8	21.0	0.0	21.5
256QAM	75	0	20.8	20.7	21.0	0.0	21.5	20.9	20.7	21.1	0.0	21.5	
	1	0	19.4	19.4	19.6	1.0	20.5	19.4	19.3	19.7	1.0	20.5	
	1	37	19.3	19.4	19.6	1.0	20.5	19.4	19.2	19.6	1.0	20.5	
	1	74	19.4	19.5	19.7	1.0	20.5	19.5	19.3	19.7	1.0	20.5	
	36	0	19.3	19.2	19.6	1.0	20.5	19.3	19.2	19.5	1.0	20.5	
	36	20	19.3	19.2	19.6	1.0	20.5	19.3	19.2	19.5	1.0	20.5	

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26090	26365	26640			26090	26365	26640		
				1855 MHz	1882.5 MHz	1910 MHz			1855 MHz	1882.5 MHz	1910 MHz		
10 MHz	QPSK	1	0	20.8	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	25	20.7	20.5	20.8	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	49	20.7	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		25	0	20.7	20.5	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		25	12	20.8	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		25	25	20.8	20.5	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
	16QAM	50	0	20.7	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		1	0	20.9	21.0	21.0	0.0	21.5	21.1	20.9	21.3	0.0	21.5
		1	25	20.9	21.0	21.0	0.0	21.5	21.0	20.9	21.4	0.0	21.5
		1	49	21.0	21.0	21.1	0.0	21.5	21.1	20.9	21.4	0.0	21.5
		25	0	20.7	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		25	12	20.8	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
	64QAM	25	25	20.8	20.6	20.9	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		50	0	20.7	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		1	0	21.0	20.6	20.8	0.0	21.5	20.9	20.6	21.5	0.0	21.5
		1	25	21.0	20.7	20.8	0.0	21.5	21.0	20.6	21.0	0.0	21.5
		1	49	21.0	20.6	20.8	0.0	21.5	21.0	20.5	21.1	0.0	21.5
		25	0	20.8	20.7	20.9	0.0	21.5	21.0	20.6	21.0	0.0	21.5
	256QAM	25	12	20.8	20.7	20.7	0.0	21.5	21.0	20.6	21.0	0.0	21.5
		25	25	20.9	20.7	20.7	0.0	21.5	20.9	20.6	21.1	0.0	21.5
		50	0	20.8	20.6	20.8	0.0	21.5	20.9	20.5	21.0	0.0	21.5
		1	0	19.5	19.3	19.6	1.0	20.5	19.4	19.3	19.5	1.0	20.5
		1	25	19.4	19.3	19.6	1.0	20.5	19.4	19.3	19.5	1.0	20.5
		1	49	19.5	19.3	19.6	1.0	20.5	19.5	19.4	19.5	1.0	20.5
	5 MHz	QPSK	25	0	19.4	19.3	19.5	1.0	20.5	19.3	19.2	19.6	1.0
25			12	19.4	19.3	19.5	1.0	20.5	19.4	19.2	19.6	1.0	20.5
25			25	19.4	19.3	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5
50			0	19.4	19.2	19.5	1.0	20.5	19.3	19.2	19.5	1.0	20.5
1			0	20.8	20.6	20.9	0.0	21.5	20.8	20.6	20.9	0.0	21.5
1			12	20.7	20.5	20.8	0.0	21.5	20.8	20.6	20.8	0.0	21.5
16QAM		1	24	20.8	20.6	20.9	0.0	21.5	20.9	20.7	20.9	0.0	21.5
		12	0	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		12	7	20.7	20.6	20.8	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		12	13	20.8	20.6	20.8	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		25	0	20.7	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		25	0	20.7	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
64QAM		1	0	21.0	21.0	21.2	0.0	21.5	21.1	21.0	21.3	0.0	21.5
		1	12	20.8	20.6	21.0	0.0	21.5	20.8	20.8	21.1	0.0	21.5
		1	24	20.9	20.9	21.2	0.0	21.5	21.1	21.1	21.3	0.0	21.5
		12	0	20.8	20.6	20.9	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		12	7	20.8	20.6	20.9	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		12	13	20.8	20.6	20.9	0.0	21.5	21.0	20.7	21.0	0.0	21.5
256QAM		25	0	20.7	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		1	0	21.1	20.6	21.3	0.0	21.5	20.8	20.7	21.3	0.0	21.5
		1	12	21.1	20.6	21.3	0.0	21.5	20.8	20.7	21.2	0.0	21.5
		1	24	21.2	20.6	21.3	0.0	21.5	20.8	20.7	21.3	0.0	21.5
		12	0	20.9	20.6	21.3	0.0	21.5	20.8	20.7	21.0	0.0	21.5
		12	7	20.9	20.6	21.2	0.0	21.5	20.8	20.7	21.0	0.0	21.5
256QAM		12	13	20.9	20.6	21.2	0.0	21.5	20.8	20.7	21.0	0.0	21.5
	25	0	20.9	20.6	21.3	0.0	21.5	20.8	20.7	21.1	0.0	21.5	
	1	0	19.4	19.1	19.9	1.0	20.5	19.4	19.2	19.9	1.0	20.5	
	1	12	19.3	19.0	19.8	1.0	20.5	19.4	19.0	19.8	1.0	20.5	
	1	24	19.5	19.1	19.8	1.0	20.5	19.5	19.2	19.9	1.0	20.5	
	12	0	19.4	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
256QAM	12	7	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
	12	13	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
	25	0	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
	25	0	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
	25	0	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	
	25	0	19.5	19.2	19.5	1.0	20.5	19.3	19.2	19.6	1.0	20.5	

LTE Band 25 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				26055	26365	26675			26055	26365	26675		
				1851.5 MHz	1882.5 MHz	1913.5 MHz			1851.5 MHz	1882.5 MHz	1913.5 MHz		
3 MHz	QPSK	1	0	20.8	20.6	21.0	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		1	8	20.7	20.6	20.9	0.0	21.5	20.9	20.6	21.0	0.0	21.5
		1	14	20.7	20.7	21.0	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		8	0	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		8	4	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		8	7	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
	16QAM	15	0	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		1	0	21.2	20.9	21.1	0.0	21.5	20.9	20.9	21.3	0.0	21.5
		1	8	21.0	20.9	20.8	0.0	21.5	20.8	20.8	21.3	0.0	21.5
		1	14	21.1	21.0	20.9	0.0	21.5	20.8	21.0	21.3	0.0	21.5
		8	0	20.9	20.6	20.9	0.0	21.5	21.0	20.8	21.0	0.0	21.5
		8	4	20.9	20.6	21.0	0.0	21.5	21.0	20.8	21.0	0.0	21.5
	64QAM	8	4	20.9	20.6	21.0	0.0	21.5	21.0	20.8	21.0	0.0	21.5
		8	7	20.8	20.6	21.0	0.0	21.5	21.0	20.8	21.0	0.0	21.5
		15	0	20.8	20.6	20.9	0.0	21.5	20.9	20.7	21.0	0.0	21.5
		1	0	21.1	20.8	21.1	0.0	21.5	21.2	20.9	21.0	0.0	21.5
		1	8	20.9	20.5	21.1	0.0	21.5	21.2	20.6	21.0	0.0	21.5
		1	14	21.1	20.8	21.1	0.0	21.5	21.0	20.9	20.9	0.0	21.5
	256QAM	8	0	20.8	20.7	21.1	0.0	21.5	21.2	20.9	20.9	0.0	21.5
		8	4	20.8	20.5	21.1	0.0	21.5	20.9	20.9	20.9	0.0	21.5
		8	7	20.8	20.7	21.0	0.0	21.5	20.9	20.8	21.0	0.0	21.5
		15	0	20.8	20.5	21.1	0.0	21.5	20.9	20.6	21.0	0.0	21.5
		1	0	19.7	19.3	19.7	1.0	20.5	19.6	19.5	19.6	1.0	20.5
		1	8	19.4	19.2	19.5	1.0	20.5	19.5	19.2	19.3	1.0	20.5
1.4 MHz	QPSK	1	14	19.4	19.4	19.7	1.0	20.5	19.6	19.3	19.6	1.0	20.5
		8	0	19.5	19.3	19.6	1.0	20.5	19.4	19.3	19.6	1.0	20.5
		8	4	19.5	19.2	19.6	1.0	20.5	19.3	19.2	19.6	1.0	20.5
		8	7	19.5	19.3	19.6	1.0	20.5	19.4	19.2	19.5	1.0	20.5
		15	0	19.4	19.3	19.6	1.0	20.5	19.4	19.2	19.6	1.0	20.5
		1	0	19.4	19.3	19.6	1.0	20.5	19.4	19.2	19.6	1.0	20.5
1.4 MHz	QPSK	1	0	20.8	20.5	20.8	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		1	3	20.8	20.4	20.7	0.0	21.5	20.9	20.6	21.0	0.0	21.5
		1	5	20.8	20.5	20.8	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		3	0	20.8	20.5	20.7	0.0	21.5	20.9	20.6	20.9	0.0	21.5
		3	1	20.8	20.5	20.7	0.0	21.5	20.9	20.6	20.9	0.0	21.5
		3	3	20.7	20.5	20.8	0.0	21.5	20.9	20.6	20.8	0.0	21.5
	16QAM	6	0	20.8	20.6	20.8	0.0	21.5	21.0	20.7	20.9	0.0	21.5
		1	0	21.1	20.6	21.2	0.0	21.5	21.3	20.5	21.0	0.0	21.5
		1	3	21.1	20.6	21.2	0.0	21.5	21.3	20.7	21.1	0.0	21.5
		1	5	20.8	20.7	21.3	0.0	21.5	21.3	20.8	21.0	0.0	21.5
		3	0	20.8	20.5	20.9	0.0	21.5	21.0	20.6	21.0	0.0	21.5
		3	1	20.8	20.5	20.9	0.0	21.5	21.0	20.7	21.0	0.0	21.5
	64QAM	3	3	20.8	20.5	20.9	0.0	21.5	21.0	20.7	21.0	0.0	21.5
		6	0	20.9	20.7	20.8	0.0	21.5	20.9	20.8	21.1	0.0	21.5
		1	0	21.2	20.7	21.0	0.0	21.5	21.0	20.9	21.3	0.0	21.5
		1	3	21.1	20.8	21.3	0.0	21.5	20.8	20.9	21.2	0.0	21.5
		1	5	21.2	20.8	21.1	0.0	21.5	21.0	20.7	21.2	0.0	21.5
		3	0	21.1	20.7	21.0	0.0	21.5	20.8	20.7	20.9	0.0	21.5
	256QAM	3	1	21.1	20.8	21.2	0.0	21.5	21.1	20.9	20.8	0.0	21.5
		3	3	21.1	20.7	21.3	0.0	21.5	20.8	20.7	20.9	0.0	21.5
		6	0	20.9	20.8	21.2	0.0	21.5	20.8	20.9	21.1	0.0	21.5
		1	0	19.3	19.3	19.5	1.0	20.5	19.4	19.1	19.5	1.0	20.5
		1	3	19.1	19.1	19.6	1.0	20.5	19.4	19.1	19.6	1.0	20.5
		1	5	19.4	19.4	19.3	1.0	20.5	19.5	19.2	19.7	1.0	20.5
1.4 MHz	QPSK	3	0	19.3	19.0	19.5	1.0	20.5	19.2	19.0	19.6	1.0	20.5
		3	1	19.3	19.0	19.4	1.0	20.5	19.2	19.1	19.6	1.0	20.5
		3	3	19.4	19.0	19.5	1.0	20.5	19.2	19.0	19.6	1.0	20.5
		6	0	19.5	19.2	19.4	1.0	20.5	19.3	19.1	19.5	1.0	20.5
		1	0	19.5	19.2	19.4	1.0	20.5	19.3	19.1	19.5	1.0	20.5
		1	3	19.5	19.2	19.4	1.0	20.5	19.3	19.1	19.5	1.0	20.5

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off					Reduced Average Power (dBm) Proximity sensor back-off				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132072	132322	132572			132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	19.4	19.2	19.6	0.0	20	19.4	19.2	19.4	0.0	20
		1	49	19.4	19.2	19.5	0.0	20	19.4	19.2	19.4	0.0	20
		1	99	19.4	19.2	19.4	0.0	20	19.4	19.1	19.3	0.0	20
		50	0	19.4	19.3	19.6	0.0	20	19.4	19.3	19.5	0.0	20
		50	24	19.4	19.3	19.5	0.0	20	19.4	19.3	19.5	0.0	20
		50	50	19.4	19.2	19.4	0.0	20	19.4	19.2	19.4	0.0	20
	16QAM	100	0	19.4	19.3	19.5	0.0	20	19.4	19.2	19.4	0.0	20
		1	0	19.7	19.6	19.7	0.0	20	19.8	19.7	19.8	0.0	20
		1	49	19.8	19.6	19.7	0.0	20	19.8	19.7	19.8	0.0	20
		1	99	19.7	19.5	19.5	0.0	20	19.8	19.6	19.6	0.0	20
		50	0	19.4	19.3	19.5	0.0	20	19.4	19.3	19.5	0.0	20
		50	24	19.4	19.3	19.5	0.0	20	19.4	19.3	19.5	0.0	20
	64QAM	50	50	19.4	19.2	19.4	0.0	20	19.4	19.2	19.4	0.0	20
		100	0	19.4	19.3	19.4	0.0	20	19.4	19.3	19.4	0.0	20
		1	0	19.6	19.3	19.4	0.0	20	19.8	19.5	19.4	0.0	20
		1	49	19.6	19.2	19.4	0.0	20	19.9	19.5	19.4	0.0	20
		1	99	19.5	19.3	19.5	0.0	20	19.8	19.4	19.4	0.0	20
		50	0	19.4	19.3	19.4	0.0	20	19.4	19.4	19.3	0.0	20
	256QAM	50	24	19.4	19.3	19.5	0.0	20	19.4	19.4	19.4	0.0	20
		50	50	19.4	19.3	19.4	0.0	20	19.4	19.4	19.4	0.0	20
		100	0	19.4	19.3	19.4	0.0	20	19.4	19.4	19.4	0.0	20
		1	0	18.6	18.5	18.7	1.0	19	18.6	18.4	18.8	1.0	19
		1	49	18.6	18.6	18.6	1.0	19	18.7	18.3	18.8	1.0	19
		1	99	18.7	18.4	18.6	1.0	19	18.7	18.3	18.7	1.0	19
15 MHz	QPSK	50	0	18.4	18.3	18.5	1.0	19	18.4	18.3	18.5	1.0	19
		50	24	18.4	18.3	18.4	1.0	19	18.4	18.3	18.5	1.0	19
		50	50	18.4	18.2	18.4	1.0	19	18.5	18.2	18.4	1.0	19
		100	0	18.4	18.2	18.4	1.0	19	18.4	18.2	18.5	1.0	19
		1	0	19.5	19.2	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		1	37	19.5	19.1	19.4	0.0	20	19.5	19.2	19.4	0.0	20
	16QAM	1	74	19.6	19.2	19.3	0.0	20	19.5	19.2	19.3	0.0	20
		36	0	19.5	19.3	19.5	0.0	20	19.5	19.3	19.5	0.0	20
		36	20	19.6	19.3	19.5	0.0	20	19.5	19.3	19.5	0.0	20
		36	39	19.6	19.3	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		75	0	19.5	19.3	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		1	0	19.9	19.7	19.7	0.0	20	20.0	19.6	19.6	0.0	20
	64QAM	1	37	19.9	19.5	19.6	0.0	20	20.0	19.4	19.6	0.0	20
		1	74	19.9	19.6	19.5	0.0	20	20.0	19.5	19.5	0.0	20
		36	0	19.6	19.3	19.4	0.0	20	19.6	19.3	19.5	0.0	20
		36	20	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		36	39	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		75	0	19.6	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
	256QAM	1	0	19.7	19.4	19.5	0.0	20	19.6	19.5	19.5	0.0	20
		1	37	19.6	19.4	19.6	0.0	20	19.6	19.5	19.5	0.0	20
		1	74	19.7	19.4	19.5	0.0	20	19.6	19.5	19.5	0.0	20
		36	0	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20
		36	20	19.5	19.4	19.5	0.0	20	19.5	19.5	19.5	0.0	20
		36	39	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20
256QAM	75	0	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20	
	1	0	18.7	18.4	18.8	1.0	19	18.5	18.4	18.7	1.0	19	
	1	37	18.5	18.4	18.7	1.0	19	18.4	18.4	18.6	1.0	19	
	1	74	18.7	18.3	18.6	1.0	19	18.5	18.3	18.5	1.0	19	
	36	0	18.5	18.3	18.4	1.0	19	18.5	18.3	18.5	1.0	19	
	36	20	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19	
15 MHz	QPSK	36	39	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19
		36	20	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19
		36	39	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19
		75	0	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19
		1	0	19.5	19.2	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		1	37	19.5	19.1	19.4	0.0	20	19.5	19.2	19.4	0.0	20
	16QAM	1	74	19.6	19.2	19.3	0.0	20	19.5	19.2	19.3	0.0	20
		36	0	19.5	19.3	19.5	0.0	20	19.5	19.3	19.5	0.0	20
		36	20	19.6	19.3	19.5	0.0	20	19.5	19.3	19.5	0.0	20
		36	39	19.6	19.3	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		75	0	19.5	19.3	19.4	0.0	20	19.5	19.3	19.4	0.0	20
		1	0	19.9	19.7	19.7	0.0	20	20.0	19.6	19.6	0.0	20
	64QAM	1	37	19.9	19.5	19.6	0.0	20	20.0	19.4	19.6	0.0	20
		1	74	19.9	19.6	19.5	0.0	20	20.0	19.5	19.5	0.0	20
		36	0	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		36	20	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		36	39	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		75	0	19.6	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
	256QAM	1	0	19.7	19.4	19.5	0.0	20	19.6	19.5	19.5	0.0	20
		1	37	19.6	19.4	19.6	0.0	20	19.6	19.5	19.5	0.0	20
		1	74	19.7	19.4	19.5	0.0	20	19.6	19.5	19.5	0.0	20
		36	0	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20
		36	20	19.5	19.4	19.5	0.0	20	19.5	19.5	19.5	0.0	20
		36	39	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20
256QAM	75	0	19.5	19.4	19.6	0.0	20	19.5	19.5	19.5	0.0	20	
	1	0	18.7	18.4	18.8	1.0	19	18.5	18.4	18.7	1.0	19	
	1	37	18.5	18.4	18.7	1.0	19	18.4	18.4	18.6	1.0	19	
	1	74	18.7	18.3	18.6	1.0	19	18.5	18.3	18.5	1.0	19	
	36	0	18.5	18.3	18.4	1.0	19	18.5	18.3	18.5	1.0	19	
	36	20	18.5	18.3	18.4	1.0	19	18.5	18.3	18.4	1.0	19	

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	19.6	19.2	19.5	0.0	20	19.7	19.2	19.5	0.0	20
		1	25	19.6	19.2	19.3	0.0	20	19.6	19.2	19.3	0.0	20
		1	49	19.6	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
		25	0	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		25	12	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		25	25	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
	16QAM	50	0	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		1	0	20.0	19.6	19.5	0.0	20	19.9	19.7	19.5	0.0	20
		1	25	19.7	19.5	19.5	0.0	20	19.9	19.6	19.5	0.0	20
		1	49	19.9	19.5	19.4	0.0	20	19.9	19.6	19.4	0.0	20
		25	0	19.7	19.3	19.5	0.0	20	19.7	19.3	19.4	0.0	20
		25	12	19.7	19.3	19.5	0.0	20	19.6	19.3	19.4	0.0	20
	64QAM	25	25	19.6	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		50	0	19.6	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
		1	0	19.8	19.6	19.5	0.0	20	19.8	19.4	19.3	0.0	20
		1	25	19.8	19.6	19.4	0.0	20	19.7	19.4	19.3	0.0	20
		1	49	19.7	19.5	19.5	0.0	20	19.7	19.4	19.2	0.0	20
		25	0	19.7	19.5	19.5	0.0	20	19.7	19.4	19.3	0.0	20
	256QAM	25	12	19.7	19.5	19.5	0.0	20	19.6	19.4	19.3	0.0	20
		25	25	19.6	19.5	19.4	0.0	20	19.7	19.4	19.3	0.0	20
		50	0	19.6	19.5	19.5	0.0	20	19.6	19.4	19.3	0.0	20
		1	0	18.6	18.4	18.6	1.0	19	18.8	18.4	18.6	1.0	19
		1	25	18.6	18.3	18.5	1.0	19	18.7	18.3	18.4	1.0	19
		1	49	18.6	18.3	18.5	1.0	19	18.7	18.3	18.5	1.0	19
	5 MHz	QPSK	25	0	18.7	18.3	18.4	1.0	19	18.7	18.4	18.5	1.0
25			12	18.7	18.3	18.4	1.0	19	18.7	18.4	18.4	1.0	19
25			25	18.6	18.3	18.4	1.0	19	18.6	18.3	18.4	1.0	19
50			0	18.6	18.3	18.4	1.0	19	18.6	18.3	18.4	1.0	19
1			0	19.7	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
1			12	19.5	19.2	19.4	0.0	20	19.5	19.2	19.4	0.0	20
16QAM		1	24	19.7	19.2	19.4	0.0	20	19.6	19.2	19.4	0.0	20
		12	0	19.7	19.3	19.4	0.0	20	19.7	19.3	19.4	0.0	20
		12	7	19.7	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		12	13	19.7	19.3	19.4	0.0	20	19.7	19.2	19.4	0.0	20
		25	0	19.7	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
		1	0	19.7	19.6	19.7	0.0	20	19.7	19.6	19.8	0.0	20
64QAM		1	12	19.9	19.5	19.4	0.0	20	19.7	19.5	19.5	0.0	20
		1	24	20.0	19.6	19.6	0.0	20	19.7	19.6	19.7	0.0	20
		12	0	19.7	19.3	19.5	0.0	20	19.7	19.3	19.4	0.0	20
		12	7	19.7	19.3	19.4	0.0	20	19.7	19.2	19.4	0.0	20
		12	13	19.7	19.3	19.5	0.0	20	19.7	19.2	19.4	0.0	20
		25	0	19.7	19.2	19.4	0.0	20	19.7	19.2	19.4	0.0	20
256QAM		1	0	20.0	19.5	19.4	0.0	20	19.9	19.5	19.4	0.0	20
		1	12	19.9	19.4	19.4	0.0	20	20.0	19.5	19.4	0.0	20
		1	24	20.0	19.5	19.4	0.0	20	19.7	19.6	19.4	0.0	20
		12	0	19.7	19.4	19.4	0.0	20	19.6	19.5	19.4	0.0	20
		12	7	19.7	19.5	19.4	0.0	20	19.6	19.5	19.4	0.0	20
		12	13	19.7	19.4	19.4	0.0	20	19.6	19.5	19.4	0.0	20
256QAM		25	0	19.7	19.4	19.4	0.0	20	19.7	19.6	19.4	0.0	20
	1	0	19.0	18.3	18.5	1.0	19	19.0	18.4	18.5	1.0	19	
	1	12	18.9	18.1	18.4	1.0	19	19.0	18.1	18.4	1.0	19	
	1	24	19.0	18.3	18.5	1.0	19	19.0	18.3	18.5	1.0	19	
	12	0	18.7	18.3	18.3	1.0	19	18.7	18.3	18.4	1.0	19	
	12	7	18.7	18.3	18.3	1.0	19	18.7	18.3	18.4	1.0	19	
12	13	18.7	18.3	18.3	1.0	19	18.7	18.3	18.3	1.0	19		
25	0	18.6	18.3	18.3	1.0	19	18.7	18.3	18.3	1.0	19		

LTE Band 66 Measured Results (Continued)

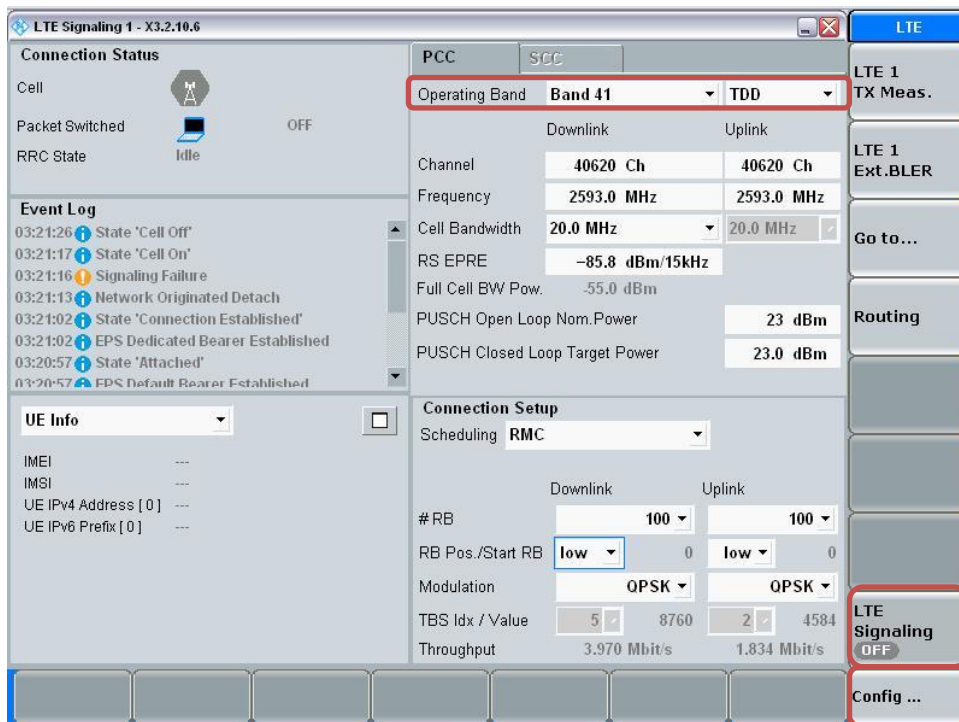
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	19.6	19.3	19.5	0.0	20	19.7	19.2	19.4	0.0	20
		1	8	19.6	19.2	19.4	0.0	20	19.7	19.2	19.2	0.0	20
		1	14	19.6	19.3	19.5	0.0	20	19.8	19.2	19.4	0.0	20
		8	0	19.7	19.3	19.4	0.0	20	19.7	19.3	19.4	0.0	20
		8	4	19.7	19.2	19.4	0.0	20	19.7	19.2	19.3	0.0	20
		8	7	19.7	19.3	19.4	0.0	20	19.6	19.3	19.4	0.0	20
	15	0	19.7	19.3	19.4	0.0	20	19.7	19.3	19.4	0.0	20	
	16QAM	1	0	19.8	19.5	19.8	0.0	20	19.9	19.4	19.4	0.0	20
		1	8	19.9	19.4	19.7	0.0	20	19.9	19.4	19.3	0.0	20
		1	14	20.0	19.4	19.7	0.0	20	19.9	19.7	19.3	0.0	20
		8	0	19.8	19.3	19.5	0.0	20	19.8	19.4	19.4	0.0	20
		8	4	19.8	19.3	19.5	0.0	20	19.7	19.3	19.4	0.0	20
		8	7	19.8	19.3	19.5	0.0	20	19.7	19.3	19.4	0.0	20
	15	0	19.7	19.3	19.4	0.0	20	19.7	19.2	19.3	0.0	20	
	64QAM	1	0	19.7	19.3	19.4	0.0	20	19.8	19.4	19.5	0.0	20
		1	8	19.7	19.3	19.3	0.0	20	19.8	19.3	19.4	0.0	20
		1	14	19.9	19.3	19.4	0.0	20	19.9	19.5	19.5	0.0	20
		8	0	19.7	19.3	19.4	0.0	20	19.6	19.4	19.3	0.0	20
		8	4	19.6	19.3	19.4	0.0	20	19.6	19.3	19.3	0.0	20
		8	7	19.7	19.3	19.4	0.0	20	19.7	19.5	19.3	0.0	20
	15	0	19.7	19.3	19.4	0.0	20	19.7	19.3	19.3	0.0	20	
	256QAM	1	0	18.8	18.4	18.7	1.0	19	18.5	18.2	18.5	1.0	19
		1	8	18.8	18.4	18.5	1.0	19	18.5	18.4	18.4	1.0	19
		1	14	18.9	18.5	18.7	1.0	19	18.7	18.3	18.4	1.0	19
8		0	18.7	18.4	18.4	1.0	19	18.7	18.4	18.4	1.0	19	
8		4	18.7	18.4	18.3	1.0	19	18.7	18.3	18.4	1.0	19	
8		7	18.7	18.4	18.4	1.0	19	18.7	18.4	18.4	1.0	19	
15	0	18.7	18.2	18.4	1.0	19	18.7	18.2	18.4	1.0	19		
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
131979	132322	132665	131979	132322	132665								
1710.7 MHz	1745 MHz	1779.3 MHz	1710.7 MHz	1745 MHz	1779.3 MHz								
1.4 MHz	QPSK	1	0	19.8	19.4	19.4	0.0	20	19.7	19.3	19.5	0.0	20
		1	3	19.5	19.1	19.3	0.0	20	19.5	19.1	19.3	0.0	20
		1	5	19.7	19.3	19.4	0.0	20	19.7	19.3	19.4	0.0	20
		3	0	19.6	19.3	19.4	0.0	20	19.7	19.3	19.3	0.0	20
		3	1	19.7	19.2	19.4	0.0	20	19.7	19.3	19.4	0.0	20
		3	3	19.7	19.3	19.3	0.0	20	19.7	19.2	19.4	0.0	20
	6	0	19.8	19.4	19.4	0.0	20	19.8	19.3	19.4	0.0	20	
	16QAM	1	0	19.7	19.7	19.3	0.0	20	19.8	19.1	19.2	0.0	20
		1	3	19.8	19.8	19.4	0.0	20	19.8	19.3	19.2	0.0	20
		1	5	19.9	19.7	19.5	0.0	20	19.8	19.3	19.6	0.0	20
		3	0	19.8	19.3	19.3	0.0	20	19.8	19.3	19.4	0.0	20
		3	1	19.7	19.2	19.3	0.0	20	19.7	19.2	19.4	0.0	20
		3	3	19.8	19.4	19.4	0.0	20	19.8	19.3	19.4	0.0	20
	6	0	20.0	19.4	19.6	0.0	20	19.7	19.4	19.5	0.0	20	
	64QAM	1	0	19.8	19.4	19.6	0.0	20	19.8	19.4	19.4	0.0	20
		1	3	19.8	19.4	19.6	0.0	20	19.7	19.5	19.5	0.0	20
		1	5	20.0	19.4	19.3	0.0	20	19.7	19.4	19.2	0.0	20
		3	0	19.8	19.5	19.4	0.0	20	19.7	19.4	19.3	0.0	20
		3	1	19.8	19.4	19.6	0.0	20	19.7	19.4	19.2	0.0	20
		3	3	19.8	19.7	19.6	0.0	20	19.7	19.4	19.5	0.0	20
	6	0	19.8	19.4	19.5	0.0	20	19.9	19.4	19.3	0.0	20	
	256QAM	1	0	18.5	18.5	18.7	1.0	19	18.8	18.3	18.5	1.0	19
		1	3	18.6	18.3	18.5	1.0	19	18.9	18.3	18.1	1.0	19
		1	5	18.6	18.5	18.7	1.0	19	18.8	18.4	18.4	1.0	19
3		0	18.8	18.2	18.3	1.0	19	18.7	18.2	18.2	1.0	19	
3		1	18.8	18.3	18.2	1.0	19	18.7	18.3	18.2	1.0	19	
3		3	18.8	18.2	18.2	1.0	19	18.8	18.2	18.2	1.0	19	
6	0	18.7	18.3	18.4	1.0	19	18.7	18.2	18.4	1.0	19		

LTE Band TDD Measured Results

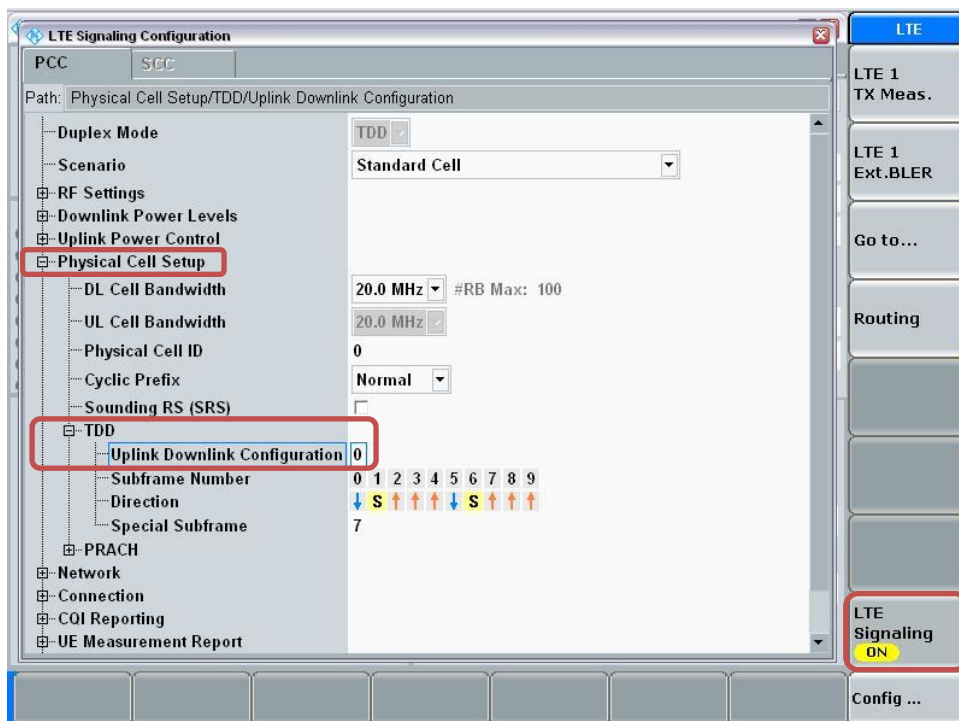
Procedure used to establish SAR test signal for LTE TDD Band

Set to CMW-500 with following parameters:

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

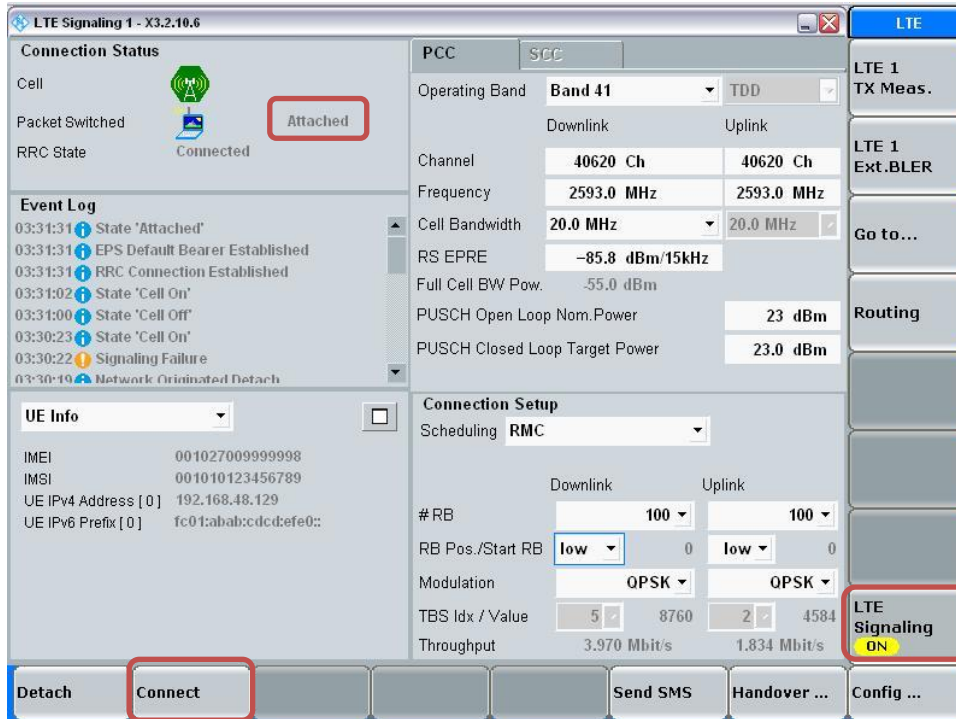


- Go to “Physical Cell Setup”
- Select “TDD” and Set “Uplink Downlink Configuration” to “0”
- Turn the cell on using “ON | OFF” key



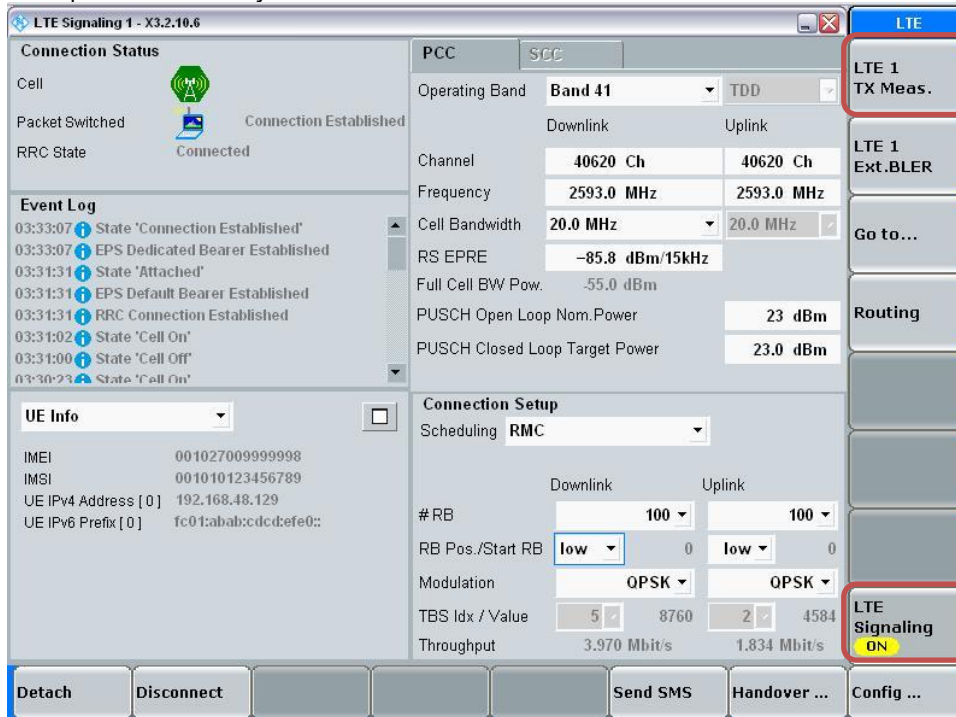
Connect to EUT

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

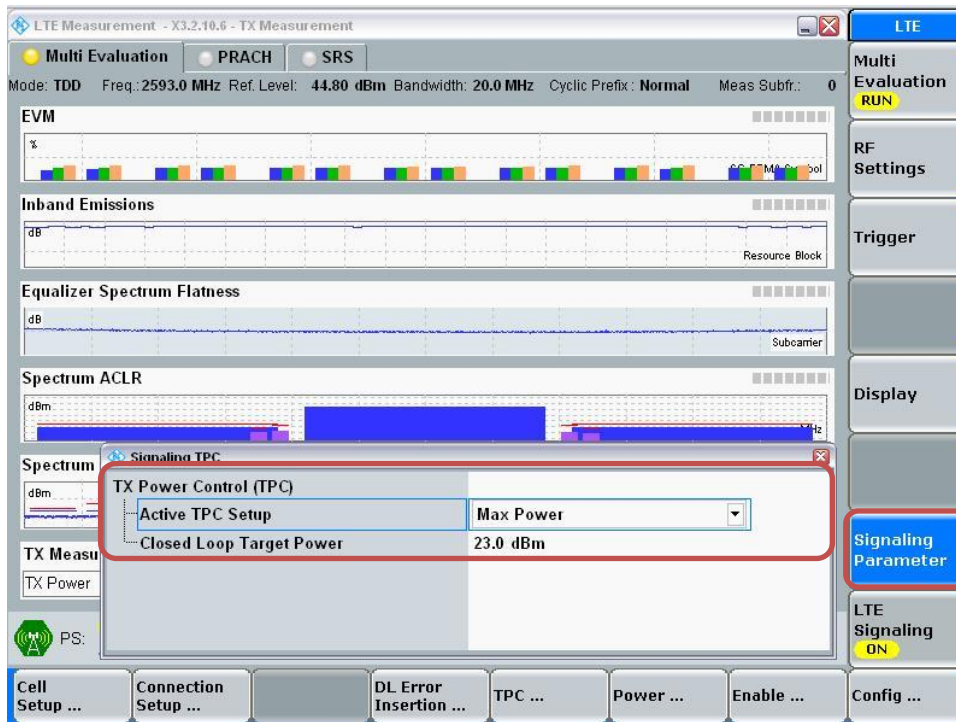


Max Power Setting

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



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



View TX Power

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



1. Max power Results

LTE Band 41 Power Class 3 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						
				Measured Pwr (dBm)					MPR	Tune-up Limit
				39750 2506 MHz	40185 2549.5 MHz	40620 2593 MHz	41055 2636.5 MHz	41490 2680 MHz		
20 MHz	QPSK	1	0	23.5	23.3	23.5	23.7	23.5	0.0	25.0
		1	49	23.5	23.3	23.6	23.7	23.6	0.0	25.0
		1	99	23.4	23.3	23.5	23.7	23.4	0.0	25.0
		50	0	22.6	22.4	22.7	22.8	22.7	1.0	24.0
		50	24	22.6	22.5	22.7	22.8	22.7	1.0	24.0
		50	50	22.6	22.4	22.6	22.8	22.6	1.0	24.0
	16QAM	100	0	22.6	22.5	22.6	22.8	22.7	1.0	24.0
		1	0	22.8	22.4	22.6	22.4	22.6	1.0	24.0
		1	49	22.7	22.7	22.5	22.8	22.3	1.0	24.0
		1	99	22.7	22.4	22.6	22.5	22.5	1.0	24.0
		50	0	21.7	21.5	21.7	21.8	21.7	2.0	23.0
		50	24	21.6	21.5	21.7	21.8	21.7	2.0	23.0
	64QAM	50	50	21.6	21.5	21.6	21.7	21.6	2.0	23.0
		100	0	21.6	21.4	21.6	21.7	21.7	2.0	23.0
		1	0	21.8	21.5	21.6	21.9	21.6	2.0	23.0
		1	49	21.7	21.5	21.6	21.8	21.6	2.0	23.0
		1	99	21.8	21.4	21.8	22.0	22.0	2.0	23.0
		50	0	20.7	21.4	21.3	21.6	21.6	3.0	22.0
	256QAM	50	24	20.6	21.1	21.8	21.6	21.6	3.0	22.0
		50	50	20.6	21.5	21.6	21.9	21.8	3.0	22.0
		100	0	20.6	21.1	21.9	21.7	21.7	3.0	22.0
		1	0	18.6	18.3	18.7	18.8	18.8	5.0	20.0
		1	49	18.8	18.1	18.8	18.8	18.8	5.0	20.0
		1	99	18.3	18.7	18.7	19.1	18.8	5.0	20.0
15 MHz	QPSK	50	0	18.7	18.5	18.7	18.9	18.8	5.0	20.0
		50	24	18.7	18.5	18.7	18.9	18.8	5.0	20.0
		50	50	18.7	18.4	18.7	18.9	18.8	5.0	20.0
		100	0	18.7	18.5	18.7	18.9	18.8	5.0	20.0
		1	0	23.5	23.1	23.4	23.5	23.4	0.0	25.0
		1	37	23.4	23.2	23.4	23.5	23.5	0.0	25.0
	16QAM	1	74	23.3	23.1	23.4	23.5	23.4	0.0	25.0
		36	0	22.5	22.2	22.5	22.7	22.5	1.0	24.0
		36	20	22.5	22.2	22.5	22.7	22.5	1.0	24.0
		36	39	22.5	22.3	22.5	22.6	22.5	1.0	24.0
		75	0	22.5	22.2	22.5	22.7	22.5	1.0	24.0
		1	0	22.2	22.1	22.4	22.8	22.5	1.0	24.0
64QAM	1	37	21.9	22.4	22.1	22.5	22.3	1.0	24.0	
	1	74	22.6	22.3	22.5	22.3	22.1	1.0	24.0	
	36	0	21.6	21.2	21.4	21.6	21.5	2.0	23.0	
	36	20	21.5	21.2	21.4	21.7	21.5	2.0	23.0	
	36	39	21.5	21.2	21.4	21.6	21.5	2.0	23.0	
	75	0	21.4	21.2	21.4	21.6	21.5	2.0	23.0	
256QAM	1	0	21.7	21.2	21.8	21.8	21.4	2.0	23.0	
	1	37	21.9	21.3	21.4	21.8	21.9	2.0	23.0	
	1	74	21.9	21.2	21.5	21.6	21.2	2.0	23.0	
	36	0	21.7	21.2	21.5	21.8	20.6	3.0	22.0	
	36	20	21.7	21.2	21.7	21.5	20.6	3.0	22.0	
	36	39	21.5	21.2	21.8	21.8	20.6	3.0	22.0	
256QAM	75	0	21.7	21.2	21.5	21.8	20.6	3.0	22.0	
	1	0	18.6	18.7	18.2	18.6	18.8	5.0	20.0	
	1	37	18.4	18.9	18.2	18.8	18.8	5.0	20.0	
	1	74	18.3	18.6	18.3	18.7	18.8	5.0	20.0	
	36	0	18.7	18.4	18.6	18.8	18.6	5.0	20.0	
	36	20	18.6	18.4	18.6	18.8	18.6	5.0	20.0	
36	39	18.7	18.4	18.6	18.8	18.6	5.0	20.0		
75	0	18.6	18.4	18.6	18.8	18.6	5.0	20.0		

LTE Band 41 Power Class 3 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MFR	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	23.5	23.2	23.4	23.5	23.4	0.0	25.0
		1	25	23.4	23.2	23.4	23.5	23.4	0.0	25.0
		1	49	23.4	23.2	23.4	23.5	23.4	0.0	25.0
		25	0	22.5	22.2	22.4	22.6	22.5	1.0	24.0
		25	12	22.5	22.2	22.4	22.6	22.4	1.0	24.0
		25	25	22.5	22.2	22.4	22.6	22.5	1.0	24.0
	16QAM	50	0	22.5	22.2	22.4	22.6	22.5	1.0	24.0
		1	0	22.6	22.1	22.4	22.7	22.4	1.0	24.0
		1	25	22.4	22.0	22.4	22.6	22.3	1.0	24.0
		1	49	22.5	22.1	22.4	22.7	22.4	1.0	24.0
		25	0	21.4	21.2	21.4	21.6	21.5	2.0	23.0
		25	12	21.5	21.2	21.4	21.6	21.4	2.0	23.0
	64QAM	25	25	21.5	21.2	21.4	21.6	21.5	2.0	23.0
		50	0	21.5	21.2	21.4	21.6	21.5	2.0	23.0
		1	0	21.7	21.3	21.6	21.8	21.5	2.0	23.0
		1	25	21.7	21.3	21.6	21.8	21.4	2.0	23.0
		1	49	21.7	21.3	21.6	21.8	21.4	2.0	23.0
		25	0	21.7	21.3	21.6	21.8	20.6	3.0	22.0
	256QAM	25	12	21.6	21.3	21.6	21.8	20.5	3.0	22.0
		25	25	21.7	21.3	21.6	21.8	20.6	3.0	22.0
		50	0	21.7	21.3	21.6	21.8	20.6	3.0	22.0
		1	0	18.6	18.3	18.3	18.7	18.5	5.0	20.0
		1	25	18.5	18.2	18.2	18.6	18.5	5.0	20.0
		1	49	18.5	18.3	18.3	18.7	18.5	5.0	20.0
	5 MHz	QPSK	25	0	18.6	18.4	18.6	18.8	18.6	5.0
25			12	18.6	18.4	18.6	18.7	18.6	5.0	20.0
25			25	18.6	18.3	18.6	18.7	18.6	5.0	20.0
50			0	18.6	18.4	18.5	18.8	18.6	5.0	20.0
1			0	23.5	23.2	23.3	23.5	23.4	0.0	25.0
1			12	23.5	23.0	23.2	23.4	23.5	0.0	25.0
16QAM		1	24	23.5	23.1	23.4	23.5	23.4	0.0	25.0
		12	0	22.5	22.2	22.4	22.6	22.5	1.0	24.0
		12	7	22.5	22.2	22.4	22.6	22.4	1.0	24.0
		12	13	22.5	22.2	22.4	22.6	22.5	1.0	24.0
	25	0	22.5	22.2	22.4	22.6	22.4	1.0	24.0	
	1	0	22.3	22.1	22.5	22.5	22.3	1.0	24.0	
64QAM	1	12	22.2	22.0	22.1	22.5	22.3	1.0	24.0	
	1	24	22.3	22.1	22.5	22.5	22.3	1.0	24.0	
	12	0	21.5	21.2	21.4	21.6	21.4	2.0	23.0	
	12	7	21.5	21.2	21.4	21.6	21.4	2.0	23.0	
	12	13	21.5	21.2	21.3	21.6	21.4	2.0	23.0	
	25	0	21.5	21.2	21.4	21.5	21.4	2.0	23.0	
256QAM	1	0	21.5	21.5	21.4	21.5	21.6	2.0	23.0	
	1	12	21.6	21.5	21.4	21.5	21.7	2.0	23.0	
	1	24	21.6	21.5	21.4	21.5	21.5	2.0	23.0	
	12	0	21.5	21.5	21.5	21.5	20.4	3.0	22.0	
	12	7	21.6	21.5	21.5	21.5	20.4	3.0	22.0	
	12	13	21.6	21.5	21.4	21.5	20.5	3.0	22.0	
256QAM	25	0	21.6	21.5	21.4	21.5	20.4	3.0	22.0	
	1	0	18.6	18.4	18.5	18.7	18.6	5.0	20.0	
	1	12	18.7	18.5	18.4	18.6	18.5	5.0	20.0	
	1	24	18.6	18.4	18.5	18.7	18.6	5.0	20.0	
	12	0	18.6	18.3	18.5	18.7	18.5	5.0	20.0	
	12	7	18.6	18.3	18.5	18.7	18.5	5.0	20.0	
256QAM	12	13	18.5	18.3	18.5	18.7	18.5	5.0	20.0	
	25	0	18.6	18.3	18.5	18.7	18.5	5.0	20.0	
	25	0	18.6	18.3	18.5	18.7	18.5	5.0	20.0	

LTE Band 41 Power Class 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)						
				Measured Pwr (dBm)					MFR	Tune-up Limit
				39750 2506 MHz	40185 2549.5 MHz	40620 2593 MHz	41055 2636.5 MHz	41490 2680 MHz		
20 MHz	QPSK	1	0	24.6	24.3	24.5	24.7	24.5	0.0	26.2
		1	49	24.6	24.3	24.5	24.7	24.5	0.0	26.2
		1	99	24.5	24.3	24.4	24.6	24.4	0.0	26.2
		50	0	23.6	23.3	23.6	23.7	23.6	1.0	25.2
		50	24	23.7	23.4	23.6	23.8	23.6	1.0	25.2
		50	50	23.6	23.3	23.5	23.7	23.6	1.0	25.2
	16QAM	100	0	23.6	23.3	23.5	23.7	23.6	1.0	25.2
		1	0	23.7	23.6	23.9	24.0	24.0	1.0	25.2
		1	49	23.7	23.6	23.9	24.0	24.0	1.0	25.2
		1	99	23.6	23.6	23.9	23.9	23.9	1.0	25.2
		50	0	22.6	22.4	22.6	22.7	22.6	2.0	24.2
		50	24	22.7	22.5	22.6	22.8	22.7	2.0	24.2
	64QAM	50	50	22.6	22.4	22.6	22.7	22.6	2.0	24.2
		100	0	22.7	22.4	22.6	22.8	22.6	2.0	24.2
		1	0	22.8	22.3	22.8	22.8	22.7	2.0	24.2
		1	49	22.8	22.3	22.8	22.8	22.8	2.0	24.2
		1	99	22.8	22.3	22.8	22.8	22.7	2.0	24.2
		50	0	22.8	22.3	22.8	22.8	21.8	3.0	23.2
	256QAM	50	24	22.8	22.3	22.8	22.8	21.8	3.0	23.2
		50	50	22.8	22.3	22.8	22.8	21.8	3.0	23.2
		100	0	22.8	22.3	22.8	22.8	21.8	3.0	23.2
		1	0	20.0	19.7	19.9	19.9	19.8	5.0	21.2
		1	49	20.0	19.6	19.9	19.9	19.8	5.0	21.2
		1	99	19.9	19.7	19.9	19.9	19.7	5.0	21.2
15 MHz	QPSK	50	0	19.7	19.5	19.8	19.9	19.8	5.0	21.2
		50	24	19.8	19.6	19.8	19.9	19.8	5.0	21.2
		50	50	19.7	19.5	19.7	19.9	19.8	5.0	21.2
		100	0	19.7	19.5	19.7	19.9	19.8	5.0	21.2
		1	0	24.6	24.3	24.5	24.7	24.5	0.0	26.2
		1	37	24.5	24.2	24.5	24.5	24.4	0.0	26.2
	16QAM	1	74	24.5	24.2	24.4	24.6	24.5	0.0	26.2
		36	0	23.7	23.4	23.6	23.8	23.6	1.0	25.2
		36	20	23.6	23.4	23.6	23.7	23.6	1.0	25.2
		36	39	23.6	23.4	23.5	23.8	23.6	1.0	25.2
		75	0	23.6	23.3	23.6	23.8	23.6	1.0	25.2
		1	0	23.8	23.7	23.6	24.0	24.0	1.0	25.2
	64QAM	1	37	23.5	23.8	23.5	23.7	24.1	1.0	25.2
		1	74	23.7	23.6	23.5	23.9	23.8	1.0	25.2
		36	0	22.7	22.4	22.5	22.8	22.6	2.0	24.2
		36	20	22.7	22.4	22.5	22.8	22.6	2.0	24.2
		36	39	22.7	22.4	22.5	22.8	22.6	2.0	24.2
		75	0	22.7	22.4	22.6	22.8	22.7	2.0	24.2
	256QAM	1	0	23.0	22.8	22.6	22.9	23.1	2.0	24.2
		1	37	23.1	22.8	22.6	22.8	23.2	2.0	24.2
		1	74	22.9	22.8	22.6	22.8	22.9	2.0	24.2
		36	0	21.7	22.7	22.6	21.8	21.8	3.0	23.2
		36	20	21.7	22.7	22.6	21.8	21.7	3.0	23.2
		36	39	21.7	22.8	22.6	21.8	21.7	3.0	23.2
256QAM	75	0	21.7	22.7	22.6	21.8	21.7	3.0	23.2	
	1	0	19.9	19.8	19.8	19.5	19.7	5.0	21.2	
	1	37	19.9	19.6	19.8	19.8	19.7	5.0	21.2	
	1	74	19.8	19.7	19.7	19.5	19.6	5.0	21.2	
	36	0	19.8	19.6	19.7	19.8	19.8	5.0	21.2	
	36	20	19.7	19.6	19.7	19.8	19.8	5.0	21.2	
256QAM	36	39	19.7	19.6	19.7	19.8	19.8	5.0	21.2	
	36	0	19.8	19.6	19.7	19.8	19.8	5.0	21.2	
	36	20	19.7	19.6	19.7	19.8	19.8	5.0	21.2	
	36	39	19.7	19.6	19.7	19.8	19.8	5.0	21.2	
	75	0	19.8	19.5	19.7	19.8	19.8	5.0	21.2	
	75	0	19.8	19.5	19.7	19.8	19.8	5.0	21.2	

LTE Band 41 Power Class 2 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)					MFR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	24.7	24.3	24.5	24.7	24.6	0.0	26.2
		1	25	24.6	24.3	24.4	24.6	24.5	0.0	26.2
		1	49	24.6	24.3	24.4	24.7	24.6	0.0	26.2
		25	0	23.7	23.4	23.5	23.7	23.6	1.0	25.2
		25	12	23.7	23.4	23.5	23.7	23.6	1.0	25.2
		25	25	23.6	23.4	23.5	23.7	23.6	1.0	25.2
	16QAM	50	0	23.7	23.4	23.5	23.7	23.6	1.0	25.2
		1	0	23.8	23.7	23.8	23.7	24.1	1.0	25.2
		1	25	23.8	23.6	23.7	23.7	24.1	1.0	25.2
		1	49	23.8	23.7	23.8	23.7	24.1	1.0	25.2
		25	0	22.7	22.4	22.5	22.7	22.6	2.0	24.2
		25	12	22.6	22.4	22.5	22.7	22.6	2.0	24.2
	64QAM	25	25	22.6	22.4	22.5	22.7	22.6	2.0	24.2
		50	0	22.7	22.5	22.5	22.8	22.6	2.0	24.2
		1	0	22.9	22.5	22.8	23.0	22.5	2.0	24.2
		1	25	22.9	22.5	22.7	23.0	22.4	2.0	24.2
		1	49	22.9	22.5	22.8	23.0	22.4	2.0	24.2
		25	0	22.9	22.5	21.6	23.0	21.7	3.0	23.2
	256QAM	25	12	22.9	22.5	21.6	23.0	21.7	3.0	23.2
		25	25	22.9	22.5	21.6	23.0	21.7	3.0	23.2
		50	0	22.9	22.5	21.7	23.0	21.7	3.0	23.2
		1	0	19.4	20.0	19.6	19.9	19.5	5.0	21.2
		1	25	19.2	19.9	19.6	19.8	19.5	5.0	21.2
		1	49	19.3	20.0	19.6	19.9	19.5	5.0	21.2
	5 MHz	QPSK	25	0	19.8	19.5	19.7	19.9	19.8	5.0
25			12	19.8	19.5	19.6	19.9	19.7	5.0	21.2
25			25	19.8	19.6	19.7	19.9	19.8	5.0	21.2
50			0	19.7	19.6	19.7	19.9	19.7	5.0	21.2
1			0	24.7	24.7	24.6	24.3	24.5	0.0	26.2
1			12	24.9	25.0	24.6	24.6	24.7	0.0	26.2
16QAM		1	24	24.7	24.7	24.5	24.3	24.5	0.0	26.2
		12	0	23.7	23.8	23.5	23.4	23.6	1.0	25.2
		12	7	23.7	23.8	23.5	23.4	23.6	1.0	25.2
		12	13	23.7	23.8	23.6	23.4	23.6	1.0	25.2
		25	0	23.7	23.8	23.5	23.4	23.6	1.0	25.2
		1	0	23.9	24.0	23.8	23.7	24.0	1.0	25.2
64QAM		1	12	23.8	23.8	24.0	23.7	23.8	1.0	25.2
		1	24	23.8	24.0	23.8	23.7	24.0	1.0	25.2
		12	0	22.7	22.8	22.5	22.5	22.6	2.0	24.2
		12	7	22.7	22.8	22.5	22.6	22.7	2.0	24.2
		12	13	22.7	22.8	22.5	22.5	22.6	2.0	24.2
		25	0	22.6	22.8	22.5	22.4	22.7	2.0	24.2
256QAM		1	0	22.9	23.0	22.8	22.7	23.0	2.0	24.2
		1	12	22.9	23.0	22.8	22.7	23.0	2.0	24.2
		1	24	22.9	23.0	22.8	22.7	23.0	2.0	24.2
		12	0	22.9	23.0	22.8	22.7	21.8	3.0	23.2
		12	7	22.9	23.0	22.8	22.7	21.8	3.0	23.2
		12	13	22.9	23.0	22.8	22.7	21.8	3.0	23.2
256QAM		25	0	22.9	23.0	22.8	22.7	21.7	3.0	23.2
	1	0	20.0	19.5	19.9	20.3	19.8	5.0	21.2	
	1	12	20.2	19.6	20.2	20.5	20.1	5.0	21.2	
	1	24	19.9	19.5	19.9	20.3	19.9	5.0	21.2	
	12	0	19.7	19.6	19.6	19.8	19.7	5.0	21.2	
	12	7	19.7	19.6	19.6	19.8	19.7	5.0	21.2	
	12	13	19.7	19.6	19.6	19.8	19.7	5.0	21.2	
	25	0	19.7	19.5	19.6	19.8	19.7	5.0	21.2	
	25	0	19.7	19.5	19.6	19.8	19.7	5.0	21.2	

2. Reduced power Results

LTE Band 41 Power Class 3 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Reduced Average Power (dBm) Hotspot back-off							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	20.5	20.3	20.4	20.7	20.5	0.0	22.0	20.5	20.2	20.4	20.7	20.5	0.0	22.0
		1	49	20.6	20.3	20.4	20.7	20.4	0.0	22.0	20.5	20.3	20.4	20.7	20.5	0.0	22.0
		1	99	20.4	20.1	20.4	20.7	20.4	0.0	22.0	20.5	20.2	20.4	20.6	20.4	0.0	22.0
		50	0	20.6	20.2	20.5	20.8	20.6	0.0	22.0	20.6	20.3	20.5	20.7	20.5	0.0	22.0
		50	24	20.6	20.3	20.5	20.8	20.7	0.0	22.0	20.6	20.4	20.6	20.7	20.6	0.0	22.0
		50	50	20.6	20.2	20.5	20.8	20.6	0.0	22.0	20.6	20.3	20.5	20.7	20.5	0.0	22.0
	16QAM	100	0	20.6	20.3	20.5	20.7	20.6	0.0	22.0	20.6	20.3	20.5	20.7	20.5	0.0	22.0
		1	0	20.9	20.3	20.3	20.7	20.7	0.0	22.0	20.4	20.5	20.8	20.7	20.6	0.0	22.0
		1	49	20.5	20.6	20.7	20.9	20.8	0.0	22.0	20.4	20.5	20.8	20.9	20.4	0.0	22.0
		1	99	20.2	20.4	20.8	20.7	20.4	0.0	22.0	20.3	20.1	20.7	20.7	20.6	0.0	22.0
		50	0	20.6	20.3	20.6	20.8	20.7	0.0	22.0	20.6	20.4	20.6	20.7	20.6	0.0	22.0
		50	24	20.7	20.3	20.6	20.8	20.7	0.0	22.0	20.6	20.4	20.5	20.7	20.6	0.0	22.0
	64QAM	50	50	20.6	20.3	20.6	20.7	20.7	0.0	22.0	20.6	20.4	20.5	20.6	20.6	0.0	22.0
		100	0	20.6	20.3	20.6	20.7	20.7	0.0	22.0	20.6	20.3	20.5	20.7	20.5	0.0	22.0
		1	0	20.5	20.4	20.3	20.1	20.3	0.0	22.0	20.7	20.4	20.6	20.7	20.4	0.0	22.0
		1	49	20.5	20.6	20.4	20.6	20.7	0.0	22.0	20.7	20.5	20.6	20.6	20.5	0.0	22.0
		1	99	20.4	20.2	20.4	20.8	20.3	0.0	22.0	20.6	20.5	20.6	20.3	20.4	0.0	22.0
		50	0	20.7	20.2	20.5	20.4	20.7	0.0	22.0	20.3	20.0	20.6	20.5	20.6	0.0	22.0
	256QAM	50	24	20.6	20.4	20.5	20.6	20.5	0.0	22.0	20.6	20.0	20.7	20.7	20.6	0.0	22.0
		50	50	20.6	20.5	20.5	21.1	20.7	0.0	22.0	20.6	20.5	20.7	20.5	20.5	0.0	22.0
		100	0	20.7	20.5	20.8	21.1	20.5	0.0	22.0	20.6	20.5	20.6	20.6	20.5	0.0	22.0
		1	0	18.7	18.3	18.5	18.8	18.8	2.0	20.0	18.6	18.6	18.2	18.6	18.6	2.0	20.0
		1	49	18.4	18.4	18.2	18.8	18.4	2.0	20.0	18.7	18.6	18.5	18.7	18.7	2.0	20.0
		1	99	18.4	18.3	18.8	18.7	18.5	2.0	20.0	18.5	18.6	18.7	18.6	18.4	2.0	20.0
15 MHz	QPSK	50	0	18.7	18.5	18.7	18.9	18.7	2.0	20.0	18.8	18.5	18.7	18.7	18.5	2.0	20.0
		50	24	18.7	18.5	18.7	18.9	18.7	2.0	20.0	18.8	18.5	18.7	18.8	18.6	2.0	20.0
		50	50	18.7	18.4	18.7	18.8	18.7	2.0	20.0	18.7	18.5	18.7	18.8	18.5	2.0	20.0
		100	0	18.7	18.4	18.7	18.9	18.7	2.0	20.0	18.7	18.5	18.7	18.8	18.5	2.0	20.0
		1	0	20.3	20.0	20.2	20.4	20.4	0.0	22.0	20.7	20.2	20.4	21.0	21.0	0.0	22.0
		1	37	20.1	20.1	20.0	20.3	20.1	0.0	22.0	20.4	20.4	20.4	20.5	20.7	0.0	22.0
	16QAM	1	74	20.5	20.1	20.2	20.6	20.3	0.0	22.0	20.4	20.7	20.4	21.0	20.7	0.0	22.0
		36	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.6	20.5	20.7	20.8	20.7	0.0	22.0
		36	20	20.5	20.4	20.5	20.6	20.5	0.0	22.0	20.6	20.5	20.7	20.8	20.7	0.0	22.0
		36	39	20.5	20.3	20.5	20.6	20.5	0.0	22.0	20.6	20.5	20.7	20.8	20.7	0.0	22.0
		75	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.6	20.4	20.7	20.8	20.7	0.0	22.0
		1	0	20.8	19.9	20.5	20.6	20.6	0.0	22.0	20.6	20.3	20.4	20.6	20.2	0.0	22.0
	64QAM	1	37	20.6	20.3	20.8	20.4	20.5	0.0	22.0	20.6	20.0	20.9	20.5	20.6	0.0	22.0
		1	74	20.7	20.3	20.8	20.6	20.4	0.0	22.0	20.5	20.0	20.8	20.5	20.5	0.0	22.0
		36	0	20.5	20.3	20.7	20.6	20.5	0.0	22.0	20.6	20.3	20.2	20.5	20.5	0.0	22.0
		36	20	20.5	20.3	20.5	20.7	20.5	0.0	22.0	20.5	20.3	20.4	20.4	20.5	0.0	22.0
		36	39	20.5	20.3	20.8	20.5	20.5	0.0	22.0	20.5	20.2	20.4	20.5	20.2	0.0	22.0
		75	0	20.5	19.9	20.5	20.3	20.4	0.0	22.0	20.5	20.2	20.8	20.4	20.5	0.0	22.0
	256QAM	1	0	18.7	18.3	18.1	18.9	18.7	2.0	20.0	18.7	18.3	18.4	19.0	18.5	2.0	20.0
		1	37	18.9	18.1	18.1	18.9	18.5	2.0	20.0	19.0	18.1	18.2	18.7	18.5	2.0	20.0
		1	74	18.7	18.1	18.2	18.9	18.7	2.0	20.0	18.9	18.3	18.1	18.7	18.5	2.0	20.0
		36	0	18.6	18.4	18.6	18.7	18.7	2.0	20.0	18.6	18.4	18.6	18.7	18.7	2.0	20.0
		36	20	18.6	18.4	18.6	18.8	18.7	2.0	20.0	18.6	18.4	18.6	18.7	18.7	2.0	20.0
		36	39	18.6	18.4	18.6	18.8	18.7	2.0	20.0	18.6	18.4	18.6	18.7	18.7	2.0	20.0

LTE Band 41 Power Class 3 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	20.5	20.2	20.4	20.5	20.4	0.0	22.0	20.7	20.5	20.6	20.8	20.6	0.0	22.0	
		1	25	20.4	20.1	20.3	20.4	20.3	0.0	22.0	20.6	20.4	20.5	20.7	20.6	0.0	22.0	
		1	49	20.4	20.2	20.3	20.5	20.4	0.0	22.0	20.6	20.5	20.6	20.8	20.6	0.0	22.0	
		25	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	
		25	12	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.7	20.5	20.6	20.8	20.7	0.0	22.0	
		25	25	20.5	20.2	20.4	20.6	20.4	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	
	16QAM	50	0	20.5	20.3	20.4	20.6	20.4	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	
		1	0	20.4	20.3	20.5	20.7	20.6	0.0	22.0	21.0	20.7	20.8	20.9	20.8	0.0	22.0	
		1	25	20.3	20.3	20.5	20.6	20.5	0.0	22.0	20.9	20.6	20.8	20.9	20.7	0.0	22.0	
		1	49	20.4	20.4	20.5	20.7	20.6	0.0	22.0	20.9	20.6	20.8	20.9	20.7	0.0	22.0	
		25	0	20.5	20.3	20.5	20.6	20.5	0.0	22.0	20.8	20.5	20.7	20.8	20.7	0.0	22.0	
		25	12	20.5	20.3	20.5	20.6	20.5	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	
	64QAM	25	25	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.7	20.5	20.7	20.8	20.7	0.0	22.0	
		50	0	20.5	20.3	20.5	20.6	20.5	0.0	22.0	20.8	20.5	20.7	20.9	20.8	0.0	22.0	
		1	0	20.5	20.5	20.5	20.6	20.5	0.0	22.0	20.6	20.3	20.5	20.6	20.5	0.0	22.0	
		1	25	20.4	20.5	20.5	20.6	20.5	0.0	22.0	20.5	20.3	20.5	20.6	20.5	0.0	22.0	
		1	49	20.5	20.5	20.5	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
		25	0	20.5	20.5	20.5	20.6	20.5	0.0	22.0	20.6	20.3	20.4	20.6	20.5	0.0	22.0	
	256QAM	25	12	20.5	20.5	20.5	20.6	20.5	0.0	22.0	20.6	20.3	20.5	20.6	20.5	0.0	22.0	
		25	25	20.5	20.5	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.5	20.6	20.4	0.0	22.0	
		50	0	20.6	20.5	20.5	20.6	20.5	0.0	22.0	20.6	20.3	20.5	20.6	20.4	0.0	22.0	
		1	0	18.6	18.3	18.2	18.6	18.5	2.0	20.0	18.5	18.2	18.3	18.6	18.5	2.0	20.0	
		1	25	18.5	18.2	18.2	18.6	18.5	2.0	20.0	18.5	18.1	18.2	18.6	18.5	2.0	20.0	
		1	49	18.5	18.3	18.3	18.6	18.5	2.0	20.0	18.5	18.2	18.2	18.6	18.5	2.0	20.0	
	5 MHz	QPSK	25	0	18.6	18.3	18.5	18.7	18.6	2.0	20.0	18.6	18.4	18.5	18.7	18.6	2.0	20.0
			25	12	18.6	18.3	18.5	18.7	18.6	2.0	20.0	18.6	18.4	18.5	18.7	18.6	2.0	20.0
			25	25	18.6	18.3	18.5	18.7	18.6	2.0	20.0	18.6	18.4	18.5	18.7	18.6	2.0	20.0
			50	0	18.6	18.4	18.5	18.7	18.6	2.0	20.0	18.6	18.4	18.5	18.7	18.6	2.0	20.0
			1	0	20.5	20.2	20.4	20.6	20.4	0.0	22.0	20.7	20.4	20.5	20.7	20.5	0.0	22.0
			1	12	20.3	20.1	20.5	20.5	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.6	0.0	22.0
16QAM		1	24	20.4	20.2	20.4	20.6	20.4	0.0	22.0	20.6	20.5	20.5	20.7	20.5	0.0	22.0	
		12	0	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.7	20.4	20.6	20.7	20.5	0.0	22.0	
		12	7	20.5	20.2	20.4	20.7	20.5	0.0	22.0	20.7	20.4	20.6	20.7	20.5	0.0	22.0	
		12	13	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.7	20.4	20.6	20.8	20.5	0.0	22.0	
	25	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.7	20.4	20.6	20.7	20.5	0.0	22.0		
	1	0	20.4	20.3	20.3	20.6	20.8	0.0	22.0	20.6	20.4	20.8	20.7	20.5	0.0	22.0		
64QAM	1	12	20.4	20.0	20.3	20.5	20.7	0.0	22.0	20.4	20.2	20.5	20.6	20.3	0.0	22.0		
	1	24	20.4	20.3	20.3	20.6	20.8	0.0	22.0	20.6	20.4	20.8	20.7	20.5	0.0	22.0		
	12	0	20.6	20.2	20.4	20.7	20.5	0.0	22.0	20.7	20.5	20.6	20.7	20.6	0.0	22.0		
	12	7	20.5	20.2	20.4	20.7	20.6	0.0	22.0	20.7	20.5	20.6	20.7	20.6	0.0	22.0		
	12	13	20.5	20.2	20.4	20.7	20.6	0.0	22.0	20.6	20.5	20.6	20.7	20.6	0.0	22.0		
	25	0	20.5	20.3	20.4	20.7	20.5	0.0	22.0	20.7	20.5	20.6	20.7	20.6	0.0	22.0		
256QAM	1	0	20.6	20.1	20.6	20.6	20.5	0.0	22.0	20.6	20.2	20.4	21.0	20.5	0.0	22.0		
	1	12	20.5	20.1	20.6	20.7	20.5	0.0	22.0	20.4	20.2	20.4	21.0	20.5	0.0	22.0		
	1	24	20.4	20.1	20.6	20.7	20.5	0.0	22.0	20.5	20.2	20.4	21.0	20.5	0.0	22.0		
	12	0	20.5	20.1	20.6	20.7	20.5	0.0	22.0	20.5	20.2	20.4	20.9	20.5	0.0	22.0		
	12	7	20.5	20.1	20.6	20.6	20.5	0.0	22.0	20.5	20.2	20.4	20.9	20.5	0.0	22.0		
	12	13	20.4	20.1	20.6	20.6	20.5	0.0	22.0	20.5	20.2	20.4	20.9	20.5	0.0	22.0		
256QAM	25	0	20.5	20.1	20.6	20.6	20.5	0.0	22.0	20.4	20.2	20.4	20.9	20.5	0.0	22.0		
	1	0	18.4	18.3	18.5	18.6	18.6	2.0	20.0	18.6	18.3	18.6	18.8	18.6	2.0	20.0		
	1	12	18.4	18.4	18.5	18.5	18.5	2.0	20.0	18.7	18.4	18.5	18.7	18.4	2.0	20.0		
	1	24	18.4	18.3	18.5	18.6	18.6	2.0	20.0	18.6	18.3	18.6	18.8	18.6	2.0	20.0		
	12	0	18.5	18.3	18.5	18.7	18.6	2.0	20.0	18.5	18.3	18.5	18.7	18.6	2.0	20.0		
	12	7	18.5	18.3	18.5	18.7	18.7	2.0	20.0	18.5	18.3	18.5	18.7	18.7	2.0	20.0		
256QAM	12	13	18.4	18.3	18.5	18.7	18.6	2.0	20.0	18.5	18.3	18.5	18.7	18.6	2.0	20.0		
	25	0	18.5	18.3	18.5	18.7	18.6	2.0	20.0	18.5	18.3	18.5	18.7	18.6	2.0	20.0		

LTE Band 41 Power Class 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
				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	20.3	20.4	20.5	0.0	22.0	20.4	20.2	20.4	20.7	20.4	0.0	22.0
		1	49	20.4	20.2	20.3	20.5	20.4	0.0	22.0	20.3	20.2	20.4	20.7	20.4	0.0	22.0
		1	99	20.3	20.2	20.3	20.4	20.4	0.0	22.0	20.3	20.2	20.4	20.6	20.4	0.0	22.0
		50	0	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.4	20.3	20.4	20.7	20.5	0.0	22.0
		50	24	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.5	20.7	20.5	0.0	22.0
		50	50	20.4	20.2	20.4	20.6	20.5	0.0	22.0	20.4	20.3	20.4	20.7	20.5	0.0	22.0
		100	0	20.4	20.2	20.4	20.6	20.5	0.0	22.0	20.4	20.3	19.9	20.7	20.5	0.0	22.0
	16QAM	1	0	21.0	20.7	20.7	21.0	20.8	0.0	22.0	21.1	20.6	20.9	20.9	20.9	0.0	22.0
		1	49	20.9	20.8	20.7	21.0	20.8	0.0	22.0	21.1	20.6	21.1	20.9	21.0	0.0	22.0
		1	99	20.9	20.7	20.7	21.0	20.7	0.0	22.0	21.1	20.6	21.2	20.9	20.9	0.0	22.0
		50	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.4	20.8	20.7	20.5	0.0	22.0
		50	24	20.5	20.3	20.5	20.6	20.5	0.0	22.0	20.5	20.4	20.7	20.7	20.5	0.0	22.0
		50	50	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.4	20.6	20.6	20.5	0.0	22.0
		100	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.6	20.7	20.5	0.0	22.0
	64QAM	1	0	20.6	20.5	20.6	20.7	20.9	0.0	22.0	20.8	20.4	20.6	20.7	20.4	0.0	22.0
		1	49	20.6	20.5	20.6	20.6	20.9	0.0	22.0	20.7	20.4	20.7	20.7	20.4	0.0	22.0
		1	99	20.6	20.5	20.6	20.6	20.9	0.0	22.0	20.7	20.4	20.6	20.7	20.4	0.0	22.0
		50	0	20.6	20.5	20.6	20.6	20.9	0.0	22.0	20.6	20.4	20.7	20.7	20.4	0.0	22.0
		50	24	20.6	20.5	20.6	20.6	20.9	0.0	22.0	20.6	20.4	20.6	20.7	20.4	0.0	22.0
		50	50	20.5	20.5	20.6	20.6	20.9	0.0	22.0	20.5	20.4	20.6	20.7	20.4	0.0	22.0
		100	0	20.6	20.5	20.6	20.6	20.9	0.0	22.0	20.5	20.4	20.6	20.7	20.4	0.0	22.0
	256QAM	1	0	18.7	18.5	18.6	18.8	18.7	2.0	20.0	18.6	18.4	18.8	18.8	18.6	2.0	20.0
		1	49	18.7	18.6	18.6	18.8	18.7	2.0	20.0	18.5	18.4	18.8	18.8	18.6	2.0	20.0
		1	99	18.7	18.5	18.5	18.8	18.7	2.0	20.0	18.5	18.4	18.8	18.8	18.6	2.0	20.0
		50	0	18.5	18.2	18.5	18.6	18.5	2.0	20.0	18.5	18.2	18.4	18.6	18.5	2.0	20.0
		50	24	18.6	18.3	18.5	18.7	18.5	2.0	20.0	18.5	18.2	18.4	18.6	18.5	2.0	20.0
		50	50	18.5	18.2	18.4	18.6	18.5	2.0	20.0	18.4	18.2	18.3	18.6	18.5	2.0	20.0
		100	0	18.5	18.3	18.5	18.6	18.5	2.0	20.0	18.4	18.2	18.4	18.6	18.5	2.0	20.0
15 MHz	QPSK	1	0	20.4	20.2	20.3	20.5	20.4	0.0	22.0	20.4	20.2	20.3	20.5	20.4	0.0	22.0
		1	37	20.1	20.1	20.2	20.3	20.3	0.0	22.0	20.2	20.1	20.2	20.4	20.3	0.0	22.0
		1	74	20.3	20.1	20.2	20.5	20.3	0.0	22.0	20.4	20.1	20.2	20.5	20.3	0.0	22.0
		36	0	20.5	20.2	20.4	20.5	20.4	0.0	22.0	20.5	20.2	20.3	20.5	20.4	0.0	22.0
		36	20	20.5	20.2	20.4	20.5	20.4	0.0	22.0	20.4	20.2	20.3	20.5	20.4	0.0	22.0
		36	39	20.5	20.2	20.3	20.6	20.4	0.0	22.0	20.5	20.2	20.3	20.6	20.4	0.0	22.0
		75	0	20.5	20.2	20.4	20.5	20.4	0.0	22.0	20.4	20.2	20.3	20.5	20.4	0.0	22.0
	16QAM	1	0	20.7	20.2	20.7	20.8	20.8	0.0	22.0	20.8	20.5	20.9	20.5	20.7	0.0	22.0
		1	37	21.0	20.1	20.8	21.1	20.7	0.0	22.0	20.6	20.7	20.9	20.3	20.9	0.0	22.0
		1	74	20.6	20.2	20.6	20.8	20.7	0.0	22.0	20.7	20.5	20.9	20.4	20.7	0.0	22.0
		36	0	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.5	20.2	20.3	20.6	20.5	0.0	22.0
		36	20	20.5	20.3	20.4	20.7	20.5	0.0	22.0	20.5	20.2	20.3	20.6	20.5	0.0	22.0
		36	39	20.5	20.2	20.3	20.7	20.5	0.0	22.0	20.5	20.2	20.3	20.6	20.5	0.0	22.0
		75	0	20.4	20.2	20.4	20.6	20.4	0.0	22.0	20.5	20.2	20.4	20.6	20.4	0.0	22.0
	64QAM	1	0	20.9	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	21.1	0.0	22.0
		1	37	20.9	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	21.0	0.0	22.0
		1	74	20.8	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	21.0	0.0	22.0
		36	0	20.5	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	20.4	0.0	22.0
		36	20	20.5	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	20.4	0.0	22.0
		36	39	20.5	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	20.4	0.0	22.0
		75	0	20.5	20.0	20.5	20.8	20.6	0.0	22.0	20.7	20.3	20.8	20.8	20.4	0.0	22.0
	256QAM	1	0	18.5	18.5	18.2	18.8	18.5	2.0	20.0	18.6	18.7	18.1	18.8	18.6	2.0	20.0
		1	37	18.4	18.6	18.2	18.8	18.5	2.0	20.0	18.7	18.3	18.3	18.9	18.5	2.0	20.0
		1	74	18.4	18.5	18.1	18.8	18.5	2.0	20.0	18.5	18.6	18.1	18.8	18.6	2.0	20.0
		36	0	18.5	18.3	18.4	18.6	18.6	2.0	20.0	18.6	18.2	18.4	18.6	18.5	2.0	20.0
		36	20	18.5	18.3	18.5	18.6	18.6	2.0	20.0	18.5	18.3	18.5	18.6	18.5	2.0	20.0
		36	39	18.5	18.3	18.4	18.6	18.6	2.0	20.0	18.5	18.2	18.4	18.6	18.5	2.0	20.0
		75	0	18.5	18.2	18.4	18.6	18.6	2.0	20.0	18.5	18.3	18.4	18.6	18.5	2.0	20.0

LTE Band 41 Power Class 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	
				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	20.5	20.2	20.3	20.5	20.4	0.0	22.0	20.5	20.2	20.3	20.5	20.4	0.0	22.0	
		1	25	20.4	20.1	20.2	20.5	20.4	0.0	22.0	20.4	20.1	20.2	20.4	20.4	0.0	22.0	
		1	49	20.4	20.2	20.3	20.5	20.4	0.0	22.0	20.4	20.2	20.3	20.5	20.4	0.0	22.0	
		25	0	20.5	20.3	20.4	20.6	20.4	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
		25	12	20.5	20.2	20.4	20.5	20.4	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
		25	25	20.5	20.3	20.4	20.6	20.4	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
	16QAM	50	0	20.5	20.3	20.4	20.6	20.4	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
		1	0	20.6	20.6	20.6	20.9	21.1	0.0	22.0	21.0	20.6	20.7	20.9	21.1	0.0	22.0	
		1	25	20.5	20.6	20.5	20.9	21.1	0.0	22.0	21.0	20.5	20.6	20.9	21.0	0.0	22.0	
		1	49	20.6	20.6	20.6	20.9	21.1	0.0	22.0	21.0	20.5	20.7	20.9	21.1	0.0	22.0	
		25	0	20.6	20.3	20.4	20.6	20.5	0.0	22.0	20.6	20.3	20.4	20.6	20.5	0.0	22.0	
		25	12	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.6	20.3	20.4	20.6	20.5	0.0	22.0	
	64QAM	25	25	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	
		50	0	20.6	20.3	20.4	20.6	20.5	0.0	22.0	20.6	20.3	20.4	20.7	20.5	0.0	22.0	
		1	0	20.7	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.8	20.7	0.0	22.0	
		1	25	20.6	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.7	20.7	0.0	22.0	
		1	49	20.7	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.8	20.7	0.0	22.0	
		25	0	20.5	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.7	20.5	0.0	22.0	
	256QAM	25	12	20.5	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.7	20.5	0.0	22.0	
		25	25	20.5	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.7	20.5	0.0	22.0	
		50	0	20.6	20.3	20.5	20.9	20.4	0.0	22.0	20.6	20.4	20.6	20.7	20.6	0.0	22.0	
		1	0	18.2	18.3	18.6	18.7	18.6	2.0	20.0	18.8	18.5	18.2	18.9	18.4	2.0	20.0	
		1	25	18.3	18.2	18.5	18.7	18.5	2.0	20.0	18.8	18.4	18.2	18.8	18.4	2.0	20.0	
		1	49	18.4	18.2	18.6	18.7	18.6	2.0	20.0	18.8	18.5	18.2	18.9	18.4	2.0	20.0	
	5 MHz	QPSK	25	0	18.5	18.3	18.4	18.6	18.5	2.0	20.0	18.5	18.2	18.4	18.6	18.4	2.0	20.0
			25	12	18.5	18.3	18.4	18.6	18.5	2.0	20.0	18.5	18.2	18.4	18.6	18.4	2.0	20.0
			25	25	18.5	18.3	18.4	18.6	18.5	2.0	20.0	18.5	18.2	18.3	18.6	18.5	2.0	20.0
			50	0	18.5	18.2	18.3	18.6	18.5	2.0	20.0	18.5	18.2	18.3	18.6	18.4	2.0	20.0
			1	0	20.5	20.3	20.3	20.5	20.4	0.0	22.0	20.5	20.2	20.3	20.5	20.4	0.0	22.0
			1	12	20.6	20.3	20.4	20.7	20.5	0.0	22.0	20.6	20.3	20.6	20.7	20.5	0.0	22.0
16QAM	1	24	20.4	20.3	20.3	20.5	20.4	0.0	22.0	20.5	20.2	20.3	20.5	20.4	0.0	22.0		
	12	0	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0		
	12	7	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.5	20.2	20.4	20.6	20.4	0.0	22.0		
	12	13	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0		
	25	0	20.5	20.2	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0		
	1	0	20.8	20.5	20.8	21.0	20.8	0.0	22.0	20.8	20.8	20.7	21.0	21.0	0.0	22.0		
64QAM	1	12	20.8	20.7	20.7	20.9	21.0	0.0	22.0	20.3	21.0	20.7	20.7	21.1	0.0	22.0		
	1	24	20.9	20.5	20.7	21.0	20.8	0.0	22.0	20.8	20.8	20.7	21.0	20.9	0.0	22.0		
	12	0	20.7	20.2	20.5	20.7	20.4	0.0	22.0	20.5	20.4	20.5	20.6	20.5	0.0	22.0		
	12	7	20.7	20.2	20.4	20.7	20.4	0.0	22.0	20.5	20.4	20.5	20.6	20.5	0.0	22.0		
	12	13	20.6	20.2	20.5	20.7	20.4	0.0	22.0	20.5	20.4	20.5	20.6	20.5	0.0	22.0		
	25	0	20.5	20.3	20.4	20.6	20.5	0.0	22.0	20.5	20.3	20.4	20.6	20.5	0.0	22.0		
256QAM	1	0	20.6	20.8	20.4	20.9	20.8	0.0	22.0	20.6	20.5	20.2	20.7	20.8	0.0	22.0		
	1	12	20.6	20.8	20.4	20.9	20.8	0.0	22.0	20.6	20.5	20.2	20.7	21.0	0.0	22.0		
	1	24	20.6	20.8	20.4	20.9	20.9	0.0	22.0	20.6	20.5	20.2	20.7	20.8	0.0	22.0		
	12	0	20.6	20.8	20.4	20.9	20.8	0.0	22.0	20.7	20.5	20.2	20.7	20.5	0.0	22.0		
	12	7	20.6	20.8	20.4	20.9	20.9	0.0	22.0	20.7	20.5	20.2	20.7	20.5	0.0	22.0		
	12	13	20.6	20.8	20.4	20.9	20.9	0.0	22.0	20.7	20.5	20.2	20.7	20.5	0.0	22.0		
5 MHz	QPSK	25	0	20.6	20.8	20.4	20.9	20.8	0.0	22.0	20.6	20.5	20.2	20.7	20.5	0.0	22.0	
		1	0	18.7	18.6	18.5	18.8	18.8	2.0	20.0	18.5	18.4	18.6	18.9	18.8	2.0	20.0	
		1	12	18.8	18.9	18.6	19.0	18.9	2.0	20.0	18.7	18.5	18.7	19.1	19.0	2.0	20.0	
		1	24	18.7	18.6	18.5	18.8	18.8	2.0	20.0	18.4	18.3	18.6	18.8	18.8	2.0	20.0	
		12	0	18.6	18.3	18.4	18.5	18.4	2.0	20.0	18.4	18.2	18.3	18.5	18.5	2.0	20.0	
		12	7	18.6	18.3	18.3	18.5	18.4	2.0	20.0	18.4	18.1	18.2	18.5	18.5	2.0	20.0	
16QAM	12	13	18.6	18.3	18.4	18.5	18.5	2.0	20.0	18.4	18.2	18.3	18.5	18.5	2.0	20.0		
	25	0	18.5	18.2	18.3	18.6	18.5	2.0	20.0	18.4	18.2	18.3	18.5	18.5	2.0	20.0		

9.3.1. LTE Rel. 10 Carrier Aggregation

LTE Carrier Aggregation Down Link Combinations:

The DL CA power measurement conditions for various CC's combinations were determined according LTE DL CA SAR Test Exclusion guidance in TCB workshop note (April 2018). Only yellow highlighted cells need power measurement. The following power measurements were performed with a single carrier uplink; CA for this particular project only supports one (1) uplink and up to four (4) downlinks.

LTE Release 10 Carrier Aggregation

Index	2CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
2CC #1	CA_2A-2A			
2CC #2	CA_2C			
2CC #3	CA_2A-4A		3CC #1	O
2CC #4	CA_2A-5A		3CC #1	O
2CC #5	CA_2A-12A			O
2CC #6	CA_2A-13A		3CC #2	O
2CC #7	CA_2A-17A			O
2CC #8	CA_2A-66A			O
2CC #9	CA_4A-4A		3CC #3	
2CC #10	CA_4A-5A		3CC #1	O
2CC #11	CA_4A-12A		3CC #3	O
2CC #12	CA_4A-13A		3CC #2	O
2CC #13	CA_4A-17A	B17 SCC only	3CC #4	X
2CC #14	CA_5A-41A			X
2CC #15	CA_5A-66A		3CC #5	O
2CC #16	CA_12A-66A		3CC #6	O
2CC #17	CA_26A-41A			X
2CC #18	CA_41A-41A			
2CC #19	CA_41C		3CC #7	
2CC #20	CA_66A-66A		3CC #5	
2CC #21	CA_66B			
2CC #22	CA_66C			

Index	3CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
3CC #1	CA_2A-4A-5A			O
3CC #2	CA_2A-4A-13A			O
3CC #3	CA_4A-4A-12A			O
3CC #4	CA_4A-4A-17A	B17 SCC only		X
3CC #5	CA_5A-66A-66A			O
3CC #6	CA_12A-66A-66A			O
3CC #7	CA_26A-41C			X
3CC #8	CA_41A-41C			-
3CC #9	CA_41D		4CC #2	-

Index	4CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
4CC #1	CA_41C-41C		-	
4CC #2	CA_41A-41D		-	O
4CC #3	CA_41E		-	

Note:

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

LTE Release 10 Carrier Aggregation with 4x4 MIMO

2CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
2A-[4A]	3CC #1		O
2A-[66A]			O
[4A]-4A			O
[4A]-[4A]	3CC #3		
[4A]-5A	3CC #1		O
[4A]-12A	3CC #3		O
[4A]-13A	3CC #2		O
[4A]-17A	3CC #4		O
5A-[41A]			X
5A-[66A]	3CC #3		O
12A-[66A]	3CC #6		O
66A-[66A]	3CC #5		
[66A]-[66A]	3CC #6		
26A-[41A]			X
[41A]-41A			O
[41A]-[41A]			
[41C]	4CC #4		

Index	3CC	Restriction	Completely Covered by Measurement Supersrt	Reverse
3CC #1	2A-[4A]-5A			O
3CC #2	2A-[4A]-13A			O
3CC #3	[4A]-[4A]-12A			O
3CC #4	[4A]-[4A]-17A			O
3CC #5	5A-66A-[66A]			O
3CC #6	5A-[66A]-[66A]			O
3CC #7	12A-66A-[66A]			
3CC #8	12A-[66A]-[66A]			
3CC #9	26A-[41C]			O
3CC #10	41A-[41C]			O
3CC #11	[41A]-41C			O
3CC #12	[41A]-[41C]			O
3CC #13	[41D]	4CC #2		O

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

[*] is 4X4 MIMO configuration.

Note:

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

1. Single Carrier 4x4 Downlink MIMO

LTE Band	Bandwidth (MHz)	Channel	Frequency (MHz)	Modulation	RB/Offset	LTE Rel 8 Tx. Power [dBm]	4x4 DL MIMO LTE Rel 8 Tx. Power [dBm]	Delta
LTE Band 4	20 MHz	20050	1720 MHz	QPSK	1/99	23.5	23.3	-0.2
LTE Band 66	20 Mhz	132572	1770 MHz	QPSK	1/49	23.6	23.7	0.1
LTE Band 41	20 Mhz	41055	2636.5 MHz	QPSK	1/49	23.7	23.8	0.1

Note:

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

2. DL CA output power results

E-UTRA CA configuration (BCS)	Bands					UL				DL												LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta						
	PCC	SCC1	SCC2	SCC3	SCC4	PCC				PCC			SCC1			SCC2			SCC3						SCC4					
	1st	2nd	3rd	4th	5th	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel				Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)		
2A-12A	2A	12A				QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	5095	737.5											24.3	24.4	0.1	
	12A	2A				QPSK	10	23095	707.5	1/0	10	5095	737.5	20	900	1960.0											25.2	25.2	0.0	
2A-17A	2A	17A				QPSK	20	19100	1900.0	1/49	20	1100	1980.0	10	5790	740.0											24.3	24.3	0.1	
	17A	2A				QPSK	10	23790	710.0	1/49	10	5790	740.0	20	900	1960.0											24.9	25.0	0.1	
2A-66A	2A	66A				QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	66786	2145.0												24.3	24.4	0.1
	66A	2A				QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	900	1960.0												23.2	23.2	-0.1
5A-41A	5A	41A				QPSK	10	20525	836.5	1/0	10	2525	881.5	20	40620	2593.0												24.6	24.6	0.0
26A-41A	26A	41A				QPSK	15	26865	831.5	1/74	15	8865	876.5	20	40620	2593.0												24.7	24.7	0.1
2A-4A-5A	2A	4A	5A			QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	2175	2132.5	10	2525	881.5									24.3	24.2	-0.1
	4A	5A	2A			QPSK	20	20175	1732.5	1/49	20	2175	2132.5	10	2525	881.5	20	900	1960.0									23.3	23.3	0.0
	5A	2A	4A			QPSK	10	20525	836.5	1/0	10	2525	881.5	20	900	1960.0	20	2175	2132.5									24.6	24.7	0.0
2A-4A-13A	2A	4A	13A			QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	2175	2132.5	10	5230	751.0									24.3	24.3	0.0
	4A	2A	13A			QPSK	20	20175	1732.5	1/49	20	2175	2132.5	20	900	1960.0	10	5230	751.0									23.3	23.4	0.1
	13A	2A	4A			QPSK	10	23230	782.0	1/25	10	5230	751.0	20	900	1960.0	20	2175	2132.5									25.0	24.9	0.0
4A-4A-12A	4A	4A	12A			QPSK	20	20050	1720.0	1/99	20	2050	2120.0	20	2300	2145.0	20	5095	737.5									23.5	23.4	-0.1
	12A	4A	4A			QPSK	10	23095	707.5	1/0	20	5095	737.5	20	2050	2120.0	20	2300	2145.0									25.2	25.2	-0.1
4A-4A-17A	4A	4A	17A			QPSK	20	20050	1720.0	1/99	20	2050	2120.0	20	2300	2145.0	10	5790	740.0									23.5	23.5	0.0
5A-66A-66A	5A	66A	66A			QPSK	10	20525	836.5	1/0	10	2525	881.5	20	66786	2145.0	20	67036	2170.0									24.6	24.5	-0.1
	66A	66A	5A			QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	2525	881.5									23.6	23.7	0.1
12A-66A-66A	12A	66A	66A			QPSK	10	23095	707.5	1/0	10	5095	737.5	20	66786	2145.0	20	67036	2170.0									25.2	25.2	0.0
	66A	66A	12A			QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	5095	737.5									23.6	23.7	0.1
26A-41C	26A	41C	41C			QPSK	15	26865	831.5	1/74	15	8865	876.5	20	40620	2593.0	20	40818	2612.8									24.7	24.5	-0.1
2A-2A	2A	2A				QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	700	1940.0												24.3	24.3	0.0
41A-41A	41A	41A				QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0												23.7	23.9	0.1
41A-41C	41A	41C	41C			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8									23.7	23.8	0.0
	41C	41C	41A			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0									23.7	23.7	0.0
41C-41C	41C	41C	41C	41C		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0	20	39948	2525.8						23.7	23.7	0.0
41A-41D	41A	41D	41D	41D		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8	20	40146	2545.6						23.7	23.7	0.0
	41D	41D	41D	41A		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	41451	2676.1	20	39750	2506.0						23.7	23.8	0.0
41C-41D	41C	41C	41D	41D	41D	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0	20	39948	2525.8	20	40146	2545.6		23.7	23.8	0.0	
	41D	41D	41D	41C	41C	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	41451	2676.1	20	39750	2506.0	20	39948	2525.8		23.7	23.8	0.1	
2C	2C	2C				QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	898	1959.8												24.3	24.3	0.1
66B	66B	66B				QPSK	15	132047	1717.5	1/74	15	66511	2117.5	5	66604	2126.8												23.5	23.6	0.0
66C	66C	66C				QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66838	2150.2												23.6	23.6	0.0
41E	41E	41E	41E	41E		QPSK	20	41055	2636.5	1/49	20	40620	2593.0	20	40818	2612.8	20	41016	2632.6	20	41214	2652.4					23.7	23.8	0.0	

- Note:**
- Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.
 - When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

3. DL CA with downlink 4x4 MIMO output power results

E-UTRA CA configuration (BCS)	Bands				UL					DL											LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta	
	PCC	SCC1	SCC2	SCC3	PCC					PCC			SCC1			SCC2			SCC3					
	1st	2nd	3rd	4th	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel				Freq. (MHz)
2A-[66A]	2A	[66A]			QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	66786	2145.0							24.3	24.2	-0.1
	[66A]	2A			QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	900	1960.0							23.2	23.2	-0.1
5A-[41A]	5A	[41A]			QPSK	10	20525	836.5	1/0	10	2525	881.5	20	40620	2593.0							24.6	24.6	-0.1
26A-[41A]	26A	[41A]			QPSK	15	26865	831.5	1/74	15	8865	876.5	20	40620	2593.0							24.7	24.7	0.0
2A-[4A]-5A	2A	[4A]	5A		QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	2175	2132.5	10	2525	881.5				24.3	24.2	-0.1
	[4A]	5A	2A		QPSK	20	20175	1732.5	1/49	20	2175	2132.5	10	2525	881.5	20	900	1960.0				23.3	23.4	0.1
	5A	2A	[4A]		QPSK	10	20525	836.5	1/0	10	2525	881.5	20	900	1960.0	20	2175	2132.5				24.6	24.7	0.1
2A-[4A]-13A	2A	[4A]	13A		QPSK	20	19100	1900.0	1/49	20	1100	1980.0	20	2175	2132.5	10	5230	751.0				24.3	24.4	0.1
	[4A]	2A	13A		QPSK	20	20175	1732.5	1/49	20	2175	2132.5	20	900	1960.0	10	5230	751.0				23.3	23.4	0.1
	13A	2A	[4A]		QPSK	10	23230	782.0	1/25	10	5230	751.0	20	900	1960.0	20	2175	2132.5				25.0	25.0	0.0
[4A]-[4A]-12A	[4A]	[4A]	12A		QPSK	20	20050	1720.0	1/99	20	2050	2120.0	20	2300	2145.0	20	5095	737.5				23.3	23.2	0.0
	12A	[4A]	[4A]		QPSK	10	23095	707.5	1/0	20	5095	737.5	20	2050	2120.0	20	2300	2145.0				25.2	25.2	0.0
[4A]-[4A]-17A	[4A]	[4A]	17A		QPSK	20	20050	1720.0	1/99	20	2050	2120.0	20	2300	2145.0	10	5790	740.0				23.3	23.2	-0.1
5A-[66A]-[66A]	5A	[66A]	[66A]		QPSK	10	20525	836.5	1/0	10	2525	881.5	20	66786	2145.0	20	67036	2170.0				24.6	24.7	0.0
	[66A]	[66A]	5A		QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	2525	881.5				23.2	23.3	0.0
5A-66A-[66A]	5A	66A	[66A]		QPSK	10	20525	836.5	1/0	10	2525	881.5	20	66786	2145.0	20	67036	2170.0				24.6	24.8	0.1
	[66A]	[66A]	5A		QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	2525	881.5				23.2	23.2	0.0
12A-66A-[66A]	12A	66A	[66A]		QPSK	10	23095	707.5	1/0	10	5095	737.5	20	66786	2145.0	20	67036	2170.0				25.2	25.1	-0.1
	[66A]	[66A]	12A		QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	5095	737.5				23.2	23.2	0.0
12A-[66A]-[66A]	12A	[66A]	[66A]		QPSK	10	23095	707.5	1/0	10	5095	737.5	20	66786	2145.0	20	67036	2170.0				25.2	25.3	0.1
	[66A]	[66A]	12A		QPSK	20	132572	1770.0	1/0	20	67036	2170.0	20	66536	2120.0	10	5095	737.5				23.2	23.3	0.0
26A-[41C]	26A	[41C]	[41C]		QPSK	15	26865	831.5	1/74	15	8865	876.5	20	40620	2593.0	20	40818	2612.8				24.7	24.7	0.1
[4A]-4A	[4A]	4A			QPSK	20	20050	1720.0	1/99	20	2050	2120.0	20	2300	2145.0							23.7	23.8	0.1
[41A]-41A	[41A]	41A			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0							23.7	23.9	0.2
	41A	[41A]			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0							23.7	23.7	-0.1
[41A]-[41A]	[41A]	[41A]			QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0							23.7	23.6	-0.1

Note:

1. Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.
2. When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

DL CA with downlink 4x4 MIMO output power results (Continued)

E-UTRA CA configuration (BCS)	Bands				UL					DL									LTE Rel 8 Tx. Power [dBm]	LTE Rel 10 Tx. Power [dBm]	Delta			
	PCC	SCC1	SCC2	SCC3	PCC					PCC			SCC1			SCC2						SCC3		
					1st	2nd	3rd	4th	Mode	BW (MHz)	Channel	Freq. (MHz)	RB/Offset	BW (MHz)	Channel	Freq. (MHz)	BW (MHz)	Channel				Freq. (MHz)	BW (MHz)	Channel
41A-[41C]	41A	[41C]	[41C]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8				23.7	23.7	0.0
	[41C]	[41C]	41A		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0				23.7	23.6	-0.1
[41A]-41C	[41A]	41C	41C		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8				23.7	23.6	-0.1
	41C	41C	[41A]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0				23.7	23.9	0.1
[41A]-[41C]	[41A]	[41C]	[41C]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8				23.7	23.6	-0.1
	[41C]	[41C]	[41A]		QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0				23.7	23.6	-0.2
[41A]-41D	[41A]	41D	41D	41D	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8	20	40146	2545.6	23.7	23.6	-0.1
	41D	41D	41D	[41A]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	41451	2676.1	20	39750	2506.0	23.7	23.6	-0.2
41A-[41D]	41A	[41D]	[41D]	[41D]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8	20	40146	2545.6	23.7	23.7	0.0
	[41D]	[41D]	[41D]	41A	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	41451	2676.1	20	39750	2506.0	23.7	23.6	-0.2
[41A]-[41D]	[41A]	[41D]	[41D]	[41D]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	39750	2506.0	20	39948	2525.8	20	40146	2545.6	23.7	23.6	-0.2
	[41D]	[41D]	[41D]	[41A]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	41451	2676.1	20	39750	2506.0	23.7	23.7	0.0
[41C]-41C	[41C]	[41C]	41C	41C	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0	20	39948	2525.8	23.7	23.7	-0.1
	41C	41C	[41C]	[41C]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0	20	39948	2525.8	23.7	23.7	-0.1
[41C]-[41C]	[41C]	[41C]	[41C]	[41C]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	41253	2656.3	20	39750	2506.0	20	39948	2525.8	23.7	23.7	-0.1
	[41E]	[41E]	[41E]	[41E]	QPSK	20	41055	2636.5	1/49	20	41055	2636.5	20	40857	2616.7	20	40659	2596.9	20	40461	2577.1	23.7	23.8	0.0

Note:

1. Per KDB 941225 D05A LTE Rel. 10 KDB Inquiry Sheet: SAR is excluded for Carrier Aggregation when measured power does not exceed LTE Release 8 by more than a 1/4 dB.
2. When the same frequency band is used for both contiguous and non-contiguous in DL CA Intra band, power was measured using the configuration with the largest aggregated bandwidth and maximum output power among the contiguous and non-contiguous in DL CA Intra band configurations

9.4. 5G NR (FR1)

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS 138.521-1 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 TS138.521-1.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power 3

Modulation	MPR (dB)		
	Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM Pi/2 BPSK	≤ 3.5 ¹	≤ 1.2 ¹	≤ 0.2 ¹
DFT-s-OFDM QPSK		≤ 0.5 ²	0 ²
DFT-s-OFDM 16 QAM	≤ 1		0
DFT-s-OFDM 64 QAM	≤ 2		≤ 1
DFT-s-OFDM 256 QAM		≤ 2.5	
CP-OFDM QPSK		≤ 4.5	
CP-OFDM 16 QAM	≤ 3		≤ 1.5
CP-OFDM 64 QAM	≤ 3		≤ 2
CP-OFDM 256 QAM		≤ 3.5	
		≤ 6.5	

NOTE 1: Applicable for UE operating in TDD mode with Pi/2 BPSK modulation and UE indicates support for UE capability *powerBoosting-pi2BPSK* and if the IE *powerBoostPi2BPSK* is set to 1 and 40 % or less slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79. The reference power of 0dB MPR is 26dBm.

NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n41, n77, n78 and n79 and if the IE *powerBoostPi2BPSK* is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n41, n77, n78 and n79.

The allowed A-MPR values specified below in Table 6.2.3.3.1-1 of 3GPP TS138.521-1 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 6.2.3.3.1-1: Additional maximum power reduction (A-MPR)

Network Signalling label	Requirements (subclause)	NR Band	Channel bandwidth (MHz)	Resources Blocks (N _{RB})	A-MPR (dB)
NS_01		Table 5.2-1	5, 10, 15, 20, 25, 30, 40, 50, 60, 80, 90, 100	Table 5.3.2-1	N/A

Uplink RB allocations were used to Table 6.1-1 of the 3GPP TS 138.521-1.

Channel Bandwidth	SCS(kHz)	OFDM	RB allocation							
			Edge_Full_Left	Edge_Full_Right	Edge_1RB_Left	Edge_1RB_Right	Outer_Full	Inner_Full	Inner_1RB_Left	Inner_1RB_Right
5MHz	15	DFT-s	2@0	2@23	1@0	1@24	25@0	12@6	1@1	1@23
		CP	2@0	2@23	1@0	1@24	25@0	13@6	1@1	1@23
	30	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2 ¹	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2 ¹	1@1	1@9
	60	DFT-s	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		CP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10MHz	15	DFT-s	2@0	2@50	1@0	1@51	50@0	25@12	1@1	1@50
		CP	2@0	2@50	1@0	1@51	52@0	26@13	1@1	1@50
	30	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
	60	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2 ¹	1@1	1@9
		CP	2@0	2@9	1@0	1@10	11@0	5@2 ¹	1@1	1@9
15MHz	15	DFT-s	2@0	2@77	1@0	1@78	75@0	38@18	1@1	1@77
		CP	2@0	2@77	1@0	1@78	79@0	39@19 ¹	1@1	1@77
	30	DFT-s	2@0	2@36	1@0	1@37	36@0	18@9	1@1	1@36
		CP	2@0	2@36	1@0	1@37	38@0	19@9	1@1	1@36
	60	DFT-s	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
		CP	2@0	2@16	1@0	1@17	18@0	9@4	1@1	1@16
20MHz	15	DFT-s	2@0	2@104	1@0	1@105	100@0	50@25	1@1	1@104
		CP	2@0	2@104	1@0	1@105	106@0	53@26	1@1	1@104
	30	DFT-s	2@0	2@49	1@0	1@50	50@0	25@12	1@1	1@49
		CP	2@0	2@49	1@0	1@50	51@0	25@12 ¹	1@1	1@49
	60	DFT-s	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22
		CP	2@0	2@22	1@0	1@23	24@0	12@6	1@1	1@22

1. Max power Results

NR Band n5 Power Measured Results

BW (MHz)	Waveform	Modulation	RB Allocation	RB offset	Maximum Average Power (dBm)				
					Measured Pwr (dBm)			MPR	Tune-up Limit
					166800	167300	167800		
					834 MHz	836.5 MHz	839 MHz		
20 MHz	DFT-s OFDM	π/2 BPSK	1	1		24.1		0.0	25.5
			1	53		24.5		0.0	25.5
			1	104		24.5		0.0	25.5
			50	0		23.8		1.0	24.5
			50	28		24.3		0.0	25.5
			50	56		24.1		1.0	24.5
			100	0		23.8		1.0	24.5
		QPSK	1	1		24.1		0.0	25.5
			1	53		24.5		0.0	25.5
			1	104		24.8		0.0	25.5
			50	0		23.2		1.0	24.5
			50	28		24.5		0.0	25.5
			50	56		23.5		1.0	24.5
			100	0		23.3		1.0	24.5
		16QAM	1	1		23.1		1.0	24.5
		64QAM	1	1		21.6		2.5	23.0
		256QAM	1	1		19.7		4.5	21.0
CP-OFDM	QPSK	1	1		22.6		1.5	24.0	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					166300	167300	168300		
					831.5 MHz	836.5 MHz	841.5 MHz		
15 MHz	DFT-s OFDM	π/2 BPSK	1	1		24.3		0.0	25.5
			1	39		24.5		0.0	25.5
			1	77		24.6		0.0	25.5
			36	0		23.8		1.0	24.5
			36	22		24.4		0.0	25.5
			36	43		24.1		1.0	24.5
			75	0		23.9		1.0	24.5
		QPSK	1	1		24.3		0.0	25.5
			1	39		24.6		0.0	25.5
			1	77		24.6		0.0	25.5
			36	0		23.3		1.0	24.5
			36	22		24.4		0.0	25.5
			36	43		23.5		1.0	24.5
			75	0		23.4		1.0	24.5
		16QAM	1	1		23.3		1.0	24.5
		64QAM	1	1		21.7		2.5	23.0
		256QAM	1	1		19.8		4.5	21.0
CP-OFDM	QPSK	1	1		22.9		1.5	24.0	

NR Band n5 Power Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					165800	167300	168800		
					829 MHz	836.5 MHz	844 MHz		
10 MHz	DFT-s OFDM	π/2 BPSK	1	1		24.3		0.0	25.5
			1	26		24.6		0.0	25.5
			1	50		24.6		0.0	25.5
			25	0		23.9		1.0	24.5
			25	14		24.5		0.0	25.5
			25	27		24.1		1.0	24.5
			50	0		24.0		1.0	24.5
		QPSK	1	1		24.3		0.0	25.5
			1	26		24.6		0.0	25.5
			1	50		24.6		0.0	25.5
			25	0		23.4		1.0	24.5
			25	14		24.5		0.0	25.5
			25	27		23.6		1.0	24.5
		16QAM	50	0		23.5		1.0	24.5
			1	1		23.3		1.0	24.5
1	1			21.8		2.5	23.0		
256QAM	1	1		19.9		4.5	21.0		
	CP-OFDM	QPSK	1	1		22.8		1.5	24.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	
					165300	167300	169300			
					826.5 MHz	836.5 MHz	846.5 MHz			
5 MHz	DFT-s OFDM	π/2 BPSK	1	1	24.4	24.4	24.7	0.0	25.5	
			1	13	24.4	24.4	24.6	0.0	25.5	
			1	23	24.5	24.5	24.7	0.0	25.5	
			12	0	24.0	24.0	24.2	1.0	24.5	
			12	6	24.5	24.5	24.7	0.0	25.5	
			12	13	24.0	24.0	24.2	1.0	24.5	
			25	0	24.0	24.0	24.3	1.0	24.5	
		QPSK	1	1	24.4	24.4	24.6	0.0	25.5	
			1	13	24.4	24.4	24.6	0.0	25.5	
			1	23	24.5	24.6	24.7	0.0	25.5	
			12	0	23.5	23.5	23.7	1.0	24.5	
			12	6	24.5	24.5	24.7	0.0	25.5	
			12	13	23.5	23.4	23.7	1.0	24.5	
		16QAM	25	0	23.4	23.5	23.7	1.0	24.5	
			1	1	23.4	23.4	23.8	1.0	24.5	
			1	1	21.9	21.9	22.2	2.5	23.0	
		256QAM	1	1	20.0	20.0	20.3	4.5	21.0	
			CP-OFDM	QPSK	1	1	22.9	22.9	23.1	1.5

NR Band n66 Power Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)				
					Measured Pwr (dBm)			MPR	Tune-up Limit
					344000	349000	354000		
					1720 MHz	1745 MHz	1770 MHz		
20 MHz	DFT-s OFDM	π/2 BPSK	1	1	23.1	22.8	22.8	0.0	24.0
			1	53	23.3	23.1	22.8	0.0	24.0
			1	104	23.1	23.0	22.7	0.0	24.0
			50	0	22.6	22.6	22.3	1.0	23.0
			50	28	23.2	23.1	22.7	0.0	24.0
			50	56	22.6	22.7	22.2	1.0	23.0
			100	0	22.7	22.5	22.2	1.0	23.0
		QPSK	1	1	23.0	22.9	22.5	0.0	24.0
			1	53	23.3	23.1	22.7	0.0	24.0
			1	104	23.2	23.0	22.5	0.0	24.0
			50	0	22.2	22.0	21.7	1.0	23.0
			50	28	23.2	23.2	22.7	0.0	24.0
			50	56	22.2	22.2	21.7	1.0	23.0
			100	0	22.0	22.0	21.7	1.0	23.0
	16QAM	1	1	22.1	21.8	21.8	1.0	23.0	
	64QAM	1	1	20.6	20.3	20.1	2.5	21.5	
256QAM	1	1	18.6	18.3	18.2	4.5	19.5		
CP-OFDM	QPSK	1	1	21.6	21.4	21.0	1.5	22.5	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500		
					1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	DFT-s OFDM	π/2 BPSK	1	1	23.1	23.1	22.7	0.0	24.0
			1	39	23.3	23.1	22.7	0.0	24.0
			1	77	23.1	23.2	22.7	0.0	24.0
			36	0	22.6	22.5	22.3	1.0	23.0
			36	22	23.2	23.2	22.7	0.0	24.0
			36	43	22.7	22.7	22.2	1.0	23.0
			75	0	22.6	22.7	22.2	1.0	23.0
		QPSK	1	1	23.3	23.0	22.7	0.0	24.0
			1	39	23.2	23.2	22.8	0.0	24.0
			1	77	23.1	23.1	22.7	0.0	24.0
			36	0	22.1	22.2	21.7	1.0	23.0
			36	22	23.1	23.0	22.8	0.0	24.0
			36	43	22.1	22.2	21.8	1.0	23.0
			75	0	22.0	22.1	21.8	1.0	23.0
	16QAM	1	1	22.1	22.2	21.8	1.0	23.0	
	64QAM	1	1	20.6	20.5	20.1	2.5	21.5	
256QAM	1	1	18.6	18.4	18.2	4.5	19.5		
CP-OFDM	QPSK	1	1	21.5	21.4	21.2	1.5	22.5	

NR Band n66 Power Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	
					343000	349000	355000			
					1715 MHz	1745 MHz	1775 MHz			
10 MHz	DFT-s OFDM	π/2 BPSK	1	1	23.3	23.0	22.7	0.0	24.0	
			1	26	23.4	23.3	22.8	0.0	24.0	
			1	50	23.2	23.1	22.8	0.0	24.0	
			25	0	22.7	22.5	22.3	1.0	23.0	
			25	14	23.0	23.2	22.7	0.0	24.0	
			25	27	22.6	22.7	22.2	1.0	23.0	
			50	0	22.8	22.7	22.3	1.0	23.0	
		QPSK	1	1	23.2	23.1	22.6	0.0	24.0	
			1	26	23.3	23.3	22.8	0.0	24.0	
			1	50	23.2	23.1	22.7	0.0	24.0	
			25	0	22.3	22.1	21.7	1.0	23.0	
			25	14	23.2	23.2	22.7	0.0	24.0	
			25	27	22.3	22.2	21.8	1.0	23.0	
		16QAM	1	1	22.3	22.0	21.9	1.0	23.0	
			64QAM	1	1	20.7	20.6	20.2	2.5	21.5
256QAM	1		1	18.7	18.6	18.2	4.5	19.5		
CP-OFDM	QPSK	1	1	21.8	21.6	21.2	1.5	22.5		
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	
					342500	349000	355500			
					1712.5 MHz	1745 MHz	1777.5 MHz			
5 MHz	DFT-s OFDM	π/2 BPSK	1	1	23.3	23.0	22.7	0.0	24.0	
			1	13	23.2	22.9	22.7	0.0	24.0	
			1	23	23.3	23.1	22.7	0.0	24.0	
			12	0	22.7	22.5	22.3	1.0	23.0	
			12	6	23.4	23.0	22.7	0.0	24.0	
			12	13	22.9	22.6	22.3	1.0	23.0	
			25	0	22.7	22.5	22.3	1.0	23.0	
		QPSK	1	1	23.4	23.0	22.6	0.0	24.0	
			1	13	23.3	23.0	22.6	0.0	24.0	
			1	23	23.2	23.1	22.8	0.0	24.0	
			12	0	22.3	22.0	21.7	1.0	23.0	
			12	6	23.3	23.1	22.7	0.0	24.0	
			12	13	22.2	22.1	21.7	1.0	23.0	
		16QAM	25	0	22.2	22.1	21.8	1.0	23.0	
			16QAM	1	1	22.4	22.1	21.8	1.0	23.0
			64QAM	1	1	20.7	20.7	20.2	2.5	21.5
		256QAM	1	1	18.8	18.6	18.1	4.5	19.5	
		CP-OFDM	QPSK	1	1	21.7	21.5	21.2	1.5	22.5

2. Reduced power Results

NR Band n66 Power Measured Results

BW (MHz)	Modulation	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
					344000	349000	354000			344000	349000	354000		
					1720 MHz	1745 MHz	1770 MHz			1720 MHz	1745 MHz	1770 MHz		
20 MHz	DFT-s OFDM	π/2 BPSK	1	1	19.0	19.0	18.5	0.0	19.5	18.8	18.8	18.5	0.0	19.5
			1	53	19.2	19.2	18.7	0.0	19.5	19.2	19.2	18.7	0.0	19.5
			1	104	19.1	19.0	18.5	0.0	19.5	18.9	18.9	18.6	0.0	19.5
			50	0	19.1	19.0	18.5	0.0	19.5	18.9	18.9	18.6	0.0	19.5
			50	28	19.2	19.0	18.6	0.0	19.5	19.2	19.0	18.7	0.0	19.5
			50	56	19.1	19.1	18.6	0.0	19.5	18.9	19.0	18.6	0.0	19.5
		QPSK	100	0	19.1	19.0	18.6	0.0	19.5	18.9	18.9	18.6	0.0	19.5
			1	1	19.0	18.8	18.5	0.0	19.5	18.9	18.7	18.6	0.0	19.5
			1	53	19.2	19.1	18.6	0.0	19.5	19.2	19.1	18.7	0.0	19.5
			1	104	19.1	19.0	18.5	0.0	19.5	18.9	18.8	18.6	0.0	19.5
			50	0	19.2	19.0	18.5	0.0	19.5	18.9	18.9	18.6	0.0	19.5
			50	28	19.2	19.0	18.6	0.0	19.5	19.0	19.0	18.7	0.0	19.5
		16QAM	50	56	19.2	19.0	18.5	0.0	19.5	19.0	18.9	18.5	0.0	19.5
			100	0	19.1	19.0	18.6	0.0	19.5	19.0	18.9	18.7	0.0	19.5
1	1		19.2	18.8	18.6	0.0	19.5	19.0	18.9	18.7	0.0	19.5		
64QAM	1	1	19.3	18.8	18.5	0.0	19.5	19.0	18.8	18.6	0.0	19.5		
	1	1	18.7	18.4	18.2	0.0	19.5	18.5	18.4	18.2	0.0	19.5		
CP-OFDM	QPSK	1	1	19.0	18.8	18.6	0.0	19.5	18.9	18.8	18.5	0.0	19.5	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343500	349000	354500			343500	349000	354500		
					1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
					15 MHz	DFT-s OFDM	π/2 BPSK	1	1	19.1	18.8	19.5	0.0	19.5
1	39	19.4	18.9	18.6				0.0	19.5	19.1	19.0	18.6	0.0	19.5
1	77	19.2	18.9	18.6				0.0	19.5	19.0	18.9	18.5	0.0	19.5
36	0	19.3	18.8	18.5				0.0	19.5	19.0	18.9	18.5	0.0	19.5
36	22	19.3	18.9	18.6				0.0	19.5	19.0	18.9	18.5	0.0	19.5
36	43	19.2	19.0	18.6				0.0	19.5	19.0	19.0	18.5	0.0	19.5
QPSK	75	0	19.3	18.9			18.5	0.0	19.5	19.0	18.9	18.6	0.0	19.5
	1	1	19.2	18.8			18.5	0.0	19.5	18.9	18.8	18.5	0.0	19.5
	1	39	19.4	19.1			18.6	0.0	19.5	19.2	19.0	18.7	0.0	19.5
	1	77	19.2	18.9			18.5	0.0	19.5	19.0	18.9	18.6	0.0	19.5
	36	0	19.3	18.8			18.5	0.0	19.5	19.0	18.9	18.6	0.0	19.5
	36	22	19.2	18.9			18.5	0.0	19.5	19.0	19.0	18.5	0.0	19.5
16QAM	36	43	19.3	18.9			18.6	0.0	19.5	18.9	18.9	18.6	0.0	19.5
	75	0	19.2	18.9			18.6	0.0	19.5	19.0	18.9	18.5	0.0	19.5
	1	1	19.2	18.8	18.8	0.0	19.5	19.1	19.0	18.8	0.0	19.5		
64QAM	1	1	19.3	19.0	18.6	0.0	19.5	19.0	19.0	18.6	0.0	19.5		
	1	1	18.9	18.4	18.2	0.0	19.5	18.6	18.5	18.2	0.0	19.5		
CP-OFDM	QPSK	1	1	19.2	18.8	18.6	0.0	19.5	19.0	18.8	18.5	0.0	19.5	

NR Band n66 Power Measured Results (Continued)

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					343000	349000	355000			343000	349000	355000		
					1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	DFT-s OFDM	π/2 BPSK	1	1	19.2	18.9	18.5	0.0	19.5	19.0	18.8	18.4	0.0	19.5
			1	26	19.3	19.1	18.6	0.0	19.5	19.1	19.0	18.6	0.0	19.5
			1	50	19.3	18.9	18.6	0.0	19.5	19.0	19.0	18.6	0.0	19.5
			25	0	19.3	18.9	18.5	0.0	19.5	19.0	18.9	18.5	0.0	19.5
			25	14	19.3	19.0	18.5	0.0	19.5	19.1	19.0	18.5	0.0	19.5
			25	27	19.3	18.9	18.6	0.0	19.5	19.0	18.9	18.6	0.0	19.5
			50	0	19.3	18.9	18.5	0.0	19.5	19.1	19.0	18.5	0.0	19.5
		QPSK	1	1	19.2	18.8	18.5	0.0	19.5	19.2	18.9	18.6	0.0	19.5
			1	26	19.3	19.0	18.6	0.0	19.5	19.0	19.0	18.7	0.0	19.5
			1	50	19.3	18.9	18.7	0.0	19.5	19.1	18.9	18.6	0.0	19.5
			25	0	19.3	18.9	18.5	0.0	19.5	19.1	18.9	18.5	0.0	19.5
			25	14	19.3	18.9	18.6	0.0	19.5	19.1	18.9	18.6	0.0	19.5
			25	27	19.3	18.9	18.6	0.0	19.5	19.0	19.0	18.6	0.0	19.5
			50	0	19.3	18.9	18.6	0.0	19.5	19.0	19.0	18.5	0.0	19.5
16QAM	1	1	19.4	19.0	18.7	0.0	19.5	19.0	18.9	18.6	0.0	19.5		
64QAM	1	1	19.4	18.9	18.8	0.0	19.5	19.2	18.9	18.6	0.0	19.5		
256QAM	1	1	18.8	18.4	18.1	0.0	19.5	18.6	18.4	18.1	0.0	19.5		
CP-OFDM	QPSK	1	1	19.3	19.0	18.6	0.0	19.5	19.0	18.9	18.5	0.0	19.5	
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					342500	349000	355500			342500	349000	355500		
					1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	DFT-s OFDM	π/2 BPSK	1	1	19.3	18.9	18.6	0.0	19.5	19.1	18.9	18.5	0.0	19.5
			1	13	19.2	18.9	18.6	0.0	19.5	19.1	18.8	18.4	0.0	19.5
			1	23	19.4	19.0	18.6	0.0	19.5	19.2	19.0	18.5	0.0	19.5
			12	0	19.3	18.9	18.6	0.0	19.5	19.1	18.9	18.5	0.0	19.5
			12	6	19.3	19.0	18.6	0.0	19.5	19.1	18.9	18.5	0.0	19.5
			12	13	19.3	18.9	18.6	0.0	19.5	19.1	19.0	18.5	0.0	19.5
			25	0	19.3	19.0	18.6	0.0	19.5	19.2	19.0	18.6	0.0	19.5
		QPSK	1	1	19.4	18.9	18.5	0.0	19.5	19.1	19.0	18.6	0.0	19.5
			1	13	19.3	18.8	18.5	0.0	19.5	19.0	18.9	18.6	0.0	19.5
			1	23	19.4	18.9	18.6	0.0	19.5	19.1	19.0	18.6	0.0	19.5
			12	0	19.3	18.8	18.5	0.0	19.5	19.1	18.9	18.6	0.0	19.5
			12	6	19.3	18.9	18.5	0.0	19.5	19.1	18.9	18.6	0.0	19.5
			12	13	19.4	18.9	18.5	0.0	19.5	19.1	18.9	18.6	0.0	19.5
			25	0	19.3	19.0	18.6	0.0	19.5	19.2	19.0	18.6	0.0	19.5
16QAM	1	1	19.4	18.9	18.7	0.0	19.5	19.2	19.0	18.6	0.0	19.5		
64QAM	1	1	19.3	18.9	18.6	0.0	19.5	19.2	19.0	18.6	0.0	19.5		
256QAM	1	1	19.0	18.5	18.1	0.0	19.5	18.7	18.5	18.1	0.0	19.5		
CP-OFDM	QPSK	1	1	19.3	18.9	18.6	0.0	19.5	19.2	18.9	18.5	0.0	19.5	

9.5. Wi-Fi 2.4 GHz (DTS Band)

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

Refer to Operational Description for WLAN explanation.

Measured of Normal WLAN operation Results

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Normal WLAN mode					
					Max. Average Power			Reduced Average Power		
					Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.1	802.11b	1 Mbps	1	2412.0	20.2	21.0	Yes	16.2	17.0	Yes
			6	2437.0	20.7			16.5		
			11	2462.0	20.8			17.0		
			12	2467.0	11.6			12.0		
WiFi SISO Ant.2	802.11b	1 Mbps	13	2472.0	5.7	6.0	No	5.7	6.0	No
			1	2412.0	20.1	16.7	17.0	Yes		
			6	2437.0	20.2	16.4				
			11	2462.0	20.9	16.5				
12	2467.0	11.7	12.0	No						
WiFi MIMO Ant.1	802.11g	6 Mbps	13	2472.0	5.1	6.0	No	5.1	6.0	No
			1	2412.0	14.8	18.0	Yes	14.8	17.0	Yes
			2	2417.0	14.8			14.8		
			3	2422.0	17.1			16.4		
6	2437.0	16.8	16.7							
WiFi MIMO Ant.1	802.11n (HT20)	6.5 Mbps	10	2457.0	16.5	16.0	No	15.5	14.0	No
			11	2462.0	13.5	13.5				
			12	2467.0	10.9	12.0				
			13	2472.0	4.5	6.0				
WiFi MIMO Ant.1	802.11ax (HE20)	7.3 Mbps	1	2412.0	16.0	14.0	No	16.0	14.0	No
			6	2437.0	18.0	12.0				
			11	2462.0	14.0	12.0				
			12	2467.0	12.0	6.0				
WiFi MIMO Ant.2	802.11g	6 Mbps	1	2412.0	15.1	18.0	Yes	15.1	17.0	Yes
			2	2417.0	15.1			15.1		
			3	2422.0	17.1			16.7		
			6	2437.0	17.2			16.7		
WiFi MIMO Ant.2	802.11n (HT20)	6.5 Mbps	10	2457.0	17.1	16.0	No	16.1	14.0	No
			11	2462.0	13.9	13.9				
			12	2467.0	11.4	12.0				
			13	2472.0	5.7	6.0				
WiFi MIMO Ant.2	802.11ax (HE20)	7.3 Mbps	1	2412.0	16.0	14.0	No	16.0	14.0	No
			6	2437.0	18.0	12.0				
			11	2462.0	14.0	12.0				
			12	2467.0	12.0	6.0				

Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- 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.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.
- For Head SAR of MIMO mode, SAR test was performed at Ch3 & Ch10 instead of Ch.1 & Ch.11. because Ch3 & Ch10 has more higher target power than Ch.1 & Ch.11.
- MIMO DTS SAR test were additionally evaluated for determining simultaneous transmission SAR test exclusion.

Measured Results of RSDB WLAN operation

Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	RSDB WLAN mode					
					Max. Average Power			Reduced Average Power		
					Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
WiFi SISO Ant.1	802.11b	1 Mbps	1	2412.0	16.2	17.0	Yes	13.6	14.0	Yes
			6	2437.0	16.5			13.6		
			11	2462.0	17.0	12.0	No	14.0	12.0	No
			12	2467.0	11.6			11.6		
			13	2472.0	5.7			5.7		
WiFi SISO Ant.2	802.11b	1 Mbps	1	2412.0	16.7	17.0	Yes	13.8	14.0	Yes
			6	2437.0	16.4			13.3		
			11	2462.0	16.5	12.0	No	13.2	12.0	No
			12	2467.0	11.7			11.7		
			13	2472.0	5.1			5.1		
WiFi MIMO Ant.1	802.11g	6 Mbps	1	2412.0	14.8	16.0	Yes	13.2	14.0	Yes
			6	2437.0	16.7			13.7		
			11	2462.0	12.9	12.0	No	13.6	12.0	No
			12	2467.0	10.9			10.9		
			13	2472.0	4.5			4.5		
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	14.0	No
			6	2437.0		17.0				
			11	2462.0		14.0				
			12	2467.0		12.0				
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	6.0	No	Not Required	14.0	No
			6	2437.0		14.0				
			11	2462.0		12.0				
			12	2467.0		6.0				
WiFi MIMO Ant.2	802.11g	6 Mbps	1	2412.0	15.4	16.0	Yes	13.1	14.0	Yes
			6	2437.0	16.7			13.9		
			11	2462.0	16.1	12.0	No	13.7	12.0	No
			12	2467.0	11.4			11.4		
			13	2472.0	5.7			5.7		
	802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	14.0	No
			6	2437.0		17.0				
			11	2462.0		14.0				
			12	2467.0		12.0				
	802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	6.0	No	Not Required	14.0	No
			6	2437.0		14.0				
			11	2462.0		12.0				
			12	2467.0		6.0				

Note(s):

- SAR is not required for 802.11g/n modes when the adjusted SAR for 802.11b is < 1.2 W/kg.
- 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.
- Additionally, SAR is not required for Channels 12 and 13 because the tune-up limit and the measured output power for these two channels are no greater than those for the default test channels. Refer to §6.3.
- MIMO DTS SAR test were additionally evaluated at Body-worn and Hotspot exposure conditions for determining simultaneous transmission SAR test exclusion.

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

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

Measured Results of Normal WLAN MIMO Ant.1

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	MIMO Ant.1					
					Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Reduced Tune-up Limit (dBm)	SAR Test (Yes/No)
5.3 (U-NII 2A)	802.11a	6 Mbps	52	5260	17.1	18.0	Yes	Not Required	12.0	No
			56	5280	17.2					
			60	5300	17.2					
			64	5320	17.1					
	802.11n (HT20)	6.5 Mbps	52	5260	Not Required	18.0	No	Not Required	12.0	No
			56	5280						
			60	5300						
	802.11n (HT40)	13.5 Mbps	54	5270	Not Required	16.0	No	Not Required	12.0	No
			62	5310						
	802.11ac (VHT20)	6.5 Mbps	52	5260	Not Required	18.0	No	Not Required	12.0	No
			56	5280						
			60	5300						
802.11ac (VHT40)	13.5 Mbps	54	5270	Not Required	16.0	No	Not Required	12.0	No	
		62	5310							
802.11ac (VHT80)	29.3 Mbps	58	5290	Not Required	15.0	No	11.0	12.0	Yes	
		62	5310							
802.11ax (HE20)	7.3 Mbps	52	5260	Not Required	13.0	No	Not Required	12.0	No	
		56	5280							
		60	5300							
		64	5320							
802.11ax (HE40)	14.6 Mbps	54	5270	Not Required	11.0	No	Not Required	11.0	No	
		62	5310							
802.11ax (HE80)	30.6 Mbps	58	5290	Not Required	10.0	No	Not Required	10.0	No	
		62	5310							
5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
			120	5600						
			124	5620						
			144	5720						
	802.11n (HT20)	6.5 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
			120	5600						
			124	5620						
	802.11n (HT40)	13.5 Mbps	102	5510	15.0	16.0	Yes	Not Required	12.0	No
			118	5590	15.1					
			126	5630	15.3					
			142	5710	15.5					
	802.11ac (VHT20)	6.5 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
			120	5600						
			124	5620						
	802.11ac (VHT40)	13.5 Mbps	102	5510	Not Required	16.0	No	Not Required	12.0	No
			118	5590						
			126	5630						
			142	5710						
802.11ac (VHT80)	29.3 Mbps	106	5530	Not Required	15.0	No	11.8	12.0	Yes	
		122	5610				11.9			
		138	5690				11.1			
802.11ax (HE20)	7.3 Mbps	100	5500	Not Required	13.0	No	Not Required	12.0	No	
		120	5600							
		124	5620							
		144	5720							
802.11ax (HE40)	14.6 Mbps	102	5510	Not Required	11.0	No	Not Required	11.0	No	
		118	5590							
		126	5630							
		142	5710							
802.11ax (HE80)	30.6 Mbps	106	5530	Not Required	10.0	No	Not Required	10.0	No	
		122	5610							
		138	5690							
5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	16.5	18.0	Yes	Not Required	12.0	No
			157	5785	17.5					
			165	5825	17.5					
	802.11n (HT20)	6.5 Mbps	149	5745	Not Required	18.0	No	Not Required	12.0	No
			157	5785						
	802.11n (HT40)	13.5 Mbps	151	5755	Not Required	16.0	No	Not Required	12.0	No
			159	5795						
	802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	18.0	No	Not Required	12.0	No
			157	5785						
			165	5825						
	802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	16.0	No	Not Required	12.0	No
			159	5795						
802.11ac (VHT80)	29.3 Mbps	155	5775	Not Required	15.0	No	11.8	12.0	Yes	
		159	5795							
802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	13.0	No	Not Required	12.0	No	
		157	5785							
		165	5825							
802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	11.0	No	Not Required	11.0	No	
		159	5795							
802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	10.0	No	Not Required	10.0	No	
		159	5795							

Measured Results of Normal WLAN MIMO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	MIMO Ant.2					
						Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Reduced Tune-up Limit (dBm)	SAR Test (Yes/No)
MIMO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260	17.4	18.0	Yes	Not Required	12.0	No
				56	5280	17.4					
				60	5300	17.4					
				64	5320	17.5					
		802.11n (HT20)	6.5 Mbps	52	5260	Not Required	18.0	No	Not Required	12.0	No
				56	5280						
				60	5300						
		802.11n (HT40)	13.5 Mbps	54	5270	Not Required	16.0	No	Not Required	12.0	No
				62	5310						
		802.11ac (VHT20)	6.5 Mbps	52	5260	Not Required	18.0	No	Not Required	12.0	No
				56	5280						
				60	5300						
		802.11ac (VHT40)	13.5 Mbps	54	5270	Not Required	16.0	No	Not Required	12.0	No
				62	5310						
		802.11ac (VHT80)	29.3 Mbps	58	5290	Not Required	15.0	No	11.1	12.0	Yes
				64	5320						
		802.11ax (HE20)	7.3 Mbps	52	5260	Not Required	13.0	No	Not Required	12.0	No
				56	5280						
	60			5300							
	802.11ax (HE40)	14.6 Mbps	54	5270	Not Required	11.0	No	Not Required	11.0	No	
			62	5310							
	802.11ax (HE80)	30.6 Mbps	58	5290	Not Required	10.0	No	Not Required	10.0	No	
			64	5320							
	5.5 (UNII 2C)	802.11a	6 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
				120	5600						
				124	5620						
				144	5720						
		802.11n (HT20)	6.5 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
				120	5600						
				124	5620						
		802.11n (HT40)	13.5 Mbps	102	5510	Not Required	16.0	Yes	Not Required	12.0	No
				118	5590						
				126	5630						
				142	5710						
		802.11ac (VHT20)	6.5 Mbps	100	5500	Not Required	15.0	No	Not Required	12.0	No
				120	5600						
124				5620							
144				5720							
802.11ac (VHT40)		13.5 Mbps	102	5510	Not Required	16.0	No	Not Required	12.0	No	
			118	5590							
			126	5630							
	142		5710								
802.11ac (VHT80)	29.3 Mbps	106	5530	Not Required	15.0	No	11.5	12.0	Yes		
		122	5610				11.6				
		138	5690				10.3				
802.11ax (HE20)	7.3 Mbps	100	5500	Not Required	13.0	No	Not Required	12.0	No		
		120	5600								
		124	5620								
802.11ax (HE40)	14.6 Mbps	102	5510	Not Required	11.0	No	Not Required	11.0	No		
		118	5590								
		126	5630								
802.11ax (HE80)	30.6 Mbps	106	5530	Not Required	10.0	No	Not Required	10.0	No		
		122	5610								
		138	5690								
5.8 (UNII 3)	802.11a	6 Mbps	149	5745	Not Required	18.0	Yes	Not Required	12.0	No	
			157	5785							
			165	5825							
	802.11n (HT20)	6.5 Mbps	149	5745	Not Required	18.0	No	Not Required	12.0	No	
			157	5785							
			165	5825							
	802.11n (HT40)	13.5 Mbps	151	5755	Not Required	16.0	No	Not Required	12.0	No	
			159	5795							
	802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	18.0	No	Not Required	12.0	No	
			157	5785							
			165	5825							
	802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	16.0	No	Not Required	12.0	No	
159			5795								
802.11ac (VHT80)	29.3 Mbps	155	5775	Not Required	15.0	No	11.9	12.0	Yes		
		165	5825								
802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	13.0	No	Not Required	12.0	No		
		157	5785								
		165	5825								
802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	11.0	No	Not Required	11.0	No		
		159	5795								
802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	10.0	No	Not Required	10.0	No		
		165	5825								

Note(s):

- 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.
- 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.
- When the specified maximum output power is the same for both UNII band 1 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 1
 - > 1.2 W/kg, both bands should be tested independently for SAR.
- U-NII Bands only supports MIMO mode. So Output power measured each Ant.1 & Ant.2 during MIMO mode.

Measured Results of RSDB WLAN MIMO Ant.1 & Ant.2

Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	MIMO Ant.1			MIMO Ant.2		
					Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max. Tune-up Limit (dBm)	SAR Test (Yes/No)
5.3 (UNII 2A)	802.11a	6 Mbps	52	5260	Not Required	14.0	No	Not Required	14.0	No
			56	5280						
			60	5300						
			64	5320						
	802.11n (HT20)	6.5 Mbps	52	5260	Not Required	14.0	No	Not Required	14.0	No
			56	5280						
			60	5300						
	802.11n (HT40)	13.5 Mbps	54	5270	Not Required	14.0	No	Not Required	14.0	No
			62	5310						
	802.11ac (VHT20)	6.5 Mbps	52	5260	Not Required	14.0	No	Not Required	14.0	No
56			5280							
60			5300							
802.11ac (VHT40)	13.5 Mbps	54	5270	Not Required	14.0	No	Not Required	14.0	No	
		62	5310							
802.11ac (VHT80)	29.3 Mbps	58	5290	13.7	14.0	Yes	13.6	14.0	Yes	
802.11ax (HE20)	7.3 Mbps	52	5260	Not Required	13.0	No	Not Required	13.0	No	
		56	5280							
		60	5300							
802.11ax (HE40)	14.6 Mbps	54	5270	Not Required	11.0	No	Not Required	11.0	No	
		62	5310							
802.11ax (HE80)	30.6 Mbps	58	5290	Not Required	10.0	No	Not Required	10.0	No	
5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500	Not Required	14.0	No	Not Required	14.0	No
			120	5600						
			124	5620						
			144	5720						
	802.11n (HT20)	6.5 Mbps	100	5500	Not Required	14.0	No	Not Required	14.0	No
			120	5600						
			124	5620						
			144	5720						
	802.11n (HT40)	13.5 Mbps	102	5510	Not Required	14.0	No	Not Required	14.0	No
			118	5590						
			126	5630						
			142	5710						
	802.11ac (VHT20)	6.5 Mbps	100	5500	Not Required	14.0	No	Not Required	14.0	No
			120	5600						
			124	5620						
			144	5720						
802.11ac (VHT40)	13.5 Mbps	102	5510	Not Required	14.0	No	Not Required	14.0	No	
		118	5590							
		126	5630							
		142	5710							
802.11ac (VHT80)	29.3 Mbps	106	5530	13.0	14.0	Yes	13.1	14.0	Yes	
		122	5610	12.8			13.3			
		138	5690	13.5			13.3			
802.11ax (HE20)	7.3 Mbps	100	5500	Not Required	13.0	No	Not Required	13.0	No	
		120	5600							
		124	5620							
		144	5720							
802.11ax (HE40)	14.6 Mbps	102	5510	Not Required	11.0	No	Not Required	11.0	No	
		118	5590							
		126	5630							
		142	5710							
802.11ax (HE80)	30.6 Mbps	106	5530	Not Required	10.0	No	Not Required	10.0	No	
		122	5610							
		138	5690							
5.8 (U-NII 3)	802.11a	6 Mbps	149	5745	Not Required	14.0	No	Not Required	14.0	No
			157	5785						
			165	5825						
	802.11n (HT20)	6.5 Mbps	149	5745	Not Required	14.0	No	Not Required	14.0	No
			157	5785						
			165	5825						
	802.11n (HT40)	13.5 Mbps	151	5755	Not Required	14.0	No	Not Required	14.0	No
			159	5795						
	802.11ac (VHT20)	6.5 Mbps	149	5745	Not Required	14.0	No	Not Required	14.0	No
			157	5785						
			165	5825						
	802.11ac (VHT40)	13.5 Mbps	151	5755	Not Required	14.0	No	Not Required	14.0	No
			159	5795						
	802.11ac (VHT80)	29.3 Mbps	155	5775	12.7	14.0	Yes	13.1	14.0	Yes
802.11ax (HE20)	7.3 Mbps	149	5745	Not Required	13.0	No	Not Required	13.0	No	
		157	5785							
		165	5825							
802.11ax (HE40)	14.6 Mbps	151	5755	Not Required	11.0	No	Not Required	11.0	No	
		159	5795							
802.11ax (HE80)	30.6 Mbps	155	5775	Not Required	10.0	No	Not Required	10.0	No	

Note(s):

- 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.
- 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.
- 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.
- U-NII Bands only supports MIMO mode. So Output power measured each Ant.1 & Ant.2 during MIMO mode.
- Both Normal & RSDB WLAN mode are same target power under reduced power condition. So please refer to reduced output power results in Normal WLAN mode.

9.7. Bluetooth

Measured Results

Band (GHz)	Mode	Ch #	Freq. (MHz)	Maximum Average Power (dBm)	
				Meas Pwr	Tune-up Limit
2.4	GFSK	0	2402	15.5	17.0
		39	2441	16.7	
		78	2480	16.8	
	EDR, 8-DPSK	0	2402	11.3	13.0
		39	2441	12.5	
		78	2480	12.1	
	LE, GFSK, 1M (37 pkt)	0	2402	6.9	9.0
		19	2440	8.3	
		39	2480	8.4	
	LE, GFSK, 2M (37 pkt)	0	2402	6.8	9.0
		19	2440	8.1	
		39	2480	8.4	

Note(s):

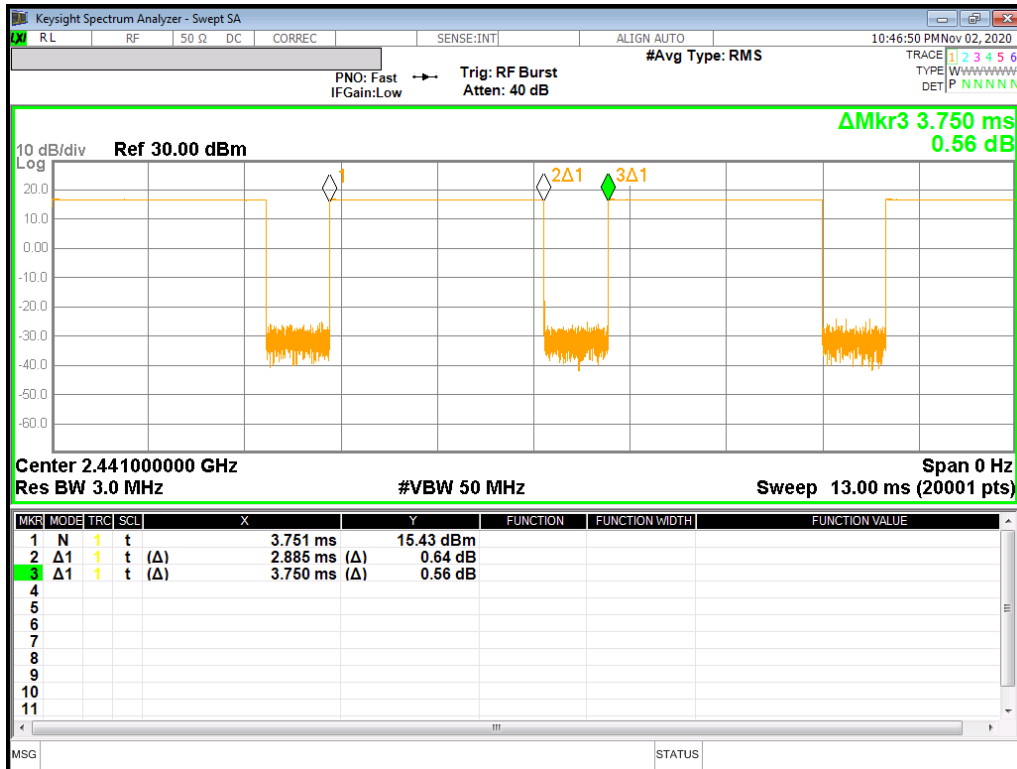
SAR test is evaluated at GFSK mode in Bluetooth

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.885	3.750	76.9%	1.30

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

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

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 648474 D04 Handset SAR:

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

KDB 648474 D04 Handset SAR (Phablet Only):

For smart phones, with a display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm.

When hotspot mode does not apply, 10-g extremity SAR is required for all surfaces and edges with an antenna located at ≤ 25 mm

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 $\leq 1/4$ dB higher than the primary mode or when the highest reported SAR of the primary mode is scaled by the ratio of specified maximum output power and tune-up tolerance of secondary to primary mode and the adjusted SAR is ≤ 1.2 W/kg, SAR measurement is not required for the secondary mode.

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11:

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

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

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

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

10.1. GSM 850

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	GPRS 3 Slots	N/A	0	Left Touch	251	848.8	30.0	29.2	0.239	0.290	1
					Left Tilt	251	848.8	30.0	29.2	0.145	0.176	
					Right Touch	251	848.8	30.0	29.2	0.346	0.420	
					Right Tilt	251	848.8	30.0	29.2	0.152	0.184	
	Body-worn	GPRS 3 Slots	N/A	15	Rear	251	848.8	30.0	29.2	0.444	0.538	2
					Front	251	848.8	30.0	29.2	0.392	0.475	
	Hotspot	GPRS 3 Slots	N/A	10	Rear	128	824.4	30.0	28.3	0.446	0.654	3
						190	836.6	30.0	28.7	0.594	0.793	
						251	848.8	30.0	29.2	0.757	0.918	
					Front	251	848.8	30.0	29.2	0.508	0.616	
					Edge 2	251	848.8	30.0	29.2	0.504	0.611	
					Edge 3	251	848.8	30.0	29.2	0.481	0.583	
Edge 4	251	848.8	30.0	29.2	0.143	0.173						

10.2. GSM 1900

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	
								Tune-up limit	Meas.	Meas.	Scaled		
Main 1 Ant.	Head	GPRS 3 Slot	Off	0	Left Touch	661	1880.0	27.0	26.0	0.083	0.105	4	
					Left Tilt	661	1880.0	27.0	26.0	0.048	0.061		
					Right Touch	661	1880.0	27.0	26.0	0.042	0.053		
					Right Tilt	661	1880.0	27.0	26.0	0.038	0.048		
	Body-worn	GPRS 3 Slot	Off	15	Rear	661	1880.0	27.0	26.0	0.160	0.202	5	
					Front	661	1880.0	27.0	26.0	0.137	0.173		
	Hotspot	GPRS 3 Slot	On	10	Rear	661	1880.0	25.5	24.4	0.352	0.451		
					Front	661	1880.0	25.5	24.4	0.338	0.433		
					Edge 3	Edge 2	661	1880.0	25.5	24.4	0.079	0.102	
						512	1850.2	25.5	24.5	0.675	0.841		
661						1880.0	25.5	24.4	0.737	0.944			
810					1909.8	25.5	24.6	0.841	1.033	6			
Edge 4	661	1880.0	25.5	24.4	0.079	0.101							
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.	
								Tune-up limit	Meas.	Meas.	Scaled		
Main 1 Ant.	Product Specific 10-g	GPRS 3 Slot	Off	10	Edge 3	661	1880.0	27.0	26.0	0.569	0.718		
			On	0	Edge 3	661	1880.0	25.5	24.6	1.430	1.744	7	

10.3. W-CDMA Band II

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.	
								Tune-up limit	Meas.	Meas.	Scaled		
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	9400	1880.0	25.0	23.8	0.153	0.202	8	
					Left Tilt	9400	1880.0	25.0	23.8	0.094	0.124		
					Right Touch	9400	1880.0	25.0	23.8	0.116	0.153		
					Right Tilt	9400	1880.0	25.0	23.8	0.086	0.114		
	Body-worn	Rel 99 RMC	Off	15	Rear	9400	1880.0	25.0	23.8	0.553	0.732	9	
					Front	9400	1880.0	25.0	23.8	0.472	0.625		
	Hotspot	Rel 99 RMC	On	10	Rear	9400	1880.0	21.5	20.6	0.494	0.609		
					Front	9400	1880.0	21.5	20.6	0.421	0.519		
					Edge 3	Edge 2	9400	1880.0	21.5	20.6	0.110	0.136	
						9262	1852.4	21.5	20.7	0.950	1.140		
9400						1880.0	21.5	20.6	0.912	1.125			
9538					1907.6	21.5	20.9	1.020	1.171	10			
Edge 4	9400	1880.0	21.5	20.6	0.078	0.096							

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	8	Rear	9400	1880.0	25.0	23.8	0.795	1.052	
				10	Edge 3	9400	1880.0	25.0	23.8	1.190	1.575	
				0	Rear	9400	1880.0	21.5	20.4	1.190	1.522	
			On	Edge 3	9262	1852.4	21.5	20.6	1.790	2.223		
					9400	1880.0	21.5	20.4	1.850	2.367	11	
					9538	1907.6	21.5	20.8	1.850	2.174		

10.4. W-CDMA Band IV

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	Off	0	Left Touch	1413	1732.6	24.5	24.0	0.204	0.231	12
					Left Tilt	1413	1732.6	24.5	24.0	0.149	0.168	
					Right Touch	1413	1732.6	24.5	24.0	0.157	0.177	
					Right Tilt	1413	1732.6	24.5	24.0	0.112	0.127	
	Body-worn	Rel 99 RMC	Off	15	Rear	1312	1712.4	24.5	24.3	0.751	0.793	
						1413	1732.6	24.5	24.0	0.775	0.876	
						1513	1752.6	24.5	24.0	0.832	0.938	
					Front	1312	1712.4	24.5	24.3	0.812	0.858	
						1413	1732.6	24.5	24.0	0.766	0.866	
						1513	1752.6	24.5	24.0	0.833	0.939	13
	Hotspot	Rel 99 RMC	On	10	Rear	1413	1732.6	20.5	20.0	0.601	0.676	
					Front	1413	1732.6	20.5	20.0	0.546	0.614	
					Edge 2	1413	1732.6	20.5	20.0	0.115	0.129	
					Edge 3	1312	1712.4	20.5	20.2	0.890	0.947	
1413						1732.6	20.5	20.0	0.930	1.046		
1513						1752.6	20.5	20.0	1.030	1.148	14	
Edge 4	1413	1732.6	20.5	20.0	0.149	0.168						

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		10-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	Rel 99 RMC	Off	8	Rear	1413	1732.6	24.5	24.0	0.904	1.022	
				6	Front	1413	1732.6	24.5	24.0	1.130	1.277	
				10	Edge 3	1413	1732.6	24.5	24.0	0.579	0.654	
			On	0	Rear	1413	1732.6	20.5	20.0	1.480	1.645	
				0	Front	1413	1732.6	20.5	20.0	1.490	1.656	
				0	Edge 3	1413	1732.6	20.5	20.0	1.640	1.823	15

10.5. W-CDMA Band V

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Power (dBm)		1-g SAR (W/kg)		Plot No.
								Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	Rel 99 RMC	N/A	0	Left Touch	4183	836.6	25.3	25.3	0.254	0.255	16
					Left Tilt	4183	836.6	25.3	25.3	0.150	0.151	
					Right Touch	4183	836.6	25.3	25.3	0.349	0.351	
					Right Tilt	4183	836.6	25.3	25.3	0.152	0.153	
	Body-w orn	Rel 99 RMC	N/A	15	Rear	4183	836.6	25.3	25.3	0.413	0.415	17
					Front	4183	836.6	25.3	25.3	0.392	0.394	
	Hotspot	Rel 99 RMC	N/A	10	Rear	4183	836.6	25.3	25.3	0.771	0.775	18
					Front	4183	836.6	25.3	25.3	0.536	0.538	
					Edge 2	4183	836.6	25.3	25.3	0.440	0.442	
					Edge 3	4183	836.6	25.3	25.3	0.525	0.527	
					Edge 4	4183	836.6	25.3	25.3	0.162	0.163	

10.6. LTE Band 2 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.				
										Tune-up limit	Meas.	Meas.	Scaled					
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	19100	1900.0	1	49	24.5	24.3	0.164	0.173	19				
								50	24	23.5	23.3	0.100	0.106					
					Left Tilt	19100	1900.0	1	49	24.5	24.3	0.070	0.073					
								50	24	23.5	23.3	0.033	0.034					
					Right Touch	19100	1900.0	1	49	24.5	24.3	0.093	0.098					
								50	24	23.5	23.3	0.057	0.060					
					Right Tilt	19100	1900.0	1	49	24.5	24.3	0.058	0.061					
								50	24	23.5	23.3	0.036	0.038					
					Body-w orn	QPSK	Off	15	Rear	19100	1900.0	1	49	24.5	24.3	0.580	0.611	20
												50	24	23.5	23.3	0.370	0.391	
	Front	19100	1900.0	1					49	24.5	24.3	0.542	0.571					
				50					24	23.5	23.3	0.343	0.362					
	Hotspot	QPSK	On	10	Rear	19100	1900.0	1	49	21.0	20.6	0.447	0.495					
								50	24	21.0	20.6	0.450	0.491					
					Front	19100	1900.0	1	49	21.0	20.6	0.414	0.458					
								50	24	21.0	20.6	0.418	0.456					
					Edge 2	19100	1900.0	1	49	21.0	20.6	0.089	0.098					
								50	24	21.0	20.6	0.092	0.101					
					Edge 3	18700	1860.0	1	49	21.0	20.3	0.894	1.059					
								50	24	21.0	20.3	0.906	1.058					
						18900	1880.0	1	49	21.0	20.4	0.951	1.093	21				
								50	24	21.0	20.5	0.948	1.075					
						19100	1900.0	1	49	21.0	20.6	0.944	1.044					
								50	24	21.0	20.6	0.986	1.075					
100					0	21.0	20.6	0.990	1.086									
Edge 4					19100	1900.0	1	49	21.0	20.6	0.109	0.121						
	50	24	21.0	20.6			0.102	0.111										
Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		10-g SAR (W/kg)		Plot No.				
Main 1 Ant.	Product Specific 10-g	QPSK	Off	10	Edge 3	19100	1900.0	1	49	24.5	24.3	1.170	1.232					
								50	24	23.5	23.3	0.749	0.791					
			On	0	Edge 3	19100	1900.0	1	49	21.0	20.6	1.450	1.588					
								50	24	21.0	20.6	1.490	1.631					

10.7. LTE Band 5 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	NA	0	Left Touch	20525	836.5	1	0	25.5	24.6	0.252	0.307	
								25	0	23.5	22.4	0.128	0.166	
					Left Tilt	20525	836.5	1	0	25.5	24.6	0.144	0.176	
								25	0	23.5	22.4	0.075	0.097	
					Right Touch	20525	836.5	1	0	25.5	24.6	0.283	0.345	23
								25	0	23.5	22.4	0.174	0.226	
					Right Tilt	20525	836.5	1	0	25.5	24.6	0.121	0.147	
								25	0	23.5	22.4	0.075	0.097	
	Body-w orn	QPSK	NA	15	Rear	20525	836.5	1	0	25.5	24.6	0.335	0.408	24
								25	0	23.5	22.4	0.198	0.257	
					Front	20525	836.5	1	0	25.5	24.6	0.292	0.356	
								25	0	23.5	22.4	0.187	0.243	
	Hotspot	QPSK	NA	10	Rear	20525	836.5	1	0	25.5	24.6	0.619	0.755	25
								25	0	23.5	22.4	0.377	0.490	
					Front	20525	836.5	1	0	25.5	24.6	0.465	0.567	
								25	0	23.5	22.4	0.243	0.316	
					Edge 2	20525	836.5	1	0	25.5	24.6	0.376	0.458	
								25	0	23.5	22.4	0.239	0.311	
					Edge 3	20525	836.5	1	0	25.5	24.6	0.457	0.557	
								25	0	23.5	22.4	0.251	0.326	
					Edge 4	20525	836.5	1	0	25.5	24.6	0.193	0.235	
								25	0	23.5	22.4	0.076	0.098	

10.8. LTE Band 12 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	NA	0	Left Touch	23095	707.5	1	0	25.3	25.2	0.092	0.094	
								25	0	23.3	22.6	0.066	0.077	
					Left Tilt	23095	707.5	1	0	25.3	25.2	0.059	0.061	
								25	0	23.3	22.6	0.039	0.046	
					Right Touch	23095	707.5	1	0	25.3	25.2	0.107	0.109	26
								25	0	23.3	22.6	0.069	0.081	
					Right Tilt	23095	707.5	1	0	25.3	25.2	0.061	0.062	
								25	0	23.3	22.6	0.037	0.043	
	Body-w orn	QPSK	NA	15	Rear	23095	707.5	1	0	25.3	25.2	0.140	0.143	27
								25	0	23.3	22.6	0.107	0.125	
					Front	23095	707.5	1	0	25.3	25.2	0.135	0.138	
								25	0	23.3	22.6	0.098	0.114	
	Hotspot	QPSK	NA	10	Rear	23095	707.5	1	0	25.3	25.2	0.232	0.237	28
								25	0	23.3	22.6	0.139	0.162	
					Front	23095	707.5	1	0	25.3	25.2	0.174	0.178	
								25	0	23.3	22.6	0.105	0.122	
					Edge 2	23095	707.5	1	0	25.3	25.2	0.209	0.214	
								25	0	23.3	22.6	0.152	0.177	
					Edge 3	23095	707.5	1	0	25.3	25.2	0.120	0.123	
								25	0	23.3	22.6	0.066	0.077	
					Edge 4	23095	707.5	1	0	25.3	25.2	0.165	0.169	
								25	0	23.3	22.6	0.118	0.138	

10.9. LTE Band 13 (10MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	23230	782.0	1	25	25.3	25.0	0.151	0.164	
								25	0	23.3	22.5	0.075	0.090	
					Left Tilt	23230	782.0	1	25	25.3	25.0	0.080	0.087	
								25	0	23.3	22.5	0.035	0.042	
					Right Touch	23230	782.0	1	25	25.3	25.0	0.174	0.189	29
								25	0	23.3	22.5	0.087	0.105	
					Right Tilt	23230	782.0	1	25	25.3	25.0	0.071	0.077	
								25	0	23.3	22.5	0.034	0.040	
	Body-w orn	QPSK	N/A	15	Rear	23230	782.0	1	25	25.3	25.0	0.233	0.253	30
								25	0	23.3	22.5	0.114	0.137	
					Front	23230	782.0	1	25	25.3	25.0	0.232	0.251	
								25	0	23.3	22.5	0.117	0.140	
	Hotspot	QPSK	N/A	10	Rear	23230	782.0	1	25	25.3	25.0	0.409	0.443	31
								25	0	23.3	22.5	0.176	0.211	
					Front	23230	782.0	1	25	25.3	25.0	0.246	0.267	
								25	0	23.3	22.5	0.127	0.152	
					Edge 2	23230	782.0	1	25	25.3	25.0	0.315	0.341	
								25	0	23.3	22.5	0.104	0.125	
					Edge 3	23230	782.0	1	25	25.3	25.0	0.202	0.219	
								25	0	23.3	22.5	0.102	0.122	
					Edge 4	23230	782.0	1	25	25.3	25.0	0.167	0.181	
								25	0	23.3	22.5	0.072	0.086	

10.10. LTE Band 25 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.				
										Tune-up limit	Meas.	Meas.	Scaled					
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	26590	1905.0	1	49	25.0	24.2	0.149	0.178	32				
								50	24	23.0	22.3	0.105	0.124					
					Left Tilt	26590	1905.0	1	49	25.0	24.2	0.087	0.104					
								50	24	23.0	22.3	0.043	0.050					
					Right Touch	26590	1905.0	1	49	25.0	24.2	0.120	0.143					
								50	24	23.0	22.3	0.074	0.087					
					Right Tilt	26590	1905.0	1	49	25.0	24.2	0.093	0.111					
								50	24	23.0	22.3	0.059	0.070					
	Body-w orn	QPSK	Off	15	Rear	26590	1905.0	1	49	25.0	24.2	0.536	0.640	33				
								50	24	23.0	22.3	0.311	0.366					
					Front	26590	1905.0	1	49	25.0	24.2	0.473	0.565					
								50	24	23.0	22.3	0.299	0.352					
	Hotspot	QPSK	On	10	Rear	26590	1905.0	1	49	21.5	21.0	0.421	0.477					
								50	24	21.5	21.0	0.428	0.483					
					Front	26590	1905.0	1	49	21.5	21.0	0.401	0.455					
								50	24	21.5	21.0	0.411	0.463					
					Edge 2	26590	1905.0	1	49	21.5	21.0	0.090	0.102					
								50	24	21.5	21.0	0.093	0.105					
					Edge 3	26140	1860.0	1	49	21.5	20.6	1.020	1.254					
								50	24	21.5	20.6	1.040	1.266					
						26365	1882.5	1	49	21.5	20.4	1.050	1.344	34				
								50	24	21.5	20.5	1.040	1.318					
					26590	1905.0	1	49	21.5	21.0	1.110	1.258						
							50	24	21.5	21.0	1.100	1.240						
					Edge 4	26590	1905.0	1	49	21.5	21.0	1.100	1.305					
								100	0	21.5	20.8	1.100	1.305					
												1	49	21.5	21.0	0.081	0.091	
												50	24	21.5	21.0	0.082	0.093	
	Main 1 Ant.	Product Specific 10-g	QPSK	Off	10	Edge 3	26590	1905.0	1	49	25.0	24.2	1.240	1.481	35			
									50	24	23.0	22.3	0.728	0.857				
									26140	1860.0	50	24	21.5	20.8		1.740	2.022	
									26365	1882.5	50	24	21.5	20.7		1.670	2.008	
										1	49	21.5	21.0	1.730	1.948			
										50	24	21.5	21.0	1.790	2.003			

10.11. LTE Band 26 (15MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	26865	831.5	1	74	25.5	24.7	0.228	0.276	
								36	39	23.5	22.2	0.097	0.130	
					Left Tilt	26865	831.5	1	74	25.5	24.7	0.140	0.169	
								36	39	23.5	22.2	0.057	0.077	
					Right Touch	26865	831.5	1	74	25.5	24.7	0.282	0.341	36
								36	39	23.5	22.2	0.132	0.178	
					Right Tilt	26865	831.5	1	74	25.5	24.7	0.124	0.150	
								36	39	23.5	22.2	0.053	0.071	
	Body-worn	QPSK	N/A	15	Rear	26865	831.5	1	74	25.5	24.7	0.322	0.389	37
								36	39	23.5	22.2	0.170	0.229	
					Front	26865	831.5	1	74	25.5	24.7	0.306	0.370	
								36	39	23.5	22.2	0.153	0.206	
	Hotspot	QPSK	N/A	10	Rear	26865	831.5	1	74	25.5	24.7	0.528	0.639	38
								36	39	23.5	22.2	0.297	0.401	
					Front	26865	831.5	1	74	25.5	24.7	0.394	0.476	
								36	39	23.5	22.2	0.212	0.286	
					Edge 2	26865	831.5	1	74	25.5	24.7	0.394	0.476	
								36	39	23.5	22.2	0.216	0.291	
					Edge 3	26865	831.5	1	74	25.5	24.7	0.397	0.480	
								36	39	23.5	22.2	0.203	0.274	
					Edge 4	26865	831.5	1	74	25.5	24.7	0.115	0.139	
								36	39	23.5	22.2	0.060	0.080	

10.12. LTE Band 41 (20MHz Bandwidth)

LTE Band 41 Power Class 3

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	41055	2636.5	1	49	25.0	23.7	0.090	0.120	39
								50	24	24.0	22.8	0.070	0.092	
					Left Tilt	41055	2636.5	1	49	25.0	23.7	0.050	0.066	
								50	24	24.0	22.8	0.040	0.052	
					Right Touch	41055	2636.5	1	49	25.0	23.7	0.053	0.071	
								50	24	24.0	22.8	0.044	0.057	
					Right Tilt	41055	2636.5	1	49	25.0	23.7	0.090	0.120	
								50	24	24.0	22.8	0.072	0.094	
	Body-worn	QPSK	Off	15	Rear	41055	2636.5	1	49	25.0	23.7	0.134	0.179	
								50	24	24.0	22.8	0.110	0.144	
					Front	41055	2636.5	1	49	25.0	23.7	0.167	0.223	40
								50	24	24.0	22.8	0.133	0.175	
	Hotspot	QPSK	On	10	Rear	41055	2636.5	1	49	22.0	20.7	0.100	0.135	
								50	24	22.0	20.8	0.101	0.133	
					Front	41055	2636.5	1	49	22.0	20.7	0.104	0.141	
								50	24	22.0	20.8	0.104	0.137	
					Edge 3	41055	2636.5	1	49	22.0	20.7	0.205	0.278	41
								50	24	22.0	20.8	0.207	0.273	
					Edge 4	41055	2636.5	1	49	22.0	20.7	0.099	0.134	
								50	24	22.0	20.8	0.102	0.135	

LTE Band 41 Power Class 2

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 2 Ant.	Head	QPSK	Off	0	Left Touch	41055	2636.5	1	49	26.2	24.7	0.061	0.087	
	Body-worn	QPSK	Off	15	Front	41055	2636.5	1	49	26.2	24.7	0.090	0.128	
	Hotspot	QPSK	On	10	Edge 3	41055	2636.5	1	49	22.0	20.5	0.135	0.190	

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

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

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

Reported SAR vs. Output Power linearly scaled

Antenna	RF Exposure Conditions	Power Class 2				Power Class 3				PC 2 linearly Scaled Reported SAR (W/kg)	Linearly scaled (%)
		Duty Cycle (%)	Tune-up Power (dBm)	Frame Avg. Power (mW)	Reported SAR (W/kg)	Duty Cycle (%)	Tune-up Power (dBm)	Frame Avg. Power (mW)	Reported SAR (W/kg)		
Main 2 Ant.	Head	43.3	26.2	180.5	0.087	63.3	25.0	200.2	0.120	0.096	-19.6
	Body-worn	43.3	26.2	180.5	0.128	63.3	25.0	200.2	0.223	0.142	-36.3
	Hotspot	43.3	22.0	68.6	0.190	63.3	22.0	100.3	0.278	0.278	-0.1

Conclusion:

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

10.13. LTE Band 66 (20MHz Bandwidth)

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.				
										Tune-up limit	Meas.	Meas.	Scaled					
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	132572	1770.0	1	0	24.0	23.6	0.206	0.226	42				
								50	0	23.0	22.6	0.167	0.185					
					Left Tilt	132572	1770.0	1	0	24.0	23.6	0.093	0.102					
								50	0	23.0	22.6	0.074	0.082					
					Right Touch	132572	1770.0	1	0	24.0	23.6	0.114	0.125					
								50	0	23.0	22.6	0.090	0.099					
					Right Tilt	132572	1770.0	1	0	24.0	23.6	0.092	0.100					
								50	0	23.0	22.6	0.064	0.071					
	Body-w orn	QPSK	Off	15	Rear	132572	1770.0	1	0	24.0	23.6	0.689	0.757	43				
								50	0	23.0	22.6	0.551	0.610					
					Front	132572	1770.0	1	0	24.0	23.6	0.606	0.665					
								50	0	23.0	22.6	0.492	0.545					
	Hotspot	QPSK	On	10	Rear	132572	1770.0	1	0	20.0	19.6	0.468	0.514					
								50	0	20.0	19.6	0.479	0.530					
					Front	132572	1770.0	1	0	20.0	19.6	0.452	0.496					
								50	0	20.0	19.6	0.462	0.511					
					Edge 2	132572	1770.0	1	0	20.0	19.6	0.084	0.092					
								50	0	20.0	19.6	0.081	0.090					
					Edge 3	132072	1720.0	1	0	20.0	19.4	0.685	0.792					
								50	0	20.0	19.4	0.705	0.813					
						132322	1745.0	1	0	20.0	19.2	0.756	0.903					
								50	0	20.0	19.3	0.779	0.922					
						132572	1770.0	1	0	20.0	19.6	0.879	0.965					
								50	0	20.0	19.6	0.896	0.991					
Edge 4					132572	1770.0	1	0	20.0	19.6	0.133	0.146	44					
							50	0	20.0	19.6	0.133	0.147						
Antenna					RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		10-g SAR (W/kg)		Plot No.
Main 1 Ant.					Product Specific 10-g	QPSK	Off	8	Rear	132572	1770.0	1	0	24.0	23.6	0.816	0.896	
	6	Front	132572	1770.0				1	0	24.0	23.6	1.050	1.153					
	10	Edge 3	132572	1770.0				1	0	24.0	23.6	1.190	1.307					
								50	0	23.0	22.6	0.946	1.048					
	On	0	Rear	132572			1770.0	1	0	20.0	19.4	1.190	1.361					
		0	Front	132572			1770.0	1	0	20.0	19.4	1.120	1.281					
		0	Edge 3	132572			1770.0	1	0	20.0	19.4	1.370	1.567	45				
								50	0	20.0	19.5	1.370	1.544					

10.14. NR Band n5 (20MHz Bandwidth)

DFT-s-OFDM

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	N/A	0	Left Touch	167300	836.5	1	104	25.5	24.8	0.164	0.191	
								50	28	25.5	24.5	0.177	0.224	
					Left Tilt	167300	836.5	1	104	25.5	24.8	0.099	0.115	
								50	28	25.5	24.5	0.110	0.139	
					Right Touch	167300	836.5	1	104	25.5	24.8	0.248	0.289	
								50	28	25.5	24.5	0.263	0.333	46
					Right Tilt	167300	836.5	1	104	25.5	24.8	0.099	0.115	
								50	28	25.5	24.5	0.099	0.125	
	Body-w orn	QPSK	N/A	15	Rear	167300	836.5	1	104	25.5	24.8	0.392	0.456	47
								50	28	25.5	24.5	0.333	0.421	
					Front	167300	836.5	1	104	25.5	24.8	0.351	0.409	
								50	28	25.5	24.5	0.343	0.434	
	Hotspot	QPSK	N/A	10	Rear	167300	836.5	1	104	25.5	24.8	0.686	0.799	48
								50	28	25.5	24.5	0.599	0.758	
					Front	167300	836.5	1	104	25.5	24.8	0.499	0.581	
								50	28	25.5	24.5	0.492	0.622	
					Edge 2	167300	836.5	1	104	25.5	24.8	0.308	0.359	
								50	28	25.5	24.5	0.333	0.421	
					Edge 3	167300	836.5	1	104	25.5	24.8	0.474	0.552	
								50	28	25.5	24.5	0.357	0.452	
					Edge 4	167300	836.5	1	104	25.5	24.8	0.086	0.100	
								50	28	25.5	24.5	0.083	0.105	

CP-OFDM

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	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	167300	836.5	1	1	24.0	22.6	0.150	0.208	
	Body-w orn	QPSK	N/A	15	Rear	167300	836.5	1	1	24.0	22.6	0.192	0.266	
	Hotspot	QPSK	N/A	10	Rear	167300	836.5	1	1	24.0	22.6	0.334	0.462	

Note(s):

CP-OFDM mode's SAR test additionally evaluated at highest configuration of DFT-s-OFDM mode in each RF exposure conditions.

10.15. NR Band n66 (20MHz Bandwidth)

DFT-s-OFDM

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	344000	1720.0	1	53	24.0	23.3	0.179	0.208	49
								50	28	24.0	23.2	0.169	0.202	
					Left Tilt	344000	1720.0	1	53	24.0	23.3	0.068	0.079	
								50	28	24.0	23.2	0.081	0.097	
					Right Touch	344000	1720.0	1	53	24.0	23.3	0.110	0.128	
								50	28	24.0	23.2	0.099	0.118	
					Right Tilt	344000	1720.0	1	53	24.0	23.3	0.071	0.083	
								50	28	24.0	23.2	0.068	0.082	
	Body-w orn	QPSK	Off	15	Rear	344000	1720.0	1	53	24.0	23.3	0.618	0.719	50
								50	28	24.0	23.2	0.574	0.687	
					Front	344000	1720.0	1	53	24.0	23.3	0.546	0.636	
								50	28	24.0	23.2	0.518	0.620	
	Hotspot	QPSK	On	10	Rear	344000	1720.0	1	53	19.5	19.2	0.433	0.464	
								50	28	19.5	19.2	0.415	0.444	
					Front	344000	1720.0	1	53	19.5	19.2	0.422	0.452	
								50	28	19.5	19.2	0.397	0.424	
					Edge 2	344000	1720.0	1	53	19.5	19.2	0.076	0.081	
								50	28	19.5	19.2	0.075	0.080	
Edge 3					344000	1720.0	1	53	19.5	19.2	0.739	0.792	51	
							50	28	19.5	19.2	0.723	0.773		
Edge 4					344000	1720.0	1	53	19.5	19.2	0.113	0.121		
							50	28	19.5	19.2	0.111	0.119		

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Main 1 Ant.	Product Specific 10-g	QPSK	Off	8	Rear	344000	1720.0	1	53	24.0	23.3	0.750	0.873	
								50	28	24.0	23.2	0.786	0.941	
					Front	344000	1720.0	1	53	24.0	23.3	0.801	0.932	
								50	28	24.0	23.2	0.829	0.992	
					Edge 3	344000	1720.0	1	53	24.0	23.3	0.832	0.969	
								50	28	24.0	23.2	0.829	0.992	
				On	Rear	344000	1720.0	1	53	19.5	19.2	1.070	1.160	
								50	28	19.5	19.0	1.060	1.184	
					Front	344000	1720.0	1	53	19.5	19.2	1.140	1.236	
								50	28	19.5	19.2	1.410	1.528	52
					Edge 3	344000	1720.0	1	53	19.5	19.2	1.410	1.528	
								50	28	19.5	19.0	1.260	1.407	

CP-OFDM

Antenna	RF Exposure Conditions	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offset	Power (dBm)		1-g SAR (W/kg)		10-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	Meas.	Scaled	
Main 1 Ant.	Head	QPSK	Off	0	Left Touch	344000	1720.0	1	1	22.5	21.6	0.114	0.140			
	Body-w orn	QPSK	Off	15	Rear	344000	1720.0	1	1	22.5	21.6	0.367	0.452			
	Hotspot	QPSK	On	10	Rear	344000	1720.0	1	1	19.5	19.0	0.676	0.758			
	Product Specific 10-g	QPSK	On	0	Rear	344000	1720.0	1	1	19.5	18.9			1.310	1.515	

Note(s):

CP-OFDM mode's SAR test additionally evaluated at highest configuration of DFT-s-OFDM mode in each RF exposure conditions.

10.16. Wi-Fi (DTS Band)

Normal WLAN mode

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.			
											Tune-up limit	Meas.	Meas.	Scaled					
SISO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.802	99.5	17.0	16.2	0.710	0.868	3				
							6	2437.0	1.077	99.5	17.0	16.5	0.816	0.925	3				
							11	2462.0	1.099	99.5	17.0	17.0	0.838	0.846					
						Right Touch	11	2462.0	0.895	99.5	17.0	17.0	0.606	0.612	2				
							Right Tilt	11	2462.0	0.183	99.5								
			Front	11	2462.0	0.346	99.5	21.0	20.8	0.232	0.246	4							
			Front	11	2462.0	0.763	99.5	21.0	20.8	0.483	0.513	2							
			Edge 4	1	2412.0	1.339	99.5	21.0	20.2	0.877	1.058	3	54						
				6	2437.0	1.367	99.5	21.0	20.7	0.893	0.958								
				11	2462.0	1.325	99.5	21.0	20.8	0.874	0.929								
			SISO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.007	99.5	17.0	16.7				
									Left Tilt	1	2412.0	0.010	99.5	17.0	16.7				
									Right Touch	1	2412.0	0.014	99.5	17.0	16.7				
Right Tilt	1	2412.0							0.020	99.5	17.0	16.7	0.011	0.012	1				
Front	11	2462.0				0.009	99.5	21.0	20.9										
Front	11	2462.0				0.010	99.5	21.0	20.9										
Edge 1	11	2462.0				0.051	99.5	21.0	20.9										
Edge 4	11	2462.0				0.028	99.5	21.0	20.9										
MIMO (WiFi Ant.1)	2.4GHz	802.11g 6 Mbps				Head	On	0	Left Touch	3	2422.0	1.222	96.5	17.0	16.4	0.864	1.026	3	55
										6	2437.0	0.965	96.5	17.0	16.7	0.862	0.950	2	
										10	2457.0	0.803	96.5	17.0	15.5	0.572	0.843	3	
									Right Touch	3	2422.0	1.373	96.5	17.0	16.4	0.804	0.954	3	
										6	2437.0	1.200	96.5	17.0	16.7	0.739	0.815		
			10	2457.0	1.104				96.5	17.0	15.5	0.584	0.861	3					
			Right Tilt	6	2437.0				0.241	96.5	17.0	16.7	0.176	0.194	2				
			Front	6	2437.0				0.189	96.5	18.0	16.8	0.124	0.169	1				
			Front	6	2437.0	0.411	96.5	18.0	16.8	0.266	0.363	2							
			Edge 1	6	2437.0	0.078	96.5	18.0	16.8										
			Edge 4	6	2437.0	0.650	96.5	18.0	16.8	0.422	0.576								
			MIMO (WiFi Ant.2)	2.4GHz	802.11g 6 Mbps	Head	On	0	Left Touch	3	2422.0	1.222	96.5	17.0	16.7				
										6	2437.0	0.965	96.5	17.0	16.7				
										10	2457.0	0.803	96.5	17.0	16.1				
Right Touch	3	2422.0							1.373	96.5	17.0	16.7							
	6	2437.0							1.200	96.5	17.0	16.7							
10	2457.0	1.104							96.5	17.0	16.1								
Right Tilt	6	2437.0							0.241	96.5	17.0	16.7							
Front	6	2437.0							0.189	96.5	18.0	17.2							
Front	6	2437.0				0.411	96.5	18.0	17.2										
Edge 1	6	2437.0				0.078	96.5	18.0	17.2										
Edge 4	6	2437.0				0.650	96.5	18.0	17.2										

Note(s):

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

RSDB WLAN mode

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Area Scan Max. SAR (W/kg)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.			
											Tune-up limit	Meas.	Meas.	Scaled					
SISO (WiFi Ant.1)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	11	2462.0	0.601	99.5	14.0	14.0	0.516	0.524					
						Left Tilt	11	2462.0	0.049	99.5	14.0	14.0							
						Right Touch	11	2462.0	0.549	99.5	14.0	14.0	0.370	0.375	2				
						Right Tilt	11	2462.0	0.088	99.5	14.0	14.0							
			Body-worn	Off	15	Rear	11	2462.0	0.155	99.5	17.0	17.0	0.098	0.099	4				
						Front	11	2462.0	0.216	99.5	17.0	17.0	0.133	0.134	1				
			Hotspot	Off	10	Rear	11	2462.0	0.305	99.5	17.0	17.0	0.195	0.197	4				
						Front	11	2462.0	0.316	99.5	17.0	17.0	0.236	0.238	2				
						Edge 4	11	2462.0	0.746	99.5	17.0	17.0	0.399	0.403					
			SISO (WiFi Ant.2)	2.4GHz	802.11b 1 Mbps	Head	On	0	Left Touch	1	2412.0	0.005	99.5	14.0	13.8				
									Left Tilt	1	2412.0	0.007	99.5	14.0	13.8				
									Right Touch	1	2412.0	0.007	99.5	14.0	13.8				
Right Tilt	1	2412.0							0.011	99.5	14.0	13.8	0.005	0.005	1				
Body-worn	Off	15				Rear	1	2412.0	0.068	99.5	17.0	16.7	0.047	0.050	1				
						Front	1	2412.0	0.004	99.5	17.0	16.7	0.001	0.001	4				
Hotspot	Off	10				Rear	1	2412.0	0.177	99.5	17.0	16.7	0.133	0.142	1				
						Front	1	2412.0	0.008	99.5	17.0	16.7	0.004	0.004	4				
						Edge 1	1	2412.0	0.024	99.5	17.0	16.7							
						Edge 4	1	2412.0	0.003	99.5	17.0	16.7							
MIMO (WiFi Ant.1)	2.4GHz	802.11g 6 Mbps				Head	On	0	Left Touch	6	2437.0	0.672	96.5	14.0	13.7	0.590	0.651	2	
									Left Tilt	6	2437.0	0.076	96.5	14.0	13.7				
			Right Touch	6	2437.0				0.762	96.5	14.0	13.7	0.463	0.511					
			Right Tilt	6	2437.0				0.121	96.5	14.0	13.7							
			Body-worn	Off	15	Rear	6	2437.0	0.222	96.5	17.0	16.7	0.132	0.146					
						Front	6	2437.0	0.207	96.5	17.0	16.7	0.140	0.154	4				
			Hotspot	Off	10	Rear	6	2437.0	0.474	96.5	17.0	16.7	0.256	0.282					
						Front	6	2437.0	0.469	96.5	17.0	16.7	0.295	0.325	4				
						Edge 1	6	2437.0	0.089	96.5	17.0	16.7							
						Edge 4	6	2437.0	0.896	96.5	17.0	16.7							
			MIMO (WiFi Ant.2)	2.4GHz	802.11g 6 Mbps	Head	On	0	Left Touch	6	2437.0	0.672	96.5	14.0	13.9				
									Left Tilt	6	2437.0	0.076	96.5	14.0	13.9				
Right Touch	6	2437.0							0.762	96.5	14.0	13.9							
Right Tilt	6	2437.0							0.121	96.5	14.0	13.9							
Body-worn	Off	15				Rear	6	2437.0	0.222	96.5	17.0	16.7	0.157	0.175	1				
						Front	6	2437.0	0.207	96.5	17.0	16.7							
Hotspot	Off	10				Rear	6	2437.0	0.474	96.5	17.0	16.7	0.332	0.369	2				
						Front	6	2437.0	0.469	96.5	17.0	16.7							
						Edge 1	6	2437.0	0.089	96.5	17.0	16.7							
						Edge 4	6	2437.0	0.896	96.5	17.0	16.7	0.483	0.538					

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.

10.17. Wi-Fi (U-NII Bands)

U-NII 2A Results

Normal WLAN mode

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					
MIMO (WiFi Ant.1)	5.3 GHz U-NII 2A	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	58	5290.0	0.432	92.8	12.0	11.0									
						Left Tilt	58	5290.0	0.119	92.8	12.0	11.0									
						Right Touch	58	5290.0	0.772	92.8	12.0	11.0									
						Right Tilt	58	5290.0	0.198	92.8	12.0	11.0									
		802.11a 6 Mbps	Body-worn	Off	15	Rear	64	5320.0	0.422	96.6	18.0	17.1									
						Front	64	5320.0	0.331	96.6	18.0	17.1									
			Product Specific 10-g	Off	0	Rear	64	5320.0	8.956	96.6	18.0	17.1			1.070	1.351					
						Front	64	5320.0	3.798	96.6	18.0	17.1									
						Edge 1	64	5320.0	0.676	96.6	18.0	17.1									
						Edge 4	60	5300.0	23.779	96.6	18.0	17.2									
							64	5320.0	27.745	96.6	18.0	17.1									

RSDB WLAN mode

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		
MIMO (WiFi Ant.1)	5.3 GHz U-NII 2A	802.11ac VHT 80 29.3 Mbps	Body-worn	Off	15	Rear	58	5290.0	0.205	92.8	14.0	13.7						
						Front	58	5290.0	0.171	92.8	14.0	13.7						
			Product Specific 10-g	Off	0	Rear	58	5290.0	4.190	92.8	14.0	13.7			0.485	0.566		2
						Front	58	5290.0	1.736	92.8	14.0	13.7						
						Edge 1	58	5290.0	0.343	92.8	14.0	13.7						
						Edge 4	58	5290.0	10.852	92.8	14.0	13.7						
MIMO (WiFi Ant.2)	5.3 GHz U-NII 2A	802.11ac VHT 80 29.3 Mbps	Body-worn	Off	15	Rear	58	5290.0	0.205	92.8	14.0	13.6	0.098	0.114			1	
						Front	58	5290.0	0.171	92.8	14.0	13.6	0.079	0.092			4	
			Product Specific 10-g	Off	0	Rear	58	5290.0	4.190	92.8	14.0	13.6			0.383	0.448		
						Front	58	5290.0	1.736	92.8	14.0	13.6						
						Edge 1	58	5290.0	0.343	92.8	14.0	13.6						
						Edge 4	58	5290.0	10.852	92.8	14.0	13.6			0.956	1.119		

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. Head target power is same for both Normal WLAN mode & RSDB WLAN mode. So Normal WLAN mode Head SAR results used for RSDB simultaneous analysis of Head exposure condition.

U-NII 2C Results

Normal WLAN mode

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								
MIMO (WiFi Ant.1)	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	122	5610.0	0.296	92.8	12.0	11.9												
						Left Tilt	122	5610.0	0.171	92.8	12.0	11.9												
						Right Touch	122	5610.0	0.842	92.8	12.0	11.9												
						Right Tilt	122	5610.0	0.241	92.8	12.0	11.9												
	802.11n HT40 13.5 Mbps	Body-worn	Off	15	Rear	142	5710.0	0.245	98.2	16.0	15.5	0.103	0.118											
					Front	142	5710.0	0.215	98.2	16.0	15.5													
		Product Specific 10-g	Off	0	Rear	142	5710.0	4.295	98.2	16.0	15.5													
					Front	142	5710.0	2.810	98.2	16.0	15.5													
MIMO (WiFi Ant.2)	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	122	5610.0	0.296	92.8	12.0	11.6	0.134	0.158				4						
						Left Tilt	122	5610.0	0.171	92.8	12.0	11.6	0.079	0.093						4				
						Right Touch	122	5610.0	0.842	92.8	12.0	11.6	0.268	0.316						1	59			
						Right Tilt	122	5610.0	0.241	92.8	12.0	11.6	0.100	0.118							4			
	802.11n HT40 13.5 Mbps	Body-worn	Off	15	Rear	142	5710.0	0.245	98.2	16.0	15.2	0.112	0.138					1	60					
					Front	142	5710.0	0.215	98.2	16.0	15.2	0.097	0.120							4				
		Product Specific 10-g	Off	0	Rear	142	5710.0	4.295	98.2	16.0	15.2				0.363	0.449			2					
					Front	142	5710.0	2.810	98.2	16.0	15.2													
	Edge 1	142	5710.0	0.362	98.2	16.0	15.2																	
								Edge 4	142	5710.0	11.889	98.2	16.0	15.2										

RSDB WLAN mode

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				
MIMO (WiFi Ant.1)	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Body-worn	Off	15	Rear	138	5690.0	0.182	92.8	14.0	13.5	0.070	0.086						
						Front	138	5690.0	0.153	92.8	14.0	13.5								
			Product Specific 10-g	Off	0	Rear	138	5690.0	3.116	92.8	14.0	13.5				0.311	0.379		4	
						Front	138	5690.0	1.481	92.8	14.0	13.5								
						Edge 1	138	5690.0	0.251	92.8	14.0	13.5								
MIMO (WiFi Ant.2)	5.5 GHz U-NII 2C	802.11ac VHT 80 29.3 Mbps	Body-worn	Off	15	Rear	138	5690.0	0.182	92.8	14.0	13.3	0.079	0.100						
						Front	138	5690.0	0.153	92.8	14.0	13.3	0.071	0.090						
			Product Specific 10-g	Off	0	Rear	138	5690.0	3.116	92.8	14.0	13.3				0.279	0.352			
						Front	138	5690.0	1.481	92.8	14.0	13.3								
						Edge 1	138	5690.0	0.251	92.8	14.0	13.3								
Edge 4	138	5690.0	8.726	92.8	14.0	13.3						0.691	0.873		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.
5. Head target power is same for both Normal WLAN mode & RSDB WLAN mode. So Normal WLAN mode Head SAR results used for RSDB simultaneous analysis of Head exposure condition.

U-NII 3 Results

Normal WLAN mode

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		
MIMO (WiFi Ant.1)	5.8 GHz U-NII 3	802.11ac VHT 80 29.3 Mbps	Head	On	0	Left Touch	155	5775.0	0.323	92.8	12.0	11.8				
						Left Tilt	155	5775.0	0.139	92.8	12.0	11.8				
						Right Touch	155	5775.0	1.202	92.8	12.0	11.8				
						Right Tilt	155	5775.0	0.345	92.8	12.0	11.8				
		802.11a 6 Mbps	Body-worn	Off	15	Rear	157	5785.0	0.461	96.6	18.0	17.5				
						Front	157	5785.0	0.456	96.6	18.0	17.5				
			Hotspot	Off	10	Rear	149	5745.0	0.732	96.6	18.0	16.5				
						Front	149	5745.0	0.591	96.6	18.0	16.5				
						Edge 1	149	5745.0	0.203	96.6	18.0	16.5				
						Edge 4	149	5745.0	1.397	96.6	18.0	16.5				

RSDB WLAN mode

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		
MIMO (WiFi Ant.1)	5.8 GHz U-NII 3	802.11ac VHT 80 29.3 Mbps	Body-worn	Off	15	Rear	155	5775.0	0.172	92.8	14.0	12.7	0.053	0.077		
						Front	155	5775.0	0.159	92.8	14.0	12.7				
			Hotspot	Off	10	Rear	155	5775.0	0.245	92.8	14.0	12.7	0.089	0.130		
						Front	155	5775.0	0.286	92.8	14.0	12.7				
						Edge 1	155	5775.0	0.061	92.8	14.0	12.7				
						Edge 4	155	5775.0	0.514	92.8	14.0	12.7				

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. Head target power is same for both Normal WLAN mode & RSDB WLAN mode. So Normal WLAN mode Head SAR results used for RSDB simultaneous analysis of Head exposure condition.

10.18. Bluetooth

Antenna	Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
BT	2.4 GHz	GFSK	Head	N/A	0	Left Touch	0	2402.0	76.9	17.0	15.5	0.429	0.781	
							39	2441.0	76.9	17.0	16.7	0.560	0.774	
							78	2480.0	76.9	17.0	16.8	0.651	0.886	65
						Left Tilt	78	2480.0	76.9	17.0	16.8	0.068	0.093	
							Right Touch	78	2480.0	76.9	17.0	16.8	0.512	0.697
		Right Tilt	78	2480.0	76.9	17.0	16.8	0.126	0.171					
		GFSK	Body-worn	N/A	15	Rear	78	2480.0	76.9	17.0	16.8	0.098	0.134	66
						Front	78	2480.0	76.9	17.0	16.8	0.098	0.133	
		GFSK	Hotspot	N/A	10	Rear	78	2480.0	76.9	17.0	16.8	0.195	0.265	
						Front	78	2480.0	76.9	17.0	16.8	0.201	0.274	
						Edge 4	78	2480.0	76.9	17.0	16.8	0.276	0.376	67

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 ($\sim 10\%$ 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	0.232	N/A	N/A
	LTE Band 13	Hotspot	Rear	No	0.409	N/A	N/A
835	GSM 850	Hotspot	Rear	No	0.757	N/A	N/A
	WCDMA Band V	Hotspot	Rear	No	0.771	N/A	N/A
	LTE Band 5	Hotspot	Rear	No	0.619	N/A	N/A
	LTE Band 26	Hotspot	Rear	No	0.528	N/A	N/A
	NR Band n5	Hotspot	Rear	No	0.686	N/A	N/A
1750	WCDMA Band IV	Hotspot	Edge 3	Yes	1.030	1.020	1.01
	LTE Band 66	Hotspot	Edge 3	No	0.904	N/A	N/A
	NR Band n66	Hotspot	Edge 3	No	0.739	N/A	N/A
1900	GSM 1900	Hotspot	Edge 3	No	0.841	N/A	N/A
	WCDMA Band II	Hotspot	Edge 3	No	1.020	N/A	N/A
	LTE Band 2	Hotspot	Edge 3	No	0.990	N/A	N/A
	LTE Band 25	Hotspot	Edge 3	Yes	1.110	1.080	1.03
2400	Wi-Fi 802.11b/g/n	Hotspot	Edge 4	Yes	0.893	0.875	1.02
	Bluetooth	Head	Left Touch	No	0.651	N/A	N/A
2600	LTE Band 41	Hotspot	Edge 3	No	0.207	N/A	N/A
5300	Wi-Fi 802.11a/n	Head	Right Touch	No	0.294	N/A	N/A
5500	Wi-Fi 802.11a/n	Head	Right Touch	No	0.268	N/A	N/A
5800	Wi-Fi 802.11a/n	Hotspot	Edge 4	No	0.606	N/A	N/A

Peak spatial-average (10g of tissue)

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
1750	WCDMA Band IV	Product Specific 10g	Edge 3	No	1.640	N/A	N/A
	LTE Band 66	Product Specific 10g	Edge 3	No	1.370	N/A	N/A
	NR Band n66	Product Specific 10g	Edge 3	No	1.410	N/A	N/A
1900	GSM 1900	Product Specific 10g	Edge 3	No	1.430	N/A	N/A
	WCDMA Band II	Product Specific 10g	Edge 3	No	1.850	N/A	N/A
	LTE Band 2	Product Specific 10g	Edge 3	No	1.490	N/A	N/A
	LTE Band 25	Product Specific 10g	Edge 3	No	1.790	N/A	N/A
5300	Wi-Fi 802.11a/n	Product Specific 10g	Edge 4	No	1.970	N/A	N/A
5500	Wi-Fi 802.11a/n	Product Specific 10g	Edge 4	No	0.989	N/A	N/A

Note(s):

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

12. Simultaneous Transmission SAR Analysis

Simultaneous Transmission Condition

RF Exposure Condition	Item	Capable Transmit Configurations				
Head & Body-worn & Phablet-10g	1	GSM(Voice/GPRS)	+	DTS_Ant.1	or/and	DTS_Ant.2
	2	GSM(Voice/GPRS)	+	UNII MIMO		
	3	GSM(Voice/GPRS)	+	BT		
	4	GSM(Voice/GPRS)	+	UNII MIMO	+	BT
	5	GSM(Voice/GPRS)	+	RSDB scenario		
	6	WCDMA or LTE	+	DTS_Ant.1	or/and	DTS_Ant.2
	7	WCDMA or LTE	+	UNII MIMO		
	8	WCDMA or LTE	+	BT		
	9	WCDMA or LTE	+	UNII MIMO	+	BT
	10	WCDMA or LTE	+	RSDB scenario		
	11	EN-DC (LTE + NR)	+	DTS_Ant.1	or/and	DTS_Ant.2
	12	EN-DC (LTE + NR)	+	UNII MIMO		
	13	EN-DC (LTE + NR)	+	BT		
	14	EN-DC (LTE + NR)	+	UNII MIMO	+	BT
	15	EN-DC (LTE + NR)	+	RSDB scenario		
Hotspot	15	GSM(GPRS)	+	DTS_Ant.1	or/and	DTS_Ant.2
	16	GSM(GPRS)	+	UNII MIMO		
	17	GSM(GPRS)	+	BT		
	18	GSM(GPRS)	+	UNII MIMO	+	BT
	19	GSM(GPRS)	+	RSDB scenario		
	20	WCDMA or LTE	+	DTS_Ant.1	or/and	DTS_Ant.2
	21	WCDMA or LTE	+	UNII MIMO		
	22	WCDMA or LTE	+	BT		
	23	WCDMA or LTE	+	UNII MIMO	+	BT
	24	WCDMA or LTE	+	RSDB scenario		
	26	EN-DC (LTE + NR)	+	DTS_Ant.1	or/and	DTS_Ant.2
	25	EN-DC (LTE + NR)	+	UNII MIMO		
	26	EN-DC (LTE + NR)	+	BT		
27	EN-DC (LTE + NR)	+	UNII MIMO	+	BT	
28	EN-DC (LTE + NR)	+	RSDB scenario			

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. GPRS, W-CDMA, LTE supports Hotspot and VoIP.
4. 5G NR supports Hotspot.
5. U-NII Radio can transmit simultaneously with Bluetooth Radio.
6. DTS Radio cannot transmit simultaneously with Bluetooth Radio.
7. DTS Radio can only transmit simultaneously with U-NII Radio in RSDB scenarios.
8. DTS Radio can operating both SISO and MIMO modes.
9. U-NII Radio can operating MIMO mode only.
10. BT tethering is considered about each RF exposure conditions.
11. NR Radio can transmit through EN-DC mode with LTE anchor bands. (Please refer to Sec.6.6)

RSDB scenarios

Mode	Scenario	# of TX	5GHz		2.4GHz	
			Ant1	Ant2	Ant1	Ant2
2.4GHz + 5GHz RSDB & MIMO	1	3	On	On	On	-
	2	3	On	On	-	On
2.4GHz + 5GHz RSDB MIMO	3	4	On	On	On	On

Simultaneous transmission SAR test exclusion considerations

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

Sum of SAR

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

SAR to Peak Location Ratio (SPLSR)

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

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

Where:

SAR₁ is the highest reported or estimated SAR for the first of a pair of simultaneous transmitting antennas, in a specific test operating mode and exposure condition

SAR₂ is the highest reported or estimated SAR for the second of a pair of simultaneous transmitting antennas, in the same test operating mode and exposure condition as the first

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

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

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

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

When an individual antenna transmits at on two bands simultaneously, the sum of the highest *reported* SAR for the frequency bands should be used to determine **SAR₁**, or **SAR₂**. When SPLSR is necessary, the smallest distance between the peak SAR locations for the antenna pair with respect to the peaks from each antenna should be used.

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

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

Simultaneous transmission SAR measurement

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

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

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

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

Combined Multi Band Averaged SAR allows - in addition to the data extraction - an evaluation of the 1 g, 10 g and/or arbitrary averaged mass SAR.

Power Scaling Factor is used to allow the volume scans to be scaled by a value other than "1", this is important when the results need to be scaled to different maximum power levels. The Power Scaling Factor is applied to each individual point of the scan. When power scaling is used in multi-band combinations the scaling factor is applied to each individual point of the first scan, the second factor is then applied to each individual point of the second scan and so on. The scans are then combined.

SPLSR Hotspot Combination

Per November 2019 TCB Workshop Notes, SPLSR Hotspot Combination procedure can be applied to evaluate to simultaneous transmission SAR analysis.

Hybrid SPLSR and enlarged zoom scan (Volume scan) can be applied when Simultaneous transmission SAR is over 1.6 or 4.0 W/kg (1-g or 10-g respectively), it does not meet SPLSR criteria, and antenna pair is co-located. Antenna co-location means that SAR distributions overlap because the antennas are not significantly spatially separated.

Test procedure

Step.1 Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR.

Step.2 Apply SPLSR procedure for the spatially separated antenna and aggregate SAR distribution of the co-located antenna pair.

5G NR FR1 NSA EN-DC UE SAR

Per November 2019 TCB Workshop Notes, PAG requirements for both intra-band and inter-band NSA EN-DC are as follows:

Case.1 If the single uplink 1-g SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1-g SAR values are less than 1.45 W/kg, additional measurements are not needed.

Case.2 If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures KDB Pub.865664 D01.

Case.3 If the algebraic sum of the 1-g SAR values is greater than 1.45 W/kg, additional measurements might be needed.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)								
		WLAN (Normal mode)					BT	WLAN (RSDB mode)				WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Ant.1 + UNII MIMO	WWAN + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNII MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNII MIMO	1+2									
1	2	3	4	5	6	7	8	9	10											
Head (1g-SAR)	Left Touch	0.290	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.215	0.302	1.316	0.482	1.176	1.368	1.006	0.487	1.133
	Left Tilt	0.176	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.101	0.188	0.295	0.269	0.269	0.362	0.793	0.274	0.920
	Right Touch	0.420	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	1.032	0.432	1.374	0.830	1.117	1.527	1.205	0.835	1.341
	Right Tilt	0.184	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.109	0.196	0.378	0.325	0.355	0.496	0.849	0.330	0.976
Body-Worn (1g-SAR)	Rear	0.538	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.861	0.684	0.699	0.781	0.672	0.915	0.751	0.702	0.827
	Front	0.475	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.721	0.621	0.644	0.688	0.608	0.821	0.708	0.575	0.726
Hotspot (1-g SAR)	Rear	0.918	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.384	1.312	1.292	1.348	1.183	1.613	1.268	1.213	1.440
	Front	0.616	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.129	1.010	0.979	0.968	0.890	1.242	1.024	0.790	1.111
	Edge 1			0.394	0.576	0.776				0.142	0.538	0.285								
	Edge 2	0.611																		
	Edge 3	0.583																		
Edge 4	0.173	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.231	0.567	0.749	0.949	0.549	1.325	0.861	0.600	0.996	

SPLSR Hotspot Combination procedures

RF Exposure	Test Position	Standalone SAR (W/kg)										SUM SAR	Calculated distance (mm)	SPLSR (=0.04)	Volume scan (Yes/No)	Volume scan SAR (W/kg) (Total)	Figure	
		WLAN (Normal mode)					BT	WLAN (RSDB mode)										
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNII MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNII MIMO								
1	2	3	4	5	6	7	8	9	10	1+5+6	1.613							
Hotspot (1-g SAR)	Rear	0.918				0.430	0.265					1+5+6	1.613					
	Hybrid SPLSR (Note 2)	0.918				0.430	0.265					5+6	0.695	14.4	0.04	Yes	0.598	1, 2
					0.598							1+(5+6)	1.516	97.7	0.02	No		

Note(s):

- SPLSR Hotspot Combination Step.1) Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR. Refer to the Sec.12.18 for detailed Volume Scan Result.
- SPLSR Hotspot Combination Step.2) Apply SPLSR procedure for the spatially separated antenna and aggregate SAR distribution of the co-located antenna pair. Hybrid SPLSR procedure was applied for the spatially separated main bands and unlicensed bands for Multi-band Combined results.
- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)				WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Ant.1 + UNII MIMO	WWAN + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO	
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNII MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNII MIMO	1+2										1+3
1	2	3	4	5	6	7	8	9	10												
Head (1g-SAR)	Left Touch	0.105	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.030	0.117	1.131	0.297	0.991	1.183	0.821	0.302	0.948	
	Left Tilt	0.061	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	0.986	0.073	0.180	0.154	0.247	0.154	0.247	0.678	0.159	0.805
	Right Touch	0.053	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.665	0.065	1.007	0.463	0.750	1.160	0.838	0.468	0.974	
	Right Tilt	0.048	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	0.973	0.060	0.242	0.189	0.219	0.360	0.713	0.194	0.840	
Body-Worn (1g-SAR)	Rear	0.202	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.525	0.348	0.363	0.445	0.306	0.579	0.415	0.366	0.491	
	Front	0.173	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.419	0.319	0.342	0.386	0.306	0.519	0.406	0.273	0.426	
Hotspot (1-g SAR)	Rear	0.451	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.917	0.845	0.825	0.881	0.716	1.146	0.801	0.746	0.973	
	Front	0.433	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.946	0.827	0.796	0.785	0.707	1.059	0.841	0.607	0.928	
	Edge 1			0.394	0.576	0.776				0.142	0.538	0.285									
	Edge 2	0.102																			
	Edge 3	1.033																			
Edge 4	0.101	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.159	0.495	0.677	0.877	0.477	1.253	0.789	0.528	0.924		
Product Specific 10-g (10-g SAR)	Rear					1.351					0.566										
	Front					2.305					1.119										
	Edge 1					2.305					1.119										
	Edge 2																				
	Edge 4	1.744																			

Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)										
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WWAN + DTS An1	WWAN + DTS An2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS An1 + UNI MIMO	WWAN + DTS An2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	WWAN + DTS MIMO + UNI MIMO
		DTS An1.1	DTS An1.2	DTS MIMO	UNI MIMO	DTS An1.1		DTS An1.2	DTS MIMO	UNI MIMO	1+2	1+3										
1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10				
Head (1g-SAR)	Left Touch	0.202	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.127	0.214	1.228	0.394	1.088	1.280	0.918	0.399	1.045		
	Left Tilt	0.124	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	1.049	0.136	0.243	0.217	0.217	0.310	0.741	0.222	0.868		
	Right Touch	0.153	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.765	0.165	1.107	0.563	0.850	1.260	0.938	0.568	1.074		
	Right Tilt	0.114	0.925	0.012	1.194	0.141	0.171	0.524	0.005	0.651	0.141	1.039	0.126	0.308	0.255	0.285	0.426	0.779	0.260	0.906		
Body-Worn (1g-SAR)	Rear	0.732	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.055	0.878	0.893	0.975	0.866	1.109	0.945	0.896	1.021		
	Front	0.625	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.871	0.771	0.794	0.838	0.758	0.971	0.858	0.725	0.878		
	Rear	0.609	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.075	1.003	0.983	1.039	0.874	1.304	0.959	0.904	1.131		
Hotspot (1-g SAR)	Front	0.519	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.032	0.913	0.882	0.871	0.793	1.145	0.927	0.693	1.014		
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285											
	Edge 2	0.136																				
	Edge 3	1.171																				
	Edge 4	0.096	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.154	0.490	0.672	0.872	0.472	1.248	0.784	0.523	0.919		
Product Specific 10-g (10-g SAR)	Rear	1.522									1.351											
	Front										0.566											
	Edge 1										2.305											
	Edge 2										1.119											
	Edge 4	2.367									1.119											

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)										
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WWAN + DTS An1	WWAN + DTS An2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS An1 + UNI MIMO	WWAN + DTS An2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	WWAN + DTS MIMO + UNI MIMO
		DTS An1.1	DTS An1.2	DTS MIMO	UNI MIMO	DTS An1.1		DTS An1.2	DTS MIMO	UNI MIMO	1+2	1+3										
1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10				
Head (1g-SAR)	Left Touch	0.231	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.156	0.243	1.257	0.423	1.117	1.309	0.947	0.428	1.074		
	Left Tilt	0.168	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	1.093	0.180	0.287	0.261	0.261	0.354	0.785	0.266	0.912		
	Right Touch	0.177	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.789	0.189	1.131	0.587	0.874	1.284	0.962	0.592	1.098		
	Right Tilt	0.127	0.925	0.012	1.194	0.141	0.171	0.524	0.005	0.651	0.141	1.052	0.139	0.321	0.268	0.298	0.439	0.792	0.273	0.919		
Body-Worn (1g-SAR)	Rear	0.938	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.261	1.084	1.099	1.181	1.072	1.315	1.151	1.102	1.227		
	Front	0.939	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	1.185	1.085	1.108	1.152	1.072	1.285	1.172	1.039	1.192		
	Rear	0.676	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.142	1.070	1.050	1.106	0.941	1.371	1.026	0.971	1.198		
Hotspot (1-g SAR)	Front	0.614	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.127	1.008	0.977	0.966	0.888	1.240	1.022	0.788	1.109		
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285											
	Edge 2	0.129																				
	Edge 3	1.148																				
	Edge 4	0.168	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.226	0.562	0.744	0.944	0.544	1.320	0.856	0.595	0.991		
Product Specific 10-g (10-g SAR)	Rear	1.645									1.351											
	Front	1.656									0.566											
	Edge 1										2.305											
	Edge 2										1.119											
	Edge 4	1.823									1.119											

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)										
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WWAN + DTS An1	WWAN + DTS An2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS An1 + UNI MIMO	WWAN + DTS An2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	WWAN + DTS MIMO + UNI MIMO
		DTS An1.1	DTS An1.2	DTS MIMO	UNI MIMO	DTS An1.1		DTS An1.2	DTS MIMO	UNI MIMO	1+2	1+3										
1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10				
Head (1g-SAR)	Left Touch	0.255	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.180	0.267	1.281	0.447	1.141	1.333	0.971	0.452	1.098		
	Left Tilt	0.151	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	1.076	0.163	0.270	0.244	0.244	0.337	0.768	0.249	0.895		
	Right Touch	0.351	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.963	0.363	1.305	0.761	1.048	1.458	1.136	0.766	1.272		
	Right Tilt	0.153	0.925	0.012	1.194	0.141	0.171	0.524	0.005	0.651	0.141	1.078	0.165	0.347	0.294	0.324	0.465	0.818	0.299	0.945		
Body-Worn (1g-SAR)	Rear	0.415	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.738	0.561	0.576	0.658	0.549	0.792	0.628	0.579	0.704		
	Front	0.394	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.640	0.540	0.563	0.607	0.527	0.740	0.627	0.494	0.647		
	Rear	0.775	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.241	1.169	1.149	1.205	1.040	1.470	1.125	1.070	1.297		
Hotspot (1-g SAR)	Front	0.538	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.051	0.932	0.901	0.890	0.812	1.164	0.946	0.712	1.033		
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285											
	Edge 2	0.442																				
	Edge 3	0.527																				
	Edge 4	0.163	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.221	0.557	0.739	0.939	0.539	1.315	0.851	0.590	0.986		

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

12.6. Sum of the SAR for LTE Band 2 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)								
		WLAN (Normal mode)					BT	WLAN (RSDB mode)				WWAN + DTS Awt.1	WWAN + DTS Awt.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Awt.1 + UNII MIMO	WWAN + DTS Awt.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Awt.1	DTS Awt.2	DTS MIMO	UNII MIMO	DTS Awt.1		DTS Awt.2	DTS MIMO	UNII MIMO										
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10
Head (1g-SAR)	Left Touch	0.173	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.098	0.185	1.199	0.365	1.059	1.251	0.889	0.370	1.016
	Left Tilt	0.073	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	0.998	0.085	0.192	0.166	0.166	0.259	0.690	0.171	0.817
	Right Touch	0.098	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.710	0.110	1.052	0.508	0.795	1.205	0.883	0.513	1.019
Body-Worn (1g-SAR)	Right Tilt	0.061	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	0.986	0.073	0.255	0.202	0.232	0.373	0.726	0.207	0.853
	Rear	0.611	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.934	0.757	0.772	0.854	0.745	0.988	0.824	0.775	0.900
	Front	0.571	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.817	0.717	0.740	0.784	0.704	0.917	0.804	0.671	0.824
Hotspot (1-g SAR)	Rear	0.495	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.961	0.889	0.869	0.925	0.760	1.190	0.845	0.790	1.017
	Front	0.458	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.971	0.852	0.821	0.810	0.732	1.084	0.866	0.632	0.953
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285									
	Edge 2		1.011																	
	Edge 3		1.093																	
Product Specific 10-g (10-g SAR)	Edge 4	0.121	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.179	0.515	0.697	0.897	0.497	1.273	0.809	0.548	0.944
	Rear					1.351														
	Front					2.305														
	Edge 1					2.305														
	Edge 2																			
Edge 3	1.631																			
Edge 4										1.119										

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

12.7. Sum of the SAR for LTE Band 5 & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)								
		WLAN (Normal mode)					BT	WLAN (RSDB mode)				WWAN + DTS Awt.1	WWAN + DTS Awt.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Awt.1 + UNII MIMO	WWAN + DTS Awt.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Awt.1	DTS Awt.2	DTS MIMO	UNII MIMO	DTS Awt.1		DTS Awt.2	DTS MIMO	UNII MIMO										
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10
Head (1g-SAR)	Left Touch	0.307	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.232	0.319	1.333	0.499	1.193	1.385	1.023	0.504	1.150
	Left Tilt	0.176	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	1.101	0.188	0.295	0.269	0.362	0.793	0.274	0.920	
	Right Touch	0.345	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.957	0.357	1.299	0.755	1.042	1.452	1.130	0.760	1.266
Body-Worn (1g-SAR)	Right Tilt	0.147	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.072	0.159	0.341	0.288	0.318	0.459	0.812	0.293	0.939
	Rear	0.408	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.731	0.554	0.569	0.651	0.542	0.785	0.621	0.572	0.697
	Front	0.356	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.602	0.502	0.525	0.569	0.489	0.702	0.589	0.456	0.609
Hotspot (1-g SAR)	Rear	0.755	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.221	1.149	1.129	1.185	1.020	1.450	1.105	1.050	1.277
	Front	0.567	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.080	0.961	0.930	0.919	0.841	1.193	0.975	0.741	1.062
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285									
	Edge 2	0.458																		
	Edge 3	0.557																		
Edge 4	0.235	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.293	0.629	0.811	1.011	0.611	1.387	0.923	0.662	1.058	

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)								
		WLAN (Normal mode)					BT	WLAN (RSDB mode)				WWAN + DTS Awt.1	WWAN + DTS Awt.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Awt.1 + UNII MIMO	WWAN + DTS Awt.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Awt.1	DTS Awt.2	DTS MIMO	UNII MIMO	DTS Awt.1		DTS Awt.2	DTS MIMO	UNII MIMO										
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10
Head (1g-SAR)	Left Touch	0.094	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.019	0.106	1.120	0.286	0.980	1.172	0.810	0.291	0.937
	Left Tilt	0.061	0.925	0.012	1.119	0.093	0.093	0.524	0.005	0.651	0.093	0.986	0.073	0.180	0.154	0.154	0.247	0.678	0.159	0.805
	Right Touch	0.109	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.721	0.121	1.063	0.519	0.806	1.216	0.894	0.524	1.030
Body-Worn (1g-SAR)	Right Tilt	0.062	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	0.987	0.074	0.256	0.203	0.233	0.374	0.727	0.208	0.854
	Rear	0.143	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.466	0.289	0.304	0.386	0.277	0.520	0.356	0.307	0.432
	Front	0.138	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.384	0.284	0.307	0.351	0.271	0.484	0.371	0.238	0.391
Hotspot (1-g SAR)	Rear	0.237	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.703	0.631	0.611	0.667	0.502	0.932	0.587	0.532	0.759
	Front	0.178	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.691	0.572	0.541	0.530	0.452	0.804	0.586	0.352	0.673
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285									
	Edge 2	0.214																		
	Edge 3	0.123																		
Edge 4	0.169	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.227	0.563	0.745	0.945	0.545	1.321	0.857	0.596	0.992	

Note(s):

- Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WLAN + DTS Ant.1	WLAN + DTS Ant.2	WLAN + DTS MIMO	WLAN + UNI MIMO	WLAN + BT	WLAN + UNI MIMO + BT	WLAN + DTS Ant.1 + UNI MIMO	WLAN + DTS Ant.2 + UNI MIMO	WLAN + DTS MIMO + UNI MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNI MIMO											
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10	
Head (1g-SAR)	Left Touch	0.164	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.089	0.176	1.190	0.356	1.050	1.242	0.880	0.361	1.007	
	Left Tilt	0.087	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.012	0.099	0.206	0.180	0.273	0.180	0.273	0.704	0.185	0.831
	Right Touch	0.189	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.801	0.201	1.143	0.599	0.886	1.296	0.974	0.604	1.110	
Body-Worn (1g-SAR)	Right Tilt	0.077	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.002	0.089	0.271	0.218	0.248	0.389	0.742	0.223	0.869	
	Rear	0.253	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.576	0.399	0.414	0.496	0.387	0.630	0.466	0.417	0.542	
	Front	0.251	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.497	0.397	0.420	0.464	0.384	0.597	0.484	0.351	0.504	
Hotspot (1g-SAR)	Rear	0.443	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.909	0.637	0.817	0.873	0.708	1.138	0.793	0.738	0.965	
	Front	0.267	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.760	0.661	0.630	0.619	0.541	0.893	0.675	0.441	0.762	
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285										
	Edge 2	0.341																			
	Edge 3	0.219																			
	Edge 4	0.181	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.239	0.575	0.757	0.957	0.557	1.333	0.869	0.608	1.004	

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WLAN + DTS Ant.1	WLAN + DTS Ant.2	WLAN + DTS MIMO	WLAN + UNI MIMO	WLAN + BT	WLAN + UNI MIMO + BT	WLAN + DTS Ant.1 + UNI MIMO	WLAN + DTS Ant.2 + UNI MIMO	WLAN + DTS MIMO + UNI MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNI MIMO											
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10	
Head (1g-SAR)	Left Touch	0.178	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.103	0.190	1.204	0.370	1.064	1.256	0.894	0.375	1.021	
	Left Tilt	0.104	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.029	0.116	0.223	0.197	0.197	0.290	0.721	0.202	0.848	
	Right Touch	0.143	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.755	0.155	1.097	0.553	0.840	1.250	0.928	0.558	1.064	
Body-Worn (1g-SAR)	Right Tilt	0.111	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.036	0.123	0.305	0.252	0.282	0.423	0.776	0.257	0.903	
	Rear	0.640	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.963	0.786	0.801	0.883	0.774	1.017	0.853	0.804	0.929	
	Front	0.565	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.811	0.711	0.734	0.778	0.698	0.911	0.798	0.665	0.818	
Hotspot (1g-SAR)	Rear	0.483	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.949	0.877	0.857	0.913	0.748	1.178	0.833	0.778	1.005	
	Front	0.463	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.976	0.857	0.826	0.815	0.737	1.089	0.871	0.637	0.958	
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285										
	Edge 2	0.105																			
	Edge 3	1.344																			
	Edge 4	0.093	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.151	0.487	0.669	0.869	0.469	1.245	0.781	0.520	0.916	
Product Specific 10-g (10-g SAR)	Rear					1.351					0.566										
	Front					2.305				1.119											
	Edge 1					2.305				1.119											
	Edge 2																				
	Edge 3	2.022																			
	Edge 4					2.305				1.119											

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WLAN + DTS Ant.1	WLAN + DTS Ant.2	WLAN + DTS MIMO	WLAN + UNI MIMO	WLAN + BT	WLAN + UNI MIMO + BT	WLAN + DTS Ant.1 + UNI MIMO	WLAN + DTS Ant.2 + UNI MIMO	WLAN + DTS MIMO + UNI MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNI MIMO											
		1	2	3	4	5	6	7	8	9	10	1+2	1+3	1+4	1+5	1+6	1+5+6	1+7+10	1+8+10	1+9+10	
Head (1g-SAR)	Left Touch	0.276	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.201	0.288	1.302	0.468	1.162	1.354	0.992	0.473	1.119	
	Left Tilt	0.169	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.094	0.181	0.288	0.262	0.262	0.355	0.786	0.267	0.913	
	Right Touch	0.341	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.953	0.353	1.295	0.751	1.038	1.448	1.126	0.756	1.262	
Body-Worn (1g-SAR)	Right Tilt	0.150	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.075	0.162	0.344	0.291	0.321	0.462	0.815	0.296	0.942	
	Rear	0.389	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.712	0.535	0.550	0.632	0.523	0.766	0.602	0.553	0.678	
	Front	0.370	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.616	0.516	0.539	0.583	0.503	0.716	0.603	0.470	0.623	
Hotspot (1g-SAR)	Rear	0.639	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.105	1.033	1.013	1.069	0.904	1.334	0.989	0.934	1.161	
	Front	0.476	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.989	0.870	0.839	0.828	0.750	1.102	0.884	0.650	0.971	
	Edge 1			0.394	0.576	0.776			0.142	0.538	0.285										
	Edge 2	0.476																			
	Edge 3	0.480																			
	Edge 4	0.139	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.197	0.533	0.715	0.915	0.515	1.291	0.827	0.566	0.962	

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Ant.1 + UNII MIMO	WWAN + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNII MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNII MIMO	1+2	1+3									
Head (1g-SAR)	Left Touch	0.120	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.045	0.132	1.146	0.312	1.006	1.198	0.836	0.317	0.963	
	Left Tilt	0.066	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	0.991	0.078	0.185	0.159	0.252	0.683	0.164	0.810		
	Right Touch	0.071	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.683	0.083	1.025	0.481	0.768	1.178	0.856	0.486	0.992	
Body-Worn (1g-SAR)	Right Tilt	0.120	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.045	0.132	0.314	0.261	0.291	0.432	0.785	0.266	0.912	
	Rear	0.179	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	0.502	0.325	0.340	0.422	0.313	0.556	0.392	0.343	0.468	
	Front	0.223	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.469	0.369	0.392	0.436	0.356	0.569	0.456	0.323	0.476	
Hotspot (1g-SAR)	Rear	0.135	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.601	0.529	0.509	0.565	0.400	0.830	0.485	0.430	0.657	
	Front	0.141	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	0.654	0.535	0.504	0.493	0.415	0.767	0.549	0.315	0.636	
	Edge 1			0.394	0.576	0.776				0.142	0.538	0.285									
	Edge 2																				
	Edge 3	0.278																			
Edge 4	0.135	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.193	0.529	0.711	0.911	0.511	1.287	0.823	0.562	0.958		

Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

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

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WLAN (Normal mode)					BT	WLAN (RSDB mode)					WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNII MIMO	WWAN + BT	WWAN + UNII MIMO + BT	WWAN + DTS Ant.1 + UNII MIMO	WWAN + DTS Ant.2 + UNII MIMO	WWAN + DTS MIMO + UNII MIMO
		DTS Ant.1	DTS Ant.2	DTS MIMO	UNII MIMO	DTS Ant.1		DTS Ant.2	DTS MIMO	UNII MIMO	1+2	1+3									
Head (1g-SAR)	Left Touch	0.226	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.151	0.238	1.252	0.418	1.112	1.304	0.942	0.423	1.069	
	Left Tilt	0.102	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.027	0.114	0.221	0.195	0.195	0.288	0.719	0.200	0.846	
	Right Touch	0.125	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.737	0.137	1.079	0.535	0.822	1.232	0.910	0.540	1.046	
Body-Worn (1g-SAR)	Right Tilt	0.100	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.025	0.112	0.294	0.241	0.271	0.412	0.765	0.246	0.892	
	Rear	0.757	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.060	0.903	0.918	1.000	0.891	1.134	0.970	0.921	1.046	
	Front	0.665	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	0.911	0.811	0.834	0.878	0.798	1.011	0.898	0.765	0.918	
Hotspot (1g-SAR)	Rear	0.530	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	0.996	0.924	0.904	0.960	0.795	1.225	0.880	0.825	1.052	
	Front	0.511	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.024	0.905	0.874	0.863	0.785	1.137	0.919	0.685	1.006	
	Edge 1			0.394	0.576	0.776				0.142	0.538	0.285									
	Edge 2	0.092																			
	Edge 3	1.024																			
Edge 4	0.147	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.205	0.541	0.723	0.923	0.523	1.299	0.835	0.574	0.970		
Product Specific 10-g (10-g SAR)	Rear	1.361				1.351					0.566				2.712						
	Front	1.281				2.305				1.119				3.586							
	Edge 1					2.305				1.119											
	Edge 2																				
	Edge 3	1.567																			
Edge 4					2.305					1.119											

Note(s):

- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

12.14. Sum of the SAR for EN-DC(LTE Band 2 & NR Band n5) & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)									
		WWAN (EN-DC)		WLAN (Normal mode)				BT	WLAN (RSDS mode)				WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS Ant.1 + UNI MIMO	WWAN + DTS Ant.2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO
		LTE Ant.1	NR	DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO		DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO									
		1A	1B	2	3	4	5	6	7	8	9	10	1A+1B+2	1A+1B+3	1A+1B+4	1A+1B+5	1A+1B+6	1A+1B+5+6	1A+1B+7+10	1A+1B+8+10	1A+1B+9+10
Head (1g-SAR)	Left Touch	0.173	0.224	0.925	0.012	1.026	0.192	0.896	0.524	0.005	0.651	0.192	1.322	0.409	1.423	0.589	1.283	1.475	1.113	0.594	1.240
	Left Tilt	0.073	0.139	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.137	0.224	0.331	0.305	0.305	0.398	0.829	0.310	0.956
	Right Touch	0.098	0.333	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	1.043	0.443	1.385	0.841	1.128	1.538	1.216	0.846	1.352
	Right Tilt	0.061	0.125	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.111	0.198	0.380	0.327	0.357	0.498	0.851	0.332	0.978
Body/Worn (1g-SAR)	Rear	0.611	0.456	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.390	1.213	1.228	1.310	1.201	1.444	1.280	1.231	1.356
	Front	0.571	0.434	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	1.251	1.151	1.174	1.218	1.138	1.351	1.238	1.105	1.258
	Edge 3	0.495	0.799	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.760	1.688	1.668	1.724	1.559	1.989	1.644	1.589	1.816
Hotspot (1-g SAR)	Front	0.458	0.622	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.593	1.474	1.443	1.432	1.354	1.706	1.488	1.254	1.575
	Edge 1				0.394	0.576	0.776			0.142	0.538	0.285									
	Edge 2	1.001	0.421																		
	Edge 3	1.093	0.552																		
Product Specific 10-g (10-g SAR)	Edge 4	0.121	0.105	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.284	0.620	0.802	1.002	0.602	1.378	0.914	0.653	1.049
	Rear																				
	Front																				
	Edge 1																				

SPLSR Hotspot Combination procedures

RF Exposure	Test Position	Standalone SAR (W/kg)										SUM SAR	Calculated distance (mm)	SPLSR (≤0.04)	Volume scan (Yes/No)	Volume scan SAR (W/kg) (Note 1)	Figure	
		WWAN		WLAN (Normal mode)				BT	WLAN (RSDS mode)									
		LTE Ant.1	NR	DTS Ant.1	DTS Ant.2	DTS MIMO	UNI MIMO		DTS Ant.1	DTS Ant.2	DTS MIMO							UNI MIMO
		1A	1B	2	3	4	5	6	7	8	9	10						
Hotspot (1-g SAR)	Rear	0.495	0.799	0.466									1A+1B+2	1.760				
	Hybrid SPLSR Note 2	0.495	0.799										1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.811		0.466									(1A+1B)+2	1.277	99.4	0.01	No	
	Rear	0.495	0.799		0.394								1A+1B+3	1.688				
	Hybrid SPLSR Note 2	0.495	0.799										1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.811			0.394								(1A+1B)+3	1.205	135.0	0.01	No	
	Rear	0.495	0.799			0.374							1A+1B+4	1.668				
	Hybrid SPLSR Note 2	0.495	0.799										1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.811				0.374							(1A+1B)+4	1.185	132.6	0.01	No	
	Rear	0.495	0.799				0.430						1A+1B+5	1.724				
	Hybrid SPLSR Note 2	0.495	0.799					0.430					1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.811					0.430						(1A+1B)+5	1.241	115.0	0.01	No	
	Rear	0.495	0.799				0.430	0.265					1A+1B+5+6	1.989				
	Hybrid SPLSR Note 2	0.495	0.799						0.430	0.265			1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.811					0.598						5+6	0.695	14.4	0.04	Yes	0.598
	Rear	0.495	0.799						0.197			0.153	(1A+1B)+(5+6)	1.409	109.1	0.02	No	
	Hybrid SPLSR Note 2	0.495	0.799							0.197		0.153	1A+1B+7+10	1.644				
	Rear	0.811											1A+1B	1.294	16.6	0.09	Yes	0.811
	Rear	0.495	0.799							0.197		0.153	7+10	0.350	16.5	0.01	No	0.372
	Hybrid SPLSR Note 2	0.811									0.372		(1A+1B)+(7+10)	1.183	113.0	0.01	No	
Rear	0.495	0.799								0.369	0.153	1A+1B+9+10	1.816					
Hybrid SPLSR Note 2	0.495	0.799									0.369	0.153	1A+1B	1.294	16.6	0.09	Yes	0.811
Rear	0.811										0.564		9+10	0.522	33.5	0.01	No	0.564
Hybrid SPLSR Note 2	0.458	0.622			0.352	0.274						(1A+1B)+(9+10)	1.375	138.0	0.01	No		
Front	0.458	0.622										1A+1B+5+6	1.706					
Hybrid SPLSR Note 2	0.668					0.546						1A+1B	1.080	10.2	0.11	Yes	0.668	
Edge 3	1.093	0.552										5+6	0.626	15.6	0.03	Yes	0.546	
Edge 3	1.093	0.552										(1A+1B)+(5+6)	1.214	117.9	0.01	No		
Edge 3	1.093	0.552										1A+1B	1.645					
Edge 3	1.093	0.552										1A+1B	1.645	4.2	0.50	Yes	1.320	

Note(s):

- SPLSR Hotspot Combination Step.1) Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR. Refer to the Sec.12.18 for detailed Volume Scan Result.
- SPLSR Hotspot Combination Step.2) Apply SPLSR procedure for the spatially separated antenna and aggregate SAR distribution of the co-located antenna pair. Hybrid SPLSR procedure was applied for the spatially separated main bands and unlicensed bands for Multi-band Combined results.
- 5G NR FR1 NSA EN-DC UE SAR Case.2) If one of the single uplink 1-g SAR values is greater than 0.8 W/kg, instead of algebraically summing the 1-g SAR values, sum up the SAR distributions, similar to the enlarged zoom scan (volume scan) procedures KDB Pub.865664 D01. Volume scan for Edge 3(filled with green color) in Hotspot mode is required due to single uplink 1-g SAR value is over 0.8 W/kg.
- Blue values are reference from highest SAR value of initial test position procedure in each RF exposure of each bands.

12.15. Sum of the SAR for EN-DC(LTE Band 5 & NR Band n66) & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)											
		WWAN (EN-DC)					BT	WLAN (RSDB mode)					WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS Ant.1 + UNI MIMO	WWAN + DTS Ant.2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	
		LTE anchor	NR	DTS Ant.1		DTS Ant.2		DTS MIMO	UNI MIMO	DTS Ant.1	DTS Ant.2	DTS MIMO											UNI MIMO
		1A	1B	2	3	4		5	6	7	8	9											10
Head (1g-SAR)	Left Touch	0.307	0.208	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.440	0.527	1.541	0.707	1.401	1.593	1.231	0.712	1.358		
	Left Tilt	0.176	0.097	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.198	0.285	0.392	0.366	0.366	0.459	0.890	0.371	1.017		
	Right Touch	0.345	0.128	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	1.085	0.485	1.427	0.883	1.170	1.580	1.258	0.888	1.394		
	Right Tilt	0.147	0.083	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.155	0.242	0.424	0.371	0.401	0.542	0.895	0.376	1.022		
Body/Worn (1g-SAR)	Rear	0.408	0.719	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.450	1.273	1.288	1.370	1.261	1.504	1.340	1.291	1.416		
	Front	0.356	0.636	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	1.238	1.138	1.161	1.205	1.125	1.338	1.225	1.092	1.245		
	Rear	0.755	0.464	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.685	1.613	1.593	1.649	1.484	1.914	1.569	1.514	1.741		
	Front	0.567	0.452	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.532	1.413	1.382	1.371	1.293	1.645	1.427	1.193	1.514		
Hotspot (1-g SAR)	Edge 1				0.394	0.576	0.776				0.142	0.538	0.285										
	Edge 2	0.458	0.081																				
	Edge 3	0.557	0.792																				
	Edge 4	0.235	0.121	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.414	0.750	0.932	1.132	0.732	1.508	1.044	0.783	1.179		
Product Specific 10-g (10-g SAR)	Rear						1.351					0.566											
	Front						2.305					1.119				2.535							
	Edge 1						2.305					1.119				3.541							
	Edge 2																						
Edge 3		1.528																					
Edge 4							2.305					1.119											

SPLSR Hotspot Combination procedures.

RF Exposure	Test Position	Standalone SAR (W/kg)										SUM SAR	Calculated distance (mm)	SPLSR (≦0.04)	Volume scan (Yes/No)	Volume scan SAR (W/kg) (Note 1)	Figure				
		WWAN (EN-DC)					BT	WLAN (RSDB mode)													
		WLAN (Normal mode)						WLAN (RSDB mode)													
		LTE anchor	NR	DTS Ant.1		DTS Ant.2		DTS MIMO	UNI MIMO	DTS Ant.1	DTS Ant.2							DTS MIMO	UNI MIMO		
1A	1B	2	3	4	5	6	7	8	9	10											
Hotspot (1-g SAR)	Rear	0.755	0.464	0.466									1A+1B+2	1.685							
		0.755	0.464										1A+1B	1.219	17.5	0.08	Yes	0.939			
	Hybrid SPLSR Note.2	0.939	0.466										(1A+1B)+2	1.405	99.4	0.02	No				20, 21
	Rear	0.755	0.464	0.394									1A+1B+3	1.613							
		0.755	0.464										1A+1B	1.219	17.5	0.08	Yes	0.939			22, 23
	Hybrid SPLSR Note.2	0.939	0.394										(1A+1B)+3	1.333	135.0	0.01	No				
	Rear	0.755	0.464			0.430							1A+1B+5	1.649							
		0.755	0.464				0.430						1A+1B	1.219	17.5	0.08	Yes	0.939			24, 25
	Hybrid SPLSR Note.2	0.939				0.430							(1A+1B)+5	1.369	115.0	0.01	No				
	Rear	0.755	0.464			0.430	0.265						1A+1B+5+6	1.914							
		0.755	0.464				0.430	0.265					1A+1B	1.219	17.5	0.08	Yes	0.939			26, 27
	Hybrid SPLSR Note.2	0.939				0.430	0.265					5+6	0.695	14.4	0.04	Yes	0.598				
	Rear	0.755	0.464									0.369	0.153	1A+1B+9+10	1.741						
		0.755	0.464									0.369	0.153	1A+1B	1.219	17.5	0.08	Yes	0.939		
	Hybrid SPLSR Note.2	0.939										0.369	0.153	9+10	0.522	33.5	0.01	No	0.564		28, 29
	Front	0.567	0.452				0.352	0.274						1A+1B+5+6	1.645						
0.567		0.452				0.352	0.274					1A+1B	1.019	23.9	0.04	Yes	0.957			30, 31	
Hybrid SPLSR Note.2	0.957						0.546					5+6	0.626	15.6	0.03	Yes	0.546				
Hybrid SPLSR Note.2												(1A+1B)+(5+6)	1.503	116.9	0.02	No					

Note(s):

1. SPLSR Hotspot Combination Step.1) Perform enlarged zoom scan (Volume scan) on the co-located antenna pair to determine 1g/10g aggregate SAR. Refer to the Sec.12.18 for detailed Volume Scan Result.
2. SPLSR Hotspot Combination Step.2) Apply SPLSR procedure for the spatially separated antenna and aggregate SAR distribution of the co-located antenna pair. Hybrid SPLSR procedure was applied for the spatially separated main bands and unlicensed bands for Multi-band Combined results.
3. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

12.16. Sum of the SAR for EN-DC(LTE Band 12 & NR Band n66) & Wi-Fi & BT

RF Exposure	Test Position	Standalone SAR (W/kg)										Σ SAR (W/kg)										
		WWAN (EN-DC)					BT	WLAN (RSDB mode)					WWAN + DTS Ant.1	WWAN + DTS Ant.2	WWAN + DTS MIMO	WWAN + UNI MIMO	WWAN + BT	WWAN + UNI MIMO + BT	WWAN + DTS Ant.1 + UNI MIMO	WWAN + DTS Ant.2 + UNI MIMO	WWAN + DTS MIMO + UNI MIMO	WWAN + DTS MIMO + UNI MIMO
		WLAN (Normal mode)						WLAN (RSDB mode)														
		LTE anchor	NR	DTS Ant.1		DTS Ant.2		DTS MIMO	UNI MIMO	DTS Ant.1	DTS Ant.2	DTS MIMO										
1A	1B	2	3	4	5	6	7	8	9	10												
Head (1g-SAR)	Left Touch	0.094	0.208	0.925	0.012	1.026	0.192	0.886	0.524	0.005	0.651	0.192	1.227	0.314	1.328	0.494	1.188	1.018	0.499	1.145		
	Left Tilt	0.061	0.097	0.925	0.012	0.119	0.093	0.093	0.524	0.005	0.651	0.093	1.083	0.170	0.277	0.251	0.251	0.344	0.775	0.256	0.902	
	Right Touch	0.109	0.128	0.612	0.012	0.954	0.410	0.697	0.375	0.005	0.511	0.410	0.849	0.249	1.191	0.647	0.934	1.344	1.022	0.652	1.158	
	Right Tilt	0.062	0.083	0.925	0.012	0.194	0.141	0.171	0.524	0.005	0.651	0.141	1.070	0.157	0.339	0.286	0.316	0.457	0.810	0.291	0.937	
Body/Worn (1g-SAR)	Rear	0.143	0.719	0.323	0.146	0.161	0.243	0.134	0.099	0.050	0.175	0.114	1.185	1.008	1.023	1.105	0.996	1.239	1.075	1.026	1.151	
	Front	0.138	0.636	0.246	0.146	0.169	0.213	0.133	0.134	0.001	0.154	0.099	1.020	0.920	0.943	0.987	0.907	1.120	1.007	0.874	1.027	
	Rear	0.237	0.464	0.466	0.394	0.374	0.430	0.265	0.197	0.142	0.369	0.153	1.167	1.095	1.075	1.131	0.966	1.396	1.051	0.996	1.223	
	Front	0.178	0.452	0.513	0.394	0.363	0.352	0.274	0.238	0.004	0.325	0.170	1.143	1.024	0.993	0.982	0.904	1.256	1.038	0.804	1.125	
Hotspot (1-g SAR)	Edge 1				0.394	0.576	0.776					0.142	0.538	0.285								
	Edge 2	0.214	0.081																			
	Edge 3	0.123	0.792																			
	Edge 4	0.169	0.121	1.058	0.394	0.576	0.776	0.376	0.403	0.142	0.538	0.285	1.348	0.684	0.866	1.066	0.666	1.442	0.978	0.717	1.113	
Product Specific 10-g (10-g SAR)	Rear						1.351					0.566										
	Front						2.305					1.119				2.535						
	Edge 1						2.305					1.119				3.541						
	Edge 2																					
Edge 3		1.528																				
Edge 4							2.305					1.119										

Note(s):

1. Blue values are reference from highest SAR value of *initial test position* procedure in each RF exposure of each bands.

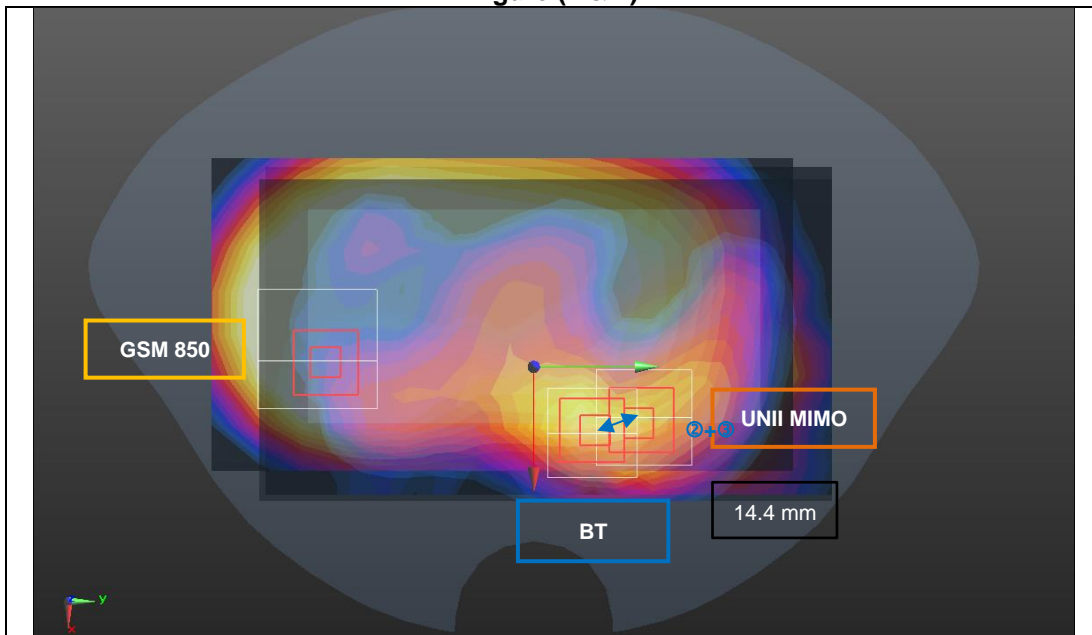
12.18. Volume Scan Results

RF Exposure	Test Position	Configuration	Band	Original Measured SAR (W/kg)	Volume Scan Result	Plot No.	Multi-Band Combined factor	Multi-Band Combined Result	Plot No.
Hotspot (1-g SAR)	Rear 10mm	LTE Band 2 + NR Band n5	LTE Band 2	0.447	0.258	1	1.106	0.811	24
			NR Band n5	0.686	0.522	2	1.164		
		LTE Band 5 + NR Band n66	LTE Band 5	0.619	0.506	3	1.219	0.939	25
			NR Band n66	0.433	0.380	4	1.072		
		LTE Band 66 + NR Band n5	LTE Band 66	0.479	0.443	5	1.106	0.977	26
			NR Band n5	0.686	0.522		1.164		
		UNII MIMO + BT	UNII MIMO	0.336	0.291	6	1.280	0.598	27
			BT	0.195	0.213	7	1.361		
		RSDB DTS Ant.1 + UNII MIMO	DTS Ant.1	0.195	0.243	8	1.010	0.372	28
			UNII MIMO	0.116	0.156	9	1.319		
		RSDB DTS Ant.2 + UNII MIMO	DTS Ant.2	0.133	0.132	10	1.067	0.263	29
			UNII MIMO	0.116	0.156		1.319		
		RSDB DTS MIMO + UNII MIMO	DTS MIMO	0.332	0.387	11	1.113	0.564	30
			UNII MIMO	0.116	0.156		1.319		
	Front 10mm	LTE Band 2 + NR Band n5	LTE Band 2	0.414	0.267	12	1.106	0.668	31
			NR Band n5	0.492	0.332	13	1.265		
		LTE Band 5 + NR Band n66	LTE Band 5	0.465	0.488	14	1.219	0.957	32
			NR Band n66	0.422	0.388	15	1.072		
		LTE Band 66 + NR Band n5	LTE Band 66	0.462	0.505	16	1.106	0.925	33
			NR Band n5	0.492	0.332		1.265		
		UNII MIMO + BT	UNII MIMO	0.273	0.290	17	1.280	0.546	34
			BT	0.201	0.207	18	1.361		
		RSDB DTS MIMO + UNII MIMO	DTS MIMO	0.295	0.293	19	1.103	0.392	35
			UNII MIMO	0.128	0.110	20	1.319		
	Edge 3 10mm	LTE Band 2 + NR Band n5	LTE Band 2	0.951	0.830	21	1.149	1.320	36
			NR Band n5	0.474	0.322	22	1.164		
		LTE Band 66 + NR Band n5	LTE Band 66	0.904	0.892	23	1.133	1.380	37
			NR Band n5	0.474	0.322		1.164		

Note(s):

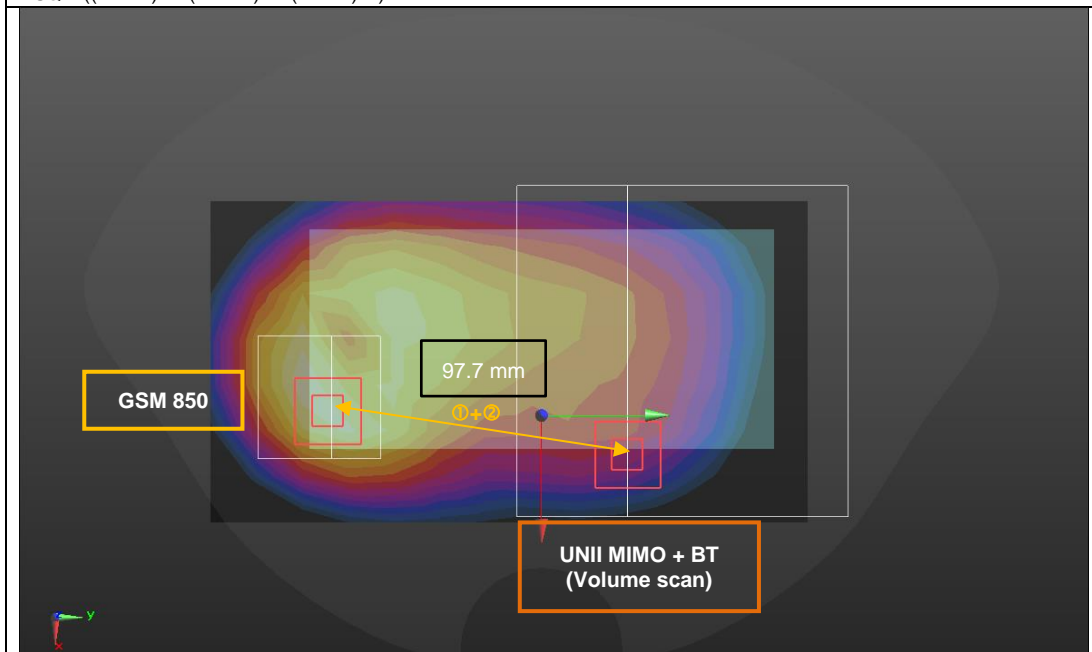
1. Multi-band Combined factor is the compensation value of power and duty.
2. For Volume Scan plot number in this section, please refer to the Appendix G.

Figure (1 & 2)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
GSM 850	①	0.918	-0.0020	-0.0685	-0.2080		
UNII MIMO	②	0.430	0.0170	0.0330	-0.2070		
BT	③	0.265	0.0222	0.0196	-0.2080	②+③	14.4

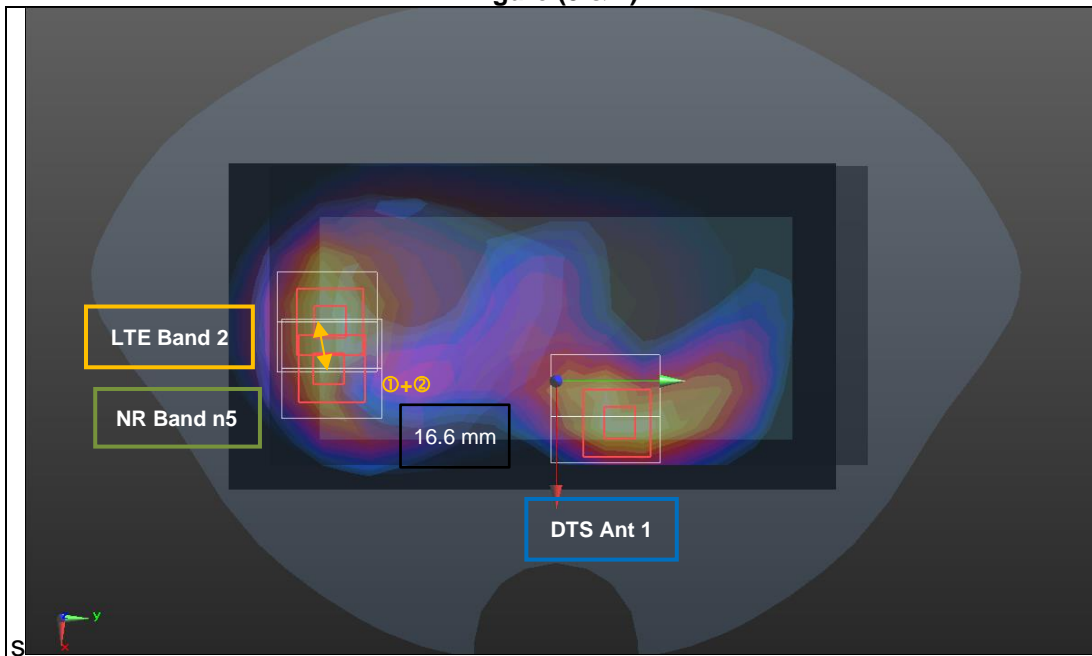
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
GSM 850	①	0.918	-0.0020	-0.0685	-0.2080		
(UNII MIMO + BT)	②	0.598	0.0130	0.0280	-0.2080	①+②	97.7

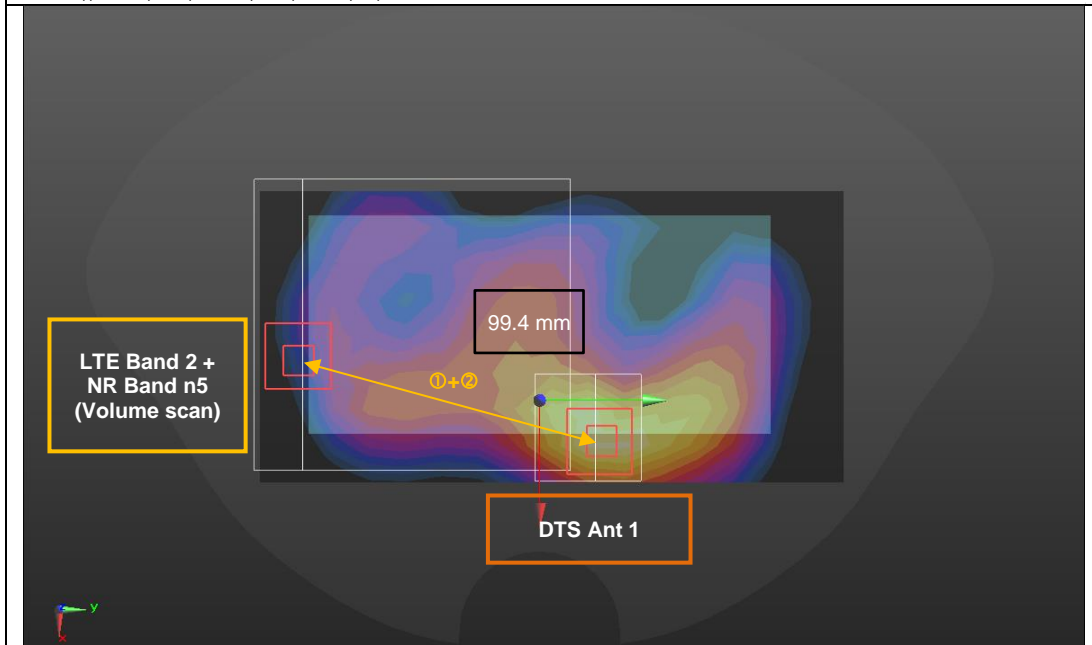
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (3 & 4)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS Ant. 1	③	0.466	0.0114	0.0184	-0.2060		

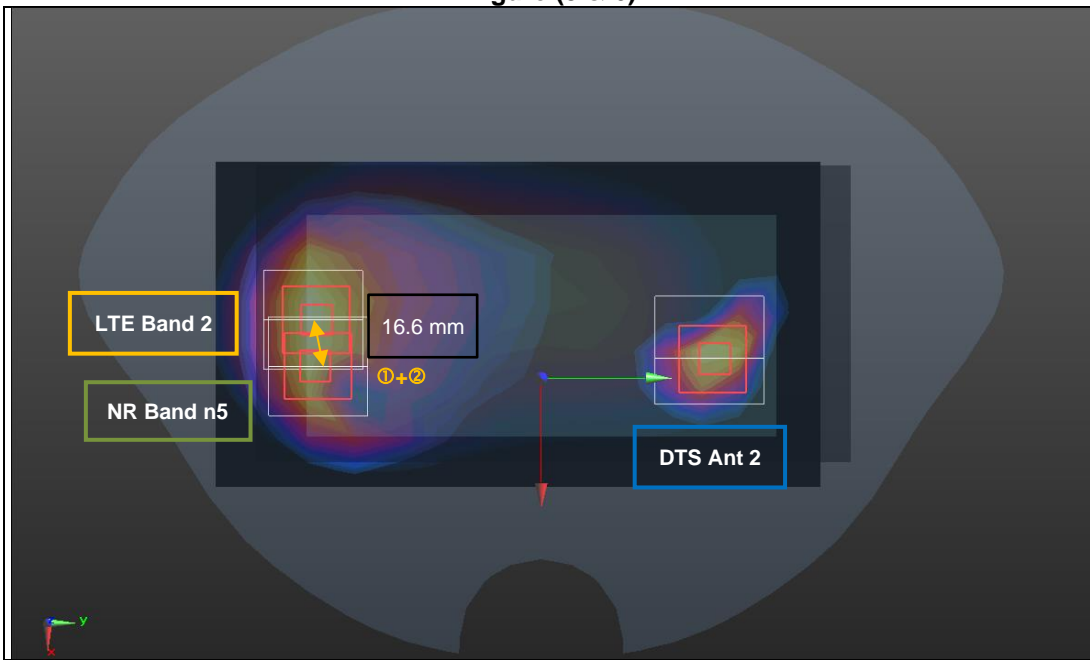
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	99.4
DTS Ant. 1	②	0.466	0.0114	0.0184	-0.2060		

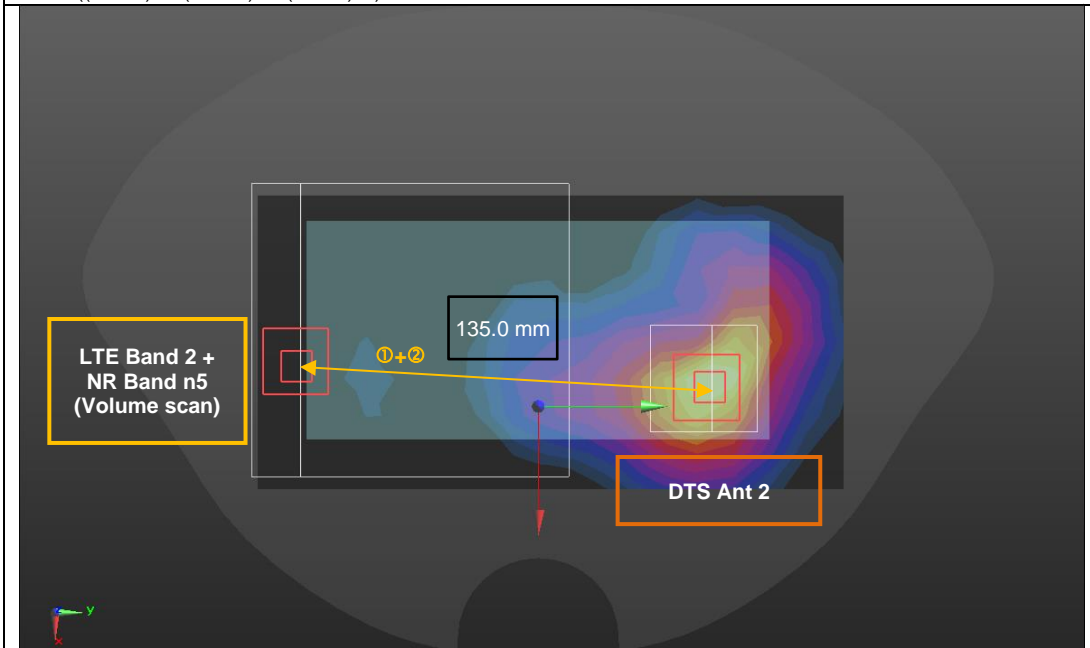
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (5 & 6)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS Ant. 2	③	0.394	-0.0066	0.0568	-0.2060		

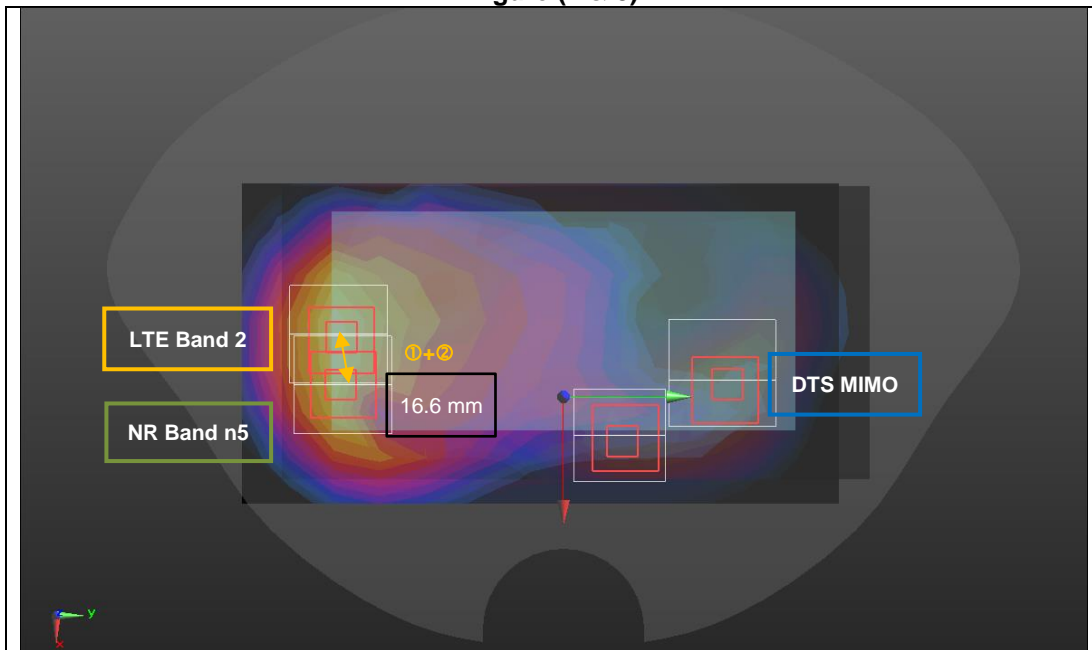
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	135.0
DTS Ant. 2	②	0.394	-0.0066	0.0568	-0.2060		

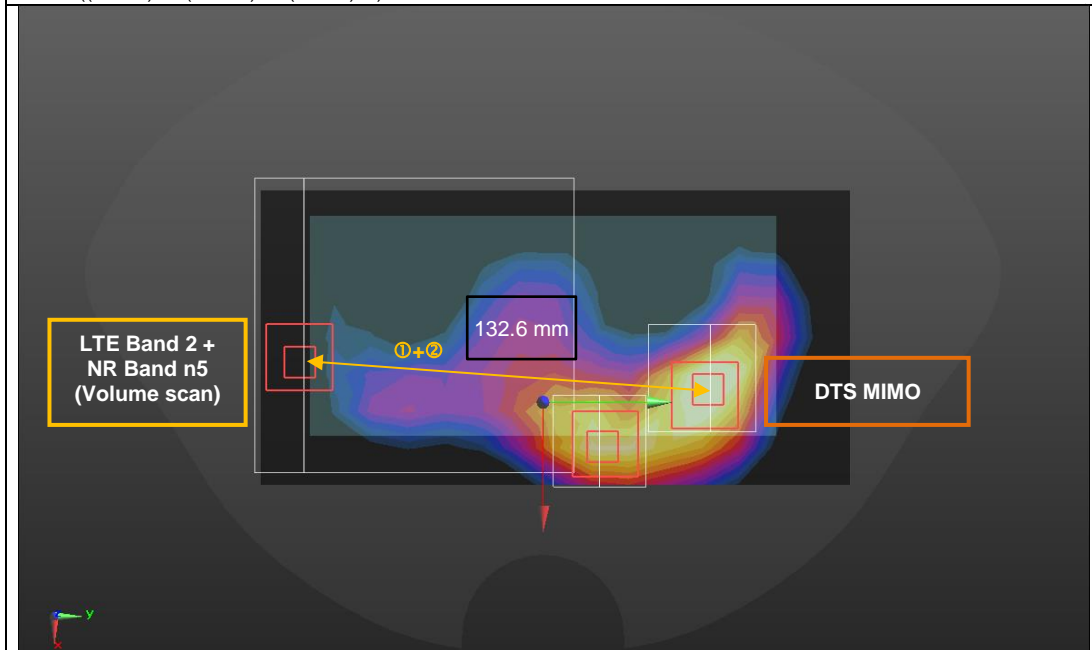
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (7 & 8)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS MIMO	③	0.374	-0.0054	0.0544	-0.2060		

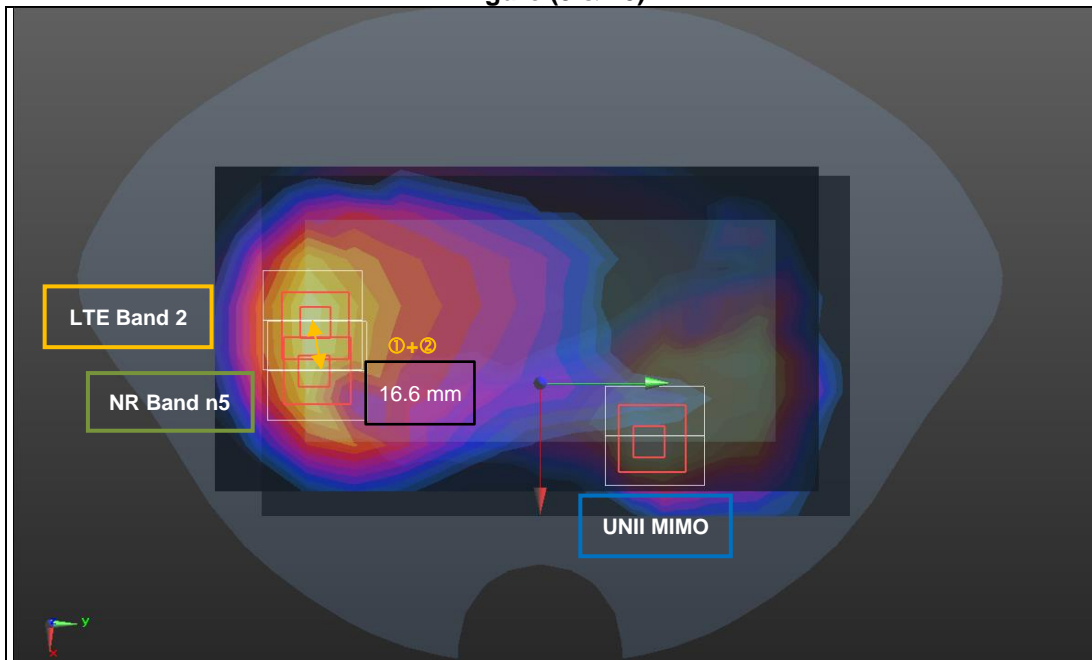
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	132.6
DTS MIMO	②	0.374	-0.0054	0.0544	-0.2060		

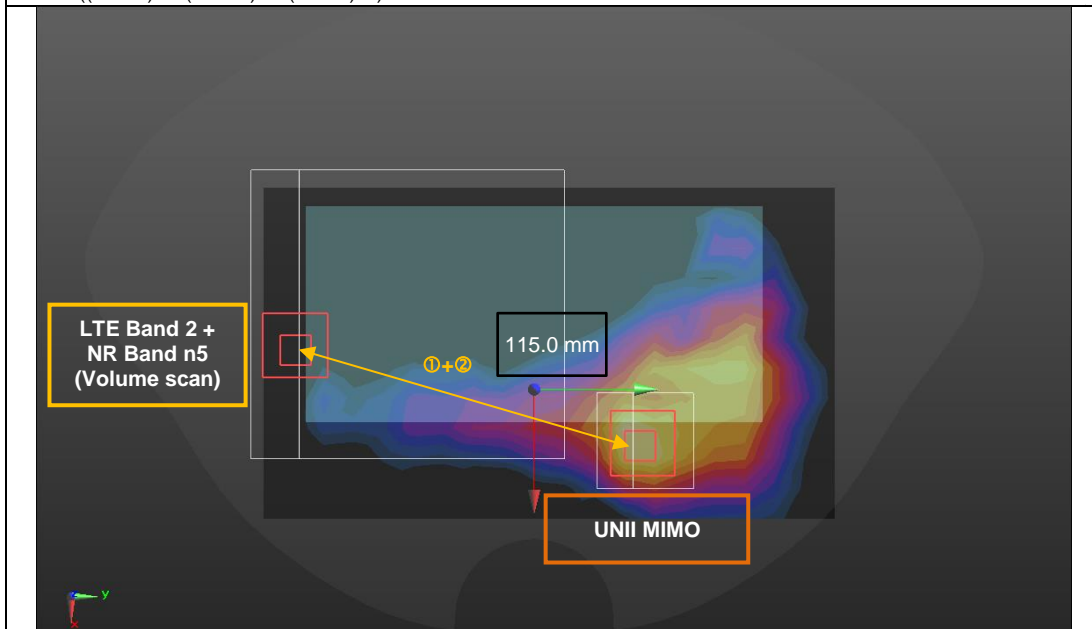
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (9 & 10)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m	①+②	
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
UNII MIMO	③	0.430	0.0170	0.0330	-0.2070		

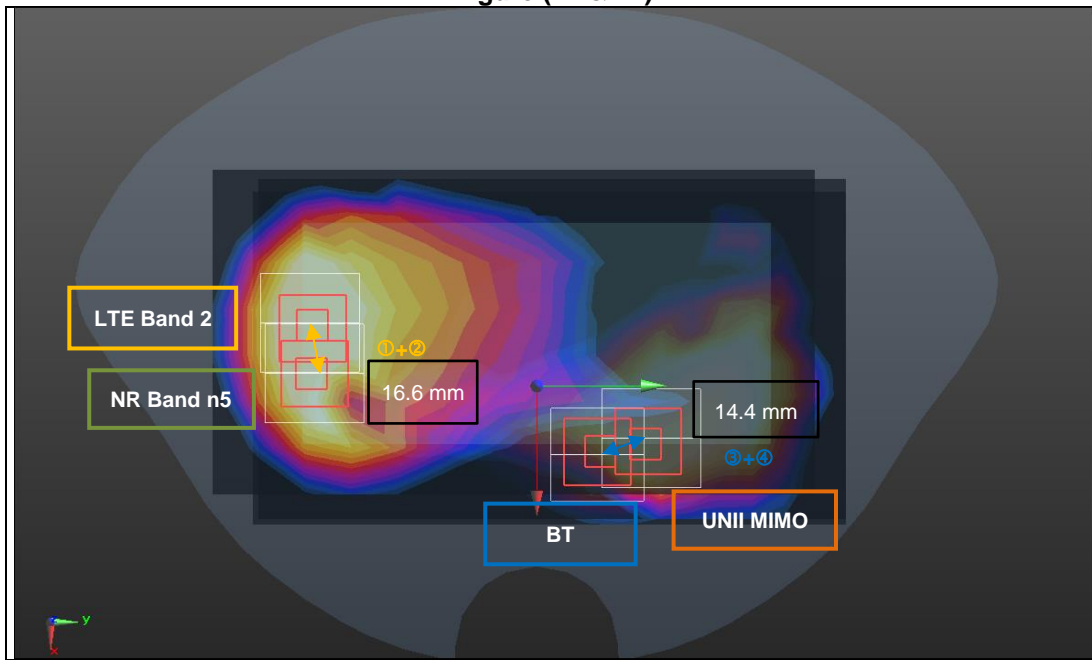
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m	①+②	
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	115.0
UNII MIMO	②	0.430	0.0170	0.0330	-0.2070		

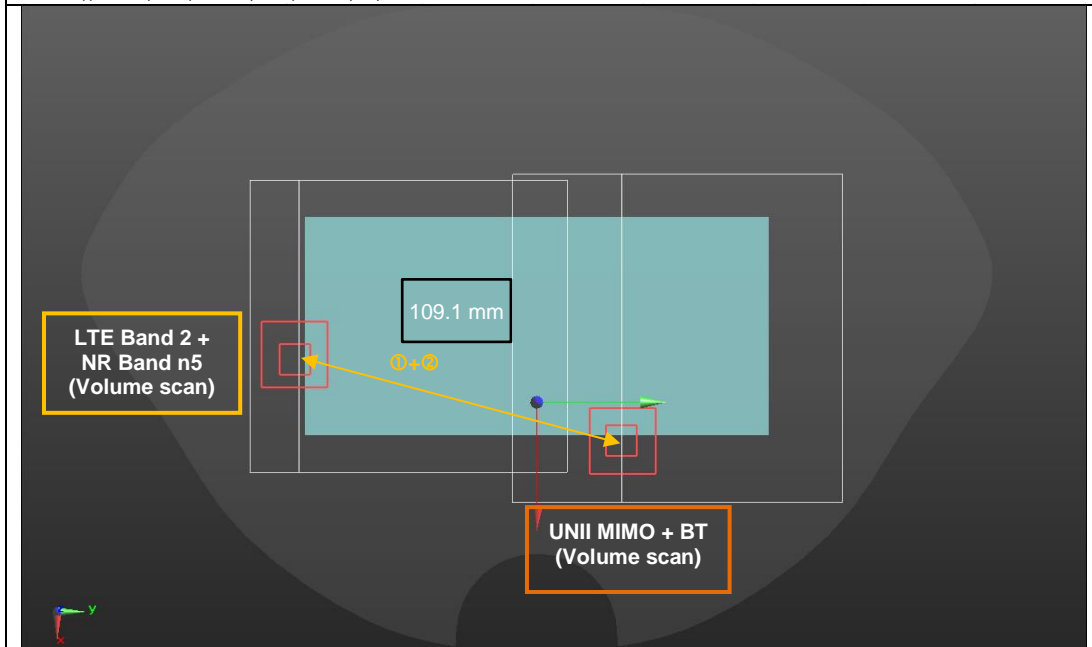
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (11 & 12)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080	③+④	14.4
UNII MIMO	③	0.430	0.0170	0.0330	-0.2070		
BT	④	0.265	0.0222	0.0196	-0.2080		

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



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	109.1
(UNII MIMO + BT)	②	0.598	0.0130	0.0280	-0.2080		

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

Figure (13 & 14)

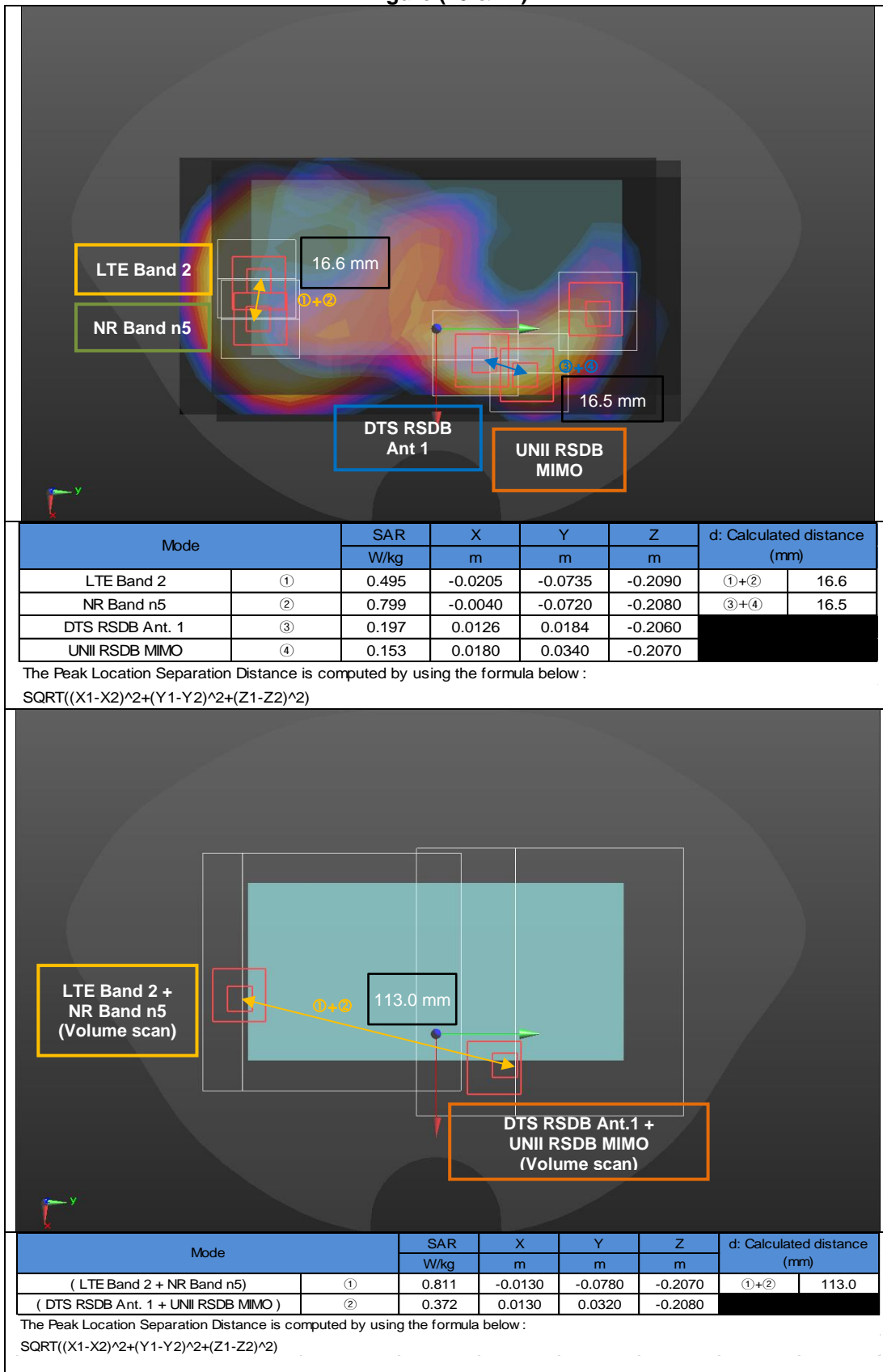
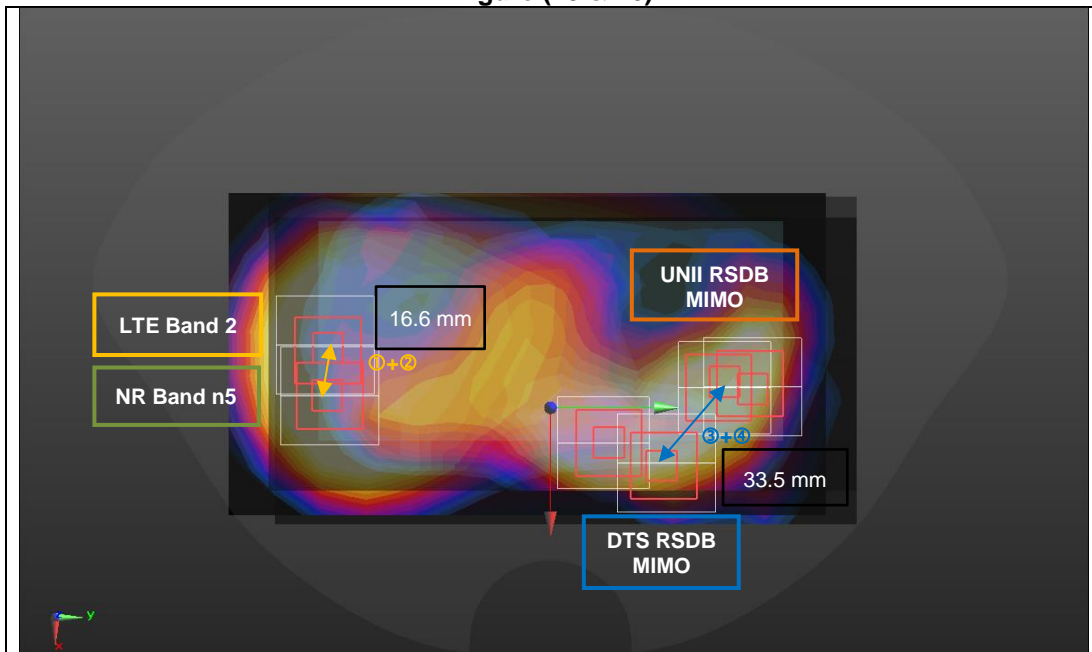


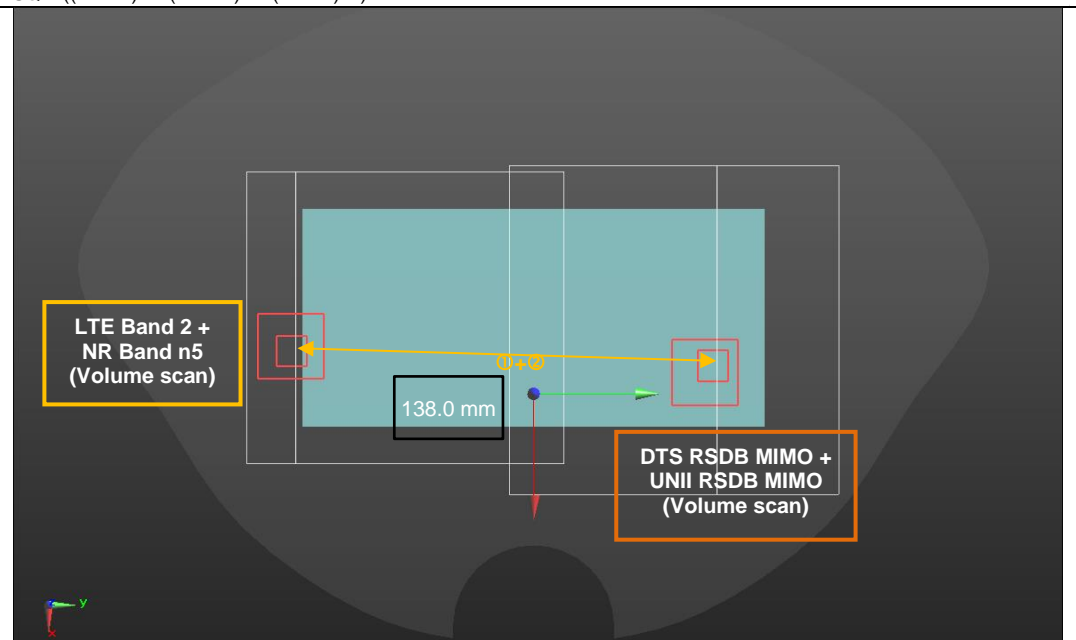
Figure (15 & 16)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	0.495	-0.0205	-0.0735	-0.2090	①+②	16.6
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080	③+④	33.5
DTS RSDB MIMO	③	0.369	-0.0066	0.0568	-0.2070		
UNII RSDB MIMO	④	0.153	0.0180	0.0340	-0.2070		

The Peak Location Separation Distance is computed by using the formula below :

$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

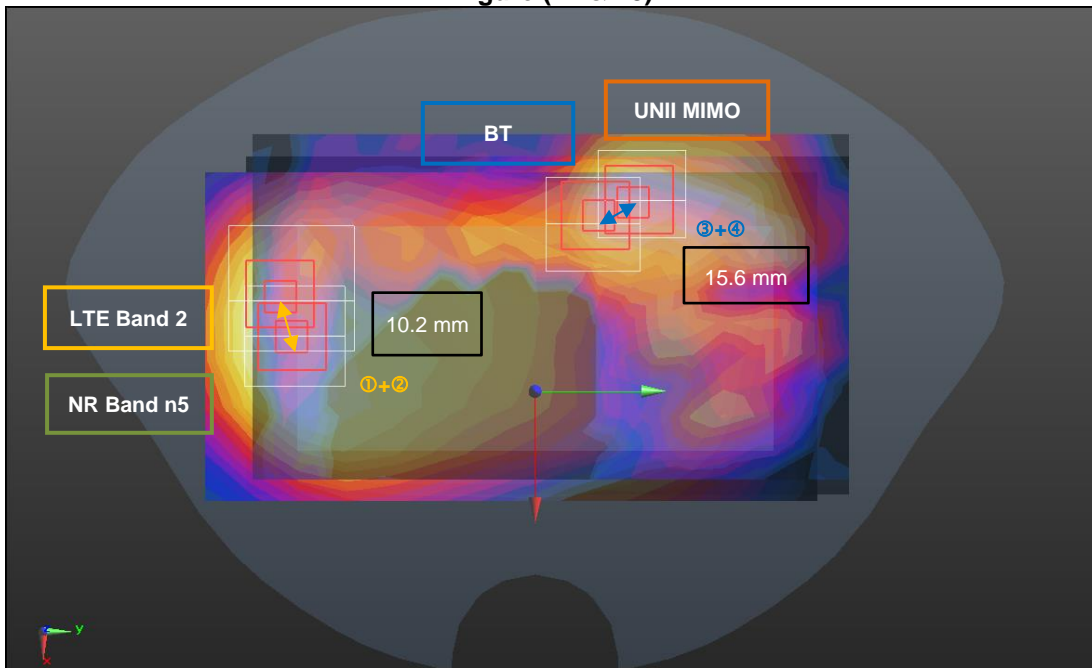


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 2 + NR Band n5)	①	0.811	-0.0130	-0.0780	-0.2070	①+②	138.0
(DTS RSDB MIMO + UNII RSDB MIMO)	②	0.564	-0.0110	0.0600	-0.2080		

The Peak Location Separation Distance is computed by using the formula below :

$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

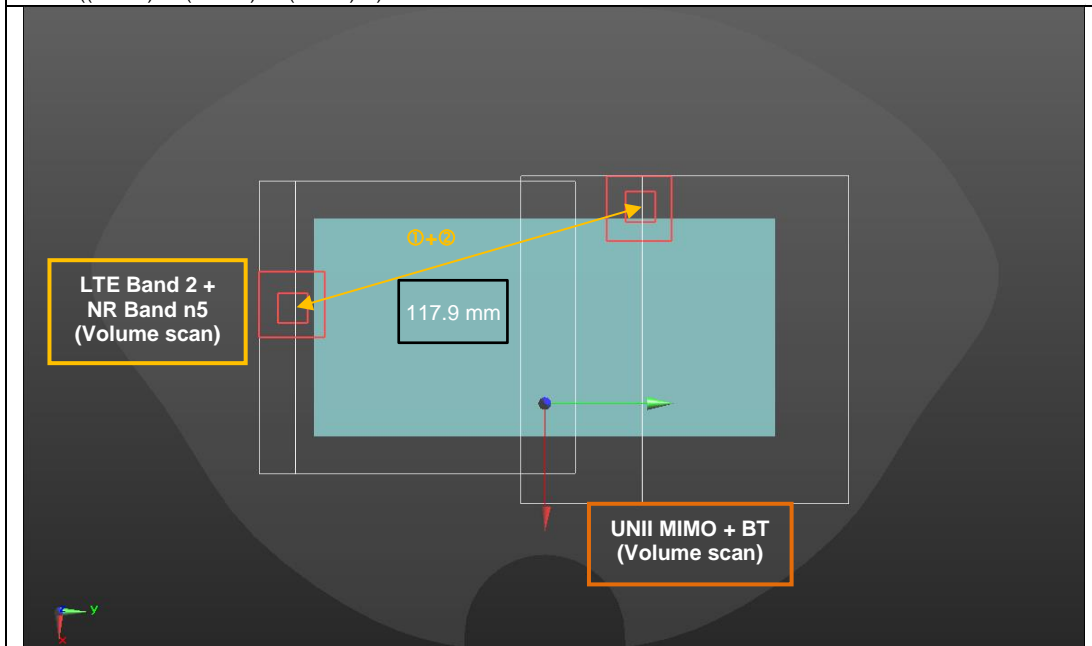
Figure (17 & 18)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	①	0.458	-0.0205	-0.0795	-0.2090	①+②	10.2
NR Band n5	②	0.622	-0.0305	-0.0815	-0.2080	③+④	15.6
UNII MIMO	③	0.352	-0.0610	0.0320	-0.2080		
BT	④	0.274	-0.0534	0.0184	-0.2080		

The Peak Location Separation Distance is computed by using the formula below :

$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 2 + NR Band n5)	①	0.668	-0.0330	-0.0820	-0.2080	①+②	117.9
(UNII MIMO + BT)	②	0.546	-0.0630	0.0320	-0.2080		

The Peak Location Separation Distance is computed by using the formula below :

$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

Figure (19)

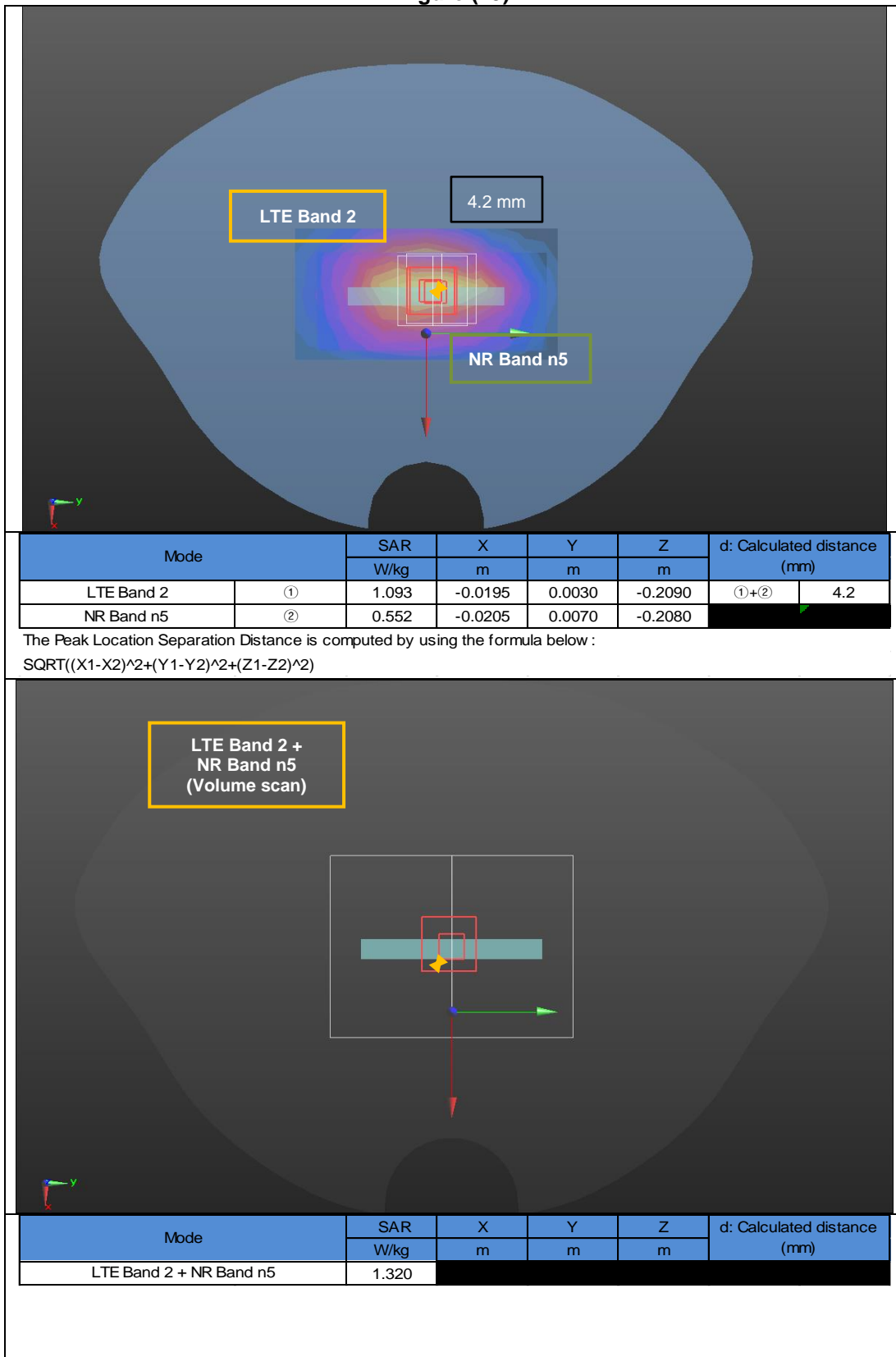
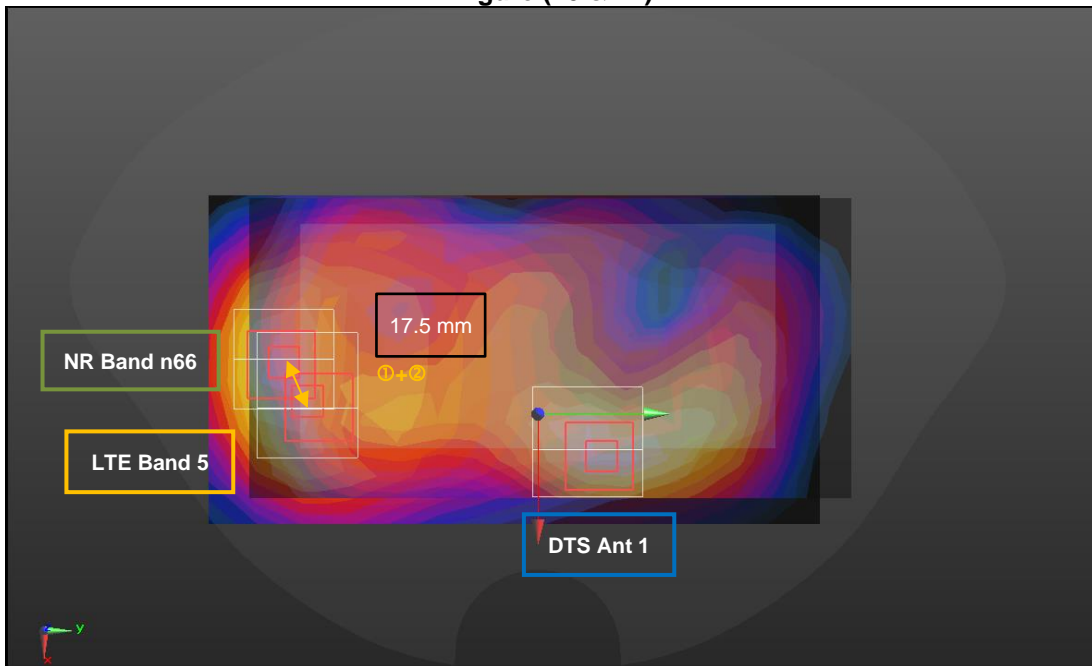
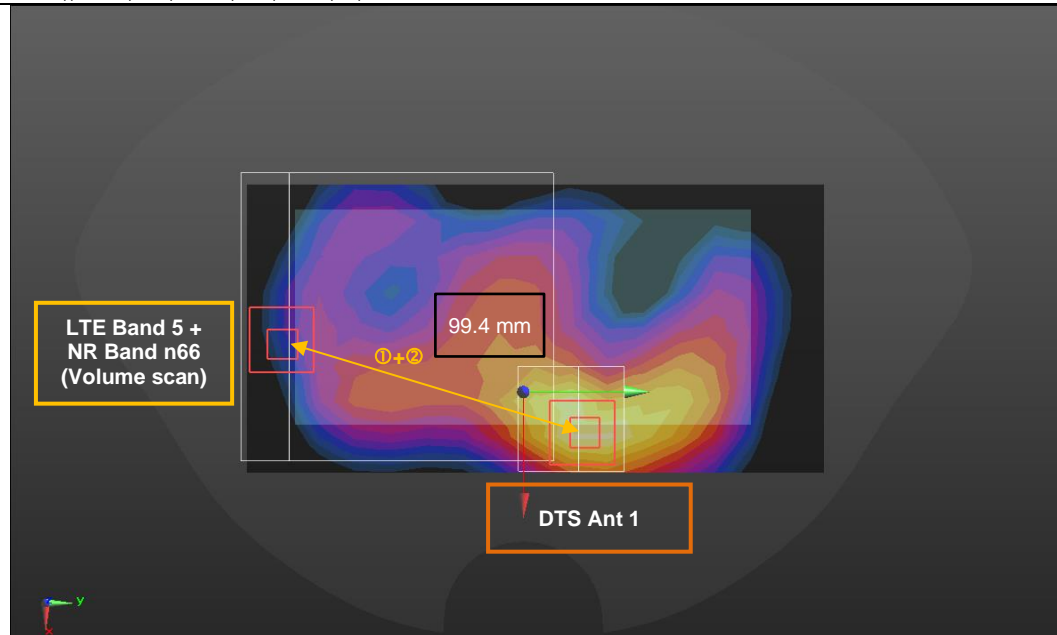


Figure (20 & 21)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.755	-0.0020	-0.0735	-0.2070	①+②	17.5
NR Band n66	②	0.464	-0.0175	-0.0810	-0.2100		
DTS Ant. 1	③	0.466	0.0114	0.0184	-0.2060		

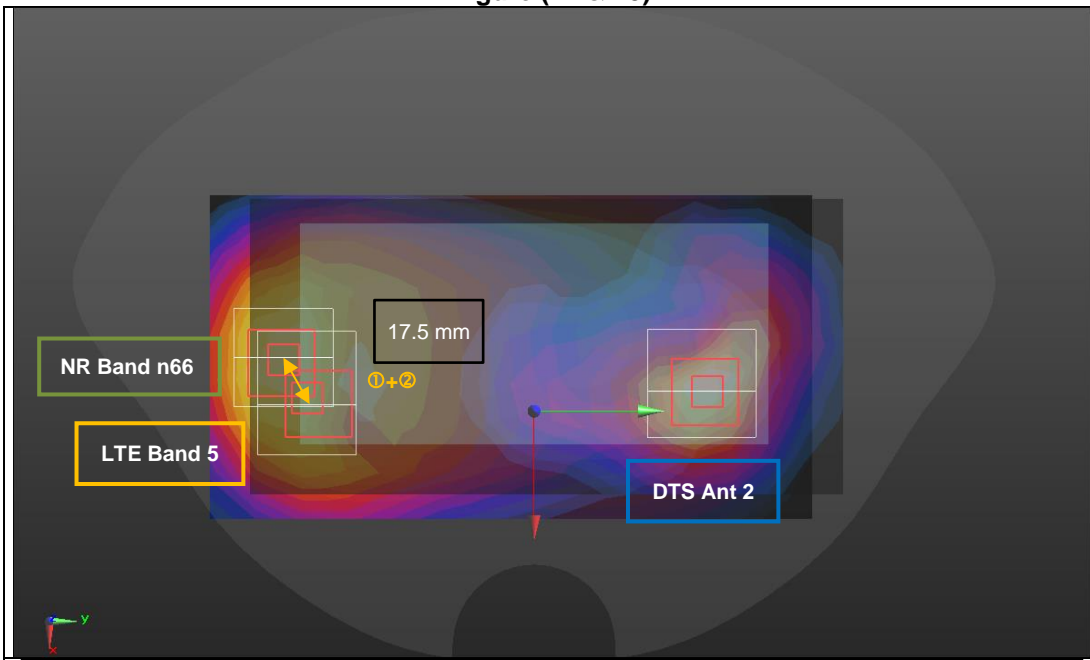
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.939	-0.0130	-0.0780	-0.2070	①+②	99.4
DTS Ant. 1	②	0.466	0.0114	0.0184	-0.2060		

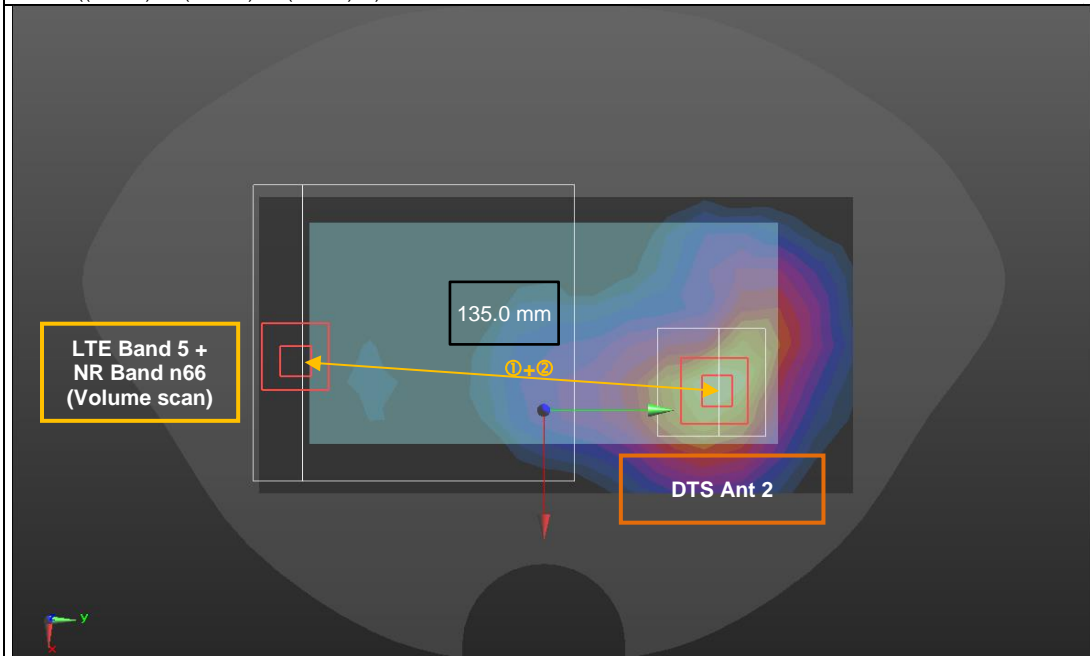
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (22 & 23)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.755	-0.0020	-0.0735	-0.2070	①+②	17.5
NR Band n66	②	0.464	-0.0175	-0.0810	-0.2100		
DTS Ant. 2	③	0.394	-0.0066	0.0568	-0.2060		

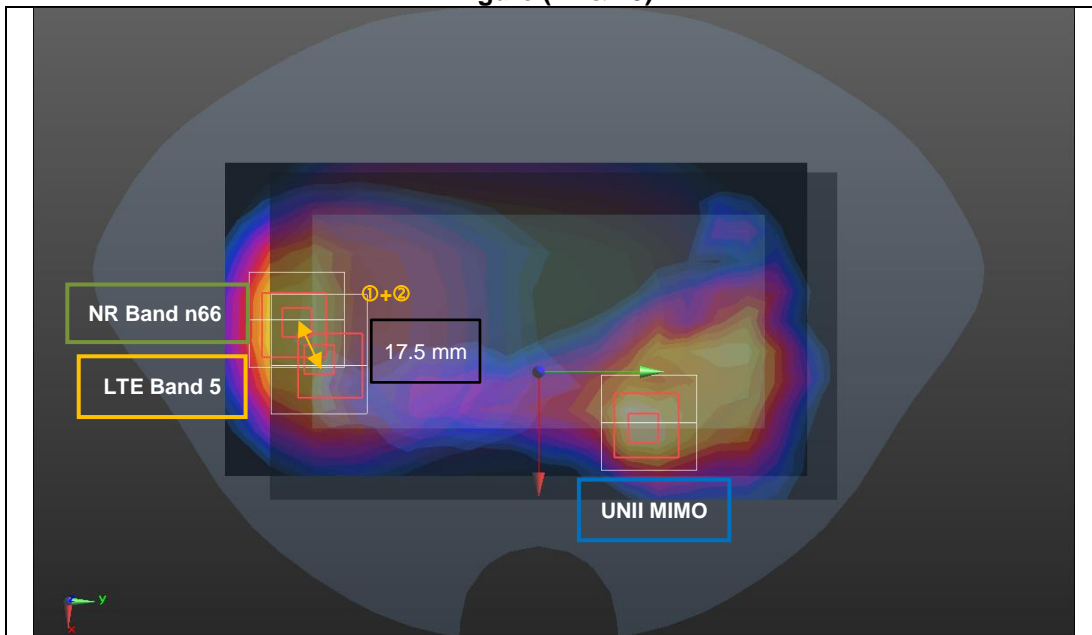
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.939	-0.0130	-0.0780	-0.2070	①+②	135.0
DTS Ant. 2	②	0.394	-0.0066	0.0568	-0.2060		

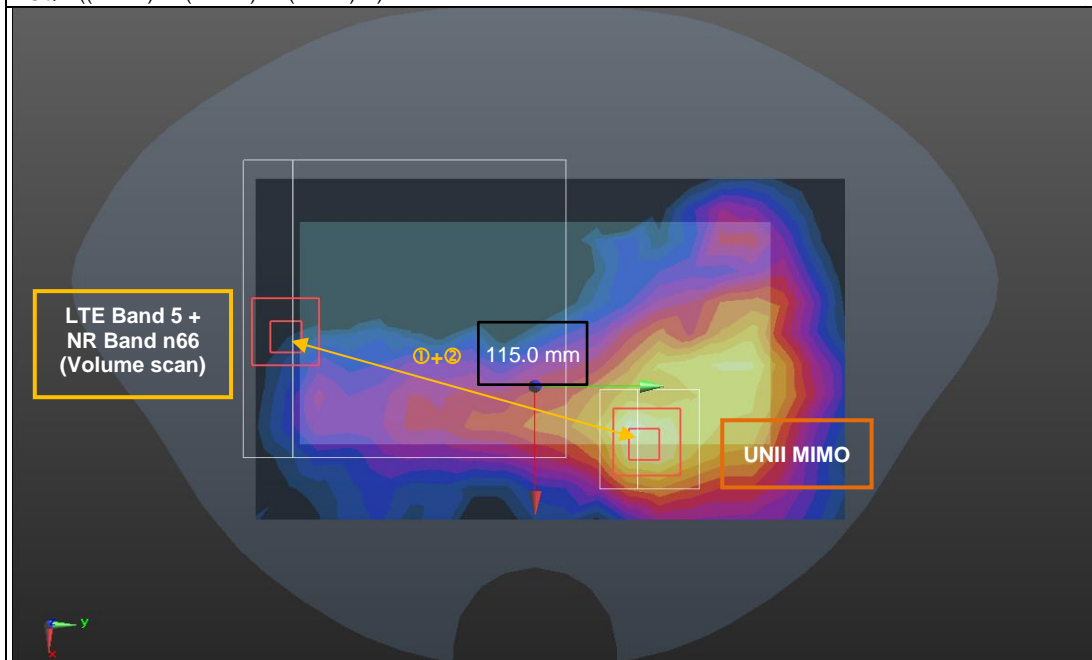
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (24 & 25)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.755	-0.0020	-0.0735	-0.2070	①+②	17.5
NR Band n66	②	0.464	-0.0175	-0.0810	-0.2100		
UNII MIMO	③	0.430	0.0170	0.0330	-0.2070		

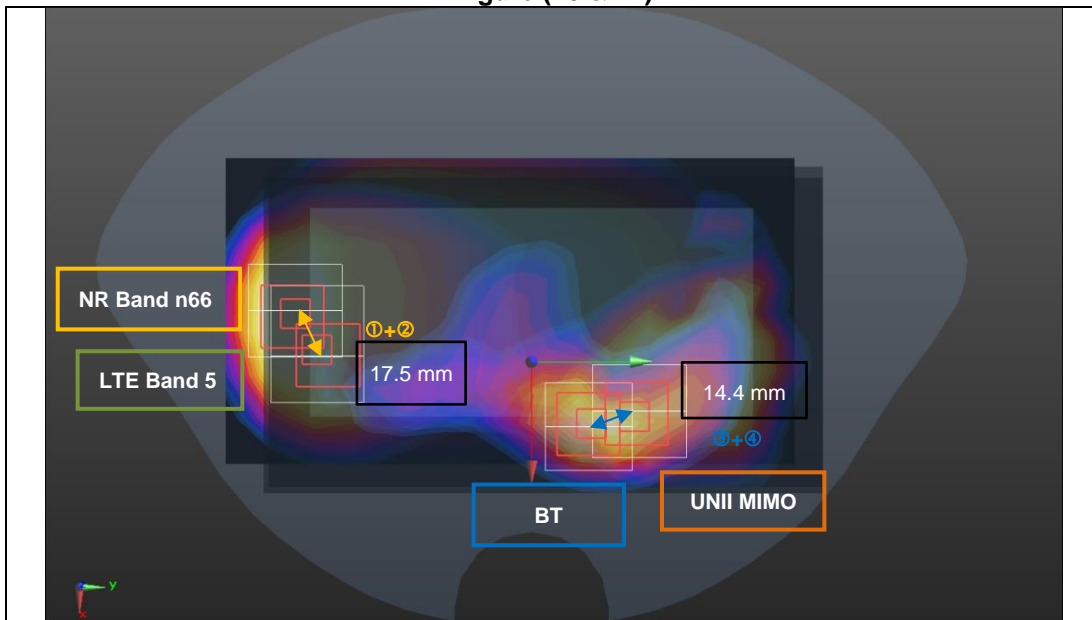
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.939	-0.0130	-0.0780	-0.2070	①+②	115.0
UNII MIMO	②	0.430	0.0170	0.0330	-0.2070		

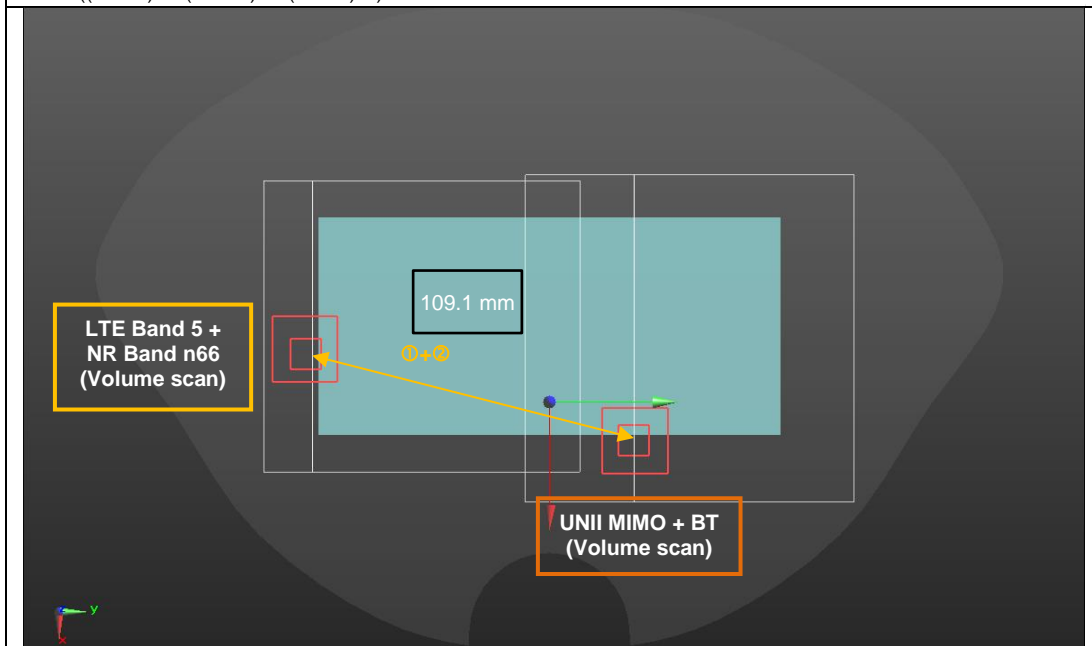
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (26 & 27)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.755	-0.0020	-0.0735	-0.2070	①+②	17.5
NR Band n66	②	0.464	-0.0175	-0.0810	-0.2100	③+④	14.4
UNII MIMO	③	0.430	0.0170	0.0330	-0.2070		
BT	④	0.265	0.0222	0.0196	-0.2080		

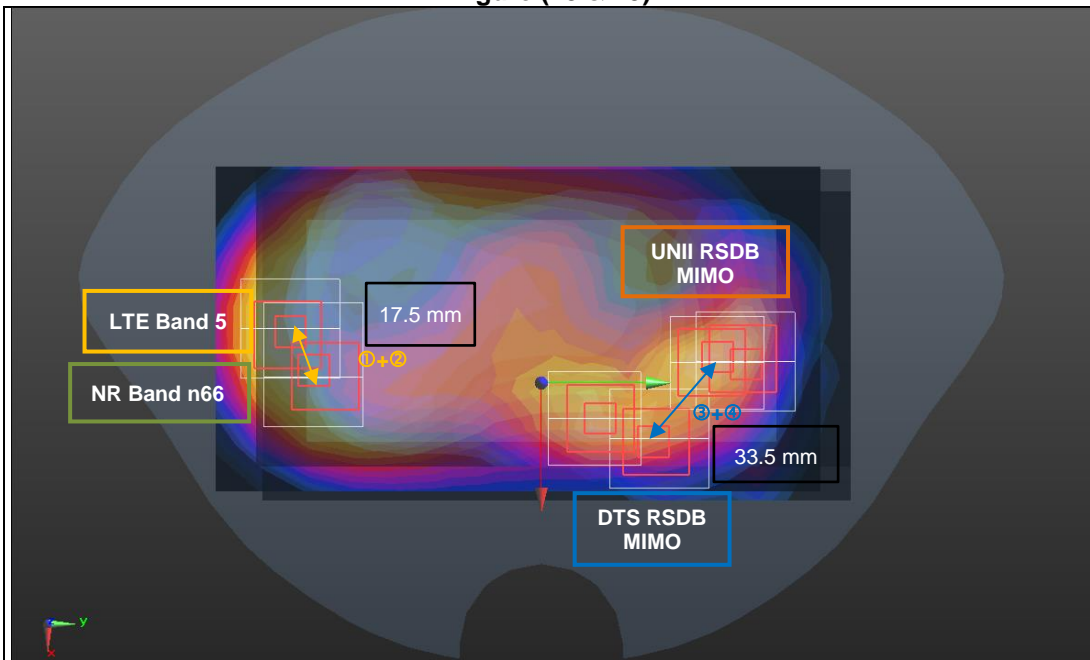
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.939	-0.0130	-0.0780	-0.2070	①+②	109.1
(UNII MIMO + BT)	②	0.598	0.0130	0.0280	-0.2080		

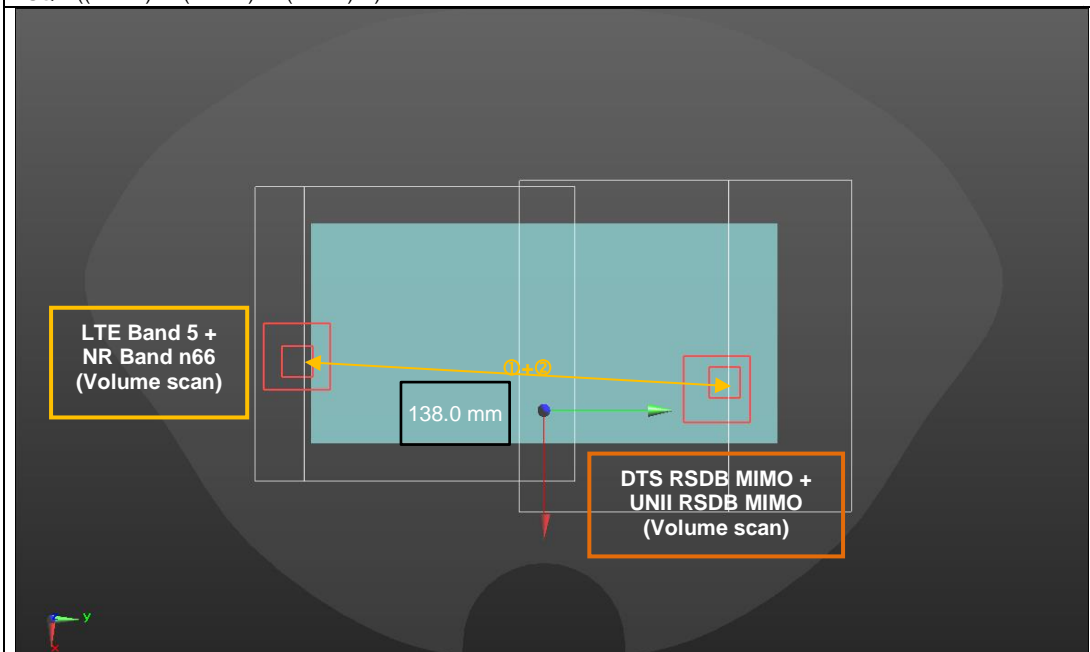
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (28 & 29)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.755	-0.0020	-0.0735	-0.2070	①+②	17.5
NR Band n66	②	0.464	-0.0175	-0.0810	-0.2100	③+④	33.5
DTS RSDB MIMO	③	0.369	-0.0066	0.0568	-0.2070		
UNII RSDB MIMO	④	0.153	0.0180	0.0340	-0.2070		

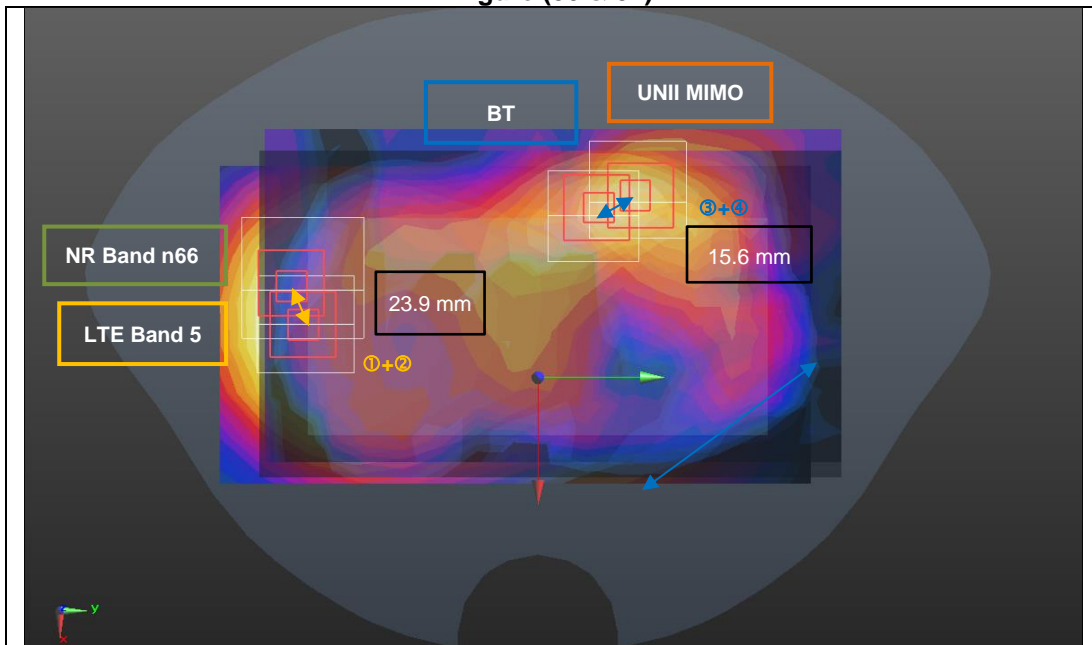
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.939	-0.0130	-0.0780	-0.2070	①+②	138.0
(DTS RSDB MIMO + UNII RSDB MIMO)	②	0.564	-0.0110	0.0600	-0.2080		

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

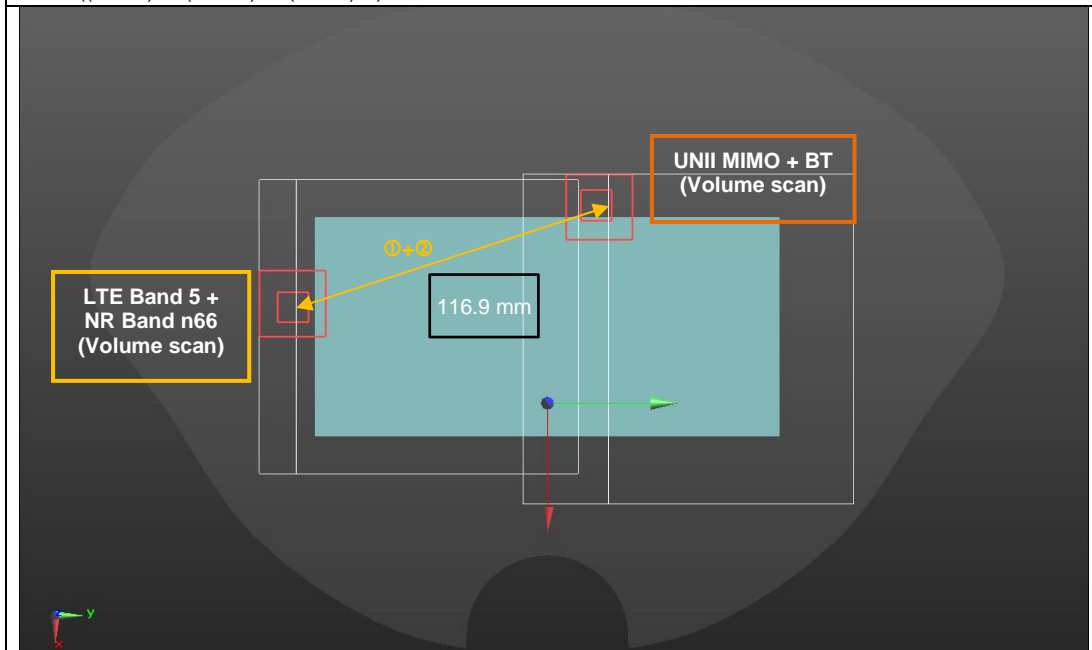
Figure (30 & 31)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	①	0.567	-0.0370	-0.0735	-0.2070	①+②	23.9
NR Band n66	②	0.452	-0.0160	-0.0845	-0.2100	③+④	15.6
UNII MIMO	③	0.352	-0.0610	0.0320	-0.2080		
BT	④	0.274	-0.0534	0.0184	-0.2080		

The Peak Location Separation Distance is computed by using the formula below :

$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

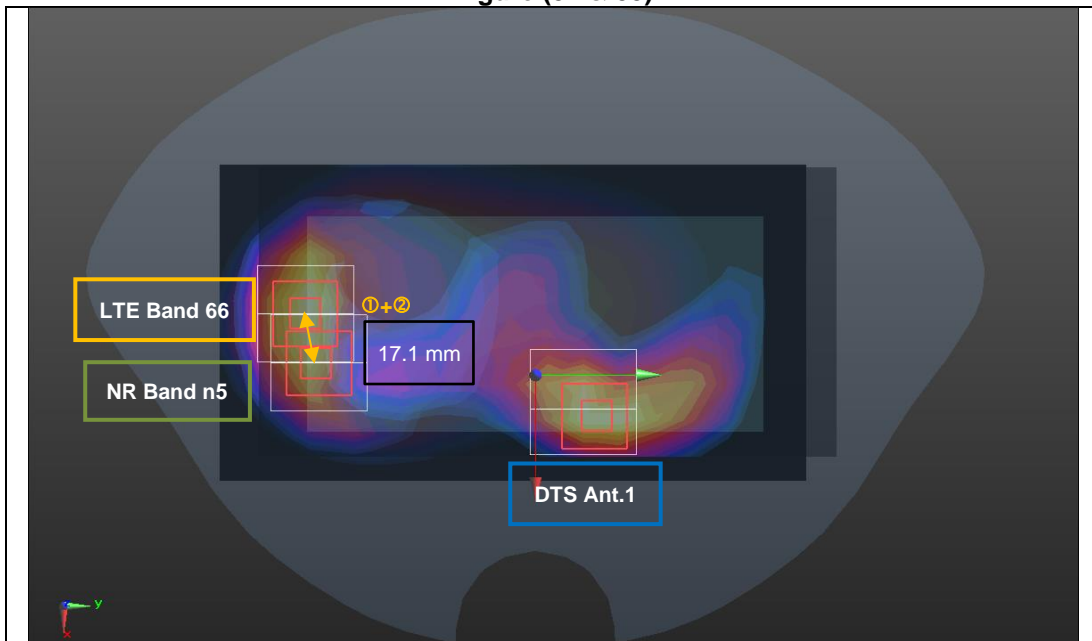


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 5 + NR Band n66)	①	0.957	-0.0370	-0.0820	-0.2070	①+②	116.9
(UNII MIMO + BT)	②	0.546	-0.0630	0.0320	-0.2080		

The Peak Location Separation Distance is computed by using the formula below :

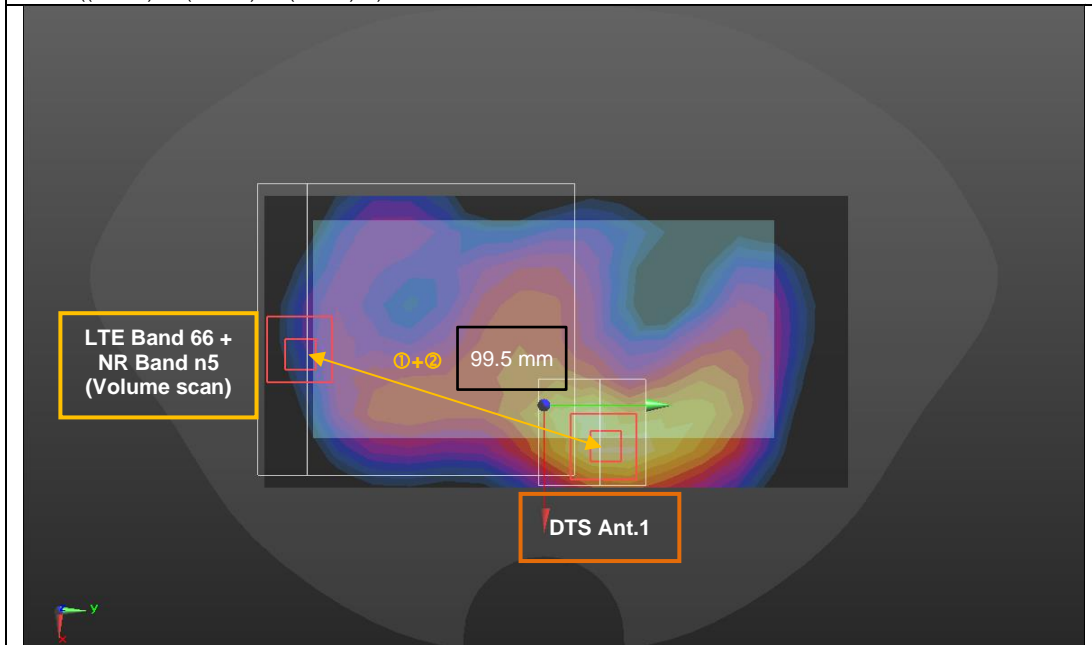
$$SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

Figure (32 & 33)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS Ant. 1	③	0.466	0.0114	0.0184	-0.2060		

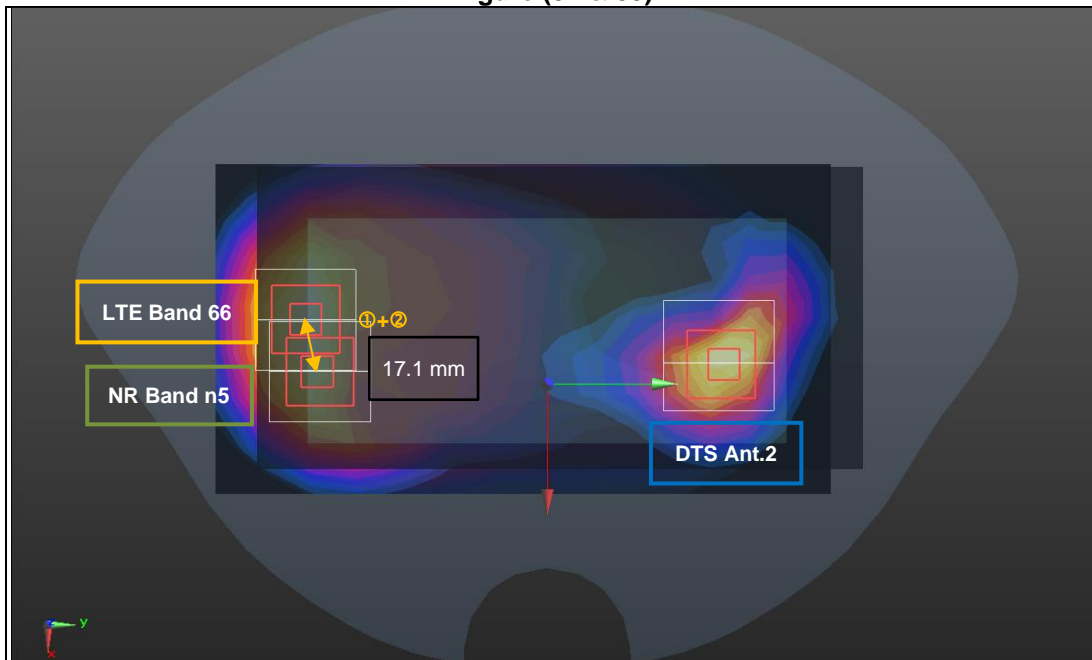
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	99.5
DTS Ant. 1	②	0.466	0.0114	0.0184	-0.2060		

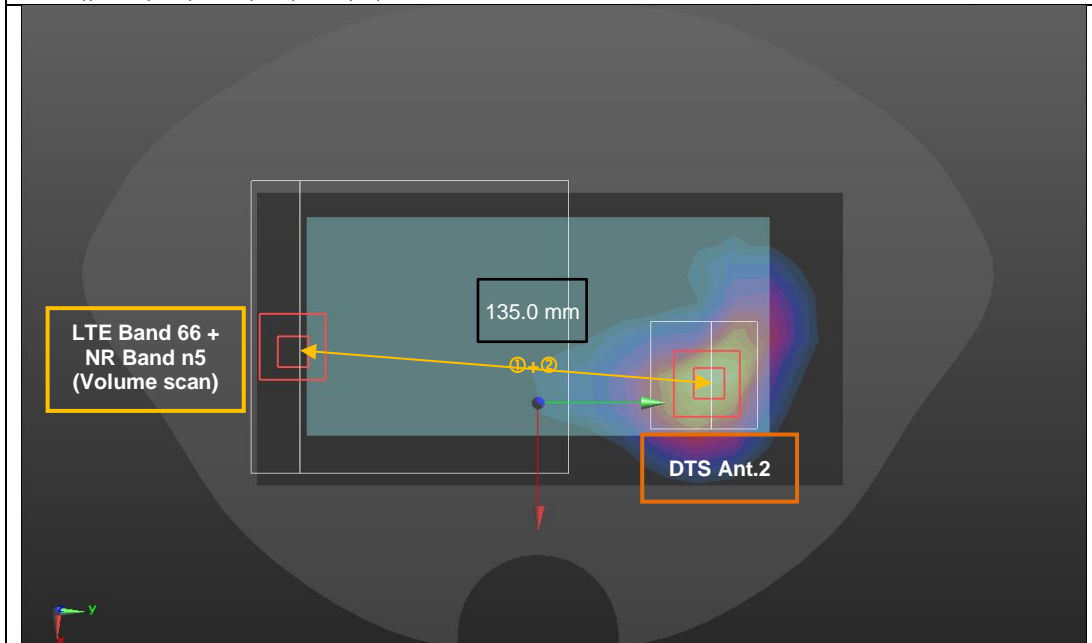
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (34 & 35)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS Ant. 2	③	0.394	-0.0066	0.0568	-0.2060		

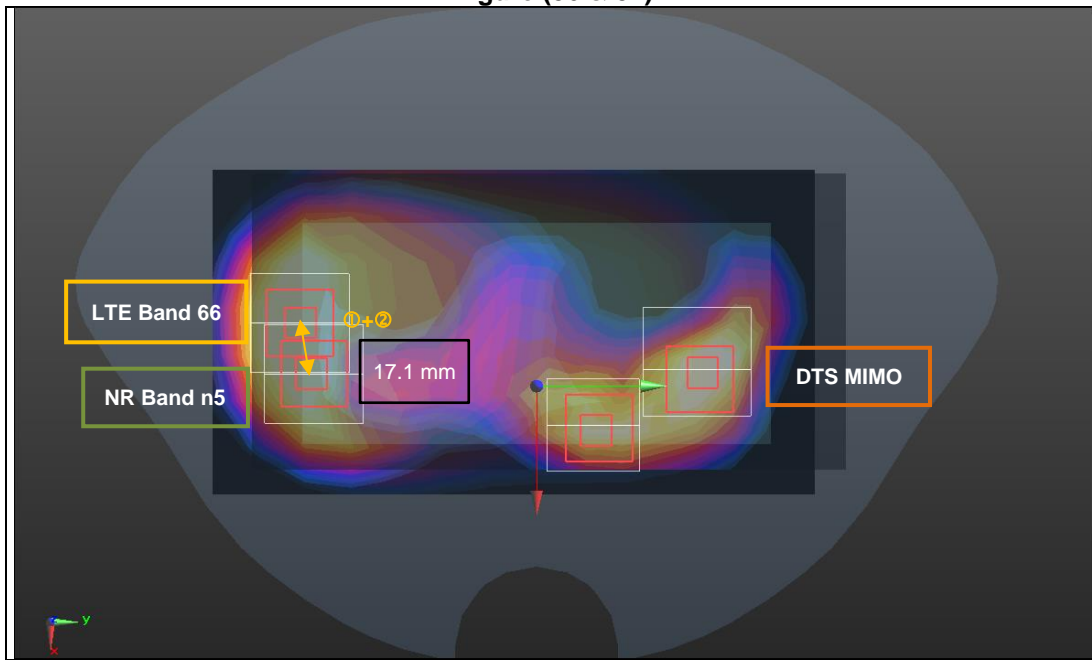
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	135.0
DTS Ant. 2	②	0.394	-0.0066	0.0568	-0.2060		

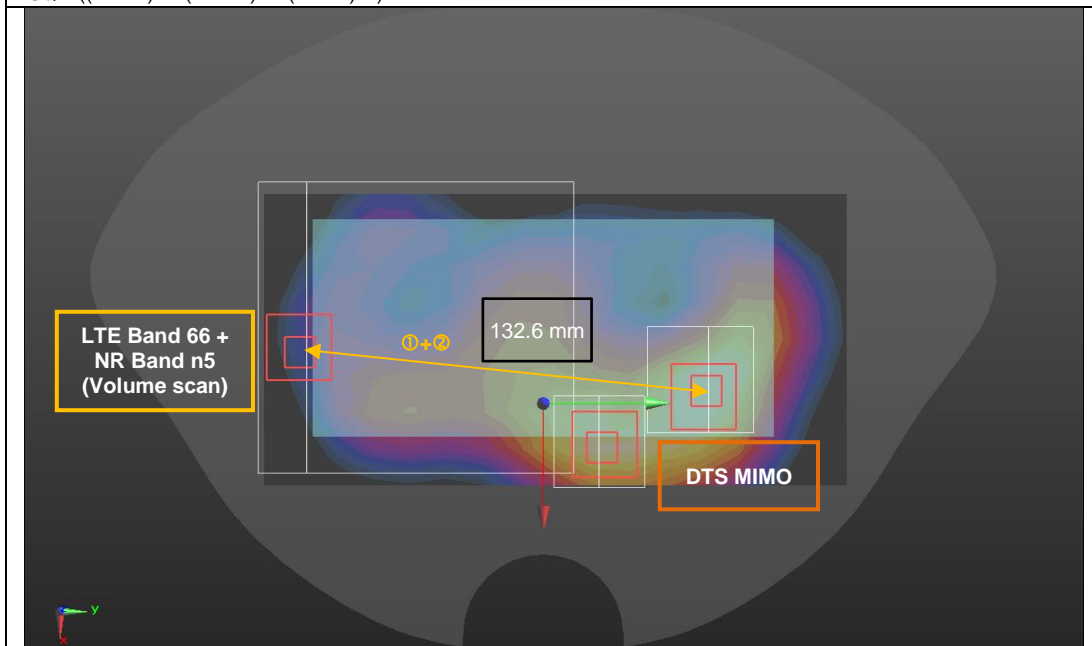
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (36 & 37)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
DTS MIMO	③	0.374	-0.0054	0.0544	-0.2060		

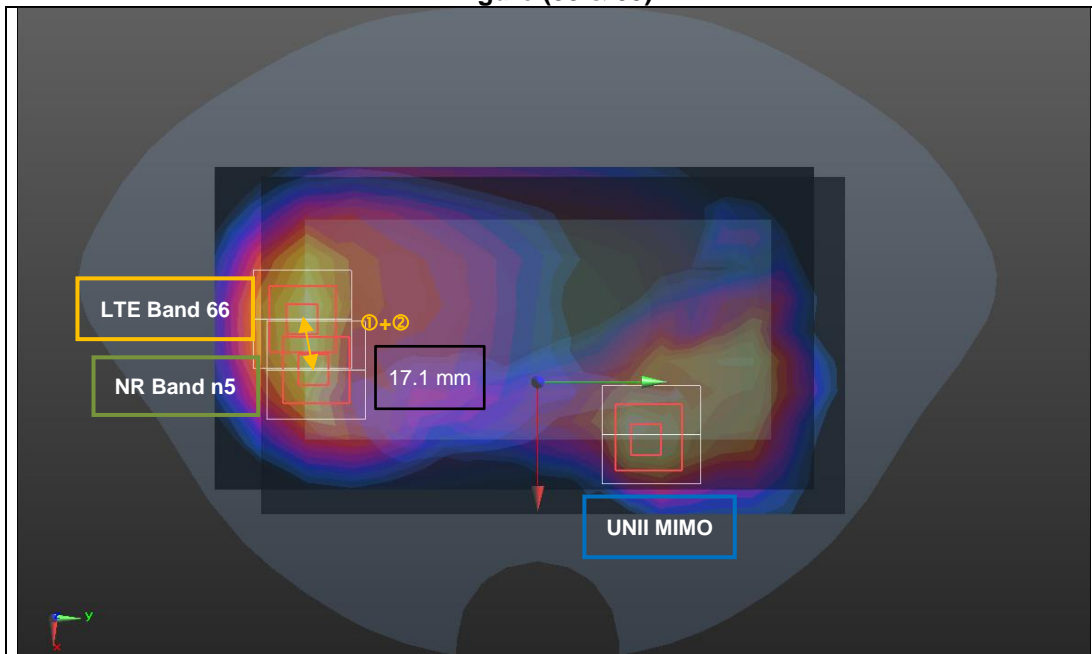
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	132.6
DTS MIMO	②	0.374	-0.0054	0.0544	-0.2060		

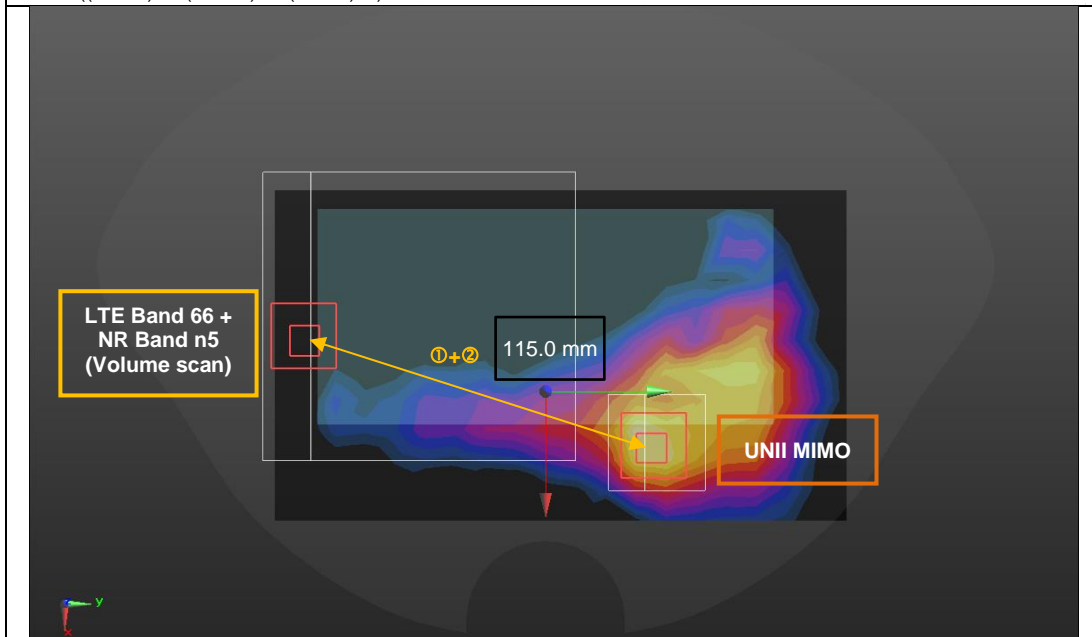
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (38 & 39)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080		
UNII MIMO	③	0.430	0.0170	0.0330	-0.2070		

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



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	115.0
UNII MIMO	②	0.430	0.0170	0.0330	-0.2070		

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

Figure (40 & 41)

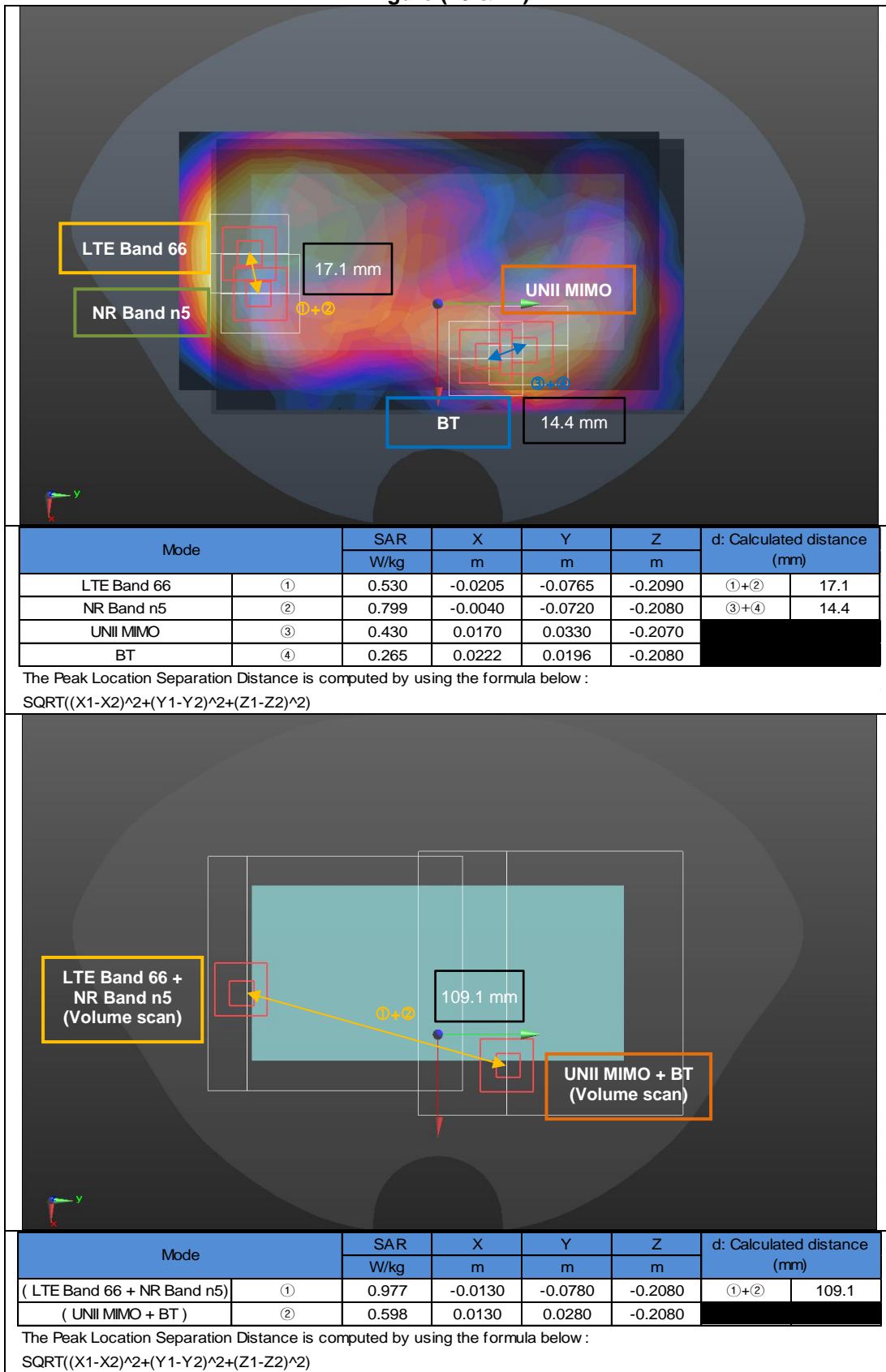


Figure (42 & 43)

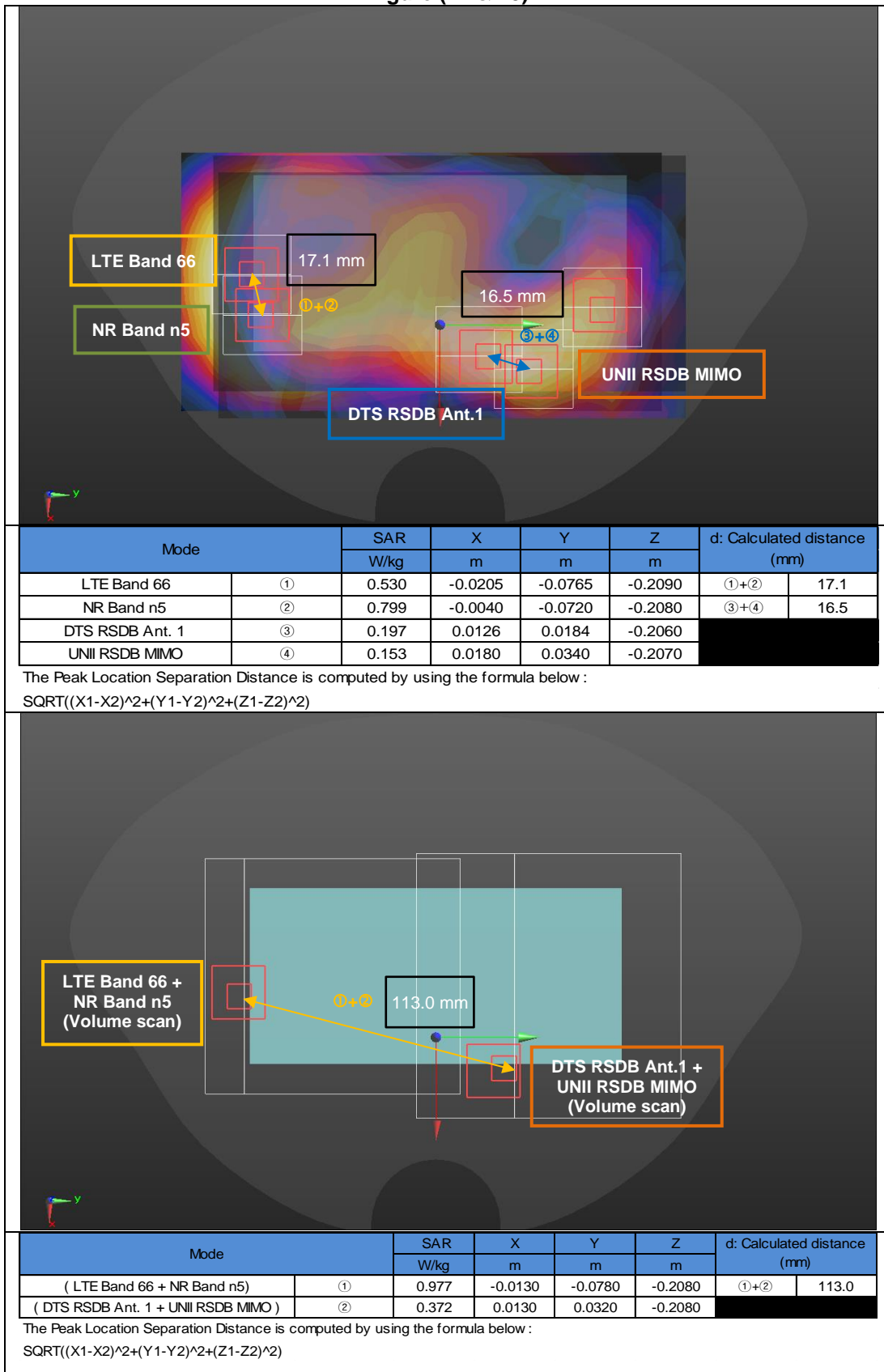
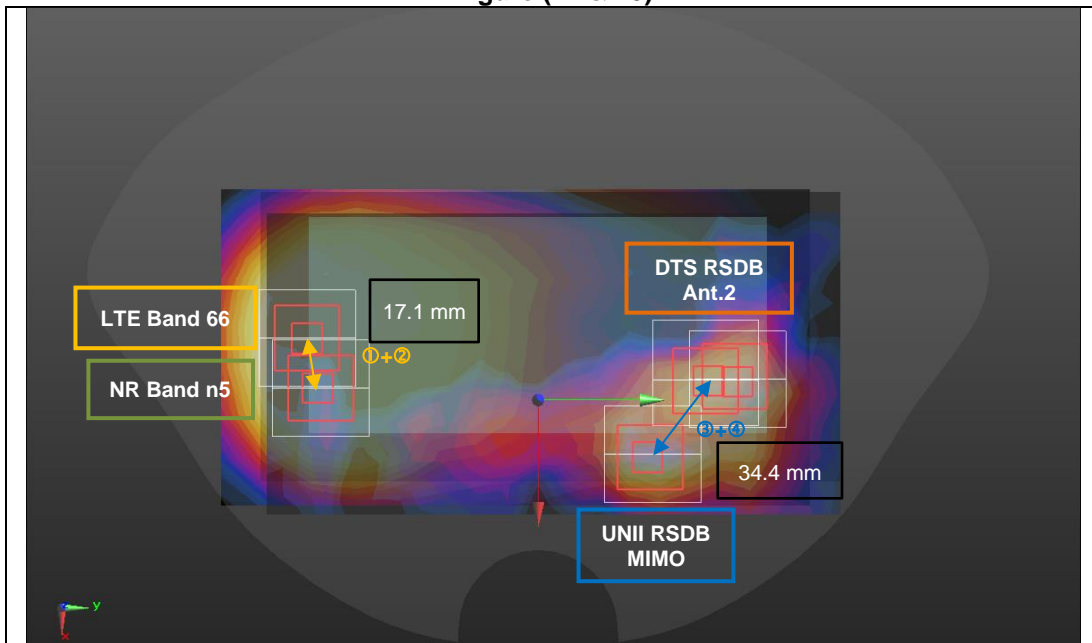
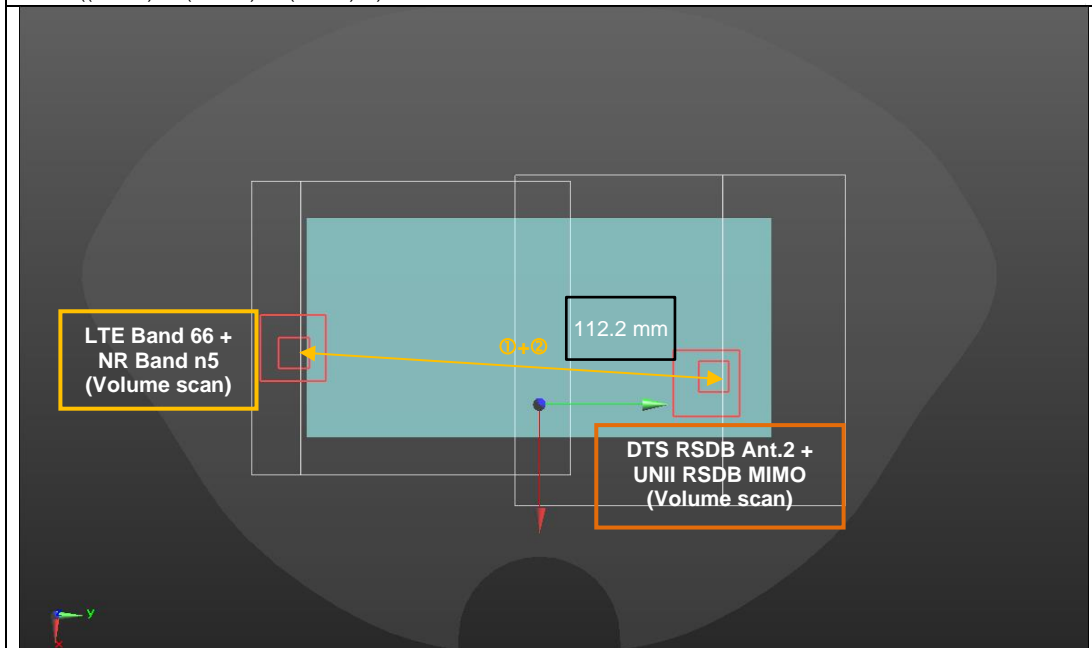


Figure (44 & 45)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080	③+④	34.4
DTS RSDB Ant. 2	③	0.142	-0.0066	0.0580	-0.2070		
UNII RSDB MIMO	④	0.153	0.0180	0.0340	-0.2070		

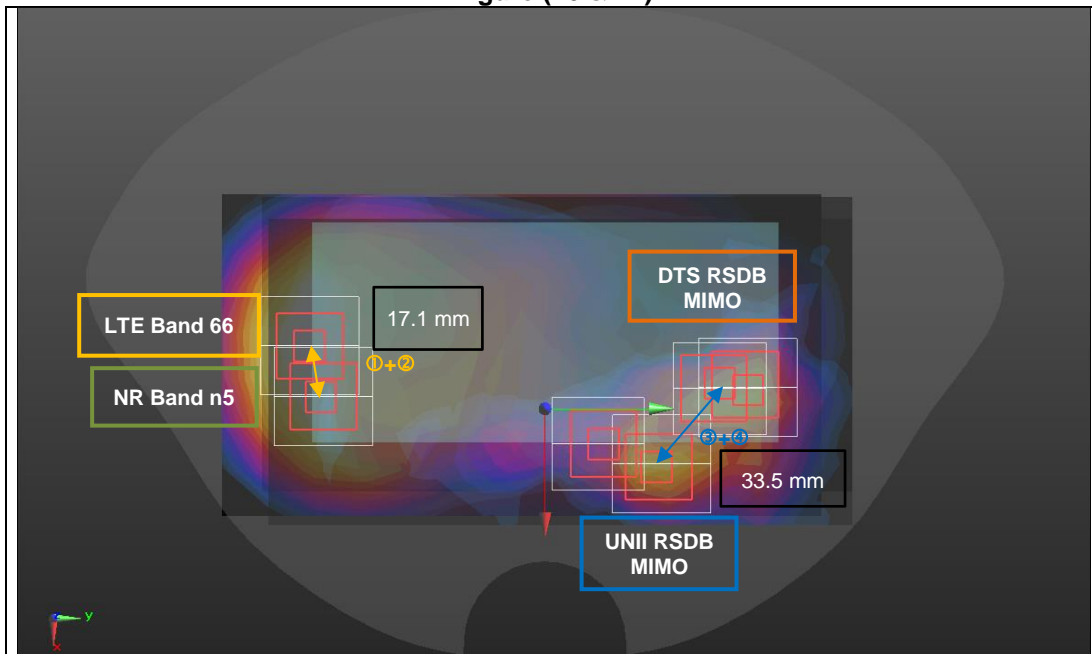
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	112.2
(DTS RSDB Ant. 2 + UNII RSDB MIMO)	②	0.263	0.0090	0.0320	-0.2080		

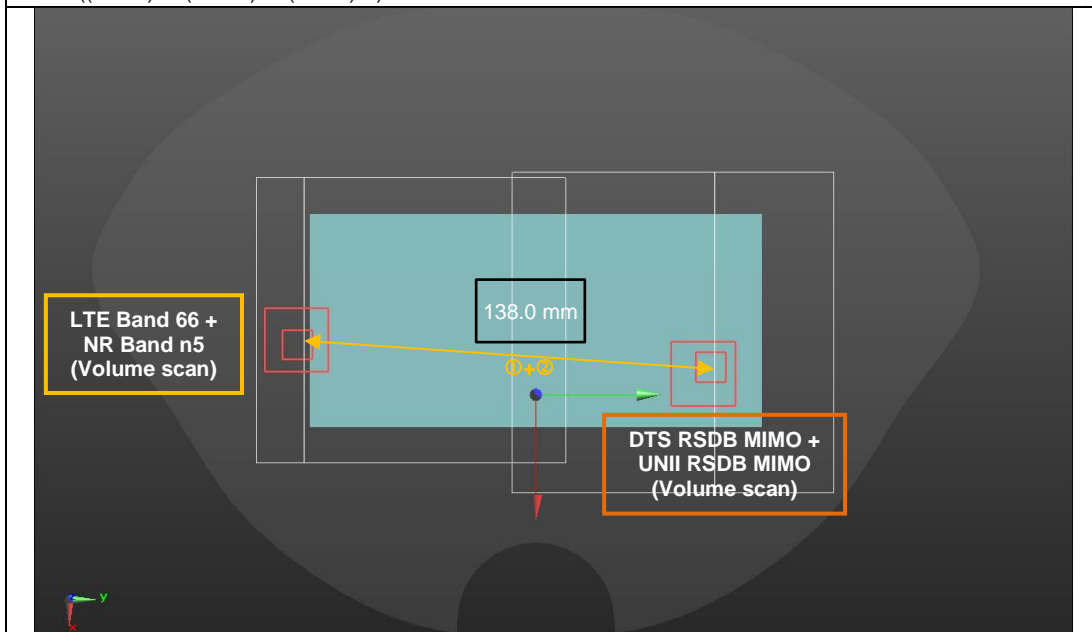
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (46 & 47)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.530	-0.0205	-0.0765	-0.2090	①+②	17.1
NR Band n5	②	0.799	-0.0040	-0.0720	-0.2080	③+④	33.5
DTS RSDB MIMO	③	0.369	-0.0066	0.0568	-0.2070		
UNII RSDB MIMO	④	0.153	0.0180	0.0340	-0.2070		

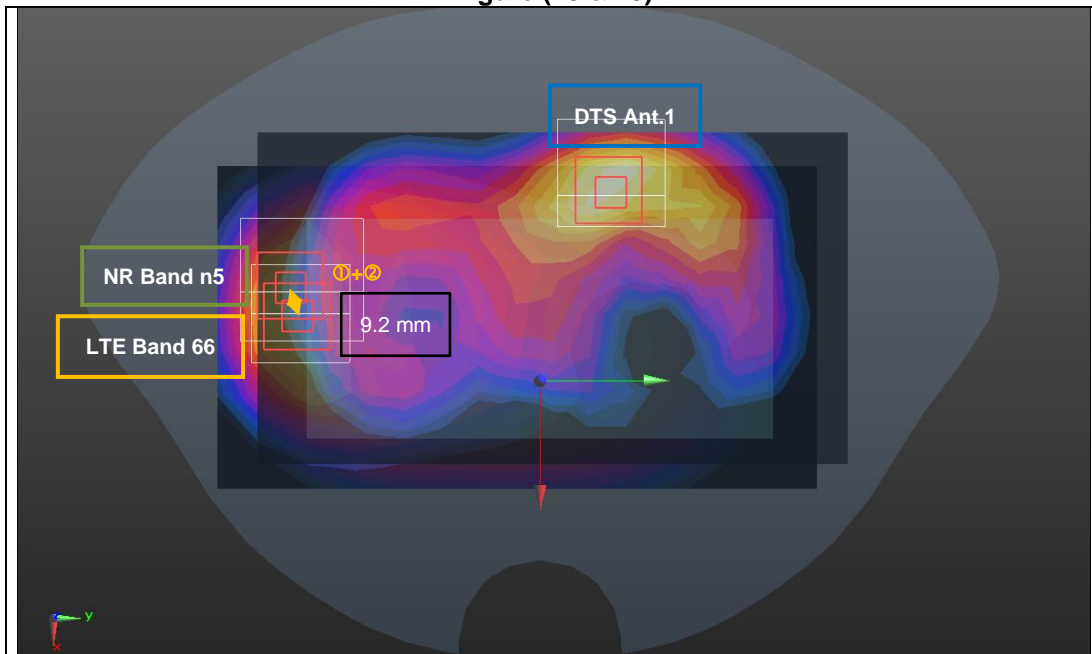
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.977	-0.0130	-0.0780	-0.2080	①+②	138.0
(DTS RSDB MIMO + UNII RSDB MIMO)	②	0.564	-0.0110	0.0600	-0.2080		

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

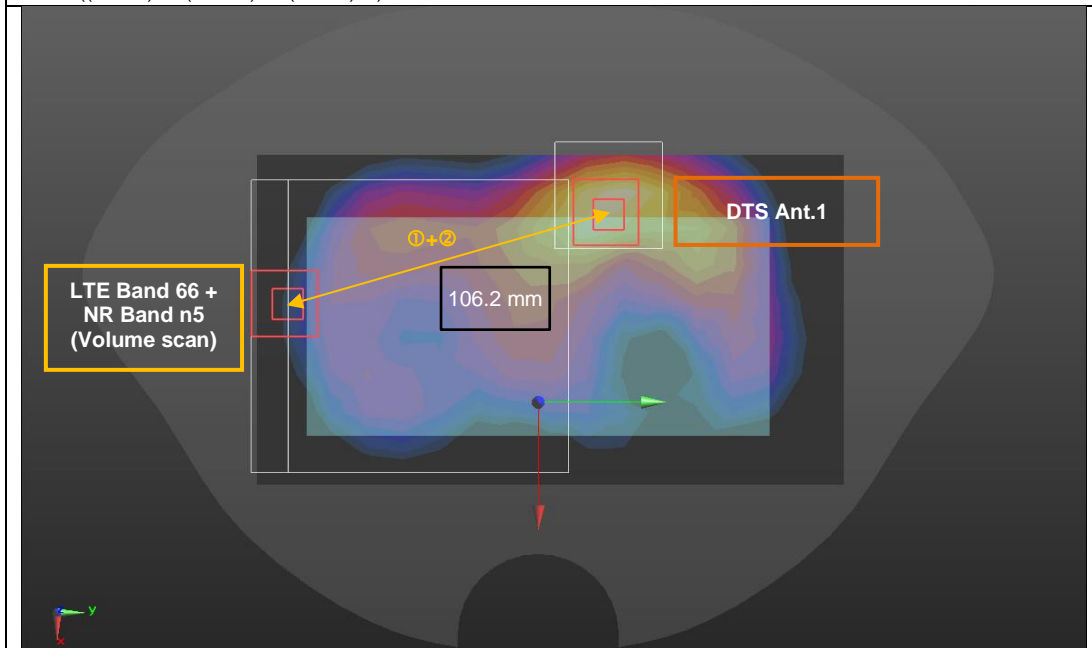
Figure (48 & 49)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	①	0.511	-0.0220	-0.0780	-0.2090	①+②	9.2
NR Band n5	②	0.622	-0.0305	-0.0815	-0.2080		
DTS Ant. 1	③	0.513	-0.0604	0.0206	-0.2060		

The Peak Location Separation Distance is computed by using the formula below :

$$\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

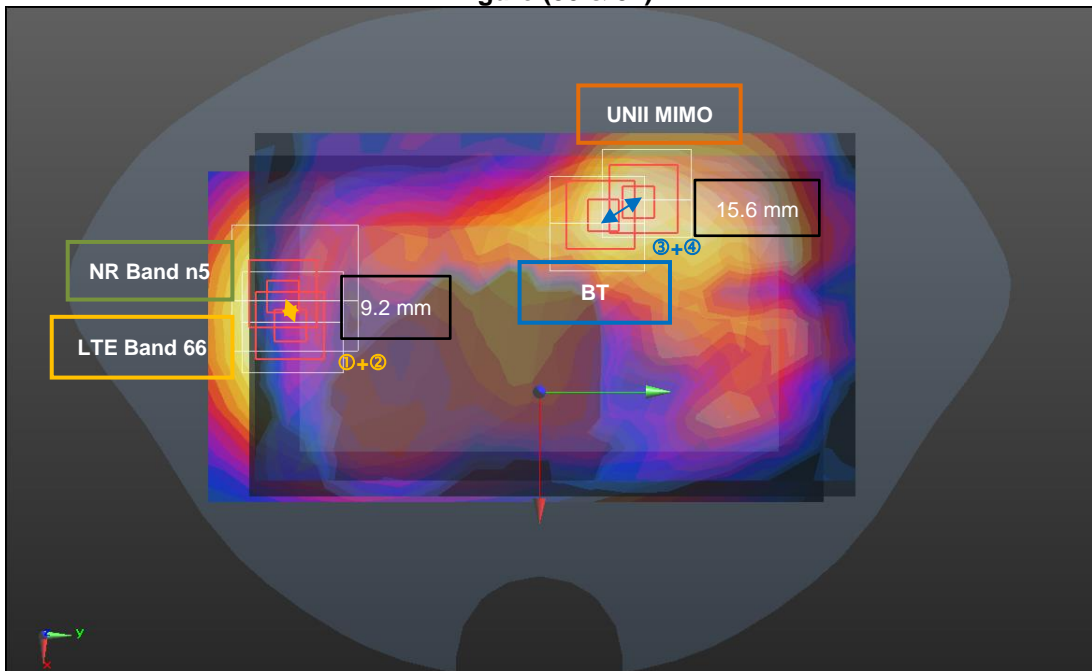


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
(LTE Band 66 + NR Band n5)	①	0.925	-0.0330	-0.0820	-0.2070	①+②	106.2
DTS Ant. 1	②	0.513	-0.0604	0.0206	-0.2060		

The Peak Location Separation Distance is computed by using the formula below :

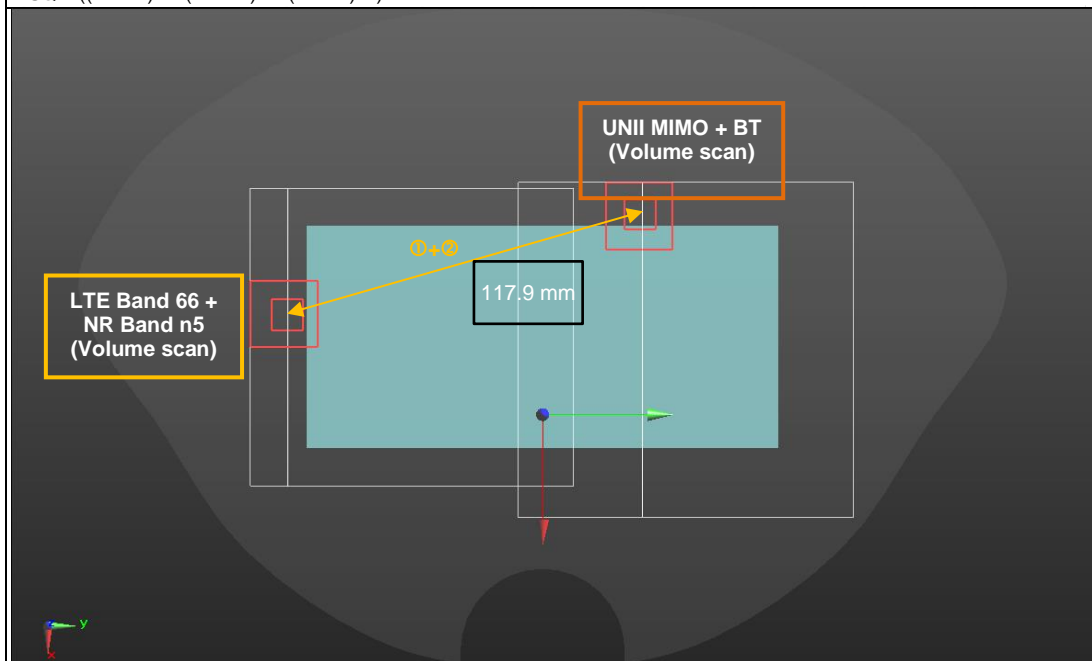
$$\text{SQRT}((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$$

Figure (50 & 51)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 66	①	0.511	-0.0220	-0.0780	-0.2090	①+②	9.2
NR Band n5	②	0.622	-0.0305	-0.0815	-0.2080	③+④	15.6
UNII MIMO	③	0.352	-0.0610	0.0320	-0.2080		
BT	④	0.274	-0.0534	0.0184	-0.2080		

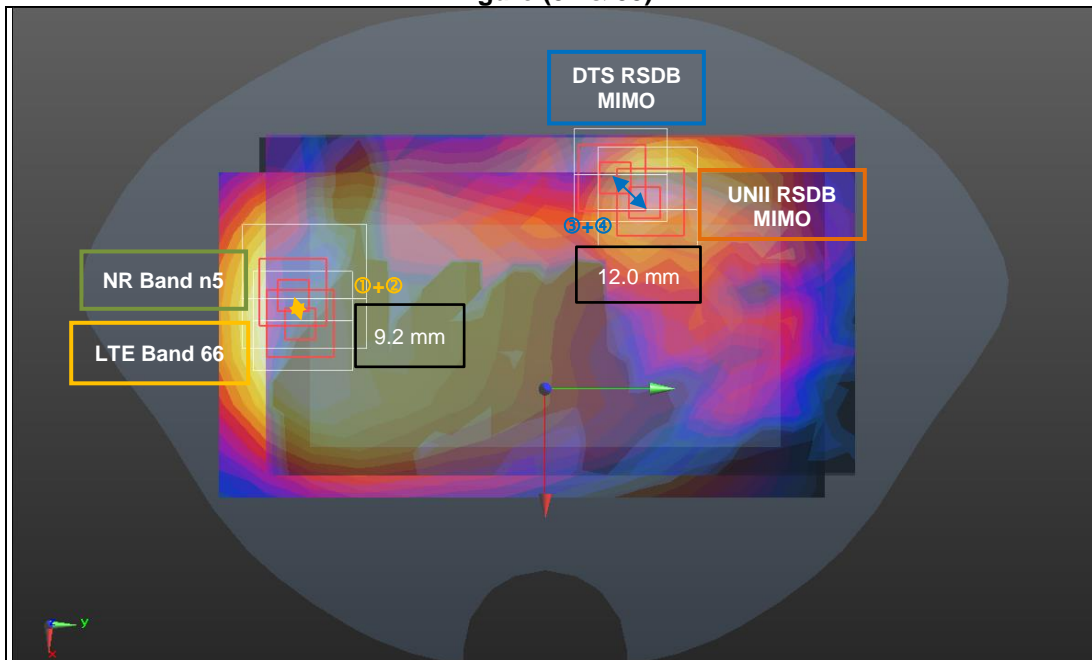
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
(LTE Band 66 + NR Band n5)	①	0.925	-0.0330	-0.0820	-0.2070	①+②	117.9
(UNII MIMO + BT)	②	0.546	-0.0630	0.0320	-0.2080		

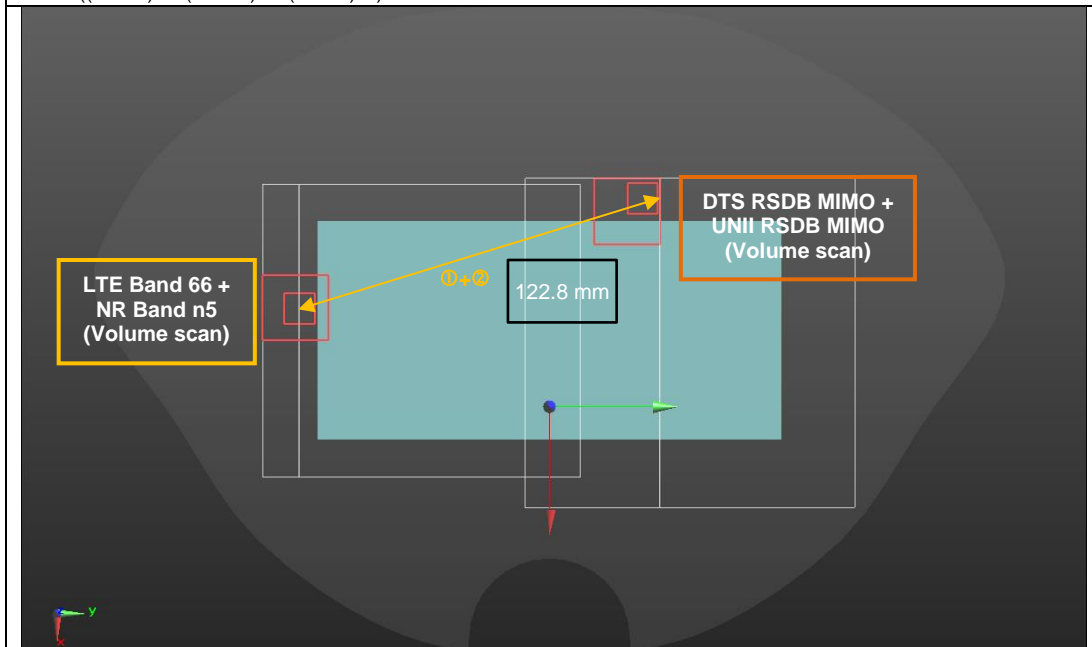
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$

Figure (52 & 53)



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
LTE Band 66	①	0.511	-0.0220	-0.0780	-0.2090	①+②	9.2
NR Band n5	②	0.622	-0.0305	-0.0815	-0.2080	③+④	12.0
DTS RSDB MIMO	③	0.325	-0.0690	0.0244	-0.2070		
UNII RSDB MIMO	④	0.170	-0.0580	0.0290	-0.2080		

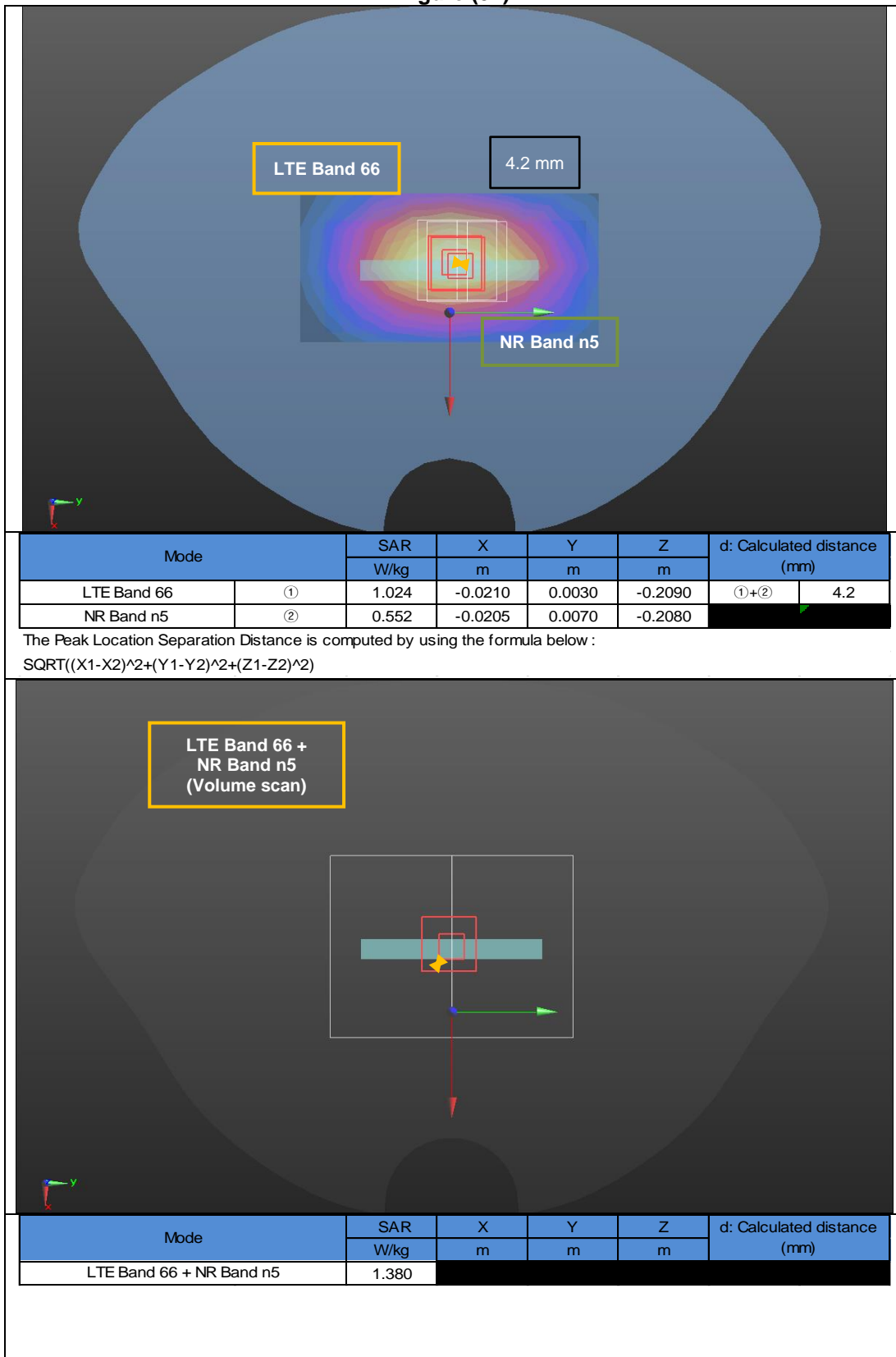
The Peak Location Separation Distance is computed by using the formula below :
 $SQRT((X1-X2)^2+(Y1-Y2)^2+(Z1-Z2)^2)$



Mode		SAR W/kg	X m	Y m	Z m	d: Calculated distance (mm)	
(LTE Band 66 + NR Band n5)	①	0.925	-0.0330	-0.0820	-0.2070	①+②	122.8
(DTS RSDB MIMO + UNII RSDB MIMO)	②	0.392	-0.0670	0.0360	-0.2080		

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

Figure (54)



Appendixes

Refer to separated files for the following appendixes.

4789651209-S1 FCC Report SAR_App A_Photos & Ant. Locations

4789651209-S1 FCC Report SAR_App B_Highest SAR Test Plots

4789651209-S1 FCC Report SAR_App C_System Check Plots

4789651209-S1 FCC Report SAR_App D_SAR Tissue Ingredients

4789651209-S1 FCC Report SAR_App E_Probe Cal. Certificates

4789651209-S1 FCC Report SAR_App F_Dipole Cal. Certificates

4789651209-S1 FCC Report SAR_App G_Volume Scan Results

END OF REPORT