FCC 47 CFR § 2.1093
IEEE Std 1528-2013

SAR EVALUATION REPORT
(Part 1 : Test in Static Transmission Condition)

FOR

WCDMA/LTE/5G NR Laptop + BT/BLE, DTS/UNII a/b/g/n/ac/ax

MODEL NUMBER: NP545XLA, NP545XLA-KA1TT, NP545XLA-KA1VZ

FCC ID: A3LNP545XLA

REPORT NUMBER: 4789893923-S1V2

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Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Prepared by

UL Korea, Ltd.

26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, Korea
TEL: (031) 337-9902
FAX: (031) 213-5433

IAS ACCREDITED

Testing Laboratory

TL-637

Revision History

Rev.	Date	Revisions	Revised By
V1	6/14/2021	Initial Issue	--
V2	6/25/2021	Revised test distance in Sec.10.12.	Sunghoon.Kim

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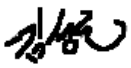
1. Attestation of Test Results

Applicant Name	SAMSUNG ELECTRONICS CO.,LTD.			
FCC ID	A3LNP545XLA			
Model Number	NP545XLA, NP545XLA-KA1TT, NP545XLA-KA1VZ			
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)			
General population / Uncontrolled exposure	1.6			
RF Exposure Conditions	Equipment Class - The Highest Reported SAR (W/kg)			
	PCB	DTS	U-NII	DSS
Standalone	1.25	0.77	1.20	0.36
Simultaneous TX	1.53	1.53	1.56	1.56
Date Tested	4/21/2021 to 6/14/2021			
Test Results	Pass			

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

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

Approved & Released By:	Prepared By:
	
Justin Park Operations Leader UL Korea, Ltd. Suwon Laboratory	Sunghoon Kim 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
		Standalone exposure condition
PCB	WCDMA Band Ⅱ	1.078
	WCDMA Band Ⅳ	0.933
	WCDMA Band Ⅴ	0.716
	LTE Band 2	1.060
	LTE Band 4	N/A
	LTE Band 5	0.910
	LTE Band 7	1.177
	LTE Band 12	0.629
	LTE Band 13	0.844
	LTE Band 14	0.858
	LTE Band 66	1.177
	NR Band n2	1.201
	NR Band n5	0.817
	NR Band n66	**1.247**
	NR Band n77	1.244
	NR Band n78	N/A
DTS	2.4GHz WLAN	**0.765**
UNⅡ	5GHz WLAN	**1.199**
DSS	Bluetooth	**0.361**

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
- 616217 D04 SAR for laptop and tablets v01r02
- 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
- 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, 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 November, 2017; Page 4, RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR)
- 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

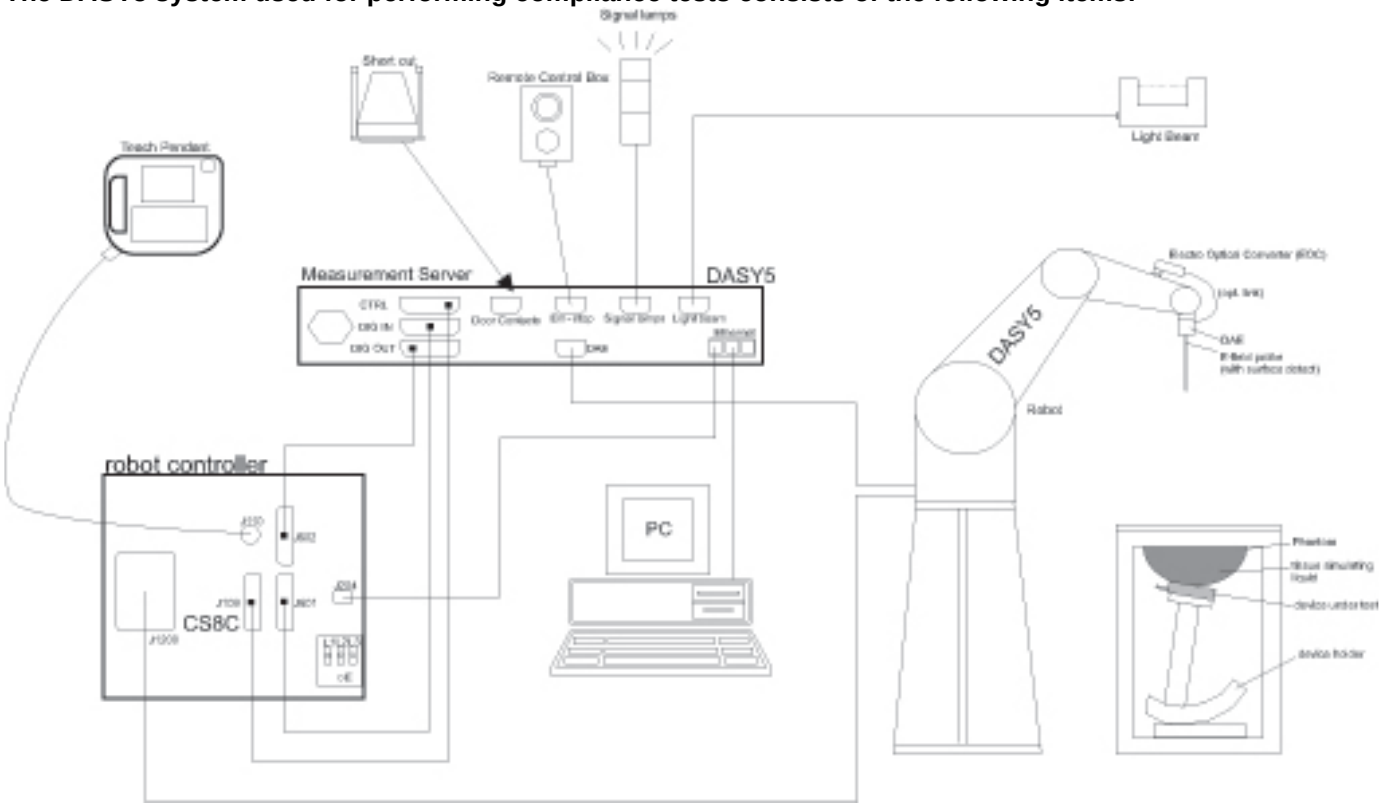
Suwon
SAR 1 Room
SAR 2 Room
SAR 3 Room
SAR 4 Room
SAR 5 Room

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

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

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



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

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

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

Step 2: Area Scan

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

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

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

Step 3: Zoom Scan

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

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

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

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

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

Step 4: Power drift measurement

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

Step 5: Z-Scan (FCC only)

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

4.3. Test Equipment

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

Dielectric Property Measurements

Name of Equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
Network Analyzer	Agilent	E5071C	MY46522054	8-4-2021
Dielectric Assessment Kit	SPEAG	DAK-3.5	1196	6-17-2021
Shorting block	SPEAG	DAK-3.5 Short	SMDAK 200 BA	N/A
Thermometer	LKM	DTM3000	3424	8-11-2021

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	MY54260007	8-5-2021
Power Sensor	Agilent	U2000A	MY60180020	9-9-2021
Power Amplifier	EXODUS	AMP2027ADB	10002	5-14-2022
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	MINI-CIRCUITS	BW-N3W5+	N/A	4-21-2022
Attenuator	Agilent	8491B/010	MY39271981	9-9-2021
Attenuator	Agilent	8491B/020	MY39271973	9-9-2021
E-Field Probe	SPEAG	EX3DV4	7314	5-29-2021
E-Field Probe	SPEAG	EX3DV4	7545	11-23-2021
E-Field Probe	SPEAG	EX3DV4	7313	2-23-2022
E-Field Probe	SPEAG	EX3DV4	7645	4-15-2022
E-Field Probe	SPEAG	EX3DV4	3871	8-28-2021
Data Acquisition Electronics (SAR2)	SPEAG	DAE4	1343	8-25-2021
Data Acquisition Electronics (SAR3)	SPEAG	DAE4	1494	7-23-2021
Data Acquisition Electronics (SAR4)	SPEAG	DAE4	1591	3-26-2022
Data Acquisition Electronics (SAR5)	SPEAG	DAE4	1447	3-23-2022
System Validation Dipole	SPEAG	D750V3	1122	2-24-2022
System Validation Dipole	SPEAG	D835V2	4d194	3-20-2022
System Validation Dipole	SPEAG	D1750V2	1125	2-21-2022
System Validation Dipole	SPEAG	D1900V2	5d199	3-19-2022
System Validation Dipole	SPEAG	D2450V2	939	7-25-2021
System Validation Dipole	SPEAG	D2600V2	1097	9-19-2021
System Validation Dipole	SPEAG	D3500V2	1121	4-21-2023
System Validation Dipole	SPEAG	D3700V2	1026	9-18-2022
System Validation Dipole	SPEAG	D3700V2	1036	5-21-2023
System Validation Dipole	SPEAG	D3900V2	1069	4-21-2023
System Validation Dipole	SPEAG	D5GHzV2	1209	2-27-2022
Thermometer (SAR2)	Lutron	MHB-382SD	AH.50215	8-7-2021
Thermometer (SAR3)	Lutron	MHB-382SD	AH.50213	8-11-2021
Thermometer (SAR4),(SAR5)	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	169801	1-28-2022
Base Station Simulator	R & S	CMW500	169800	2-2-2022
Base Station Simulator	R & S	CMW500	169797	1-29-2022
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
UXM 5G Wireless Test Platform	Keysight	E7515B	MY57510596	1-13-2022

Note(s):

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

5. Measurement Uncertainty

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

5.1. DECISION RULE

Decision rule for statement(s) of conformity is based on Accuracy Method specified in Procedure 2, Clause 4.4.3 in IEC Guide 115:2007.

6. Device Under Test (DUT) Information

6.1. DUT Description

Device Dimension	Refer to Appendix A.		
Back Cover	☒ The Back Cover is not removable.		
Battery Options	☒ The rechargeable battery is not user accessible		
Wireless Router (Hotspot)	Wi-Fi Hotspot mode permits the device to share its cellular data connection with other Wi-Fi-enabled devices. ☒ Mobile Hotspot (Wi-Fi 2.4 GHz) ☒ Mobile Hotspot (Wi-Fi 5.8 GHz)		
Wi-Fi Direct	Wi-Fi Direct enabled devices transfer data directly between each other ☒ Wi-Fi Direct (Wi-Fi 2.4 GHz) ☒ Wi-Fi Direct (Wi-Fi 5 GHz : Ch.36 – Ch.48, Ch.149 – Ch.165))		
Test Sample Information	**No.**	**S/N**	**Notes**
	1	FLKR01R2S00506	Main Conducted
	2	FLKR01R2S00505	Main Conducted
	3	FLKJ930R400132B	Main Conducted
	4	FLKR01R2S00430	Wi-Fi & BT Conducted
	5	FLKJ930R400009W	SAR
	6	FLKJ930R400107F	SAR
	7	FLKJ930R400146L	SAR
	8	G0GE930R400382J	SAR
	9	G0GE930R400374Y	SAR

6.2. Wireless Technologies

Wireless technologies	Frequency bands	Operating mode	Duty Cycle used for SAR testing
W-CDMA (UMTS)	Band II Band IV Band V	UMTS Rel. 99 (Voice & Data) HSDPA (Category 14) HSUPA (Category 6) HSPA+ (DL only)	100%
LTE	FDD Band 2 FDD Band 4 FDD Band 5 FDD Band 7 FDD Band 12 FDD Band 13 FDD Band 14 FDD Band 29 (Rx only) FDD Band 46 (Rx only) FDD Band 66	QPSK 16QAM 64QAM 256QAM Rel. 15 Carrier Aggregation (2 Uplink and 7 Downlinks)	100% (FDD)
	FDD Band 5 (2CC) FDD Band 66 (2CC)		
	Does this device support SV-LTE (1xRTT-LTE)? ☐ Yes ☒ No		
5G NR (Sub 6)	NR Band n2 NR Band n5 NR Band n66 NR Band n77 NR Band n78	DFT-s-ODFM: ■ π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-ODFM: ■QPSK, 16QAM, 64QAM, 256QAM	100%
Wi-Fi	2.4 GHz	802.11b 802.11g 802.11n (HT20) 802.11ax (HE20)	SISO mode : 99.4% (802.11b) MIMO mode : 96.4% (802.11g)
	5 GHz	802.11a 802.11n (HT20), 802.11n (HT40) 802.11ac (VHT20), 802.11ac (VHT40), 802.11ac (VHT80) 802.11ax (HE20), 802.11ax (HE40), 802.11ax (HE80),	SISO mode: 96.6% (802.11a) 95.8% (802.11ac VHT80) MIMO mode: 96.7% (802.11a) 92.1% (802.11ac VHT80)
	Does this device support bands 5.60 ~ 5.65 GHz? ☒ Yes ☐ No		
	Does this device support Band gap channel(s)? ☒ Yes ☐ No		
Bluetooth	2.4 GHz	Version 5.0 LE	76.7% (DH5)

Notes:

1. The Bluetooth protocol is considered source-based averaging. Bluetooth GFSK (DH5) was verified to have the highest duty cycle of 76.7% and was considered and used for SAR Testing.
2. Duty cycle for Wi-Fi is referenced from the DTS and UNII report.
3. This device supports LTE Uplink CA-contiguous for LTE Band 5 and LTE Band 66.
4. NR Band SAR test were evaluated using 100% duty cycle.

6.3. Time-Averaging feature

The equipment under test (EUT) contains the Qualcomm modems supporting 3G/4G technologies and 5G NR bands. these modem is enabled with Qualcomm Smart Transmit feature to control and manage transmitting power in real time and to ensure at all times the time-averaged RF exposure is in compliance with the FCC requirement. Refer to Compliance Summary document for detailed description of Qualcomm Smart Transmit feature.

The Smart Transmit algorithm maintains the time-averaged transmit power, in turn, time-averaged RF exposure of *SAR_design_target* or *PD_design_target*, below the predefined time-average power limit, for each characterized technology and band.

Smart Transmit allows the device to transmit at higher power instantaneously as high as P_{max}, when needed, but enforces power limiting to maintain time-averaged transmit power to P_{Limit}. Below table shows P_{Limit} EFS settings and maximum tune up output power P_{max} configured for this EUT for various transmit conditions (DSI Device State Index).

The maximum time-averaged output power (dBm) for any 3G/4G/5G NR WWAN technology band, and DSI = minimum of " P_{Limit} EFS" and "Maximum tune up output power P_{max}" + 1 dB device uncertainty. SAR values in this report were scaled to this maximum time-averaged output power to determine compliance per KDB 447498 D01.

The purpose of this report (Part 1 test) is to demonstrate that the EUT meets FCC SAR limits when transmitting in static transmission scenario at maximum allowable time-averaged power levels.

Device State Index (DSI)		0	1	Pmax (Maximum tune-up Power) (dBm)
Exposure scenario		Standalone SAR without triggering sensor	Standalone SAR with triggering sensor	
Test Distance (mm)		Refet to Section 6.3.		
Spatial-average		1g	1g	
WWAN Bands	Antenna	PLimit (dBm)		
WCDMA Band II	Main.2	24.8	16.5	**22.5**
WCDMA Band IV	Main.2	24.7	16.0	**22.5**
WCDMA Band V	Main.1	26.9	20.0	**23.5**
LTE Band 2	Main.2	25.1	16.5	**23.5**
LTE Band 66 / 4	Main.2	24.3	16.5	**23.5**
LTE Band 5	Main.1	27.1	20.5	**23.5**
LTE Band 7	Main.2	24.6	16.5	**23.0**
LTE Band 12	Main.1	27.7	20.0	**23.5**
LTE Band 13	Main.1	26.1	20.0	**23.5**
LTE Band 14	Main.1	26.2	20.0	**23.5**
NR Band n2	Main.2	24.3	15.5	**23.5**
NR Band n5	Main.1	26.7	20.5	**23.5**
NR Band n66	Main.2	24.2	16.5	**23.5**
NR Band n77 / n78	Main.1	24.1	14.0	**24.0**

Notes:

1. Maximum tune up output power P_{max} is used to configure EUT during RF tune up procedures. The maximum allowed output power is equal to maximum tune up output power + 1dB device design uncertainty.
2. Measurement Condition : All conducted power and SAR measurements in this report (Part 1 test) were performed by setting *Reserve_power_margin* (Smart Transmit EFS entry) to 0 dB.
3. If P_{Limit} is higher than P_{max} for some modes / bands, The modes/bands will operate at a power level up to P_{max}.

6.4. Maximum Allowed Output Power

Maximum allowed output power means that Pmax or PLimit + 1dB device uncertainty for each DSI.

RF Air interface	Antenna	Mode	Maximum allowed output power (dBm)	
			DSI = 0	DSI = 1
W-CDMA Band II	Main 2 Ant.	R99	**23.5**	**17.5**
		HSDPA	**22.5**	**17.0**
		HSUPA	**22.5**	**17.0**
W-CDMA Band IV	Main 2 Ant.	R99	**23.5**	**17.0**
		HSDPA	**22.5**	**16.0**
		HSUPA	**22.5**	**16.0**
W-CDMA Band V	Main 1 Ant.	R99	**24.5**	**21.0**
		HSDPA	**23.5**	**20.0**
		HSUPA	**23.5**	**20.0**

RF Air interface	Antenna	Mode	Maximum allowed output Power (dBm)	
			DSI = 0	DSI =1
LTE Band 2	Main.2	QPSK	**24.5**	**17.5**
LTE Band 4	Main.2	QPSK	**24.5**	**17.5**
LTE Band 5	Main.1	QPSK	**24.5**	**21.5**
LTE Band 7	Main.2	QPSK	**24.0**	**17.5**
LTE Band 12	Main.1	QPSK	**24.5**	**21.0**
LTE Band 13	Main.1	QPSK	**24.5**	**21.0**
LTE Band 14	Main.1	QPSK	**24.5**	**21.0**
LTE Band 66	Main.2	QPSK	**24.5**	**17.5**

RF Air interface	Antenna	Mode	Maximum allowed output Power (dBm)	
			DSI = 0	DSI =1
NR Band n2	Main.2	DFT-s-OFDM QPSK	**24.5**	**16.5**
NR Band n5	Main.1	DFT-s-OFDM QPSK	**24.5**	**21.5**
NR Band n66	Main.2	DFT-s-OFDM QPSK	**24.5**	**17.5**
NR Band n77	Main.1	DFT-s-OFDM QPSK	**25.0**	**15.0**
NR Band n78	Main.1	DFT-s-OFDM QPSK	**25.0**	**15.0**

Note(s):

1. Detail of DSI(Device State Index) conditions, please refer to Sec.6.5.
2. LTE Band 5, 66 has support UL CA intra-band-continues mode with same target power in each standalone LTE bands. Details of configuration are refer to sec.6.9.
3. NR Bands support SA and NSA mode as same target power.

WLAN maximum output power

RF Air interface	Mode	Max. RF Output Power (dBm)		Reduced. RF Output Power (dBm) *-Note.2 & 3-*	
		Wi-Fi SISO (Ant.1 / Ant.2)	Wi-Fi MIMO (Ant.1 + Ant.2)	Wi-Fi SISO (Ant.1 / Ant.2)	Wi-Fi MIMO (Ant.1 + Ant.2)
WiFi 2.4 GHz	802.11b	**17.0**		**13.0**	
	802.11g	**16.0**	**19.0**	**13.0**	**16.0**
	802.11n HT20	**16.0**	**19.0**	**13.0**	**16.0**
	802.11ax HE20	**15.0**	**18.0**	**13.0**	**16.0**
WiFi 5 GHz	802.11a	**15.0**	**18.0**	**11.0**	**14.0**
	802.11n HT20	**15.0**	**18.0**	**11.0**	**14.0**
	802.11n HT40	**13.0**	**16.0**	**11.0**	**14.0**
	802.11ac VHT20	**14.0**	**17.0**	**11.0**	**14.0**
	802.11ac VHT40	**13.0**	**16.0**	**11.0**	**14.0**
	802.11ac VHT80	**13.0**	**16.0**	**11.0**	**14.0**
	802.11ax HE20	**14.0**	**17.0**	**11.0**	**14.0**
	802.11ax HE40	**11.0**	**14.0**	**11.0**	**14.0**
	802.11ax HE80	**11.0**	**14.0**	**11.0**	**14.0**
Bluetooth-BR		**16.0**			
Bluetooth-EDR		**15.0**			
Bluetooth-LE_1Mbps		**8.0**			
Bluetooth-LE_2Mbps		**8.0**			

Notes:

1. Only Wi-Fi Ant.1 has support Bluetooth tech.
2. When proximity sensor are triggering for 2.4GHz/5GHz antennas, Output power operates as table of Note.2.
3. When WLAN operate RSDB mode or RSDB mode with triggering proximity sensor , Output power operates as table of Note.2.
4. WLAN operation scenarios are refer to section.12.

6.5. Power Back-off Operation

This device supports power back-off modes using triggering proximity sensor. For full details on how power back-off mode operates, refer to the Operational Description.

Technologies Supported	Power Back-off mode	Standalone Exposure Conditions
All WWAN bands	Proximity sensor triggering	O
Wi-Fi 2.4GHz & 5GHz	Proximity sensor triggering	O
Bluetooth	N/A	N/A

Note(s):

Please refer to Section.9 for all power measurements, and Proximity sensor verification is mention at Appendix G.

RF exposure Conditions	Technologuies Supported	DSI conditions	Supportd Power Back-off mode	Description
Standalone	All WWAN bands	DSI = 0	Proximity sensor -Not triggering-	When Device is not within certain distance of user, Proximity sensor is not triggered.
Standalone	All WWAN bands	DSI = 1	Proximity sensor -Triggering-	When Device is within certain distance of user, Proximity sensor is triggered.

Note(s):

This device uses different Device State Index (DSI) to configure different time averaged power levels based on exposure scenarios for WWAN bands.

6.6. General LTE SAR Test and Reporting Considerations

Item	Description						
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band 2	Frequency range: 1850 - 1910 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	18700 /1860	18675/ 1857.5	18650/ 1855	18625/ 1852.5	18615/ 1851.5	18607/ 1850.7
	Mid	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880	18900/ 1880
	High	19100/ 1900	19125/ 1902.5	19150/ 1905	19175/ 1907.5	19185/ 1908.5	19193/ 1909.3
	Band 4	Frequency range: 1710 - 1755 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20050/ 1720	20025/ 1717.5	20000/ 1715	19975/ 1712.5	19965/ 1711.5	19957/ 1710.7
	Mid	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5	20175/ 1732.5
	High	20300/ 1745	20325/ 1747.5	20350/ 1750	20375/ 1752.5	20385/ 1753.5	20393/ 1754.3
	Band 5	Frequency range: 824 - 849 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			20450/ 829	20425/ 826.5	20415/ 825.5	20407/ 824.7
	Mid			20525/ 836.5	20525/ 836.5	20525/ 836.5	20525/ 836.5
	High			20600/ 844	20625/ 846.5	20635/ 847.5	20643/ 848.3
	Band 7	Frequency range: 2500 - 2570 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low	20850 2510	20825 2507.5	20800 2505	20775 2502.5		
	Mid	21100 2535	21100 2535	21100 2535	21100 2535		
	High	21350 2560	21375 2562.5	21400 2565	21425 2567.5		
	Band 12	Frequency range: 699 – 716 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low			23060/ 704	23035/ 701.5	23025/ 700.5	23017/ 699.7
	Mid			23095/ 707.5	23095/ 707.5	23095/ 707.5	23095/ 707.5
	High			23130/ 711	23155/ 713.5	23165/ 714.5	23173/ 715.3
	Band 13	Frequency range: 777 - 787 MHz					
		Channel Bandwidth					
		20 MHz	15 MHz	10 MHz	5 MHz	3 MHz	1.4 MHz
	Low				23205/ 779.5		
	Mid			23230/ 782	23230/ 782		
	High				23255/ 784.5		

General LTE SAR Test and Reporting Considerations (Continued)

Frequency range, Channel Bandwidth, Numbers and Frequencies

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

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

LTE transmitter and antenna implementation

Refer to Appendix A.

Maximum power reduction (MPR)

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

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

MPR Built-in by design

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

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

Power reduction

Yes

Spectrum plots for RB configurations

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

Notes:

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

6.7. NR (Sub 6GHz) SAR Test and Reporting Considerations

Item	Description													
Frequency range, Channel Bandwidth, Numbers and Frequencies	Band n2	Frequency range: 1850 - 1910 MHz												
		Channel Bandwidth (MHz)												
		100	90	80	70	60	50	40	30	25	20	15	10	5
	Low										372000 /1860	371500 /1857.5	371000 /1855	370500 /1852.5
	Mid										376000 /1880	376000 /1880	376000 /1880	376000 /1880
	High										380000 /1900	380500 /1902.5	381000 /1905	381500 /1907.5
	Band n5	Frequency range: 824 - 849 MHz												
		Channel Bandwidth (MHz)												
		100	90	80	70	60	50	40	30	25	20	15	10	5
	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 (MHz)												
		100	90	80	70	60	50	40	30	25	20	15	10	5
	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
	Band n77 -Lower Band-	Frequency range: 3450 - 3550 MHz												
		Channel Bandwidth (MHz)												
		100	90	80	70	60	50	40	30	25	20	15	10	5
	Low										630667 /3460			
	Mid	633333 /3500	633333 /3500	633333 /3500		633333 /3500	633333 /3500	633333 /3500			633333 /3500			
	High										635999 /3540			
	Band n77 -Upper Band-	Frequency range: 3700 - 3980 MHz												
		Channel Bandwidth (MHz)												
		100	90	80	70	60	50	40	30	25	20	15	10	5
	Low	650000 /3750	649668 /3745.02	649334 /3740.01		648668 /3730.02	648334 /3725.01	648000 /3720			647334 /3710.01			
	Low-Mid					653556 /3803.34	652166 /3782.49	651200 /3768			650800 /3762			
	Mid-A	656000 /3840	656000 /3840	656000 /3840			656000 /3840	654400 /3816			654266 /3813.99			
	Mid-B							657600 /3864			657734 /3866.01			
	Mid-High	662000 /3930	662332 /3934.98	662666 /3939.99		658444 /3876.66	659834 /3897.51	660800 /3912			661200 /3918			
	High					663332 /3949.98	663666 /3954.99	664000 /3960			664666 /3969.99			

NR (Sub 6GHz) SAR Test and Reporting Considerations_(Continued)

Item	Description
SCS	NR FDD Bands (n2, n5, n66): 15 kHz, NR TDD Bands (n77, n78): 30 kHz
Modulations Supported in UL	DFT-s-OFDM: π/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 n2	LTE Band 5 / 12 / 13 / 14
LTE Anchor Bands for NR Band n5	LTE Band 2 / 66
LTE Anchor Bands for NR Band n66	LTE Band 5 / 12 / 13 / 14
LTE Anchor Bands for NR Band n77	LTE Band 2 / 12 / 13 /14 / 66

Notes:

1. 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.
2. NR configurations of SAR test were determined according to Section 5.2 of KDB 941225 D05.
3. Except NR Band n77(Only NAS mode), NR Bands has supports both SA and NSA mode.
4. This device has support both NR Band n77 and n78. And n78 was covered by n77. So Only n77 consider for SAR evaluation.

7. RF Exposure Conditions (Test Configurations)

This device's all antennas located in keyboard section of laptop. And This device has not support tablet use conditions. So SAR is required for the bottom surface of the keyboard section with display screen opened at an angle of 90 degree according to KDB 616217 D04.

7.1 Required Test Configurations

The table below identifies the standalone test configurations required for this device.

Antenna	Tx Interface	Pwr Back-off	Rear (bottom of keyboard section)
Main 2	W-CDMA Band II	OFF	Yes
		ON	Yes
Main 2	W-CDMA Band IV	OFF	Yes
		ON	Yes
Main 1	W-CDMA Band V	OFF	Yes
		ON	Yes
Main 2	LTE Band 2	OFF	Yes
		ON	Yes
Main 2	LTE Band 66 / 4	OFF	Yes
		ON	Yes
Main 1	LTE Band 5	OFF	Yes
		ON	Yes
Main 2	LTE Band 7	OFF	Yes
		ON	Yes
Main 1	LTE Band 12	OFF	Yes
		ON	Yes
Main 1	LTE Band 13	OFF	Yes
		ON	Yes
Main 1	LTE Band 14	OFF	Yes
		ON	Yes
Main 2	NR Band n2	OFF	Yes
		ON	Yes
Main 1	NR Band n5	OFF	Yes
		ON	Yes
Main 2	NR Band n66	OFF	Yes
		ON	Yes
Main 1	NR Band n77 / n78	OFF	Yes
		ON	Yes
WLAN Ant.1 & WLAN Ant.2	2.4GHz DTS	OFF	Yes
		ON	Yes
	5GHz UNII	OFF	Yes
		ON	Yes
WLAN MIMO (Ant.1 + Ant.2)	2.4GHz DTS	OFF	Yes
		ON	Yes
	5GHz UNII	OFF	Yes
		ON	Yes
Bluetooth Ant.1	2.4GHz GFSK	N/A	Yes

8. Dielectric Property Measurements & System Check

8.1 Dielectric Property Measurements

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

Tissue Dielectric Parameters

FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz

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

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

IEEE Std 1528-2013

Refer to Table 3 within the IEEE Std 1528-2013

Dielectric Property Measurements Results:

SAR 2 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-26-2021	Head 1750	e'	41.8400	Relative Permittivity (ε_r):	41.84	40.08	4.38	5
		e"	13.9400	Conductivity (σ):	1.36	1.37	-0.92	5
	Head 1710	e'	41.9600	Relative Permittivity (ε_r):	41.96	40.15	4.52	5
		e"	14.1400	Conductivity (σ):	1.34	1.35	-0.15	5
	Head 1755	e'	41.8200	Relative Permittivity (ε_r):	41.82	40.08	4.35	5
		e"	13.9200	Conductivity (σ):	1.36	1.37	-0.98	5
5-26-2021	Head 1900	e'	41.7000	Relative Permittivity (ε_r):	41.70	40.00	4.25	5
		e"	13.6300	Conductivity (σ):	1.44	1.40	2.85	5
	Head 1850	e'	41.7300	Relative Permittivity (ε_r):	41.73	40.00	4.32	5
		e"	13.6600	Conductivity (σ):	1.41	1.40	0.37	5
	Head 1910	e'	41.6900	Relative Permittivity (ε_r):	41.69	40.00	4.22	5
		e"	13.6400	Conductivity (σ):	1.45	1.40	3.47	5
5-30-2021	Head 1750	e'	39.4300	Relative Permittivity (ε_r):	39.43	40.08	-1.63	5
		e"	13.7000	Conductivity (σ):	1.33	1.37	-2.62	5
	Head 1710	e'	39.5100	Relative Permittivity (ε_r):	39.51	40.15	-1.58	5
		e"	13.7700	Conductivity (σ):	1.31	1.35	-2.76	5
	Head 1755	e'	39.4200	Relative Permittivity (ε_r):	39.42	40.08	-1.64	5
		e"	13.6900	Conductivity (σ):	1.34	1.37	-2.62	5
5-30-2021	Head 1900	e'	39.2000	Relative Permittivity (ε_r):	39.20	40.00	-2.00	5
		e"	13.2600	Conductivity (σ):	1.40	1.40	0.06	5
	Head 1850	e'	39.2400	Relative Permittivity (ε_r):	39.24	40.00	-1.90	5
		e"	13.4400	Conductivity (σ):	1.38	1.40	-1.25	5
	Head 1910	e'	39.1900	Relative Permittivity (ε_r):	39.19	40.00	-2.03	5
		e"	13.2400	Conductivity (σ):	1.41	1.40	0.44	5
6-1-2021	Head 5250	e'	35.3300	Relative Permittivity (ε_r):	35.33	35.93	-1.68	5
		e"	15.5600	Conductivity (σ):	4.54	4.70	-3.40	5
	Head 5260	e'	35.3100	Relative Permittivity (ε_r):	35.31	35.92	-1.70	5
		e"	15.5700	Conductivity (σ):	4.55	4.71	-3.37	5
	Head 5600	e'	34.7000	Relative Permittivity (ε_r):	34.70	35.53	-2.35	5
		e"	15.8300	Conductivity (σ):	4.93	5.06	-2.59	5
	Head 5750	e'	34.4000	Relative Permittivity (ε_r):	34.40	35.36	-2.72	5
		e"	15.8900	Conductivity (σ):	5.08	5.21	-2.56	5
	Head 5825	e'	34.2600	Relative Permittivity (ε_r):	34.26	35.30	-2.95	5
		e"	15.8900	Conductivity (σ):	5.15	5.27	-2.34	5
6-4-2021	Head 5250	e'	35.4700	Relative Permittivity (ε_r):	35.47	35.93	-1.29	5
		e"	16.3400	Conductivity (σ):	4.77	4.70	1.44	5
	Head 5260	e'	35.4500	Relative Permittivity (ε_r):	35.45	35.92	-1.31	5
		e"	16.3500	Conductivity (σ):	4.78	4.71	1.48	5
	Head 5600	e'	34.9200	Relative Permittivity (ε_r):	34.92	35.53	-1.73	5
		e"	16.5100	Conductivity (σ):	5.14	5.06	1.59	5
	Head 5750	e'	34.5800	Relative Permittivity (ε_r):	34.58	35.36	-2.21	5
		e"	16.5000	Conductivity (σ):	5.28	5.21	1.18	5
	Head 5825	e'	34.4300	Relative Permittivity (ε_r):	34.43	35.30	-2.46	5
		e"	16.5400	Conductivity (σ):	5.36	5.27	1.65	5

SAR 3 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
4-21-2021	Head 1900	e'	39.1300	Relative Permittivity (ε_r):	39.13	40.00	-2.17	5
		e"	13.5800	Conductivity (σ):	1.43	1.40	2.48	5
	Head 1850	e'	39.2600	Relative Permittivity (ε_r):	39.26	40.00	-1.85	5
		e"	13.6100	Conductivity (σ):	1.40	1.40	0.00	5
	Head 1910	e'	39.1000	Relative Permittivity (ε_r):	39.10	40.00	-2.25	5
		e"	13.5800	Conductivity (σ):	1.44	1.40	3.02	5
4-25-2021	Head 1750	e'	39.8500	Relative Permittivity (ε_r):	39.85	40.08	-0.59	5
		e"	13.9400	Conductivity (σ):	1.36	1.37	-0.92	5
	Head 1710	e'	40.0400	Relative Permittivity (ε_r):	40.04	40.15	-0.26	5
		e"	13.9900	Conductivity (σ):	1.33	1.35	-1.20	5
	Head 1755	e'	39.8300	Relative Permittivity (ε_r):	39.83	40.08	-0.62	5
		e"	13.9300	Conductivity (σ):	1.36	1.37	-0.91	5
4-25-2021	Head 1900	e'	39.2400	Relative Permittivity (ε_r):	39.24	40.00	-1.90	5
		e"	13.5300	Conductivity (σ):	1.43	1.40	2.10	5
	Head 1850	e'	39.3100	Relative Permittivity (ε_r):	39.31	40.00	-1.72	5
		e"	13.6200	Conductivity (σ):	1.40	1.40	0.07	5
	Head 1910	e'	39.2100	Relative Permittivity (ε_r):	39.21	40.00	-1.98	5
		e"	13.5100	Conductivity (σ):	1.43	1.40	2.48	5
4-28-2021	Head 1750	e'	39.2900	Relative Permittivity (ε_r):	39.29	40.08	-1.98	5
		e"	13.7400	Conductivity (σ):	1.34	1.37	-2.34	5
	Head 1710	e'	39.5100	Relative Permittivity (ε_r):	39.51	40.15	-1.58	5
		e"	13.8600	Conductivity (σ):	1.32	1.35	-2.12	5
	Head 1755	e'	39.2600	Relative Permittivity (ε_r):	39.26	40.08	-2.04	5
		e"	13.7200	Conductivity (σ):	1.34	1.37	-2.40	5
5-31-2021	Head 3600	e'	38.7400	Relative Permittivity (ε_r):	38.74	37.82	2.44	5
		e"	14.8200	Conductivity (σ):	2.97	3.01	-1.57	5
	Head 3650	e'	38.6300	Relative Permittivity (ε_r):	38.63	37.76	2.31	5
		e"	14.8900	Conductivity (σ):	3.02	3.07	-1.41	5
	Head 3700	e'	38.5400	Relative Permittivity (ε_r):	38.54	37.70	2.22	5
		e"	14.9900	Conductivity (σ):	3.08	3.12	-1.04	5
	Head 3750	e'	38.4800	Relative Permittivity (ε_r):	38.48	37.64	2.22	5
		e"	15.0800	Conductivity (σ):	3.14	3.17	-0.73	5
	Head 3800	e'	38.4800	Relative Permittivity (ε_r):	38.48	37.59	2.37	5
		e"	15.1500	Conductivity (σ):	3.20	3.22	-0.54	5
5-31-2021	Head 3750	e'	38.4800	Relative Permittivity (ε_r):	38.48	37.64	2.22	5
		e"	15.0800	Conductivity (σ):	3.14	3.17	-0.73	5
	Head 3800	e'	38.4800	Relative Permittivity (ε_r):	38.48	37.59	2.37	5
		e"	15.1500	Conductivity (σ):	3.20	3.22	-0.54	5
	Head 3900	e'	38.3600	Relative Permittivity (ε_r):	38.36	37.47	2.37	5
		e"	15.2400	Conductivity (σ):	3.30	3.32	-0.48	5
	Head 3930	e'	38.3100	Relative Permittivity (ε_r):	38.31	37.44	2.33	5
		e"	15.2900	Conductivity (σ):	3.34	3.35	-0.31	5
	Head 3950	e'	38.2900	Relative Permittivity (ε_r):	38.29	37.42	2.34	5
		e"	15.3200	Conductivity (σ):	3.36	3.37	-0.21	5
6-4-2021	Head 2450	e'	40.8400	Relative Permittivity (ε_r):	40.84	39.20	4.18	5
		e"	13.6000	Conductivity (σ):	1.85	1.80	2.93	5
	Head 2400	e'	40.9000	Relative Permittivity (ε_r):	40.90	39.30	4.08	5
		e"	13.5900	Conductivity (σ):	1.81	1.75	3.53	5
	Head 2480	e'	40.7900	Relative Permittivity (ε_r):	40.79	39.16	4.16	5
		e"	13.6000	Conductivity (σ):	1.88	1.83	2.34	5

SAR 3 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
6-4-2021	Head 5250	e'	36.1200	Relative Permittivity (ϵ_r):	36.12	35.93	0.52	5
		e"	15.5600	Conductivity (σ):	4.54	4.70	-3.40	5
	Head 5260	e'	36.1000	Relative Permittivity (ϵ_r):	36.10	35.92	0.50	5
		e"	15.5700	Conductivity (σ):	4.55	4.71	-3.37	5
	Head 5600	e'	35.4700	Relative Permittivity (ϵ_r):	35.47	35.53	-0.18	5
		e"	15.8500	Conductivity (σ):	4.94	5.06	-2.47	5
	Head 5750	e'	35.2100	Relative Permittivity (ϵ_r):	35.21	35.36	-0.43	5
		e"	15.9800	Conductivity (σ):	5.11	5.21	-2.01	5
	Head 5825	e'	35.0900	Relative Permittivity (ϵ_r):	35.09	35.30	-0.59	5
		e"	16.0300	Conductivity (σ):	5.19	5.27	-1.48	5
6-7-2021	Head 2450	e'	37.9700	Relative Permittivity (ϵ_r):	37.97	39.20	-3.14	5
		e"	13.5800	Conductivity (σ):	1.85	1.80	2.78	5
	Head 2400	e'	38.0300	Relative Permittivity (ϵ_r):	38.03	39.30	-3.22	5
		e"	13.5200	Conductivity (σ):	1.80	1.75	3.00	5
	Head 2480	e'	37.9400	Relative Permittivity (ϵ_r):	37.94	39.16	-3.12	5
		e"	13.5600	Conductivity (σ):	1.87	1.83	2.04	5
6-7-2021	Head 3600	e'	38.4900	Relative Permittivity (ϵ_r):	38.49	37.82	1.78	5
		e"	15.0000	Conductivity (σ):	3.00	3.01	-0.38	5
	Head 3650	e'	38.4100	Relative Permittivity (ϵ_r):	38.41	37.76	1.73	5
		e"	15.0500	Conductivity (σ):	3.05	3.07	-0.35	5
	Head 3700	e'	38.2900	Relative Permittivity (ϵ_r):	38.29	37.70	1.56	5
		e"	15.0700	Conductivity (σ):	3.10	3.12	-0.51	5
	Head 3750	e'	38.2100	Relative Permittivity (ϵ_r):	38.21	37.64	1.50	5
		e"	15.1600	Conductivity (σ):	3.16	3.17	-0.20	5
	Head 3800	e'	38.1200	Relative Permittivity (ϵ_r):	38.12	37.59	1.42	5
		e"	15.1300	Conductivity (σ):	3.20	3.22	-0.67	5
6-7-2021	Head 3750	e'	38.2100	Relative Permittivity (ϵ_r):	38.21	37.64	1.50	5
		e"	15.1600	Conductivity (σ):	3.16	3.17	-0.20	5
	Head 3800	e'	38.1200	Relative Permittivity (ϵ_r):	38.12	37.59	1.42	5
		e"	15.1300	Conductivity (σ):	3.20	3.22	-0.67	5
	Head 3900	e'	37.9300	Relative Permittivity (ϵ_r):	37.93	37.47	1.22	5
		e"	15.2100	Conductivity (σ):	3.30	3.32	-0.68	5
	Head 3930	e'	37.8400	Relative Permittivity (ϵ_r):	37.84	37.44	1.07	5
		e"	15.1900	Conductivity (σ):	3.32	3.35	-0.96	5
	Head 3950	e'	37.7500	Relative Permittivity (ϵ_r):	37.75	37.42	0.89	5
		e"	15.2100	Conductivity (σ):	3.34	3.37	-0.93	5
6-10-2021	Head 5250	e'	35.7600	Relative Permittivity (ϵ_r):	35.76	35.93	-0.48	5
		e"	16.0600	Conductivity (σ):	4.69	4.70	-0.30	5
	Head 5260	e'	35.7400	Relative Permittivity (ϵ_r):	35.74	35.92	-0.51	5
		e"	16.0600	Conductivity (σ):	4.70	4.71	-0.32	5
	Head 5600	e'	35.1200	Relative Permittivity (ϵ_r):	35.12	35.53	-1.16	5
		e"	16.1500	Conductivity (σ):	5.03	5.06	-0.62	5
	Head 5750	e'	34.8300	Relative Permittivity (ϵ_r):	34.83	35.36	-1.51	5
		e"	16.1700	Conductivity (σ):	5.17	5.21	-0.84	5
	Head 5825	e'	34.7200	Relative Permittivity (ϵ_r):	34.72	35.30	-1.64	5
		e"	16.1700	Conductivity (σ):	5.24	5.27	-0.62	5
6-11-2021	Head 3500	e'	39.4700	Relative Permittivity (ϵ_r):	39.47	37.93	4.06	5
		e"	14.3800	Conductivity (σ):	2.80	2.91	-3.88	5
	Head 3560	e'	39.3300	Relative Permittivity (ϵ_r):	39.33	37.86	3.88	5
		e"	14.4000	Conductivity (σ):	2.85	2.97	-4.12	5
	Head 3600	e'	39.3000	Relative Permittivity (ϵ_r):	39.30	37.82	3.93	5
		e"	14.4400	Conductivity (σ):	2.89	3.01	-4.10	5
	Head 3690	e'	39.3600	Relative Permittivity (ϵ_r):	39.36	37.71	4.37	5
		e"	14.5900	Conductivity (σ):	2.99	3.11	-3.62	5
	Head 3700	e'	39.3700	Relative Permittivity (ϵ_r):	39.37	37.70	4.43	5
		e"	14.6100	Conductivity (σ):	3.01	3.12	-3.55	5

SAR 4 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-5-2021	Head 2450	e'	39.6300	Relative Permittivity (ϵ_r):	39.63	39.20	1.10	5
		e"	13.5700	Conductivity (σ):	1.85	1.80	2.70	5
	Head 2400	e'	39.8200	Relative Permittivity (ϵ_r):	39.82	39.30	1.33	5
		e"	13.3700	Conductivity (σ):	1.78	1.75	1.86	5
	Head 2480	e'	39.5100	Relative Permittivity (ϵ_r):	39.51	39.16	0.89	5
		e"	13.6600	Conductivity (σ):	1.88	1.83	2.80	5
5-10-2021	Head 2450	e'	38.6000	Relative Permittivity (ϵ_r):	38.60	39.20	-1.53	5
		e"	13.0000	Conductivity (σ):	1.77	1.80	-1.61	5
	Head 2400	e'	38.7500	Relative Permittivity (ϵ_r):	38.75	39.30	-1.39	5
		e"	12.8400	Conductivity (σ):	1.71	1.75	-2.18	5
	Head 2480	e'	38.5000	Relative Permittivity (ϵ_r):	38.50	39.16	-1.69	5
		e"	13.0500	Conductivity (σ):	1.80	1.83	-1.80	5

SAR 5 Room

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
5-24-2021	Head 750	e'	43.0900	Relative Permittivity (ϵ_r):	43.09	41.96	2.69	5
		e"	21.4800	Conductivity (σ):	0.90	0.89	0.30	5
	Head 680	e'	43.3800	Relative Permittivity (ϵ_r):	43.38	42.32	2.50	5
		e"	22.9200	Conductivity (σ):	0.87	0.89	-2.38	5
	Head 795	e'	42.9400	Relative Permittivity (ϵ_r):	42.94	41.73	2.90	5
		e"	20.6700	Conductivity (σ):	0.91	0.90	1.91	5
5-24-2021	Head 835	e'	42.7900	Relative Permittivity (ϵ_r):	42.79	41.50	3.11	5
		e"	19.9200	Conductivity (σ):	0.92	0.90	2.76	5
	Head 820	e'	42.8400	Relative Permittivity (ϵ_r):	42.84	41.60	2.97	5
		e"	20.2000	Conductivity (σ):	0.92	0.90	2.51	5
	Head 850	e'	42.7400	Relative Permittivity (ϵ_r):	42.74	41.50	2.99	5
		e"	19.6600	Conductivity (σ):	0.93	0.92	1.55	5
5-27-2021	Head 835	e'	41.2900	Relative Permittivity (ϵ_r):	41.29	41.50	-0.51	5
		e"	19.9300	Conductivity (σ):	0.93	0.90	2.81	5
	Head 820	e'	41.3300	Relative Permittivity (ϵ_r):	41.33	41.60	-0.66	5
		e"	20.1800	Conductivity (σ):	0.92	0.90	2.41	5
	Head 850	e'	41.2600	Relative Permittivity (ϵ_r):	41.26	41.50	-0.58	5
		e"	19.7000	Conductivity (σ):	0.93	0.92	1.76	5
5-27-2021	Head 2600	e'	38.1400	Relative Permittivity (ϵ_r):	38.14	39.01	-2.23	5
		e"	13.5400	Conductivity (σ):	1.96	1.96	-0.24	5
	Head 2500	e'	38.2900	Relative Permittivity (ϵ_r):	38.29	39.14	-2.16	5
		e"	13.5400	Conductivity (σ):	1.88	1.85	1.52	5
	Head 2700	e'	37.9600	Relative Permittivity (ϵ_r):	37.96	38.88	-2.38	5
		e"	13.6400	Conductivity (σ):	2.05	2.07	-1.09	5
5-31-2021	Head 2450	e'	38.7800	Relative Permittivity (ϵ_r):	38.78	39.20	-1.07	5
		e"	13.1500	Conductivity (σ):	1.79	1.80	-0.48	5
	Head 2400	e'	38.8500	Relative Permittivity (ϵ_r):	38.85	39.30	-1.14	5
		e"	13.2000	Conductivity (σ):	1.76	1.75	0.56	5
	Head 2480	e'	38.7500	Relative Permittivity (ϵ_r):	38.75	39.16	-1.05	5
		e"	13.1300	Conductivity (σ):	1.81	1.83	-1.19	5
5-31-2021	Head 2600	e'	38.6100	Relative Permittivity (ϵ_r):	38.61	39.01	-1.03	5
		e"	13.2000	Conductivity (σ):	1.91	1.96	-2.75	5
	Head 2500	e'	38.7300	Relative Permittivity (ϵ_r):	38.73	39.14	-1.04	5
		e"	13.1400	Conductivity (σ):	1.83	1.85	-1.48	5
	Head 2700	e'	38.4100	Relative Permittivity (ϵ_r):	38.41	38.88	-1.22	5
		e"	13.2600	Conductivity (σ):	1.99	2.07	-3.84	5
6-1-2021	Head 750	e'	42.2600	Relative Permittivity (ϵ_r):	42.26	41.96	0.71	5
		e"	21.5700	Conductivity (σ):	0.90	0.89	0.72	5
	Head 680	e'	42.4900	Relative Permittivity (ϵ_r):	42.49	42.32	0.40	5
		e"	23.1200	Conductivity (σ):	0.87	0.89	-1.52	5
	Head 795	e'	42.1100	Relative Permittivity (ϵ_r):	42.11	41.73	0.91	5
		e"	20.7000	Conductivity (σ):	0.92	0.90	2.06	5
6-1-2021	Head 835	e'	41.9800	Relative Permittivity (ϵ_r):	41.98	41.50	1.16	5
		e"	20.0100	Conductivity (σ):	0.93	0.90	3.23	5
	Head 820	e'	42.0200	Relative Permittivity (ϵ_r):	42.02	41.60	1.00	5
		e"	20.2600	Conductivity (σ):	0.92	0.90	2.81	5
	Head 850	e'	41.9600	Relative Permittivity (ϵ_r):	41.96	41.50	1.11	5
		e"	19.7600	Conductivity (σ):	0.93	0.92	2.07	5
6-3-2021	Head 1900	e'	40.6900	Relative Permittivity (ϵ_r):	40.69	40.00	1.72	5
		e"	13.5900	Conductivity (σ):	1.44	1.40	2.55	5
	Head 1850	e'	40.7400	Relative Permittivity (ϵ_r):	40.74	40.00	1.85	5
		e"	13.6800	Conductivity (σ):	1.41	1.40	0.51	5
	Head 1910	e'	40.6700	Relative Permittivity (ϵ_r):	40.67	40.00	1.68	5
		e"	13.5800	Conductivity (σ):	1.44	1.40	3.02	5

SAR 5 Room (Continued)

Date	Freq. (MHz)	Liquid Parameters			Measured	Target	Delta (%)	Limit ±(%)
6-3-2021	Head 2450	e'	39.8800	Relative Permittivity (ϵ_r):	39.88	39.20	1.73	5
		e"	13.3500	Conductivity (σ):	1.82	1.80	1.04	5
	Head 2400	e'	39.9800	Relative Permittivity (ϵ_r):	39.98	39.30	1.74	5
		e"	13.3700	Conductivity (σ):	1.78	1.75	1.86	5
	Head 2480	e'	39.8300	Relative Permittivity (ϵ_r):	39.83	39.16	1.71	5
		e"	13.3300	Conductivity (σ):	1.84	1.83	0.31	5
6-3-2021	Head 2600	e'	39.6300	Relative Permittivity (ϵ_r):	39.63	39.01	1.59	5
		e"	13.3900	Conductivity (σ):	1.94	1.96	-1.35	5
	Head 2500	e'	39.8000	Relative Permittivity (ϵ_r):	39.80	39.14	1.69	5
		e"	13.3300	Conductivity (σ):	1.85	1.85	-0.06	5
	Head 2700	e'	39.4300	Relative Permittivity (ϵ_r):	39.43	38.88	1.40	5
		e"	13.4200	Conductivity (σ):	2.01	2.07	-2.68	5
6-11-2021	Head 835	e'	42.0200	Relative Permittivity (ϵ_r):	42.02	41.50	1.25	5
		e"	19.6800	Conductivity (σ):	0.91	0.90	1.52	5
	Head 820	e'	42.0600	Relative Permittivity (ϵ_r):	42.06	41.60	1.10	5
		e"	19.9200	Conductivity (σ):	0.91	0.90	1.09	5
	Head 850	e'	42.0000	Relative Permittivity (ϵ_r):	42.00	41.50	1.20	5
		e"	19.4400	Conductivity (σ):	0.92	0.92	0.41	5
6-11-2021	Head 1750	e'	40.1000	Relative Permittivity (ϵ_r):	40.10	40.08	0.04	5
		e"	14.0000	Conductivity (σ):	1.36	1.37	-0.49	5
	Head 1710	e'	40.1700	Relative Permittivity (ϵ_r):	40.17	40.15	0.06	5
		e"	14.0800	Conductivity (σ):	1.34	1.35	-0.57	5
	Head 1755	e'	40.0900	Relative Permittivity (ϵ_r):	40.09	40.08	0.03	5
		e"	13.9800	Conductivity (σ):	1.36	1.37	-0.55	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	2020-02-24	750	1g	8.54
				10g	5.59
D835V2	4d194	2020-03-20	835	1g	9.76
				10g	6.42
D1750V2	1125	2020-02-21	1750	1g	36.50
				10g	19.20
D1900V2	5d199	2020-03-19	1900	1g	40.50
				10g	21.00
D2450V2	939	2019-07-25	2450	1g	53.20
				10g	25.10
D2600V2	1097	2019-09-19	2600	1g	57.30
				10g	25.70
D3500V2	1121	2021-04-21	3500	1g	66.30
				10g	25.00
D3700V2	1026	2020-09-18	3700	1g	67.10
				10g	24.30
D3700V2	1036	2021-05-21	3700	1g	67.90
				10g	24.30
D3900V2	1069	2021-04-21	3900	1g	70.10
				10g	24.30
D5GHzV2	1209	2020-02-27	5250	1g	79.90
				10g	22.60
	1209	2020-02-27	5600	1g	83.60
				10g	23.60
	1209	2020-02-27	5750	1g	80.20
				10g	22.60

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 2 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
5-26-2021	D1750V2	1125	Head	1g	3.72	37.2	36.50	1.92	
				10g	1.95	19.5	19.20	1.56	
5-26-2021	D1900V2	5d199	Head	1g	4.11	41.1	40.50	1.48	
				10g	2.11	21.1	21.00	0.48	
5-30-2021	D1750V2	1125	Head	1g	3.67	36.7	36.50	0.55	
				10g	1.92	19.2	19.20	0.00	
5-30-2021	D1900V2	5d199	Head	1g	3.88	38.8	40.50	-4.20	
				10g	1.99	19.9	21.00	-5.24	
6-1-2021	D5GHzV2 (5250)	1209	Head	1g	8.49	84.9	79.90	6.26	1, 2
				10g	2.43	24.3	22.60	7.52	
6-1-2021	D5GHzV2 (5600)	1209	Head	1g	8.57	85.7	83.60	2.51	
				10g	2.44	24.4	23.60	3.39	
6-1-2021	D5GHzV2 (5750)	1209	Head	1g	7.99	79.9	80.20	-0.37	
				10g	2.28	22.8	22.60	0.88	
6-4-2021	D5GHzV2 (5750)	1209	Head	1g	8.52	85.2	80.20	6.23	
				10g	2.39	23.9	22.60	5.75	

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			
4-21-2021	D1900V2	5d199	Head	1g	4.18	41.8	40.50	3.21	
				10g	2.20	22.0	21.00	4.76	
4-25-2021	D1750V2	1125	Head	1g	3.67	36.7	36.50	0.55	
				10g	1.96	19.6	19.20	2.08	
4-25-2021	D1900V2	5d199	Head	1g	3.86	38.6	40.50	-4.69	3, 4
				10g	2.02	20.2	21.00	-3.81	
4-28-2021	D1750V2	1125	Head	1g	3.68	36.8	36.50	0.82	
				10g	1.97	19.7	19.20	2.60	
5-31-2021	D3700V2	1026	Head	1g	7.05	70.5	67.10	5.07	5, 6
				10g	2.64	26.4	24.30	8.64	
5-31-2021	D3900V2	1069	Head	1g	6.77	67.7	70.10	-3.42	7, 8
				10g	2.44	24.4	24.30	0.41	
6-4-2021	D2450V2	939	Head	1g	5.21	52.1	53.20	-2.07	
				10g	2.44	24.4	25.10	-2.79	
6-4-2021	D5GHzV2 (5250)	1209	Head	1g	8.22	82.2	79.90	2.88	
				10g	2.36	23.6	22.60	4.42	
6-4-2021	D5GHzV2 (5600)	1209	Head	1g	8.86	88.6	83.60	5.98	
				10g	2.51	25.1	23.60	6.36	
6-4-2021	D5GHzV2 (5750)	1209	Head	1g	7.87	78.7	80.20	-1.87	
				10g	2.24	22.4	22.60	-0.88	
6-7-2021	D2450V2	939	Head	1g	5.48	54.8	53.20	3.01	
				10g	2.56	25.6	25.10	1.99	
6-7-2021	D3700V2	1036	Head	1g	6.88	68.8	67.90	1.33	9, 10
				10g	2.56	25.6	24.30	5.35	
6-7-2021	D3900V2	1069	Head	1g	6.99	69.9	70.10	-0.29	
				10g	2.50	25.0	24.30	2.88	
6-10-2021	D5GHzV2 (5750)	1209	Head	1g	7.79	77.9	80.20	-2.87	
				10g	2.22	22.2	22.60	-1.77	
6-11-2021	D3500V2	1121	Head	1g	6.39	63.9	66.30	-3.62	11, 12
				10g	2.46	24.6	25.00	-1.60	

SAR 4 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
5-5-2021	D2450V2	939	Head	1g	5.46	54.6	53.20	2.63	13, 14
				10g	2.51	25.1	25.10	0.00	
5-10-2021	D2450V2	939	Head	1g	5.22	52.2	53.20	-1.88	
				10g	2.38	23.8	25.10	-5.18	

SAR 5 Room

Date Tested	System Dipole		T.S. Liquid		Measured Results		Target (Ref. Value)	Delta ±10 %	Plot No.
	Type	Serial #			Zoom Scan to 100 mW	Normalize to 1 W			
5-24-2021	D750V3	1122	Head	1g	0.82	8.2	8.54	-4.33	15, 16
				10g	0.54	5.4	5.59	-3.58	
5-24-2021	D835V2	4d194	Head	1g	1.00	10.0	9.76	1.95	17, 18
				10g	0.65	6.5	6.42	1.87	
5-27-2021	D835V2	4d194	Head	1g	1.00	10.0	9.76	1.95	
				10g	0.65	6.5	6.42	1.25	
5-27-2021	D2600V2	1097	Head	1g	5.84	58.4	57.30	1.92	19, 20
				10g	2.63	26.3	25.70	2.33	
5-31-2021	D2450V2	939	Head	1g	5.61	56.1	53.20	5.45	21, 22
				10g	2.61	26.1	25.10	3.98	
5-31-2021	D2600V2	1097	Head	1g	5.74	57.4	57.30	0.17	
				10g	2.59	25.9	25.70	0.78	
6-1-2021	D750V3	1122	Head	1g	0.85	8.5	8.54	-0.12	
				10g	0.56	5.6	5.59	0.18	
6-1-2021	D835V2	4d194	Head	1g	0.98	9.8	9.76	0.61	
				10g	0.64	6.4	6.42	0.31	
6-3-2021	D1900V2	5d199	Head	1g	3.98	39.8	40.50	-1.73	
				10g	2.08	20.8	21.00	-0.95	
6-3-2021	D2450V2	939	Head	1g	5.32	53.2	53.20	0.00	
				10g	2.49	24.9	25.10	-0.80	
6-3-2021	D2600V2	1097	Head	1g	5.77	57.7	57.30	0.70	
				10g	2.61	26.1	25.70	1.56	
6-11-2021	D835V2	4d194	Head	1g	0.98	9.8	9.76	0.20	
				10g	0.65	6.5	6.42	1.25	
6-11-2021	D1750V2	1125	Head	1g	3.75	37.5	36.50	2.74	23, 24
				10g	2.01	20.1	19.20	4.69	

9. Conducted Output Power Measurements

9.1 W-CDMA

Release 99 Setup Procedures used to establish the test signals

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

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

HSDPA Setup Procedures used to establish the test signals

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

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

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

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

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

HSPA+

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

W-CDMA Band II Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)					
				DSI = 0			DSI = 1		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	23.0	N/A	23.5	17.0	N/A	17.5
		9400	1880.0	22.9			17.0		
		9538	1907.6	23.0			17.0		
HSDPA	Subtest 1	9262	1852.4	22.0	0	22.5	16.0	0	17.5
		9400	1880.0	21.9			16.0		
		9538	1907.6	22.0			16.0		
	Subtest 2	9262	1852.4	22.0	0	22.5	16.0	0	17.5
		9400	1880.0	21.9			16.0		
		9538	1907.6	22.0			16.0		
	Subtest 3	9262	1852.4	21.5	0.5	22.0	15.5	0.5	17.0
		9400	1880.0	21.4			15.5		
		9538	1907.6	21.5			15.5		
	Subtest 4	9262	1852.4	21.5	0.5	22.0	15.5	0.5	17.0
		9400	1880.0	21.4			15.5		
		9538	1907.6	21.5			15.5		
HSUPA	Subtest 1	9262	1852.4	22.0	0	22.5	16.0	0	17.5
		9400	1880.0	21.9			15.9		
		9538	1907.6	22.0			16.0		
	Subtest 2	9262	1852.4	20.0	2	20.5	14.1	2	15.5
		9400	1880.0	19.9			14.0		
		9538	1907.6	20.0			14.0		
	Subtest 3	9262	1852.4	21.0	1	21.5	15.0	1	16.5
		9400	1880.0	21.0			14.9		
		9538	1907.6	21.0			14.9		
	Subtest 4	9262	1852.4	20.0	2	20.5	14.0	2	15.5
		9400	1880.0	20.0			13.9		
		9538	1907.6	20.0			14.0		
	Subtest 5	9262	1852.4	22.0	0	22.5	16.0	0	17.5
		9400	1880.0	22.0			15.9		
		9538	1907.6	22.0			16.0		

W-CDMA Band IV Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)					
				DSI = 0			DSI = 1		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	23.0	N/A	23.5	16.5	N/A	17.0
		1413	1732.6	22.9			16.5		
		1513	1752.6	22.8			16.3		
HSDPA	Subtest 1	1312	1712.4	22.0	0	22.5	15.5	0	16.0
		1413	1732.6	21.9			15.4		
		1513	1752.6	21.8			15.3		
	Subtest 2	1312	1712.4	22.0	0	22.5	15.5	0	16.0
		1413	1732.6	21.9			15.4		
		1513	1752.6	21.8			15.3		
	Subtest 3	1312	1712.4	21.5	0.5	22.0	15.0	0.5	15.5
		1413	1732.6	21.4			14.9		
		1513	1752.6	21.3			14.8		
	Subtest 4	1312	1712.4	21.5	0.5	22.0	15.0	0.5	15.5
		1413	1732.6	21.4			14.9		
		1513	1752.6	21.3			14.8		
HSUPA	Subtest 1	1312	1712.4	22.0	0	22.5	15.5	0	16.0
		1413	1732.6	22.0			15.4		
		1513	1752.6	22.0			15.3		
	Subtest 2	1312	1712.4	20.0	2	20.5	13.5	2	14.0
		1413	1732.6	20.0			13.4		
		1513	1752.6	20.0			13.3		
	Subtest 3	1312	1712.4	21.0	1	21.5	14.5	1	15.0
		1413	1732.6	21.0			14.4		
		1513	1752.6	21.0			14.5		
	Subtest 4	1312	1712.4	20.0	2	20.5	13.5	2	14.0
		1413	1732.6	20.0			13.5		
		1513	1752.6	20.0			13.4		
	Subtest 5	1312	1712.4	22.0	0	22.5	15.5	0	16.0
		1413	1732.6	22.0			15.5		
		1513	1752.6	22.0			15.4		

W-CDMA Band V Measured Results

Mode		UL Ch No.	Freq. (MHz)	Maximum Allowed Average Power (dBm)					
				DSI = 0			DSI = 1		
				Measured Pwr	MPR	Tune-up Limit	Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	24.0	N/A	24.5	20.4	N/A	21.0
		4183	836.6	24.0			20.4		
		4233	846.6	24.0			20.4		
HSDPA	Subtest 1	4132	826.4	23.0	0	23.5	19.4	0	20.0
		4183	836.6	23.0			19.4		
		4233	846.6	23.0			19.4		
	Subtest 2	4132	826.4	23.0	0	23.5	19.4	0	20.0
		4183	836.6	23.0			19.4		
		4233	846.6	23.0			19.4		
	Subtest 3	4132	826.4	22.5	0.5	23.0	18.9	0.5	19.5
		4183	836.6	22.5			18.9		
		4233	846.6	22.5			18.9		
	Subtest 4	4132	826.4	22.5	0.5	23.0	18.9	0.5	19.5
		4183	836.6	22.5			18.9		
		4233	846.6	22.5			18.9		
HSUPA	Subtest 1	4132	826.4	23.0	0	23.5	19.4	0	20.0
		4183	836.6	23.0			19.4		
		4233	846.6	23.0			19.4		
	Subtest 2	4132	826.4	21.0	2	21.5	17.4	2	18.0
		4183	836.6	21.0			17.4		
		4233	846.6	21.0			17.4		
	Subtest 3	4132	826.4	22.0	1	22.5	18.4	1	19.0
		4183	836.6	22.0			18.4		
		4233	846.6	22.0			18.4		
	Subtest 4	4132	826.4	21.0	2	21.5	17.4	2	18.0
		4183	836.6	21.0			17.4		
		4233	846.6	21.0			17.4		
	Subtest 5	4132	826.4	22.5	0	23.5	18.8	0	20.0
		4183	836.6	22.5			18.9		
		4233	846.6	22.6			18.9		

9.2 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)

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.

LTE Band 2 Measured Results

LTE Band 2 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				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	23.7	23.6	23.7	0.0	24.5	16.5	16.4	16.4	0.0	17.5
		1	49	23.6	23.6	23.7	0.0	24.5	16.3	16.3	16.5	0.0	17.5
		1	99	23.6	23.6	23.7	0.0	24.5	16.4	16.4	16.5	0.0	17.5
		50	0	22.6	22.5	22.6	1.0	23.5	16.4	16.3	16.3	0.0	17.5
		50	24	22.8	22.7	22.7	1.0	23.5	16.5	16.5	16.5	0.0	17.5
		50	50	22.8	22.7	22.8	1.0	23.5	16.5	16.4	16.5	0.0	17.5
		100	0	22.7	22.6	22.6	1.0	23.5	16.4	16.4	16.4	0.0	17.5
	16QAM	1	0	23.1	23.3	23.3	1.0	23.5	16.8	16.9	16.8	0.0	17.5
		1	49	23.1	23.2	23.2	1.0	23.5	16.8	16.9	16.8	0.0	17.5
		1	99	23.1	23.3	23.3	1.0	23.5	16.8	16.9	16.9	0.0	17.5
		50	0	21.7	21.6	21.6	2.0	22.5	16.3	16.3	16.4	0.0	17.5
		50	24	21.7	21.8	21.7	2.0	22.5	16.5	16.5	16.4	0.0	17.5
		50	50	21.7	21.8	21.7	2.0	22.5	16.4	16.5	16.5	0.0	17.5
		100	0	21.7	21.7	21.6	2.0	22.5	16.4	16.4	16.4	0.0	17.5
	64QAM	1	0	21.9	21.9	22.3	2.0	22.5	16.7	16.7	16.4	0.0	17.5
		1	49	21.9	22.0	22.4	2.0	22.5	16.6	16.7	16.5	0.0	17.5
		1	99	21.9	22.0	22.4	2.0	22.5	16.7	16.8	16.4	0.0	17.5
		50	0	20.7	20.6	20.6	3.0	21.5	16.4	16.4	16.4	0.0	17.5
		50	24	20.8	20.8	20.7	3.0	21.5	16.5	16.5	16.5	0.0	17.5
		50	50	20.8	20.8	20.8	3.0	21.5	16.5	16.5	16.6	0.0	17.5
		100	0	20.8	20.7	20.6	3.0	21.5	16.5	16.4	16.4	0.0	17.5
	256QAM	1	0	18.4	18.6	18.5	5.0	19.5	16.0	16.3	16.3	0.0	17.5
		1	49	18.6	18.9	18.9	5.0	19.5	16.3	16.6	16.7	0.0	17.5
		1	99	18.5	18.8	18.8	5.0	19.5	16.2	16.5	16.6	0.0	17.5
		50	0	18.7	18.6	18.6	5.0	19.5	16.4	16.3	16.4	0.0	17.5
		50	24	18.8	18.7	18.7	5.0	19.5	16.5	16.5	16.5	0.0	17.5
		50	50	18.8	18.7	18.8	5.0	19.5	16.5	16.4	16.6	0.0	17.5
		100	0	18.8	18.6	18.6	5.0	19.5	16.5	16.4	16.4	0.0	17.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18675	18900	19125			18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz			1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	23.6	23.6	23.7	0.0	24.5	16.3	16.3	16.4	0.0	17.5
		1	37	23.7	23.6	23.6	0.0	24.5	16.4	16.4	16.4	0.0	17.5
		1	74	23.7	23.6	23.7	0.0	24.5	16.4	16.4	16.5	0.0	17.5
		36	0	22.7	22.6	22.6	1.0	23.5	16.5	16.3	16.4	0.0	17.5
		36	20	22.8	22.7	22.6	1.0	23.5	16.5	16.5	16.4	0.0	17.5
		36	39	22.8	22.7	22.7	1.0	23.5	16.5	16.5	16.6	0.0	17.5
		75	0	22.7	22.7	22.6	1.0	23.5	16.5	16.4	16.4	0.0	17.5
	16QAM	1	0	23.0	22.7	23.1	1.0	23.5	16.8	16.3	16.9	0.0	17.5
		1	37	23.2	22.7	23.1	1.0	23.5	17.0	16.4	16.9	0.0	17.5
		1	74	23.1	22.7	23.1	1.0	23.5	16.9	16.4	16.9	0.0	17.5
		36	0	21.7	21.6	21.7	2.0	22.5	16.4	16.3	16.4	0.0	17.5
		36	20	21.8	21.7	21.7	2.0	22.5	16.5	16.5	16.5	0.0	17.5
		36	39	21.8	21.7	21.8	2.0	22.5	16.5	16.4	16.6	0.0	17.5
		75	0	21.7	21.7	21.7	2.0	22.5	16.4	16.4	16.4	0.0	17.5
	64QAM	1	0	22.2	22.0	21.8	2.0	22.5	16.4	16.3	16.6	0.0	17.5
		1	37	22.3	22.0	21.9	2.0	22.5	16.5	16.4	16.7	0.0	17.5
		1	74	22.3	22.0	21.9	2.0	22.5	16.5	16.4	16.7	0.0	17.5
		36	0	20.7	20.6	20.7	3.0	21.5	16.5	16.3	16.4	0.0	17.5
		36	20	20.8	20.8	20.8	3.0	21.5	16.6	16.5	16.5	0.0	17.5
		36	39	20.8	20.8	20.9	3.0	21.5	16.6	16.5	16.6	0.0	17.5
		75	0	20.8	20.7	20.7	3.0	21.5	16.5	16.5	16.4	0.0	17.5
	256QAM	1	0	18.8	19.0	18.3	5.0	19.5	16.1	16.4	16.7	0.0	17.5
		1	37	18.9	19.1	18.5	5.0	19.5	16.3	16.6	16.9	0.0	17.5
		1	74	18.9	19.1	18.4	5.0	19.5	16.2	16.6	16.9	0.0	17.5
		36	0	18.7	18.6	18.6	5.0	19.5	16.4	16.3	16.4	0.0	17.5
		36	20	18.8	18.7	18.7	5.0	19.5	16.5	16.4	16.5	0.0	17.5
		36	39	18.8	18.7	18.8	5.0	19.5	16.5	16.5	16.5	0.0	17.5
		75	0	18.8	18.7	18.7	5.0	19.5	16.5	16.4	16.4	0.0	17.5

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	23.4	23.4	23.8	0.0	24.5	16.1	16.1	16.5	0.0	17.5
		1	25	23.7	23.6	23.7	0.0	24.5	16.5	16.5	16.5	0.0	17.5
		1	49	23.5	23.4	23.8	0.0	24.5	16.2	16.3	16.5	0.0	17.5
		25	0	22.8	22.6	22.6	1.0	23.5	16.5	16.4	16.4	0.0	17.5
		25	12	22.9	22.8	22.8	1.0	23.5	16.6	16.5	16.6	0.0	17.5
		25	25	22.8	22.7	22.7	1.0	23.5	16.5	16.4	16.5	0.0	17.5
		50	0	22.8	22.7	22.7	1.0	23.5	16.5	16.5	16.5	0.0	17.5
	16QAM	1	0	22.6	22.4	23.1	1.0	23.5	16.3	16.1	17.0	0.0	17.5
		1	25	22.8	22.8	23.1	1.0	23.5	16.5	16.4	17.0	0.0	17.5
		1	49	22.6	22.5	23.1	1.0	23.5	16.3	16.2	17.0	0.0	17.5
		25	0	21.9	21.6	21.7	2.0	22.5	16.6	16.4	16.5	0.0	17.5
		25	12	22.0	21.8	21.8	2.0	22.5	16.7	16.6	16.7	0.0	17.5
		25	25	21.9	21.7	21.7	2.0	22.5	16.6	16.5	16.5	0.0	17.5
		50	0	21.8	21.7	21.7	2.0	22.5	16.5	16.4	16.5	0.0	17.5
	64QAM	1	0	21.8	21.7	21.9	2.0	22.5	16.3	16.3	16.9	0.0	17.5
		1	25	22.1	22.1	21.9	2.0	22.5	16.6	16.6	16.9	0.0	17.5
		1	49	21.8	21.9	21.9	2.0	22.5	16.4	16.4	16.9	0.0	17.5
		25	0	20.9	20.7	20.7	3.0	21.5	16.6	16.4	16.5	0.0	17.5
		25	12	21.0	20.9	20.9	3.0	21.5	16.7	16.6	16.7	0.0	17.5
		25	25	20.9	20.8	20.8	3.0	21.5	16.6	16.5	16.6	0.0	17.5
		50	0	20.8	20.7	20.8	3.0	21.5	16.6	16.4	16.5	0.0	17.5
	256QAM	1	0	18.6	18.9	18.2	5.0	19.5	16.1	16.2	16.0	0.0	17.5
		1	25	19.0	19.3	18.6	5.0	19.5	16.3	16.5	16.5	0.0	17.5
		1	49	18.7	19.1	18.3	5.0	19.5	16.1	16.3	16.3	0.0	17.5
		25	0	18.9	18.7	18.8	5.0	19.5	16.6	16.5	16.5	0.0	17.5
		25	12	19.0	18.9	18.9	5.0	19.5	16.7	16.6	16.6	0.0	17.5
		25	25	18.8	18.8	18.8	5.0	19.5	16.6	16.5	16.6	0.0	17.5
		50	0	18.8	18.8	18.8	5.0	19.5	16.5	16.5	16.6	0.0	17.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18625	18900	19175			18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz			1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	23.8	23.7	23.6	0.0	24.5	16.6	16.5	16.4	0.0	17.5
		1	12	23.8	23.8	23.7	0.0	24.5	16.6	16.6	16.5	0.0	17.5
		1	24	23.8	23.7	23.7	0.0	24.5	16.5	16.5	16.4	0.0	17.5
		12	0	22.9	22.7	22.8	1.0	23.5	16.6	16.4	16.5	0.0	17.5
		12	7	22.9	22.8	22.8	1.0	23.5	16.7	16.6	16.6	0.0	17.5
		12	13	22.8	22.8	22.8	1.0	23.5	16.6	16.5	16.5	0.0	17.5
		25	0	22.8	22.8	22.7	1.0	23.5	16.6	16.5	16.5	0.0	17.5
	16QAM	1	0	23.0	22.8	23.2	1.0	23.5	16.8	16.6	16.7	0.0	17.5
		1	12	23.1	22.9	23.3	1.0	23.5	16.8	16.7	16.8	0.0	17.5
		1	24	23.0	22.9	23.2	1.0	23.5	16.7	16.6	16.7	0.0	17.5
		12	0	22.0	21.8	21.9	2.0	22.5	16.7	16.6	16.7	0.0	17.5
		12	7	22.0	21.9	21.9	2.0	22.5	16.7	16.6	16.7	0.0	17.5
		12	13	21.9	21.8	21.9	2.0	22.5	16.7	16.6	16.7	0.0	17.5
		25	0	21.8	21.8	21.8	2.0	22.5	16.6	16.6	16.6	0.0	17.5
	64QAM	1	0	22.2	21.6	22.1	2.0	22.5	16.9	16.7	16.4	0.0	17.5
		1	12	22.2	21.7	22.1	2.0	22.5	17.0	16.8	16.5	0.0	17.5
		1	24	22.1	21.6	22.0	2.0	22.5	16.8	16.7	16.4	0.0	17.5
		12	0	21.0	20.8	20.7	3.0	21.5	16.6	16.6	16.6	0.0	17.5
		12	7	21.0	20.9	20.7	3.0	21.5	16.6	16.6	16.6	0.0	17.5
		12	13	21.0	20.8	20.7	3.0	21.5	16.5	16.6	16.6	0.0	17.5
		25	0	20.9	20.8	20.7	3.0	21.5	16.5	16.5	16.5	0.0	17.5
	256QAM	1	0	18.9	18.4	18.9	5.0	19.5	16.7	16.5	16.2	0.0	17.5
		1	12	19.0	18.6	19.0	5.0	19.5	16.8	16.6	16.4	0.0	17.5
		1	24	18.9	18.5	18.9	5.0	19.5	16.6	16.5	16.2	0.0	17.5
		12	0	18.9	18.8	18.8	5.0	19.5	16.6	16.5	16.5	0.0	17.5
		12	7	19.0	18.8	18.8	5.0	19.5	16.6	16.6	16.6	0.0	17.5
		12	13	18.9	18.8	18.8	5.0	19.5	16.6	16.5	16.6	0.0	17.5
		25	0	19.0	18.8	18.8	5.0	19.5	16.5	16.6	16.6	0.0	17.5

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	23.8	23.6	23.7	0.0	24.5	16.5	16.4	16.6	0.0	17.5
		1	8	23.7	23.6	23.7	0.0	24.5	16.5	16.4	16.6	0.0	17.5
		1	14	23.7	23.6	23.7	0.0	24.5	16.4	16.4	16.5	0.0	17.5
		8	0	22.9	22.7	22.8	1.0	23.5	16.6	16.5	16.6	0.0	17.5
		8	4	22.9	22.8	22.8	1.0	23.5	16.6	16.5	16.6	0.0	17.5
		8	7	22.9	22.8	22.8	1.0	23.5	16.6	16.5	16.6	0.0	17.5
		15	0	22.9	22.8	22.8	1.0	23.5	16.6	16.5	16.6	0.0	17.5
	16QAM	1	0	22.9	22.7	23.2	1.0	23.5	16.7	16.5	16.9	0.0	17.5
		1	8	22.9	22.7	23.2	1.0	23.5	16.6	16.5	17.0	0.0	17.5
		1	14	22.8	22.7	23.1	1.0	23.5	16.6	16.4	16.9	0.0	17.5
		8	0	22.0	21.8	21.9	2.0	22.5	16.7	16.6	16.7	0.0	17.5
		8	4	22.0	21.9	21.9	2.0	22.5	16.7	16.7	16.7	0.0	17.5
		8	7	22.0	21.9	21.9	2.0	22.5	16.7	16.7	16.7	0.0	17.5
		15	0	21.9	21.8	21.8	2.0	22.5	16.6	16.6	16.6	0.0	17.5
	64QAM	1	0	22.2	22.0	21.9	2.0	22.5	16.7	16.7	16.9	0.0	17.5
		1	8	22.1	22.0	21.9	2.0	22.5	16.7	16.8	16.9	0.0	17.5
		1	14	22.1	22.0	21.9	2.0	22.5	16.6	16.7	16.8	0.0	17.5
		8	0	20.9	20.8	20.9	3.0	21.5	16.7	16.5	16.7	0.0	17.5
		8	4	20.9	20.9	20.9	3.0	21.5	16.7	16.6	16.7	0.0	17.5
		8	7	20.9	20.9	20.9	3.0	21.5	16.7	16.6	16.7	0.0	17.5
		15	0	20.9	20.8	20.9	3.0	21.5	16.7	16.6	16.6	0.0	17.5
	256QAM	1	0	18.9	19.3	18.6	5.0	19.5	16.3	16.5	16.8	0.0	17.5
		1	8	18.9	19.4	18.5	5.0	19.5	16.2	16.6	16.9	0.0	17.5
		1	14	18.8	19.3	18.4	5.0	19.5	16.2	16.5	16.7	0.0	17.5
		8	0	19.0	18.8	18.8	5.0	19.5	16.6	16.6	16.7	0.0	17.5
		8	4	19.1	18.9	18.8	5.0	19.5	16.6	16.7	16.7	0.0	17.5
		8	7	19.1	18.9	18.8	5.0	19.5	16.6	16.7	16.7	0.0	17.5
		15	0	19.0	18.9	18.9	5.0	19.5	16.7	16.6	16.7	0.0	17.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				18607	18900	19193			18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz			1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	23.7	23.6	23.7	0.0	24.5	16.4	16.5	16.5	0.0	17.5
		1	3	23.7	23.7	23.7	0.0	24.5	16.5	16.5	16.5	0.0	17.5
		1	5	23.6	23.6	23.6	0.0	24.5	16.4	16.4	16.4	0.0	17.5
		3	0	23.7	23.7	23.7	0.0	24.5	16.4	16.4	16.5	0.0	17.5
		3	1	23.7	23.7	23.7	0.0	24.5	16.5	16.4	16.5	0.0	17.5
		3	3	23.6	23.6	23.7	0.0	24.5	16.4	16.4	16.5	0.0	17.5
		6	0	22.8	22.7	22.7	1.0	23.5	16.5	16.4	16.5	0.0	17.5
	16QAM	1	0	23.3	23.2	23.2	1.0	23.5	16.6	16.6	16.9	0.0	17.5
		1	3	23.3	23.3	23.2	1.0	23.5	16.6	16.6	16.9	0.0	17.5
		1	5	23.3	23.2	23.1	1.0	23.5	16.6	16.6	16.9	0.0	17.5
		3	0	22.9	22.9	22.9	1.0	23.5	16.7	16.5	16.7	0.0	17.5
		3	1	22.9	22.9	22.9	1.0	23.5	16.8	16.6	16.7	0.0	17.5
		3	3	22.8	22.9	22.9	1.0	23.5	16.7	16.5	16.7	0.0	17.5
		6	0	21.9	21.8	21.6	2.0	22.5	16.7	16.6	16.4	0.0	17.5
	64QAM	1	0	22.2	21.9	21.8	2.0	22.5	16.7	16.9	16.7	0.0	17.5
		1	3	22.3	21.9	21.9	2.0	22.5	16.8	16.9	16.7	0.0	17.5
		1	5	22.2	21.8	21.8	2.0	22.5	16.8	16.8	16.6	0.0	17.5
		3	0	22.2	21.8	21.9	2.0	22.5	16.5	16.8	16.7	0.0	17.5
		3	1	22.2	21.9	21.9	2.0	22.5	16.6	16.8	16.7	0.0	17.5
		3	3	22.3	21.9	21.9	2.0	22.5	16.6	16.8	16.7	0.0	17.5
		6	0	20.9	21.0	21.0	3.0	21.5	16.6	16.5	16.8	0.0	17.5
	256QAM	1	0	19.1	18.9	18.9	5.0	19.5	16.5	16.6	16.7	0.0	17.5
		1	3	19.1	19.0	19.0	5.0	19.5	16.6	16.7	16.8	0.0	17.5
		1	5	19.0	18.9	18.8	5.0	19.5	16.5	16.6	16.7	0.0	17.5
		3	0	18.8	18.8	18.7	5.0	19.5	16.7	16.5	16.5	0.0	17.5
		3	1	18.9	18.8	18.8	5.0	19.5	16.7	16.5	16.6	0.0	17.5
		3	3	18.9	18.8	18.8	5.0	19.5	16.7	16.5	16.6	0.0	17.5
		6	0	18.7	18.7	18.7	5.0	19.5	16.5	16.4	16.5	0.0	17.5

LTE Band 5 Measured Results

LTE Band 5 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)										
				DSI = 0					DSI = 1					
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20450	20525	20600			20450	20525	20600		
				829 MHz	836.5 MHz	844 MHz			829 MHz	836.5 MHz	844 MHz		
10 MHz	QPSK	1	0		23.6		0.0	24.5		20.5		0.0	21.5
		1	25		23.6		0.0	24.5		20.6		0.0	21.5
		1	49		23.6		0.0	24.5		20.6		0.0	21.5
		25	0		22.6		1.0	23.5		20.6		0.0	21.5
		25	12		22.7		1.0	23.5		20.6		0.0	21.5
		25	25		22.7		1.0	23.5		20.7		0.0	21.5
		50	0		22.6		1.0	23.5		20.6		0.0	21.5
	16QAM	1	0		22.7		1.0	23.5		20.7		0.0	21.5
		1	25		22.6		1.0	23.5		20.7		0.0	21.5
		1	49		22.8		1.0	23.5		20.7		0.0	21.5
		25	0		21.6		2.0	22.5		20.7		0.0	21.5
		25	12		21.7		2.0	22.5		20.7		0.0	21.5
		25	25		21.8		2.0	22.5		20.8		0.0	21.5
		50	0		21.6		2.0	22.5		20.7		0.0	21.5
	64QAM	1	0		22.0		2.0	22.5		20.9		0.0	21.5
		1	25		22.0		2.0	22.5		20.9		0.0	21.5
		1	49		22.2		2.0	22.5		21.0		0.0	21.5
		25	0		20.7		3.0	21.5		20.7		0.0	21.5
		25	12		20.7		3.0	21.5		20.8		0.0	21.5
		25	25		20.8		3.0	21.5		20.8		0.0	21.5
		50	0		20.6		3.0	21.5		20.7		0.0	21.5
	256QAM	1	0		18.8		5.0	19.5		18.2		2.0	19.5
		1	25		19.2		5.0	19.5		18.5		2.0	19.5
		1	49		18.9		5.0	19.5		18.4		2.0	19.5
		25	0		18.6		5.0	19.5		18.4		2.0	19.5
		25	12		18.7		5.0	19.5		18.5		2.0	19.5
		25	25		18.7		5.0	19.5		18.5		2.0	19.5
		50	0		18.7		5.0	19.5		18.5		2.0	19.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20425	20525	20625			20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz			826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.6	23.6	23.6	0.0	24.5	20.6	20.6	20.5	0.0	21.5
		1	12	23.6	23.7	23.6	0.0	24.5	20.7	20.7	20.6	0.0	21.5
		1	24	23.6	23.7	23.6	0.0	24.5	20.6	20.8	20.6	0.0	21.5
		12	0	22.7	22.6	22.6	1.0	23.5	20.7	20.6	20.7	0.0	21.5
		12	7	22.8	22.7	22.7	1.0	23.5	20.8	20.7	20.7	0.0	21.5
		12	13	22.7	22.7	22.7	1.0	23.5	20.7	20.7	20.7	0.0	21.5
		25	0	22.7	22.7	22.7	1.0	23.5	20.8	20.7	20.7	0.0	21.5
	16QAM	1	0	22.7	22.7	23.0	1.0	23.5	20.8	20.7	21.1	0.0	21.5
		1	12	22.7	22.8	23.1	1.0	23.5	20.8	20.8	21.2	0.0	21.5
		1	24	22.8	22.8	23.2	1.0	23.5	20.8	20.9	21.2	0.0	21.5
		12	0	21.7	21.7	21.8	2.0	22.5	20.8	20.7	20.7	0.0	21.5
		12	7	21.8	21.8	21.9	2.0	22.5	20.9	20.7	20.9	0.0	21.5
		12	13	21.8	21.8	21.8	2.0	22.5	20.8	20.8	20.8	0.0	21.5
		25	0	21.7	21.7	21.7	2.0	22.5	20.7	20.7	20.7	0.0	21.5
	64QAM	1	0	21.9	21.5	21.9	2.0	22.5	20.9	20.9	20.6	0.0	21.5
		1	12	22.0	21.6	22.0	2.0	22.5	21.0	21.0	20.6	0.0	21.5
		1	24	21.9	21.6	21.9	2.0	22.5	20.9	21.0	20.6	0.0	21.5
		12	0	20.7	20.6	20.6	3.0	21.5	20.7	20.7	20.7	0.0	21.5
		12	7	20.8	20.7	20.7	3.0	21.5	20.7	20.8	20.8	0.0	21.5
		12	13	20.7	20.7	20.7	3.0	21.5	20.7	20.8	20.8	0.0	21.5
		25	0	20.7	20.7	20.7	3.0	21.5	20.7	20.7	20.7	0.0	21.5
	256QAM	1	0	18.7	18.3	18.8	5.0	19.5	18.5	18.1	18.6	2.0	19.5
		1	12	18.7	18.4	18.9	5.0	19.5	18.6	18.3	18.7	2.0	19.5
		1	24	18.7	18.4	18.8	5.0	19.5	18.5	18.3	18.7	2.0	19.5
		12	0	18.7	18.6	18.7	5.0	19.5	18.5	18.5	18.5	2.0	19.5
		12	7	18.8	18.6	18.8	5.0	19.5	18.6	18.5	18.6	2.0	19.5
		12	13	18.7	18.7	18.7	5.0	19.5	18.6	18.5	18.6	2.0	19.5
		25	0	18.8	18.7	18.7	5.0	19.5	18.6	18.6	18.5	2.0	19.5

LTE Band 5 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20415	20525	20635			20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz			825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.6	23.5	23.6	0.0	24.5	20.6	20.5	20.6	0.0	21.5
		1	8	23.6	23.6	23.6	0.0	24.5	20.6	20.7	20.7	0.0	21.5
		1	14	23.6	23.6	23.6	0.0	24.5	20.6	20.7	20.6	0.0	21.5
		8	0	22.7	22.6	22.6	1.0	23.5	20.7	20.6	20.6	0.0	21.5
		8	4	22.8	22.7	22.6	1.0	23.5	20.8	20.7	20.7	0.0	21.5
		8	7	22.7	22.7	22.7	1.0	23.5	20.7	20.7	20.7	0.0	21.5
		15	0	22.7	22.7	22.7	1.0	23.5	20.7	20.7	20.6	0.0	21.5
	16QAM	1	0	22.7	22.6	23.0	1.0	23.5	20.7	20.5	21.0	0.0	21.5
		1	8	22.6	22.6	23.0	1.0	23.5	20.7	20.6	21.1	0.0	21.5
		1	14	22.7	22.6	23.1	1.0	23.5	20.7	20.7	21.1	0.0	21.5
		8	0	21.7	21.7	21.7	2.0	22.5	20.7	20.7	20.7	0.0	21.5
		8	4	21.8	21.8	21.7	2.0	22.5	20.8	20.7	20.7	0.0	21.5
		8	7	21.8	21.8	21.8	2.0	22.5	20.8	20.8	20.8	0.0	21.5
		15	0	21.7	21.8	21.7	2.0	22.5	20.7	20.7	20.7	0.0	21.5
	64QAM	1	0	21.9	21.9	21.7	2.0	22.5	20.8	20.9	20.9	0.0	21.5
		1	8	21.9	21.9	21.8	2.0	22.5	20.8	20.9	21.0	0.0	21.5
		1	14	22.0	22.0	21.9	2.0	22.5	20.8	20.9	21.0	0.0	21.5
		8	0	20.6	20.7	20.7	3.0	21.5	20.7	20.6	20.7	0.0	21.5
		8	4	20.7	20.8	20.8	3.0	21.5	20.8	20.6	20.7	0.0	21.5
		8	7	20.7	20.8	20.8	3.0	21.5	20.8	20.7	20.8	0.0	21.5
		15	0	20.8	20.7	20.7	3.0	21.5	20.8	20.7	20.7	0.0	21.5
	256QAM	1	0	18.7	19.1	18.4	5.0	19.5	18.5	18.9	18.3	2.0	19.5
		1	8	18.7	19.1	18.3	5.0	19.5	18.6	19.0	18.2	2.0	19.5
		1	14	18.7	19.2	18.4	5.0	19.5	18.6	19.0	18.3	2.0	19.5
		8	0	18.8	18.7	18.6	5.0	19.5	18.6	18.5	18.4	2.0	19.5
		8	4	18.9	18.8	18.6	5.0	19.5	18.7	18.6	18.5	2.0	19.5
		8	7	18.9	18.8	18.7	5.0	19.5	18.7	18.7	18.5	2.0	19.5
		15	0	18.8	18.8	18.8	5.0	19.5	18.6	18.6	18.6	2.0	19.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20407	20525	20643			20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz			824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.5	23.4	23.6	0.0	24.5	20.5	20.4	20.6	0.0	21.5
		1	3	23.6	23.6	23.7	0.0	24.5	20.6	20.6	20.6	0.0	21.5
		1	5	23.6	23.5	23.6	0.0	24.5	20.6	20.5	20.6	0.0	21.5
		3	0	23.6	23.4	23.5	0.0	24.5	20.6	20.5	20.5	0.0	21.5
		3	1	23.6	23.4	23.6	0.0	24.5	20.6	20.5	20.6	0.0	21.5
		3	3	23.6	23.5	23.6	0.0	24.5	20.7	20.5	20.6	0.0	21.5
		6	0	22.6	22.6	22.6	1.0	23.5	20.7	20.6	20.6	0.0	21.5
	16QAM	1	0	22.9	22.5	22.7	1.0	23.5	21.0	20.6	20.7	0.0	21.5
		1	3	23.0	22.6	22.8	1.0	23.5	21.1	20.7	20.8	0.0	21.5
		1	5	23.0	22.6	22.7	1.0	23.5	21.0	20.7	20.7	0.0	21.5
		3	0	22.8	22.7	22.6	1.0	23.5	20.8	20.7	20.6	0.0	21.5
		3	1	22.9	22.8	22.7	1.0	23.5	20.9	20.7	20.7	0.0	21.5
		3	3	22.9	22.8	22.7	1.0	23.5	20.9	20.8	20.7	0.0	21.5
		6	0	21.6	21.8	21.8	2.0	22.5	20.6	20.8	20.8	0.0	21.5
	64QAM	1	0	21.8	21.9	21.7	2.0	22.5	20.8	20.7	20.9	0.0	21.5
		1	3	21.9	22.1	21.8	2.0	22.5	20.9	20.9	20.9	0.0	21.5
		1	5	21.9	22.0	21.7	2.0	22.5	20.9	20.7	20.9	0.0	21.5
		3	0	21.6	21.9	21.7	2.0	22.5	20.6	20.7	20.6	0.0	21.5
		3	1	21.6	22.0	21.8	2.0	22.5	21.0	20.8	20.7	0.0	21.5
		3	3	21.7	22.0	21.8	2.0	22.5	21.0	20.8	20.7	0.0	21.5
		6	0	20.7	20.7	20.9	3.0	21.5	20.6	21.0	20.7	0.0	21.5
	256QAM	1	0	18.6	18.7	18.8	5.0	19.5	18.6	18.2	18.5	2.0	19.5
		1	3	18.8	18.9	18.9	5.0	19.5	18.7	18.7	18.6	2.0	19.5
		1	5	18.7	18.7	18.8	5.0	19.5	18.6	18.6	18.5	2.0	19.5
		3	0	18.8	18.5	18.6	5.0	19.5	18.5	18.2	18.6	2.0	19.5
		3	1	18.8	18.6	18.7	5.0	19.5	18.6	18.3	18.6	2.0	19.5
		3	3	18.8	18.6	18.7	5.0	19.5	18.6	18.4	18.6	2.0	19.5
		6	0	18.8	18.5	18.6	5.0	19.5	18.5	18.5	18.5	2.0	19.5

LTE Band 7 Measured Results

LTE Band 7 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20850	21100	21350			20850	21100	21350		
				2510 MHz	2535 MHz	2560 MHz			2510 MHz	2535 MHz	2560 MHz		
20 MHz	QPSK	1	0	23.3	23.4	23.4	0.0	24.0	16.7	16.7	16.8	0.0	17.5
		1	49	23.3	23.4	23.3	0.0	24.0	16.7	16.8	16.8	0.0	17.5
		1	99	23.4	23.4	23.1	0.0	24.0	16.7	16.8	16.6	0.0	17.5
		50	0	22.2	22.4	22.4	1.0	23.0	16.6	16.8	16.8	0.0	17.5
		50	24	22.4	22.5	22.3	1.0	23.0	16.8	16.9	16.7	0.0	17.5
		50	50	22.4	22.4	22.2	1.0	23.0	16.8	16.8	16.6	0.0	17.5
		100	0	22.3	22.4	22.2	1.0	23.0	16.7	16.8	16.6	0.0	17.5
	16QAM	1	0	22.7	23.0	22.9	1.0	23.0	17.1	17.1	17.3	0.0	17.5
		1	49	22.7	22.9	22.9	1.0	23.0	17.1	17.2	17.2	0.0	17.5
		1	99	22.8	23.0	22.9	1.0	23.0	17.2	17.0	17.0	0.0	17.5
		50	0	21.2	21.4	21.4	2.0	22.0	16.6	16.8	16.8	0.0	17.5
		50	24	21.4	21.5	21.4	2.0	22.0	16.8	16.9	16.8	0.0	17.5
		50	50	21.3	21.5	21.2	2.0	22.0	16.7	16.9	16.7	0.0	17.5
		100	0	21.3	21.4	21.3	2.0	22.0	16.7	16.8	16.7	0.0	17.5
	64QAM	1	0	21.5	21.7	21.9	2.0	22.0	16.9	17.1	16.9	0.0	17.5
		1	49	21.5	21.7	22.0	2.0	22.0	17.0	17.2	16.8	0.0	17.5
		1	99	21.6	21.7	21.9	2.0	22.0	17.1	17.2	16.6	0.0	17.5
		50	0	20.2	20.5	20.4	3.0	21.0	16.7	16.9	16.9	0.0	17.5
		50	24	20.4	20.5	20.4	3.0	21.0	16.9	17.0	16.8	0.0	17.5
		50	50	20.4	20.5	20.2	3.0	21.0	16.8	16.9	16.7	0.0	17.5
		100	0	20.3	20.4	20.2	3.0	21.0	16.8	16.9	16.7	0.0	17.5
	256QAM	1	0	17.9	18.4	18.5	5.0	19.0	16.3	16.9	16.9	0.0	17.5
		1	49	18.2	18.7	18.5	5.0	19.0	16.7	17.1	17.0	0.0	17.5
		1	99	18.1	18.5	18.0	5.0	19.0	16.6	16.9	16.4	0.0	17.5
		50	0	18.2	18.4	18.4	5.0	19.0	16.7	16.9	16.8	0.0	17.5
		50	24	18.4	18.5	18.4	5.0	19.0	16.9	16.9	16.8	0.0	17.5
		50	50	18.4	18.4	18.3	5.0	19.0	16.8	16.9	16.7	0.0	17.5
		100	0	18.3	18.4	18.3	5.0	19.0	16.8	16.8	16.7	0.0	17.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20825	21100	21375			20825	21100	21375		
				2507.5 MHz	2535 MHz	2562.5 MHz			2507.5 MHz	2535 MHz	2562.5 MHz		
15 MHz	QPSK	1	0	23.3	23.4	23.4	0.0	24.0	16.7	16.8	16.8	0.0	17.5
		1	37	23.3	23.4	23.2	0.0	24.0	16.7	16.8	16.7	0.0	17.5
		1	74	23.3	23.4	23.1	0.0	24.0	16.7	16.8	16.6	0.0	17.5
		36	0	22.2	22.4	22.3	1.0	23.0	16.6	16.8	16.8	0.0	17.5
		36	20	22.4	22.4	22.3	1.0	23.0	16.8	16.9	16.8	0.0	17.5
		36	39	22.4	22.4	22.3	1.0	23.0	16.8	16.9	16.7	0.0	17.5
		75	0	22.3	22.4	22.2	1.0	23.0	16.7	16.8	16.7	0.0	17.5
	16QAM	1	0	22.7	22.9	22.4	1.0	23.0	17.3	16.8	17.3	0.0	17.5
		1	37	22.7	22.9	22.3	1.0	23.0	17.3	16.9	17.1	0.0	17.5
		1	74	22.7	22.9	22.2	1.0	23.0	17.3	16.8	17.0	0.0	17.5
		36	0	21.3	21.4	21.3	2.0	22.0	16.6	16.8	16.8	0.0	17.5
		36	20	21.5	21.4	21.4	2.0	22.0	16.8	16.9	16.9	0.0	17.5
		36	39	21.4	21.4	21.3	2.0	22.0	16.7	16.9	16.8	0.0	17.5
		75	0	21.4	21.4	21.3	2.0	22.0	16.7	16.8	16.7	0.0	17.5
	64QAM	1	0	21.8	21.7	21.5	2.0	22.0	16.9	17.1	17.1	0.0	17.5
		1	37	21.9	21.8	21.5	2.0	22.0	16.9	17.2	17.0	0.0	17.5
		1	74	22.0	21.7	21.4	2.0	22.0	16.9	17.1	16.9	0.0	17.5
		36	0	20.3	20.5	20.4	3.0	21.0	16.8	16.9	16.8	0.0	17.5
		36	20	20.4	20.5	20.5	3.0	21.0	16.9	16.9	16.9	0.0	17.5
		36	39	20.4	20.5	20.4	3.0	21.0	16.9	16.9	16.8	0.0	17.5
		75	0	20.4	20.4	20.3	3.0	21.0	16.8	16.9	16.7	0.0	17.5
	256QAM	1	0	18.3	18.8	18.1	5.0	19.0	16.4	16.9	17.2	0.0	17.5
		1	37	18.6	18.9	18.1	5.0	19.0	16.6	17.1	17.2	0.0	17.5
		1	74	18.5	18.8	17.9	5.0	19.0	16.6	17.0	17.0	0.0	17.5
		36	0	18.2	18.5	18.4	5.0	19.0	16.7	16.9	16.8	0.0	17.5
		36	20	18.4	18.5	18.4	5.0	19.0	16.9	16.9	16.9	0.0	17.5
		36	39	18.4	18.5	18.3	5.0	19.0	16.9	16.9	16.8	0.0	17.5
		75	0	18.4	18.5	18.3	5.0	19.0	16.8	16.9	16.8	0.0	17.5

LTE Band 7 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20800	21100	21400			20800	21100	21400		
				2505 MHz	2535 MHz	2565 MHz			2505 MHz	2535 MHz	2565 MHz		
10 MHz	QPSK	1	0	23.3	23.4	23.3	0.0	24.0	16.6	17.0	16.8	0.0	17.5
		1	25	23.3	23.4	23.2	0.0	24.0	16.6	16.9	16.8	0.0	17.5
		1	49	23.3	23.4	23.1	0.0	24.0	16.6	17.0	16.7	0.0	17.5
		25	0	22.4	22.5	22.3	1.0	23.0	16.8	16.9	16.8	0.0	17.5
		25	12	22.4	22.4	22.3	1.0	23.0	16.8	16.9	16.7	0.0	17.5
		25	25	22.4	22.5	22.3	1.0	23.0	16.7	17.0	16.7	0.0	17.5
		50	0	22.3	22.4	22.2	1.0	23.0	16.7	16.8	16.6	0.0	17.5
	16QAM	1	0	22.7	22.6	22.4	1.0	23.0	16.8	16.8	17.3	0.0	17.5
		1	25	22.7	22.5	22.3	1.0	23.0	16.7	16.8	17.1	0.0	17.5
		1	49	22.8	22.5	22.3	1.0	23.0	16.8	16.8	17.0	0.0	17.5
		25	0	21.4	21.6	21.3	2.0	22.0	16.9	17.0	16.9	0.0	17.5
		25	12	21.5	21.6	21.3	2.0	22.0	16.9	17.0	16.8	0.0	17.5
		25	25	21.4	21.6	21.3	2.0	22.0	16.9	17.0	16.8	0.0	17.5
		50	0	21.3	21.5	21.2	2.0	22.0	16.7	16.8	16.6	0.0	17.5
	64QAM	1	0	21.6	21.8	21.5	2.0	22.0	16.8	17.1	17.2	0.0	17.5
		1	25	21.6	21.9	21.6	2.0	22.0	16.8	17.1	17.1	0.0	17.5
		1	49	21.6	21.9	21.5	2.0	22.0	16.8	17.1	17.0	0.0	17.5
		25	0	20.4	20.5	20.4	3.0	21.0	16.9	17.0	16.8	0.0	17.5
		25	12	20.4	20.5	20.4	3.0	21.0	17.0	17.1	16.9	0.0	17.5
		25	25	20.4	20.6	20.4	3.0	21.0	16.9	17.1	16.8	0.0	17.5
		50	0	20.3	20.4	20.3	3.0	21.0	16.8	16.9	16.7	0.0	17.5
	256QAM	1	0	18.2	18.8	17.9	5.0	19.0	16.4	16.9	17.0	0.0	17.5
		1	25	18.5	18.9	18.1	5.0	19.0	16.6	17.1	17.3	0.0	17.5
		1	49	18.2	18.8	17.7	5.0	19.0	16.4	16.7	17.1	0.0	17.5
		25	0	18.4	18.5	18.4	5.0	19.0	16.9	16.9	16.8	0.0	17.5
		25	12	18.5	18.5	18.4	5.0	19.0	16.9	17.0	16.8	0.0	17.5
		25	25	18.4	18.6	18.3	5.0	19.0	16.9	17.0	16.8	0.0	17.5
		50	0	18.4	18.5	18.2	5.0	19.0	16.8	16.9	16.7	0.0	17.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				20775	21100	21425			20775	21100	21425		
				2502.5 MHz	2535 MHz	2567.5 MHz			2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	23.3	23.5	23.3	0.0	24.0	16.9	16.8	16.8	0.0	17.5
		1	12	23.3	23.5	23.2	0.0	24.0	16.8	16.8	16.7	0.0	17.5
		1	24	23.3	23.5	23.2	0.0	24.0	16.8	16.9	16.7	0.0	17.5
		12	0	22.4	22.5	22.3	1.0	23.0	16.8	16.9	16.7	0.0	17.5
		12	7	22.4	22.5	22.3	1.0	23.0	16.8	16.9	16.8	0.0	17.5
		12	13	22.3	22.5	22.3	1.0	23.0	16.8	17.0	16.7	0.0	17.5
		25	0	22.3	22.4	22.3	1.0	23.0	16.7	16.9	16.7	0.0	17.5
	16QAM	1	0	22.5	22.7	22.8	1.0	23.0	17.0	17.2	17.0	0.0	17.5
		1	12	22.5	22.8	22.7	1.0	23.0	17.0	17.3	17.0	0.0	17.5
		1	24	22.7	22.8	22.7	1.0	23.0	17.0	17.3	16.9	0.0	17.5
		12	0	21.4	21.5	21.4	2.0	22.0	16.8	17.0	16.8	0.0	17.5
		12	7	21.4	21.6	21.5	2.0	22.0	16.9	17.1	16.8	0.0	17.5
		12	13	21.4	21.6	21.4	2.0	22.0	16.8	17.1	16.8	0.0	17.5
		25	0	21.3	21.5	21.3	2.0	22.0	16.8	17.0	16.7	0.0	17.5
	64QAM	1	0	21.3	21.9	21.7	2.0	22.0	17.1	16.9	17.2	0.0	17.5
		1	12	21.2	21.9	21.6	2.0	22.0	17.2	16.9	17.1	0.0	17.5
		1	24	21.3	21.8	21.6	2.0	22.0	17.1	16.9	17.1	0.0	17.5
		12	0	20.3	20.4	20.4	3.0	21.0	16.9	17.0	16.7	0.0	17.5
		12	7	20.4	20.4	20.4	3.0	21.0	16.9	17.0	16.8	0.0	17.5
		12	13	20.4	20.5	20.3	3.0	21.0	16.9	17.0	16.7	0.0	17.5
		25	0	20.3	20.4	20.3	3.0	21.0	16.8	16.9	16.8	0.0	17.5
	256QAM	1	0	18.1	18.6	18.4	5.0	19.0	16.9	16.7	16.9	0.0	17.5
		1	12	18.1	18.7	18.4	5.0	19.0	17.0	16.8	16.9	0.0	17.5
		1	24	18.5	18.6	18.3	5.0	19.0	16.8	16.7	16.8	0.0	17.5
		12	0	18.4	18.5	18.3	5.0	19.0	16.8	16.9	16.8	0.0	17.5
		12	7	18.5	18.5	18.4	5.0	19.0	16.9	17.0	16.8	0.0	17.5
		12	13	18.4	18.6	18.3	5.0	19.0	16.8	17.0	16.8	0.0	17.5
		25	0	18.4	18.5	18.3	5.0	19.0	16.9	17.0	16.8	0.0	17.5

LTE Band 12 Measured Results

LTE Band 12 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23060	23095	23130			23060	23095	23130		
				704 MHz	707.5 MHz	711 MHz			704 MHz	707.5 MHz	711 MHz		
10 MHz	QPSK	1	0		23.8		0.0	24.5		20.3		0.0	21.0
		1	25		23.8		0.0	24.5		20.2		0.0	21.0
		1	49		23.7		0.0	24.5		20.2		0.0	21.0
		25	0		22.9		1.0	23.5		20.2		0.0	21.0
		25	12		23.0		1.0	23.5		20.4		0.0	21.0
		25	25		22.9		1.0	23.5		20.2		0.0	21.0
		50	0		22.9		1.0	23.5		20.3		0.0	21.0
	16QAM	1	0		23.0		1.0	23.5		20.3		0.0	21.0
		1	25		22.9		1.0	23.5		20.2		0.0	21.0
		1	49		22.8		1.0	23.5		20.2		0.0	21.0
		25	0		21.9		2.0	22.5		20.2		0.0	21.0
		25	12		22.0		2.0	22.5		20.4		0.0	21.0
		25	25		21.9		2.0	22.5		20.3		0.0	21.0
		50	0		21.9		2.0	22.5		20.3		0.0	21.0
	64QAM	1	0		22.4		2.0	22.5		20.5		0.0	21.0
		1	25		22.3		2.0	22.5		20.5		0.0	21.0
		1	49		22.1		2.0	22.5		20.4		0.0	21.0
		25	0		20.9		3.0	21.5		20.8		0.0	21.0
		25	12		21.0		3.0	21.5		20.5		0.0	21.0
		25	25		21.0		3.0	21.5		20.4		0.0	21.0
		50	0		20.9		3.0	21.5		20.8		0.0	21.0
	256QAM	1	0		18.7		5.0	19.5		18.8		2.0	19.0
		1	25		19.0		5.0	19.5		18.9		2.0	19.0
		1	49		18.8		5.0	19.5		19.0		2.0	19.0
		25	0		18.9		5.0	19.5		18.6		2.0	19.0
		25	12		19.1		5.0	19.5		18.8		2.0	19.0
		25	25		19.0		5.0	19.5		18.8		2.0	19.0
		50	0		18.9		5.0	19.5		18.7		2.0	19.0
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23035	23095	23155			23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz			701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	23.9	23.9	23.8	0.0	24.5	20.3	20.3	20.1	0.0	21.0
		1	12	23.9	23.9	23.8	0.0	24.5	20.3	20.3	20.2	0.0	21.0
		1	24	23.9	23.9	23.8	0.0	24.5	20.3	20.3	20.2	0.0	21.0
		12	0	23.0	22.9	22.9	1.0	23.5	20.3	20.3	20.2	0.0	21.0
		12	7	23.0	23.0	22.9	1.0	23.5	20.4	20.4	20.3	0.0	21.0
		12	13	23.0	23.0	22.9	1.0	23.5	20.3	20.4	20.3	0.0	21.0
		25	0	23.0	23.0	22.9	1.0	23.5	20.3	20.3	20.3	0.0	21.0
	16QAM	1	0	23.1	23.0	23.5	1.0	23.5	20.4	20.4	20.8	0.0	21.0
		1	12	23.1	23.1	23.4	1.0	23.5	20.4	20.5	20.8	0.0	21.0
		1	24	23.1	23.1	23.3	1.0	23.5	20.4	20.5	20.8	0.0	21.0
		12	0	22.0	22.0	22.0	2.0	22.5	20.4	20.4	20.4	0.0	21.0
		12	7	22.1	22.1	22.0	2.0	22.5	20.4	20.4	20.4	0.0	21.0
		12	13	22.1	22.0	22.0	2.0	22.5	20.4	20.4	20.4	0.0	21.0
		25	0	22.0	22.0	21.9	2.0	22.5	20.3	20.4	20.3	0.0	21.0
	64QAM	1	0	22.2	22.1	21.7	2.0	22.5	20.6	20.5	20.2	0.0	21.0
		1	12	22.2	22.2	21.8	2.0	22.5	20.6	20.6	20.2	0.0	21.0
		1	24	22.2	22.2	21.8	2.0	22.5	20.6	20.6	20.2	0.0	21.0
		12	0	20.9	21.0	20.9	3.0	21.5	20.2	20.4	20.8	0.0	21.0
		12	7	21.0	21.0	20.9	3.0	21.5	20.3	20.4	20.8	0.0	21.0
		12	13	20.9	21.0	20.9	3.0	21.5	20.3	20.4	20.8	0.0	21.0
		25	0	21.0	21.0	20.8	3.0	21.5	20.3	20.4	20.7	0.0	21.0
	256QAM	1	0	19.1	18.9	18.6	5.0	19.5	18.9	18.7	18.4	2.0	19.0
		1	12	19.1	19.1	18.6	5.0	19.5	18.9	18.8	18.4	2.0	19.0
		1	24	19.1	18.9	18.6	5.0	19.5	18.9	18.7	18.3	2.0	19.0
		12	0	19.0	18.9	18.8	5.0	19.5	18.8	18.7	18.6	2.0	19.0
		12	7	19.0	19.0	18.9	5.0	19.5	18.9	18.8	18.7	2.0	19.0
		12	13	19.0	19.0	18.9	5.0	19.5	18.8	18.8	18.6	2.0	19.0
		25	0	19.0	19.0	18.9	5.0	19.5	18.8	18.8	18.7	2.0	19.0

LTE Band 12 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23025	23095	23165			23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz			700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	23.9	23.8	23.8	0.0	24.5	20.2	20.2	20.2	0.0	21.0
		1	8	23.8	23.8	23.8	0.0	24.5	20.2	20.2	20.3	0.0	21.0
		1	14	23.8	23.8	23.8	0.0	24.5	20.2	20.3	20.2	0.0	21.0
		8	0	22.9	22.9	22.8	1.0	23.5	20.3	20.2	20.3	0.0	21.0
		8	4	23.0	23.0	22.8	1.0	23.5	20.4	20.3	20.3	0.0	21.0
		8	7	23.0	23.0	22.8	1.0	23.5	20.3	20.4	20.3	0.0	21.0
		15	0	23.0	23.0	22.8	1.0	23.5	20.3	20.3	20.2	0.0	21.0
	16QAM	1	0	22.9	22.8	23.3	1.0	23.5	20.3	20.2	20.6	0.0	21.0
		1	8	22.9	22.8	23.3	1.0	23.5	20.3	20.2	20.7	0.0	21.0
		1	14	22.9	22.9	23.3	1.0	23.5	20.3	20.2	20.6	0.0	21.0
		8	0	22.0	22.0	21.9	2.0	22.5	20.3	20.4	20.3	0.0	21.0
		8	4	22.1	22.1	22.0	2.0	22.5	20.4	20.5	20.4	0.0	21.0
		8	7	22.1	22.1	21.9	2.0	22.5	20.4	20.5	20.4	0.0	21.0
		15	0	22.0	22.0	21.8	2.0	22.5	20.3	20.4	20.3	0.0	21.0
	64QAM	1	0	22.2	22.2	22.0	2.0	22.5	20.4	20.6	20.6	0.0	21.0
		1	8	22.1	22.2	22.0	2.0	22.5	20.4	20.5	20.6	0.0	21.0
		1	14	22.2	22.2	22.0	2.0	22.5	20.4	20.5	20.5	0.0	21.0
		8	0	20.9	21.0	20.9	3.0	21.5	20.3	20.3	20.3	0.0	21.0
		8	4	21.0	21.0	20.9	3.0	21.5	20.4	20.3	20.3	0.0	21.0
		8	7	21.0	21.1	20.9	3.0	21.5	20.4	20.3	20.4	0.0	21.0
		15	0	21.0	21.0	20.9	3.0	21.5	20.4	20.4	20.2	0.0	21.0
	256QAM	1	0	18.9	19.4	18.7	5.0	19.5	18.7	18.5	18.6	2.0	19.0
		1	8	18.9	19.3	18.5	5.0	19.5	18.8	18.6	18.3	2.0	19.0
		1	14	18.9	19.4	18.6	5.0	19.5	18.8	18.5	18.4	2.0	19.0
		8	0	19.0	19.0	18.8	5.0	19.5	18.8	18.7	18.6	2.0	19.0
		8	4	19.1	19.0	18.8	5.0	19.5	18.9	18.8	18.6	2.0	19.0
		8	7	19.1	19.1	18.8	5.0	19.5	18.9	18.9	18.6	2.0	19.0
		15	0	19.1	19.0	19.0	5.0	19.5	18.9	18.8	18.7	2.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23017	23095	23173			23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz			699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	23.7	23.8	23.7	0.0	24.5	20.1	20.1	20.1	0.0	21.0
		1	3	23.8	23.9	23.8	0.0	24.5	20.2	20.3	20.2	0.0	21.0
		1	5	23.8	23.8	23.7	0.0	24.5	20.2	20.2	20.1	0.0	21.0
		3	0	23.8	23.7	23.7	0.0	24.5	20.2	20.2	20.1	0.0	21.0
		3	1	23.8	23.8	23.8	0.0	24.5	20.2	20.2	20.2	0.0	21.0
		3	3	23.8	23.8	23.8	0.0	24.5	20.2	20.2	20.2	0.0	21.0
		6	0	22.9	22.9	22.8	1.0	23.5	20.3	20.3	20.2	0.0	21.0
	16QAM	1	0	22.8	22.9	23.2	1.0	23.5	20.2	20.3	20.6	0.0	21.0
		1	3	23.0	23.0	23.2	1.0	23.5	20.4	20.4	20.7	0.0	21.0
		1	5	22.9	23.0	23.2	1.0	23.5	20.4	20.3	20.6	0.0	21.0
		3	0	23.0	22.8	22.9	1.0	23.5	20.4	20.2	20.3	0.0	21.0
		3	1	23.1	22.9	23.0	1.0	23.5	20.5	20.3	20.4	0.0	21.0
		3	3	23.1	22.9	23.0	1.0	23.5	20.5	20.3	20.3	0.0	21.0
		6	0	22.1	22.0	21.7	2.0	22.5	20.5	20.4	20.1	0.0	21.0
	64QAM	1	0	22.1	22.2	21.9	2.0	22.5	20.5	20.3	20.4	0.0	21.0
		1	3	22.2	22.3	22.0	2.0	22.5	20.7	20.4	20.5	0.0	21.0
		1	5	22.2	22.2	22.0	2.0	22.5	20.6	20.3	20.4	0.0	21.0
		3	0	21.9	22.2	21.7	2.0	22.5	20.5	20.4	20.1	0.0	21.0
		3	1	21.9	22.3	21.8	2.0	22.5	20.6	20.4	20.2	0.0	21.0
		3	3	21.9	22.2	21.9	2.0	22.5	20.6	20.4	20.1	0.0	21.0
		6	0	21.0	20.8	20.8	3.0	21.5	20.2	20.5	20.3	0.0	21.0
	256QAM	1	0	18.8	18.9	18.8	5.0	19.5	18.8	18.4	18.3	2.0	19.0
		1	3	19.0	19.1	18.9	5.0	19.5	19.0	18.5	18.4	2.0	19.0
		1	5	18.9	19.0	18.8	5.0	19.5	18.8	18.8	18.4	2.0	19.0
		3	0	19.0	18.8	18.9	5.0	19.5	18.7	18.6	18.4	2.0	19.0
		3	1	19.1	18.9	19.0	5.0	19.5	18.8	18.7	18.5	2.0	19.0
		3	3	19.1	18.9	19.0	5.0	19.5	18.8	18.7	18.5	2.0	19.0
		6	0	18.9	18.8	18.9	5.0	19.5	18.6	18.6	18.7	2.0	19.0

LTE Band 13 Measured Results

LTE Band 13 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					23230					23230			
					782 MHz					782 MHz			
10 MHz	QPSK	1	0		23.6		0.0	24.5		19.9		0.0	21.0
		1	25		23.6		0.0	24.5		19.8		0.0	21.0
		1	49		23.5		0.0	24.5		19.7		0.0	21.0
		25	0		22.5		1.0	23.5		19.9		0.0	21.0
		25	12		22.5		1.0	23.5		19.9		0.0	21.0
		25	25		22.5		1.0	23.5		19.9		0.0	21.0
		50	0		22.4		1.0	23.5		19.8		0.0	21.0
	16QAM	1	0		23.0		1.0	23.5		20.0		0.0	21.0
		1	25		22.9		1.0	23.5		19.8		0.0	21.0
		1	49		22.9		1.0	23.5		19.9		0.0	21.0
		25	0		21.6		2.0	22.5		20.0		0.0	21.0
		25	12		21.6		2.0	22.5		20.0		0.0	21.0
		25	25		21.6		2.0	22.5		20.0		0.0	21.0
		50	0		21.5		2.0	22.5		19.8		0.0	21.0
	64QAM	1	0		21.7		2.0	22.5		20.2		0.0	21.0
		1	25		21.6		2.0	22.5		20.2		0.0	21.0
		1	49		21.7		2.0	22.5		20.3		0.0	21.0
		25	0		20.7		3.0	21.5		19.9		1.0	20.0
		25	12		20.6		3.0	21.5		20.0		1.0	20.0
		25	25		20.6		3.0	21.5		19.9		1.0	20.0
		50	0		20.5		3.0	21.5		19.9		1.0	20.0
	256QAM	1	0		18.1		5.0	19.5		18.0		2.0	19.0
		1	25		18.3		5.0	19.5		18.2		2.0	19.0
		1	49		18.2		5.0	19.5		18.0		2.0	19.0
		25	0		18.5		5.0	19.5		18.4		2.0	19.0
		25	12		18.6		5.0	19.5		18.4		2.0	19.0
		25	25		18.6		5.0	19.5		18.4		2.0	19.0
		50	0		18.4		5.0	19.5		18.2		2.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23205	23230	23255			23205	23230	23255		
				779.5 MHz	782 MHz	784.5 MHz			779.5 MHz	782 MHz	784.5 MHz		
5 MHz	QPSK	1	0		23.6		0.0	24.5		19.9		0.0	21.0
		1	12		23.6		0.0	24.5		19.9		0.0	21.0
		1	24		23.6		0.0	24.5		19.9		0.0	21.0
		12	0		22.5		1.0	23.5		19.9		0.0	21.0
		12	7		22.5		1.0	23.5		19.9		0.0	21.0
		12	13		22.6		1.0	23.5		19.9		0.0	21.0
		25	0		22.5		1.0	23.5		19.9		0.0	21.0
	16QAM	1	0		22.7		1.0	23.5		20.1		0.0	21.0
		1	12		22.7		1.0	23.5		20.1		0.0	21.0
		1	24		22.8		1.0	23.5		20.1		0.0	21.0
		12	0		21.6		2.0	22.5		19.9		0.0	21.0
		12	7		21.6		2.0	22.5		20.0		0.0	21.0
		12	13		21.6		2.0	22.5		20.0		0.0	21.0
		25	0		21.5		2.0	22.5		19.8		0.0	21.0
	64QAM	1	0		21.9		2.0	22.5		19.8		0.0	21.0
		1	12		21.9		2.0	22.5		19.8		0.0	21.0
		1	24		21.9		2.0	22.5		19.8		0.0	21.0
		12	0		20.4		3.0	21.5		19.9		1.0	20.0
		12	7		20.5		3.0	21.5		19.9		1.0	20.0
		12	13		20.5		3.0	21.5		19.9		1.0	20.0
		25	0		20.5		3.0	21.5		19.8		1.0	20.0
	256QAM	1	0		18.6		5.0	19.5		18.1		2.0	19.0
		1	12		18.7		5.0	19.5		18.3		2.0	19.0
		1	24		18.7		5.0	19.5		18.3		2.0	19.0
		12	0		18.5		5.0	19.5		18.1		2.0	19.0
		12	7		18.5		5.0	19.5		18.2		2.0	19.0
		12	13		18.6		5.0	19.5		18.2		2.0	19.0
		25	0		18.5		5.0	19.5		18.2		2.0	19.0

LTE Band 14 Measured Results

LTE Band 14 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					23330					23330			
					793 MHz					793 MHz			
10 MHz	QPSK	1	0		23.7		0.0	24.5		19.9		0.0	21.0
		1	25		23.5		0.0	24.5		19.8		0.0	21.0
		1	49		23.5		0.0	24.5		19.8		0.0	21.0
		25	0		22.5		1.0	23.5		19.9		0.0	21.0
		25	12		22.5		1.0	23.5		19.9		0.0	21.0
		25	25		22.5		1.0	23.5		19.9		0.0	21.0
		50	0		22.5		1.0	23.5		19.8		0.0	21.0
	16QAM	1	0		23.0		1.0	23.5		20.0		0.0	21.0
		1	25		22.9		1.0	23.5		19.9		0.0	21.0
		1	49		22.9		1.0	23.5		19.9		0.0	21.0
		25	0		21.6		2.0	22.5		20.0		0.0	21.0
		25	12		21.7		2.0	22.5		20.0		0.0	21.0
		25	25		21.5		2.0	22.5		20.0		0.0	21.0
		50	0		21.5		2.0	22.5		19.9		0.0	21.0
	64QAM	1	0		21.7		2.0	22.5		20.1		0.0	21.0
		1	25		21.7		2.0	22.5		20.1		0.0	21.0
		1	49		21.7		2.0	22.5		20.1		0.0	21.0
		25	0		20.5		3.0	21.5		19.9		1.0	20.0
		25	12		20.6		3.0	21.5		19.9		1.0	20.0
		25	25		20.6		3.0	21.5		20.0		1.0	20.0
		50	0		20.5		3.0	21.5		19.8		1.0	20.0
	256QAM	1	0		18.1		5.0	19.5		17.9		2.0	19.0
		1	25		18.3		5.0	19.5		18.2		2.0	19.0
		1	49		18.1		5.0	19.5		17.9		2.0	19.0
		25	0		18.5		5.0	19.5		18.4		2.0	19.0
		25	12		18.6		5.0	19.5		18.4		2.0	19.0
		25	25		18.6		5.0	19.5		18.4		2.0	19.0
		50	0		18.5		5.0	19.5		18.3		2.0	19.0

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				23305	23330	23355			23305	23330	23355		
				790.5 MHz	793 MHz	795.5 MHz			790.5 MHz	793 MHz	795.5 MHz		
5 MHz	QPSK	1	0		23.5		0.0	24.5		19.9		0.0	21.0
		1	12		23.6		0.0	24.5		19.9		0.0	21.0
		1	24		23.5		0.0	24.5		19.9		0.0	21.0
		12	0		22.6		1.0	23.5		20.0		0.0	21.0
		12	7		22.5		1.0	23.5		19.9		0.0	21.0
		12	13		22.5		1.0	23.5		19.9		0.0	21.0
		25	0		22.6		1.0	23.5		19.9		0.0	21.0
	16QAM	1	0		22.7		1.0	23.5		20.0		0.0	21.0
		1	12		22.7		1.0	23.5		20.1		0.0	21.0
		1	24		22.7		1.0	23.5		20.0		0.0	21.0
		12	0		21.7		2.0	22.5		20.0		0.0	21.0
		12	7		21.6		2.0	22.5		20.0		0.0	21.0
		12	13		21.6		2.0	22.5		20.0		0.0	21.0
		25	0		21.5		2.0	22.5		19.9		0.0	21.0
	64QAM	1	0		21.8		2.0	22.5		19.8		0.0	21.0
		1	12		21.9		2.0	22.5		19.9		0.0	21.0
		1	24		21.8		2.0	22.5		19.8		0.0	21.0
		12	0		20.5		3.0	21.5		19.9		1.0	20.0
		12	7		20.5		3.0	21.5		19.9		1.0	20.0
		12	13		20.5		3.0	21.5		19.9		1.0	20.0
		25	0		20.5		3.0	21.5		19.8		1.0	20.0
	256QAM	1	0		18.6		5.0	19.5		18.4		2.0	19.0
		1	12		18.7		5.0	19.5		18.5		2.0	19.0
		1	24		18.7		5.0	19.5		18.4		2.0	19.0
		12	0		18.6		5.0	19.5		18.4		2.0	19.0
		12	7		18.6		5.0	19.5		18.4		2.0	19.0
		12	13		18.6		5.0	19.5		18.4		2.0	19.0
		25	0		18.6		5.0	19.5		18.4		2.0	19.0

LTE Band 66 Measured Results

LTE Band 66 Measured Results

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
				DSI = 0					DSI = 1				
				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	23.6	23.6	23.8	0.0	24.5	16.5	16.3	16.5	0.0	17.5
		1	49	23.7	23.6	23.6	0.0	24.5	16.7	16.5	16.5	0.0	17.5
		1	99	23.8	23.7	23.7	0.0	24.5	16.4	16.3	16.4	0.0	17.5
		50	0	22.9	22.8	22.7	1.0	23.5	16.8	16.6	16.5	0.0	17.5
		50	24	22.9	22.8	22.7	1.0	23.5	16.8	16.6	16.5	0.0	17.5
		50	50	22.8	22.7	22.7	1.0	23.5	16.6	16.5	16.5	0.0	17.5
		100	0	22.9	22.8	22.6	1.0	23.5	16.7	16.6	16.5	0.0	17.5
	16QAM	1	0	23.3	23.0	23.3	1.0	23.5	16.9	16.8	17.1	0.0	17.5
		1	49	23.4	23.2	23.3	1.0	23.5	17.0	17.0	17.0	0.0	17.5
		1	99	23.1	22.9	23.3	1.0	23.5	16.8	16.7	17.0	0.0	17.5
		50	0	21.9	21.8	21.7	2.0	22.5	16.8	16.6	16.5	0.0	17.5
		50	24	21.9	21.8	21.8	2.0	22.5	16.8	16.6	16.5	0.0	17.5
		50	50	21.9	21.7	21.7	2.0	22.5	16.7	16.5	16.5	0.0	17.5
		100	0	21.9	21.8	21.7	2.0	22.5	16.7	16.6	16.5	0.0	17.5
	64QAM	1	0	22.4	21.8	22.1	2.0	22.5	16.8	16.6	17.1	0.0	17.5
		1	49	22.4	22.0	22.1	2.0	22.5	17.0	16.8	17.1	0.0	17.5
		1	99	22.3	21.7	22.0	2.0	22.5	16.7	16.5	17.1	0.0	17.5
		50	0	21.0	20.8	20.8	3.0	21.5	16.8	16.7	16.5	0.0	17.5
		50	24	21.0	20.9	20.8	3.0	21.5	16.8	16.7	16.6	0.0	17.5
		50	50	20.9	20.7	20.8	3.0	21.5	16.7	16.6	16.5	0.0	17.5
		100	0	20.9	20.8	20.7	3.0	21.5	16.7	16.6	16.5	0.0	17.5
	256QAM	1	0	18.8	18.5	18.7	5.0	19.5	16.7	16.3	16.4	0.0	17.5
		1	49	19.1	18.6	18.9	5.0	19.5	16.9	16.5	16.7	0.0	17.5
		1	99	18.8	18.4	18.7	5.0	19.5	16.7	16.2	16.5	0.0	17.5
		50	0	18.9	18.8	18.7	5.0	19.5	16.7	16.6	16.5	0.0	17.5
		50	24	19.0	18.9	18.7	5.0	19.5	16.8	16.7	16.6	0.0	17.5
		50	50	18.9	18.7	18.7	5.0	19.5	16.7	16.6	16.5	0.0	17.5
		100	0	18.9	18.8	18.7	5.0	19.5	16.7	16.6	16.5	0.0	17.5
BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132047	132322	132597			132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz			1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	23.8	23.7	23.7	0.0	24.5	16.6	16.5	16.5	0.0	17.5
		1	37	23.8	23.8	23.7	0.0	24.5	16.6	16.5	16.5	0.0	17.5
		1	74	23.7	23.6	23.6	0.0	24.5	16.5	16.4	16.4	0.0	17.5
		36	0	22.9	22.8	22.7	1.0	23.5	16.8	16.7	16.5	0.0	17.5
		36	20	22.9	22.8	22.8	1.0	23.5	16.8	16.6	16.6	0.0	17.5
		36	39	22.8	22.7	22.7	1.0	23.5	16.7	16.6	16.6	0.0	17.5
		75	0	22.9	22.8	22.7	1.0	23.5	16.7	16.6	16.6	0.0	17.5
	16QAM	1	0	23.2	23.2	22.8	1.0	23.5	17.1	17.0	16.6	0.0	17.5
		1	37	23.2	23.2	22.7	1.0	23.5	17.1	17.1	16.5	0.0	17.5
		1	74	23.1	23.1	22.7	1.0	23.5	16.9	16.9	16.5	0.0	17.5
		36	0	22.0	21.8	21.8	2.0	22.5	16.8	16.6	16.5	0.0	17.5
		36	20	22.0	21.8	21.8	2.0	22.5	16.8	16.6	16.6	0.0	17.5
		36	39	21.9	21.7	21.7	2.0	22.5	16.7	16.6	16.6	0.0	17.5
		75	0	21.9	21.8	21.8	2.0	22.5	16.8	16.6	16.6	0.0	17.5
	64QAM	1	0	22.4	22.1	21.9	2.0	22.5	16.8	16.8	17.1	0.0	17.5
		1	37	22.4	22.1	21.9	2.0	22.5	16.8	16.8	17.0	0.0	17.5
		1	74	22.4	21.9	21.9	2.0	22.5	16.6	16.6	17.1	0.0	17.5
		36	0	21.0	20.9	20.9	3.0	21.5	16.8	16.7	16.5	0.0	17.5
		36	20	21.0	20.9	20.9	3.0	21.5	16.8	16.7	16.6	0.0	17.5
		36	39	20.9	20.8	20.9	3.0	21.5	16.8	16.6	16.6	0.0	17.5
		75	0	21.0	20.8	20.8	3.0	21.5	16.8	16.6	16.6	0.0	17.5
	256QAM	1	0	19.0	19.2	18.4	5.0	19.5	16.4	17.0	16.6	0.0	17.5
		1	37	19.0	19.2	18.6	5.0	19.5	16.5	17.0	16.8	0.0	17.5
		1	74	18.8	19.1	18.4	5.0	19.5	16.3	16.8	16.6	0.0	17.5
		36	0	19.0	18.9	18.8	5.0	19.5	16.8	16.7	16.5	0.0	17.5
		36	20	19.0	18.8	18.8	5.0	19.5	16.8	16.6	16.6	0.0	17.5
		36	39	18.9	18.8	18.8	5.0	19.5	16.7	16.6	16.6	0.0	17.5
		75	0	18.9	18.8	18.8	5.0	19.5	16.7	16.6	16.6	0.0	17.5

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				132022	132322	132622			132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz			1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	23.6	23.5	23.4	0.0	24.5	16.3	16.4	16.3	0.0	17.5
		1	25	23.8	23.6	23.6	0.0	24.5	16.7	16.5	16.5	0.0	17.5
		1	49	23.9	23.7	23.7	0.0	24.5	16.3	16.4	16.3	0.0	17.5
		25	0	22.9	22.8	22.7	1.0	23.5	16.7	16.6	16.5	0.0	17.5
		25	12	22.9	22.8	22.8	1.0	23.5	16.8	16.6	16.6	0.0	17.5
		25	25	22.9	22.7	22.7	1.0	23.5	16.6	16.5	16.5	0.0	17.5
		50	0	22.9	22.7	22.7	1.0	23.5	16.7	16.5	16.5	0.0	17.5
	16QAM	1	0	23.1	22.6	22.5	1.0	23.5	16.5	16.2	16.7	0.0	17.5
		1	25	23.2	22.8	22.7	1.0	23.5	16.7	16.4	17.0	0.0	17.5
		1	49	23.0	22.5	22.5	1.0	23.5	16.5	16.2	16.7	0.0	17.5
		25	0	22.0	21.9	21.7	2.0	22.5	16.8	16.6	16.6	0.0	17.5
		25	12	22.0	21.9	21.8	2.0	22.5	16.9	16.7	16.7	0.0	17.5
		25	25	21.9	21.8	21.8	2.0	22.5	16.8	16.5	16.6	0.0	17.5
		50	0	21.9	21.8	21.7	2.0	22.5	16.8	16.5	16.6	0.0	17.5
	64QAM	1	0	21.9	21.8	21.8	2.0	22.5	16.9	16.6	16.3	0.0	17.5
		1	25	22.1	22.1	22.2	2.0	22.5	17.0	16.8	16.6	0.0	17.5
		1	49	21.8	21.7	21.9	2.0	22.5	16.8	16.5	16.3	0.0	17.5
		25	0	21.0	20.8	20.7	3.0	21.5	16.7	16.6	16.6	0.0	17.5
		25	12	21.1	20.9	20.9	3.0	21.5	16.8	16.7	16.7	0.0	17.5
		25	25	21.0	20.8	20.8	3.0	21.5	16.8	16.6	16.6	0.0	17.5
		50	0	21.0	20.7	20.7	3.0	21.5	16.7	16.6	16.6	0.0	17.5
	256QAM	1	0	18.5	18.6	18.9	5.0	19.5	16.9	16.5	16.1	0.0	17.5
		1	25	18.7	18.8	19.2	5.0	19.5	17.1	16.6	16.4	0.0	17.5
		1	49	18.5	18.7	19.0	5.0	19.5	16.9	16.5	16.1	0.0	17.5
		25	0	19.0	18.8	18.7	5.0	19.5	16.6	16.7	16.6	0.0	17.5
		25	12	19.1	18.9	18.9	5.0	19.5	16.6	16.7	16.7	0.0	17.5
		25	25	19.0	18.8	18.8	5.0	19.5	16.5	16.6	16.6	0.0	17.5
		50	0	18.9	18.8	18.8	5.0	19.5	16.6	16.6	16.5	0.0	17.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131997	132322	132647			131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz			1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	23.9	23.8	23.8	0.0	24.5	16.8	16.7	16.4	0.0	17.5
		1	12	23.9	23.8	23.8	0.0	24.5	16.7	16.6	16.5	0.0	17.5
		1	24	23.8	23.7	23.7	0.0	24.5	16.7	16.6	16.4	0.0	17.5
		12	0	23.0	22.9	22.8	1.0	23.5	16.8	16.6	16.6	0.0	17.5
		12	7	23.0	22.8	22.8	1.0	23.5	16.8	16.7	16.6	0.0	17.5
		12	13	22.9	22.8	22.8	1.0	23.5	16.7	16.6	16.6	0.0	17.5
		25	0	23.0	22.8	22.8	1.0	23.5	16.8	16.6	16.6	0.0	17.5
	16QAM	1	0	23.4	22.9	22.9	1.0	23.5	17.0	16.8	17.1	0.0	17.5
		1	12	23.4	23.0	23.0	1.0	23.5	17.0	16.8	17.1	0.0	17.5
		1	24	23.4	22.9	22.9	1.0	23.5	16.9	16.7	17.1	0.0	17.5
		12	0	22.1	21.9	21.8	2.0	22.5	16.9	16.7	16.7	0.0	17.5
		12	7	22.1	21.9	21.9	2.0	22.5	16.9	16.7	16.8	0.0	17.5
		12	13	22.0	21.8	21.9	2.0	22.5	16.8	16.7	16.7	0.0	17.5
		25	0	22.0	21.8	21.8	2.0	22.5	16.7	16.6	16.7	0.0	17.5
	64QAM	1	0	22.3	21.7	22.0	2.0	22.5	16.7	16.9	16.9	0.0	17.5
		1	12	22.3	21.7	22.1	2.0	22.5	16.7	16.9	17.0	0.0	17.5
		1	24	22.2	21.6	22.0	2.0	22.5	16.6	16.8	16.8	0.0	17.5
		12	0	21.1	20.9	20.7	3.0	21.5	16.9	16.8	16.5	0.0	17.5
		12	7	21.1	20.9	20.8	3.0	21.5	16.9	16.7	16.6	0.0	17.5
		12	13	21.0	20.8	20.7	3.0	21.5	16.8	16.7	16.5	0.0	17.5
		25	0	21.0	20.8	20.8	3.0	21.5	16.8	16.7	16.5	0.0	17.5
	256QAM	1	0	19.1	18.6	18.9	5.0	19.5	16.5	16.7	16.7	0.0	17.5
		1	12	19.1	18.6	19.0	5.0	19.5	16.5	16.7	16.8	0.0	17.5
		1	24	19.0	18.5	18.9	5.0	19.5	16.4	16.6	16.7	0.0	17.5
		12	0	19.0	18.8	18.8	5.0	19.5	16.8	16.7	16.6	0.0	17.5
		12	7	19.0	18.9	18.9	5.0	19.5	16.8	16.7	16.7	0.0	17.5
		12	13	19.0	18.8	18.8	5.0	19.5	16.8	16.6	16.6	0.0	17.5
		25	0	19.0	18.8	18.8	5.0	19.5	16.8	16.7	16.6	0.0	17.5

LTE Band 66 Measured Results (Continued)

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131987	132322	132657			131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz			1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	24.0	23.8	23.7	0.0	24.5	16.7	16.6	16.5	0.0	17.5
		1	8	23.9	23.7	23.6	0.0	24.5	16.6	16.5	16.6	0.0	17.5
		1	14	23.9	23.6	23.7	0.0	24.5	16.6	16.5	16.5	0.0	17.5
		8	0	22.9	22.8	22.8	1.0	23.5	16.8	16.6	16.6	0.0	17.5
		8	4	22.9	22.8	22.8	1.0	23.5	16.8	16.6	16.5	0.0	17.5
		8	7	22.9	22.8	22.7	1.0	23.5	16.8	16.6	16.6	0.0	17.5
		15	0	22.9	22.8	22.7	1.0	23.5	16.8	16.7	16.5	0.0	17.5
	16QAM	1	0	23.4	22.9	23.1	1.0	23.5	16.9	16.7	16.9	0.0	17.5
		1	8	23.3	22.8	22.7	1.0	23.5	16.8	16.5	17.0	0.0	17.5
		1	14	23.3	22.7	22.6	1.0	23.5	16.7	16.5	16.9	0.0	17.5
		8	0	22.0	21.9	21.9	2.0	22.5	16.9	16.8	16.7	0.0	17.5
		8	4	22.1	21.9	21.9	2.0	22.5	16.9	16.8	16.7	0.0	17.5
		8	7	22.0	21.8	21.9	2.0	22.5	16.9	16.8	16.6	0.0	17.5
		15	0	22.0	21.8	21.8	2.0	22.5	16.7	16.7	16.6	0.0	17.5
	64QAM	1	0	22.3	22.2	21.9	2.0	22.5	17.1	17.0	16.7	0.0	17.5
		1	8	22.2	22.1	21.9	2.0	22.5	17.1	16.8	16.7	0.0	17.5
		1	14	22.2	22.0	21.8	2.0	22.5	17.0	16.7	16.6	0.0	17.5
		8	0	21.0	20.9	20.8	3.0	21.5	16.9	16.6	16.6	0.0	17.5
		8	4	21.0	20.9	20.8	3.0	21.5	16.9	16.6	16.6	0.0	17.5
		8	7	21.0	20.9	20.8	3.0	21.5	16.9	16.6	16.6	0.0	17.5
		15	0	21.0	20.8	20.8	3.0	21.5	16.8	16.7	16.6	0.0	17.5
	256QAM	1	0	19.0	19.4	18.5	5.0	19.5	16.4	16.7	16.4	0.0	17.5
		1	8	19.0	19.3	18.5	5.0	19.5	16.4	16.6	16.2	0.0	17.5
		1	14	18.9	19.3	18.4	5.0	19.5	16.3	16.6	16.3	0.0	17.5
		8	0	19.1	18.9	18.7	5.0	19.5	16.7	16.8	16.5	0.0	17.5
		8	4	19.1	19.0	18.7	5.0	19.5	16.7	16.8	16.5	0.0	17.5
		8	7	19.2	18.9	18.7	5.0	19.5	16.6	16.8	16.5	0.0	17.5
		15	0	19.1	18.9	18.8	5.0	19.5	16.6	16.7	16.7	0.0	17.5

BW (MHz)	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
				131979	132322	132665			131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz			1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	23.8	23.6	23.7	0.0	24.5	16.7	16.5	16.4	0.0	17.5
		1	3	23.9	23.7	23.7	0.0	24.5	16.7	16.6	16.5	0.0	17.5
		1	5	23.8	23.6	23.6	0.0	24.5	16.6	16.5	16.4	0.0	17.5
		3	0	23.8	23.6	23.6	0.0	24.5	16.6	16.4	16.4	0.0	17.5
		3	1	23.9	23.6	23.7	0.0	24.5	16.7	16.5	16.5	0.0	17.5
		3	3	23.8	23.6	23.7	0.0	24.5	16.7	16.5	16.5	0.0	17.5
		6	0	22.8	22.7	22.7	1.0	23.5	16.7	16.6	16.5	0.0	17.5
	16QAM	1	0	23.3	22.7	22.8	1.0	23.5	16.3	16.7	16.6	0.0	17.5
		1	3	23.3	22.7	22.9	1.0	23.5	16.3	16.8	16.6	0.0	17.5
		1	5	23.2	22.7	22.8	1.0	23.5	16.3	16.6	16.6	0.0	17.5
		3	0	23.1	22.9	22.8	1.0	23.5	16.6	16.6	16.7	0.0	17.5
		3	1	23.1	22.9	22.8	1.0	23.5	16.6	16.7	16.8	0.0	17.5
		3	3	23.1	22.9	22.8	1.0	23.5	16.5	16.6	16.8	0.0	17.5
		6	0	21.8	21.9	21.8	2.0	22.5	16.7	16.7	16.8	0.0	17.5
	64QAM	1	0	22.3	21.9	22.1	2.0	22.5	16.6	16.7	16.7	0.0	17.5
		1	3	22.4	22.0	22.2	2.0	22.5	16.6	16.8	16.7	0.0	17.5
		1	5	22.2	21.8	22.1	2.0	22.5	16.6	16.6	16.6	0.0	17.5
		3	0	22.3	21.9	21.9	2.0	22.5	16.5	16.7	16.7	0.0	17.5
		3	1	22.3	21.9	21.9	2.0	22.5	16.6	16.8	16.7	0.0	17.5
		3	3	22.3	21.9	22.1	2.0	22.5	16.5	16.7	16.7	0.0	17.5
		6	0	20.9	21.1	20.7	3.0	21.5	16.6	16.9	16.8	0.0	17.5
	256QAM	1	0	19.1	18.5	18.9	5.0	19.5	16.2	16.3	16.5	0.0	17.5
		1	3	19.2	18.9	19.1	5.0	19.5	16.3	16.9	16.7	0.0	17.5
		1	5	19.0	18.8	18.9	5.0	19.5	16.2	16.7	16.5	0.0	17.5
		3	0	18.9	18.9	18.7	5.0	19.5	16.6	16.6	16.7	0.0	17.5
		3	1	18.9	18.9	18.8	5.0	19.5	16.6	16.6	16.7	0.0	17.5
		3	3	19.0	18.9	18.8	5.0	19.5	16.5	16.6	16.7	0.0	17.5
		6	0	18.8	18.8	18.7	5.0	19.5	16.6	16.5	16.5	0.0	17.5

9.3 NR (Sub 6GHz)

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 6.2.2.3-1: 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]
	≤ 0.5[2]		0[2]
DFT-s-OFDM QPSK	≤ 1		0
DFT-s-OFDM 16 QAM	≤ 2		≤ 1
DFT-s-OFDM 64 QAM	≤ 2.5		
DFT-s-OFDM 256 QAM	≤ 4.5		
CP-OFDM QPSK	≤ 3		≤ 1.5
CP-OFDM 16 QAM	≤ 3		≤ 2
CP-OFDM 64 QAM	≤ 3.5		
CP-OFDM 256 QAM	≤ 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.

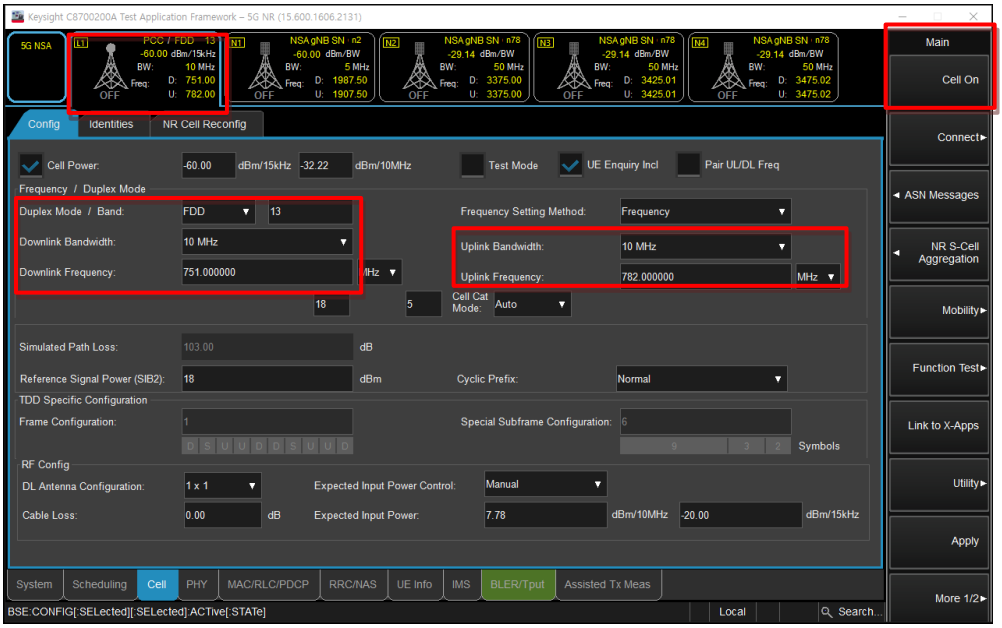
Channel Bandwidth	SCS(kHz)	OFDM	RB allocation							
			Edge_Full_Left	Edge_Full_Right	Edge_1RB_Left	Edge_1RB_Right	Outer_Full	Inner_Full	Inner_1RB_Left	Inner_1RB_Right
5MHz	15	DFT-s	2@0	2@23	1@0	1@24	25@0	12@6	1@1	1@23
		CP	2@0	2@23	1@0	1@24	25@0	13@6	1@1	1@23
	30	DFT-s	2@0	2@9	1@0	1@10	10@0	5@2[1]	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	36@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

Procedure used to establish power measurement for NR Bands of SA mode.

- FTM mode was used to measure output power.

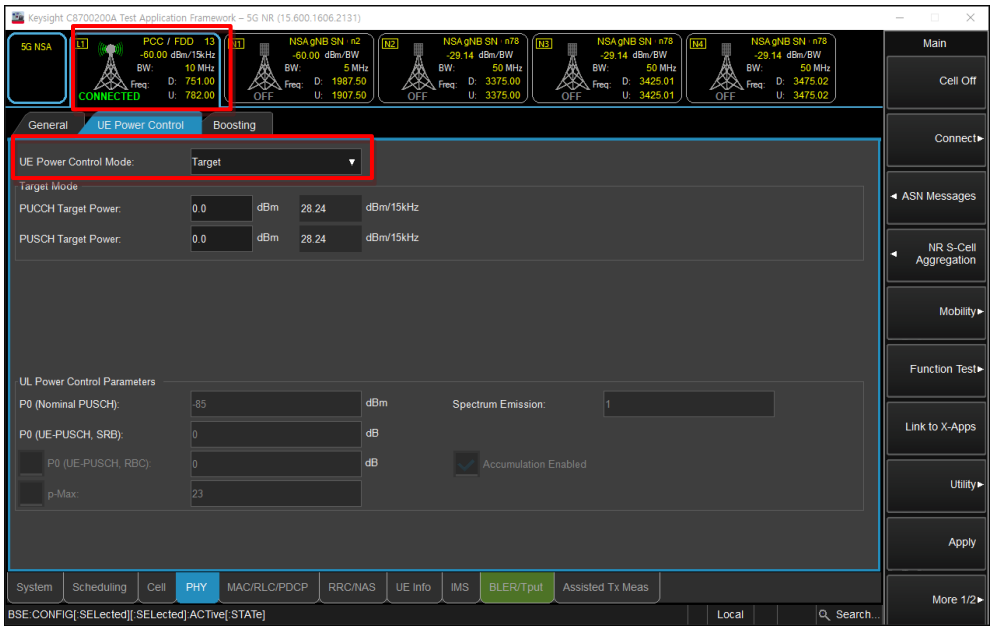
Procedure used to establish power measurement for NR Bands of NSA mode.

- Select operating band, BW and Channel.
- Click Cell on button in the right of Test application screen.
- Turn the LTE Cell On using “ON I OFF” Key.



(Figure-1)

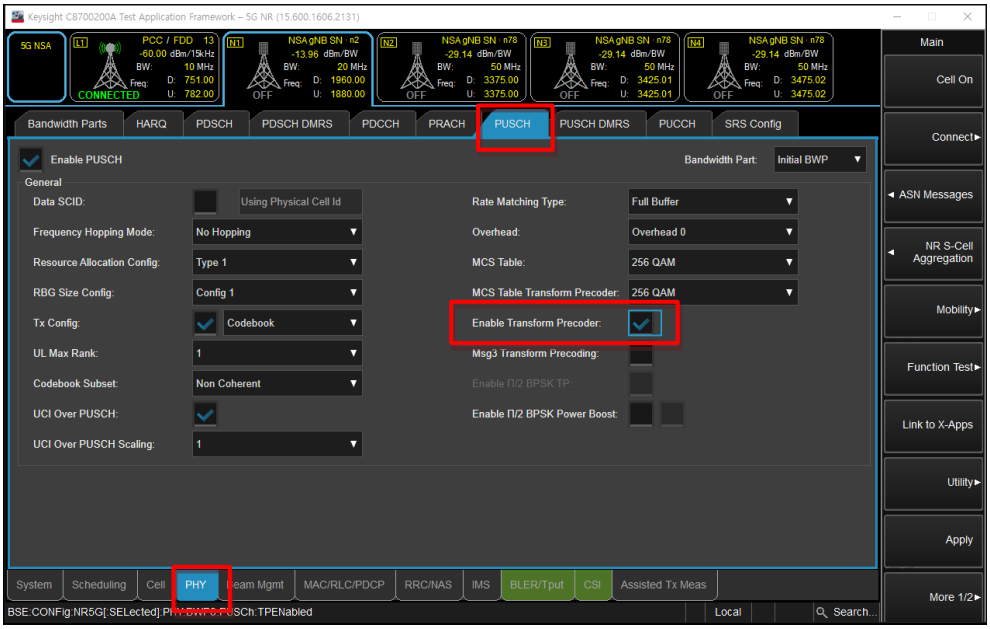
- Turn the Airplane Mode On and then turn the Airplane mode off.
- Select All down bits for UL Power control Mode in LTE.



(Figure-2)

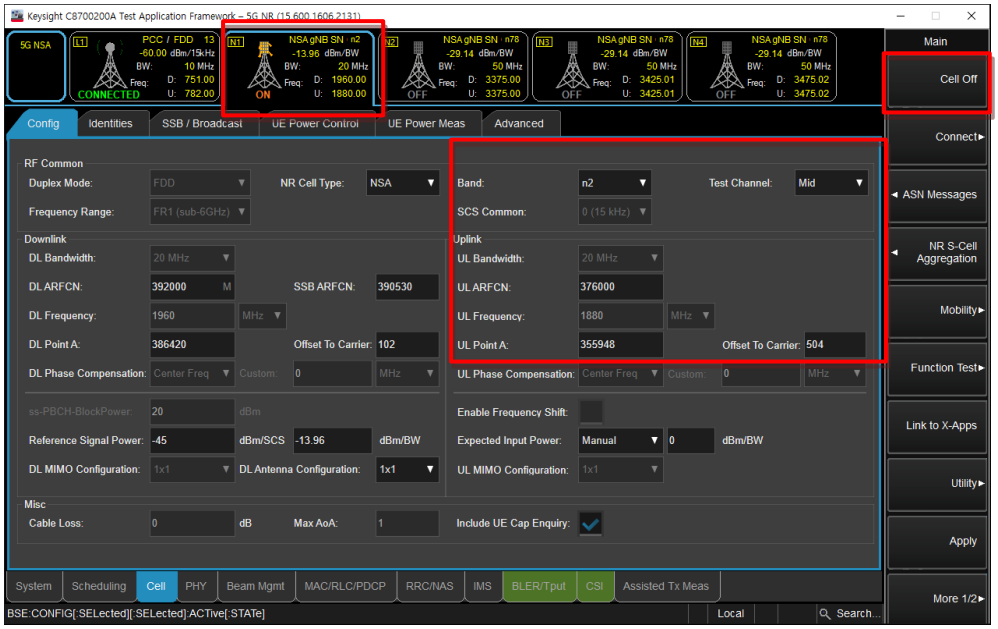
Setup for NR Band

- Select waveform for Setting NR Band (PHY -> PUSCH -> Enable Transform Precoder).
  - Enable : DFT-s-OFDM, Disable : CP-OFDM



(Figure-3)

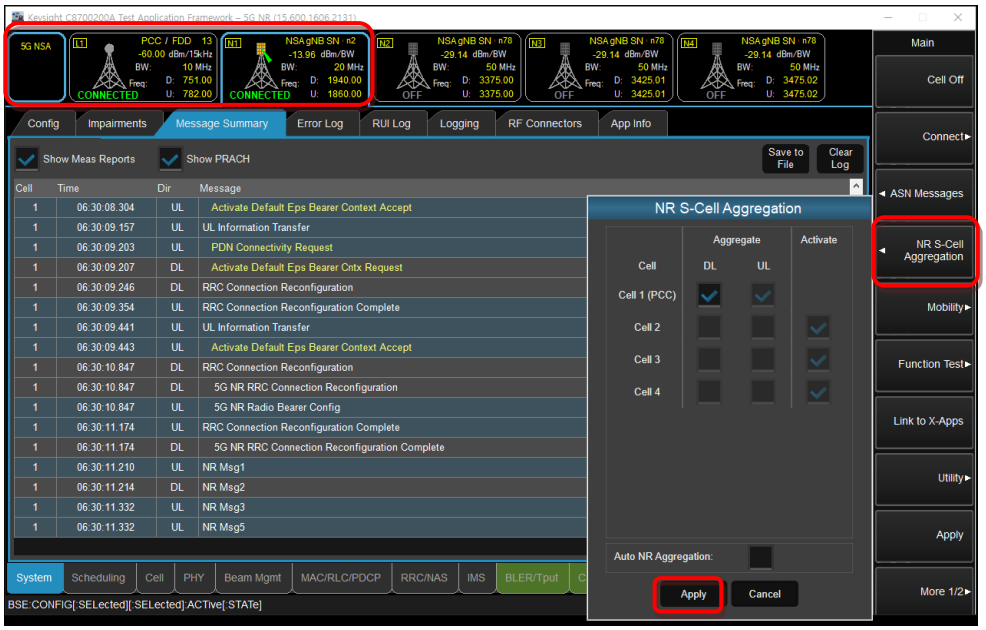
- Select operating band, BW, SCS and Channel.
- Turn the NR Cell On using “ON I OFF” Key.



(Figure-4)

Connect NR S-Cell Aggregation

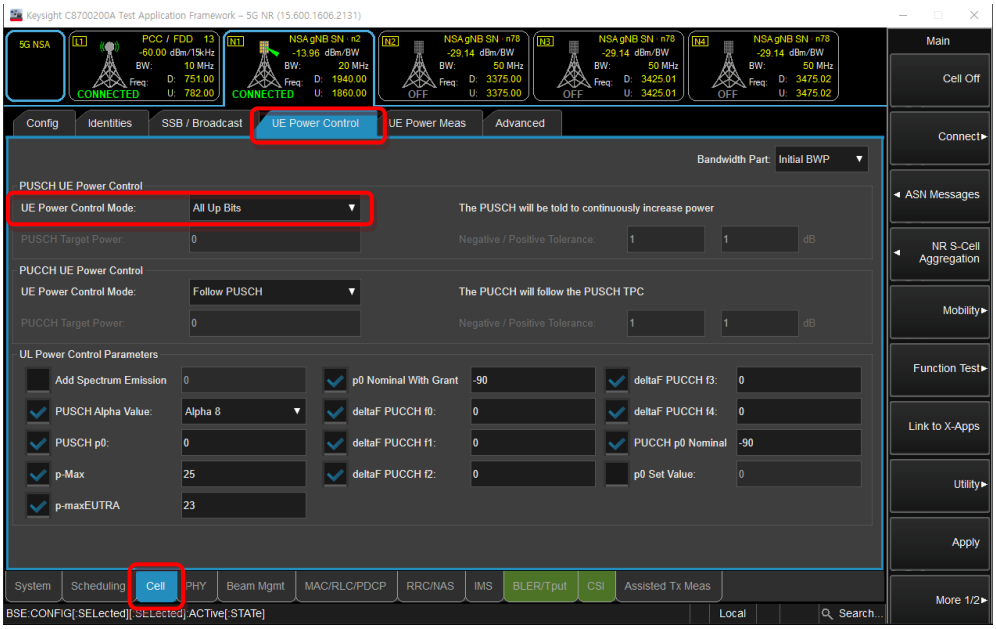
- Click NR S-Cell Aggregation.
- Check the Cell 1's DL and UL box (PCC) and than Click Apply.
- Check the message summary If message shows NR Msg 5, It is connected.



(Figure-5)

Max power setting

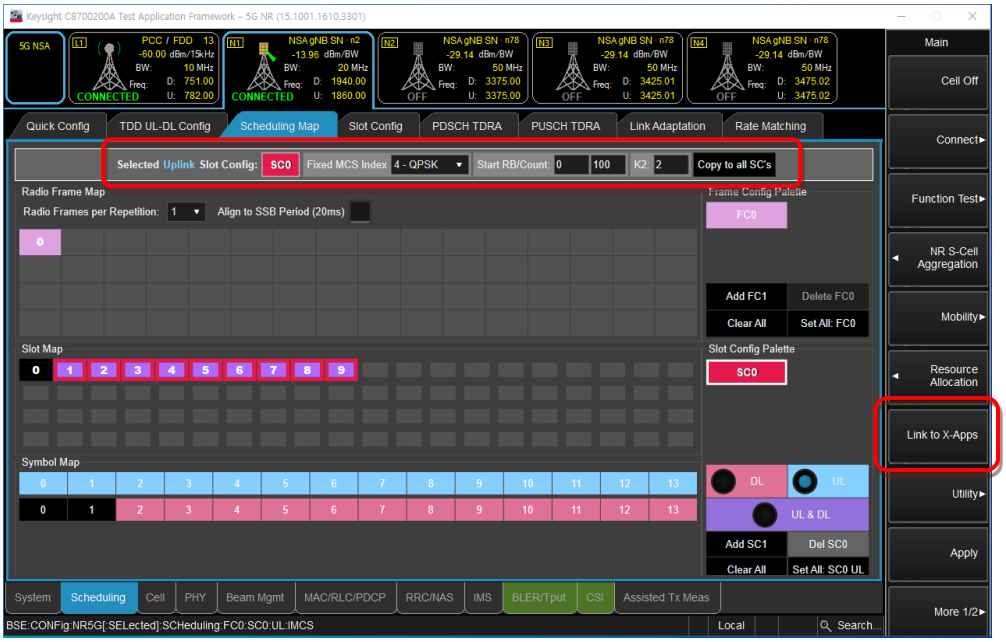
- Click "Cell" in the bottom of screen.
- Click "UE Power control" than change UE Power control mode to All Up bits.



(Figure-6)

Selecting Start RB/Count/MCS

- Select the each test configuration (Start RB, Count, MCS).



(Figure-7)

View Tx Power

- Click “Link to X-Apps”. (Please refer to Figure-7)
- Select “ Channel Power”.

(Figure-8)

NR Band n2 Measured Results

NR Band n2 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
					DSI = 0					DSI = 1				
					Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					372000	376000	380000			372000	376000	380000		
					1860 MHz	1880 MHz	1900 MHz			1860 MHz	1880 MHz	1900 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.6	23.5	23.4	0.0	24.5	15.7	15.8	15.6	0.0	16.5
			1	53	23.6	23.4	23.4	0.0	24.5	15.6	15.7	15.5	0.0	16.5
			1	104	23.6	23.4	23.4	0.0	24.5	15.6	15.7	15.6	0.0	16.5
			50	0	23.1	23.0	23.0	0.5	24.0	15.7	15.7	15.6	0.0	16.5
			50	28	23.7	23.5	23.5	0.0	24.5	15.7	15.8	15.7	0.0	16.5
			50	56	23.2	23.1	23.0	0.5	24.0	15.8	15.7	15.6	0.0	16.5
			100	0	23.2	23.0	23.0	0.5	24.0	15.7	15.7	15.6	0.0	16.5
		QPSK	1	1	23.6	23.5	23.4	0.0	24.5	15.8	15.8	15.7	0.0	16.5
			1	53	23.6	23.4	23.4	0.0	24.5	15.7	15.8	15.6	0.0	16.5
			1	104	23.7	23.4	23.4	0.0	24.5	15.8	15.7	15.5	0.0	16.5
			50	0	22.6	22.5	22.4	1.0	23.5	15.7	15.7	15.6	0.0	16.5
			50	28	23.7	23.5	23.5	0.0	24.5	15.8	15.7	15.5	0.0	16.5
			50	56	22.7	22.5	22.5	1.0	23.5	15.8	15.7	15.6	0.0	16.5
			100	0	22.6	22.5	22.5	1.0	23.5	15.7	15.7	15.6	0.0	16.5
		16QAM	1	1	22.7	22.6	22.5	1.0	23.5	15.7	15.7	15.6	0.0	16.5
		64QAM	1	1	21.4	21.5	21.3	2.5	22.0	16.3	16.2	16.1	0.0	16.5
		256QAM	1	1	19.0	18.9	18.9	4.5	20.0	15.5	15.5	15.3	0.0	16.5
	CP-OFDM	QPSK	1	1	21.9	22.0	21.9	1.5	23.0	15.7	15.7	15.6	0.0	16.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					371500	376000	380500			371500	376000	380500		
					1857.5 MHz	1880 MHz	1902.5 MHz			1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.5	23.5	23.5	0.0	24.5	15.8	15.7	15.4	0.0	16.5
			1	40	23.6	23.5	23.4	0.0	24.5	15.8	15.6	15.4	0.0	16.5
			1	77	23.6	23.5	23.4	0.0	24.5	16.0	15.6	15.6	0.0	16.5
			36	0	23.1	23.0	23.0	0.5	24.0	15.8	15.7	15.4	0.0	16.5
			36	22	23.6	23.5	23.5	0.0	24.5	15.8	15.6	15.5	0.0	16.5
			36	43	23.1	23.0	23.0	0.5	24.0	15.8	15.6	15.5	0.0	16.5
			75	0	23.1	23.0	23.0	0.5	24.0	15.8	15.6	15.5	0.0	16.5
		QPSK	1	1	23.5	23.5	23.5	0.0	24.5	15.8	15.8	15.5	0.0	16.5
			1	40	23.5	23.4	23.4	0.0	24.5	15.7	15.7	15.5	0.0	16.5
			1	77	23.6	23.5	23.4	0.0	24.5	15.8	15.7	15.5	0.0	16.5
			36	0	22.6	22.5	22.5	1.0	23.5	15.8	15.6	15.5	0.0	16.5
			36	22	23.6	23.5	23.5	0.0	24.5	15.8	15.7	15.5	0.0	16.5
			36	43	22.6	22.5	22.5	1.0	23.5	15.8	15.6	15.6	0.0	16.5
			75	0	22.6	22.5	22.5	1.0	23.5	15.7	15.6	15.4	0.0	16.5
		16QAM	1	1	22.7	22.6	22.6	1.0	23.5	15.7	15.7	15.4	0.0	16.5
		64QAM	1	1	21.6	21.7	21.6	2.5	22.0	16.3	16.2	16.1	0.0	16.5
		256QAM	1	1	18.8	19.0	18.8	4.5	20.0	15.4	15.5	15.2	0.0	16.5
	CP-OFDM	QPSK	1	1	21.9	21.9	21.9	1.5	23.0	15.7	15.7	15.5	0.0	16.5

NR Band n2 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
					371000	376000	381000			371000	376000	381000		
					1855 MHz	1880 MHz	1905 MHz			1855 MHz	1880 MHz	1905 MHz		
10 MHz	DFT-s-OFDM	QPSK	1	1	23.4	23.5	23.4	0.0	24.5	15.6	15.4	15.3	0.0	16.5
			1	26	23.4	23.5	23.4	0.0	24.5	15.6	15.4	15.3	0.0	16.5
			1	50	23.5	23.4	23.4	0.0	24.5	15.6	15.4	15.3	0.0	16.5
			25	0	22.9	22.9	22.9	0.5	24.0	15.6	15.4	15.3	0.0	16.5
			25	14	23.5	23.5	23.4	0.0	24.5	15.7	15.3	15.3	0.0	16.5
			25	27	23.0	23.0	23.0	0.5	24.0	15.6	15.4	15.3	0.0	16.5
			50	0	23.0	23.0	22.9	0.5	24.0	15.6	15.4	15.3	0.0	16.5
		16QAM	1	1	23.4	23.5	23.4	0.0	24.5	15.7	15.4	15.4	0.0	16.5
			1	26	23.5	23.5	23.4	0.0	24.5	15.7	15.4	15.5	0.0	16.5
			1	50	23.5	23.4	23.4	0.0	24.5	15.7	15.4	15.3	0.0	16.5
			25	0	22.5	22.5	22.4	1.0	23.5	15.6	15.3	15.2	0.0	16.5
			25	14	23.5	23.5	23.4	0.0	24.5	15.6	15.4	15.4	0.0	16.5
			25	27	22.5	22.5	22.4	1.0	23.5	15.7	15.3	15.3	0.0	16.5
			50	0	22.5	22.5	22.4	1.0	23.5	15.6	15.3	15.4	0.0	16.5
		64QAM	1	1	22.5	22.5	22.5	1.0	23.5	15.5	15.3	15.7	0.0	16.5
			1	1	21.3	21.4	21.2	2.5	22.0	16.2	15.9	15.1	0.0	16.5
			1	1	18.9	18.9	18.8	4.5	20.0	15.4	15.1	15.1	0.0	16.5
	CP-OFDM		1	1	21.9	22.0	21.8	1.5	23.0	15.7	15.4	15.3	0.0	16.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					370500	376000	381500			370500	376000	381500		
					1852.5 MHz	1880 MHz	1907.5 MHz			1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	DFT-s-OFDM	QPSK	1	1	23.4	23.4	23.3	0.0	24.5	15.5	15.4	15.3	0.0	16.5
			1	13	23.5	23.5	23.4	0.0	24.5	15.7	15.4	15.3	0.0	16.5
			1	23	23.5	23.4	23.4	0.0	24.5	15.6	15.5	15.3	0.0	16.5
			12	0	23.0	23.0	22.9	0.5	24.0	15.5	15.4	15.2	0.0	16.5
			12	7	23.5	23.5	23.4	0.0	24.5	15.6	15.6	15.2	0.0	16.5
			12	13	23.0	23.0	23.0	0.5	24.0	15.6	15.4	15.2	0.0	16.5
			25	0	23.0	22.9	22.9	0.5	24.0	15.5	15.4	15.2	0.0	16.5
		16QAM	1	1	23.3	23.4	23.3	0.0	24.5	15.6	15.4	15.1	0.0	16.5
			1	13	23.5	23.5	23.4	0.0	24.5	15.7	15.5	15.1	0.0	16.5
			1	23	23.5	23.4	23.4	0.0	24.5	15.7	15.4	15.2	0.0	16.5
			12	0	22.4	22.5	22.4	1.0	23.5	15.6	15.5	15.3	0.0	16.5
			12	7	23.5	23.5	23.4	0.0	24.5	15.5	15.5	15.3	0.0	16.5
			12	13	22.5	22.5	22.4	1.0	23.5	15.6	15.4	15.3	0.0	16.5
			25	0	22.5	22.5	22.4	1.0	23.5	15.6	15.5	15.2	0.0	16.5
		64QAM	1	1	22.5	22.5	22.4	1.0	23.5	15.6	15.9	15.6	0.0	16.5
			1	1	21.6	21.6	21.4	2.5	22.0	16.2	15.3	15.8	0.0	16.5
			1	1	18.8	18.9	18.7	4.5	20.0	15.3	15.2	15.0	0.0	16.5
	CP-OFDM		1	1	21.8	21.9	21.8	1.5	23.0	15.6	15.5	15.4	0.0	16.5

NR Band n5 Measured Results

NR Band n5 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)										
					DSI = 0					DSI = 1					
					Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					166800	167300	167800			166800	167300	167800		
					834 MHz	836.5 MHz	839 MHz			834 MHz	836.5 MHz	839 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1		23.6		0.0	24.5		20.9		0.0	21.5
			1	53		23.6		0.0	24.5		20.8		0.0	21.5
			1	104		23.5		0.0	24.5		20.7		0.0	21.5
			50	0		23.2		0.5	24.0		20.9		0.0	21.5
			50	28		23.7		0.0	24.5		20.8		0.0	21.5
			50	56		23.2		0.5	24.0		20.8		0.0	21.5
			100	0		23.2		0.5	24.0		20.8		0.0	21.5
		QPSK	1	1		23.7		0.0	24.5		20.8		0.0	21.5
			1	53		23.6		0.0	24.5		20.7		0.0	21.5
			1	104		23.6		0.0	24.5		20.6		0.0	21.5
			50	0		22.7		1.0	23.5		20.9		0.0	21.5
			50	28		23.6		0.0	24.5		20.8		0.0	21.5
			50	56		22.7		1.0	23.5		20.8		0.0	21.5
			100	0		22.7		1.0	23.5		20.8		0.0	21.5
		16QAM	1	1		22.7		1.0	23.5		21.1		0.0	21.5
		64QAM	1	1		21.4		2.5	22.0		20.8		0.0	21.5
		256QAM	1	1		19.4		4.5	20.0		19.4		1.5	20.0
	CP-OFDM	QPSK	1	1		22.0		1.5	23.0		20.7		0.0	21.5
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					166300	167300	168300			166300	167300	168300		
					831.5 MHz	836.5 MHz	841.5 MHz			831.5 MHz	836.5 MHz	841.5 MHz		
15 MHz	DFT-s-OFDM	π/2 BPSK	1	1		23.6		0.0	24.5		20.8		0.0	21.5
			1	40		23.7		0.0	24.5		20.8		0.0	21.5
			1	77		23.6		0.0	24.5		20.9		0.0	21.5
			36	0		23.2		0.5	24.0		20.8		0.0	21.5
			36	22		23.6		0.0	24.5		20.8		0.0	21.5
			36	43		23.2		0.5	24.0		20.8		0.0	21.5
			75	0		23.2		0.5	24.0		20.8		0.0	21.5
		QPSK	1	1		23.6		0.0	24.5		20.7		0.0	21.5
			1	40		23.6		0.0	24.5		20.7		0.0	21.5
			1	77		23.6		0.0	24.5		20.8		0.0	21.5
			36	0		22.7		1.0	23.5		20.8		0.0	21.5
			36	22		23.6		0.0	24.5		20.8		0.0	21.5
			36	43		22.6		1.0	23.5		20.8		0.0	21.5
			75	0		22.7		1.0	23.5		20.8		0.0	21.5
		16QAM	1	1		22.8		1.0	23.5		20.9		0.0	21.5
		64QAM	1	1		21.6		2.5	22.0		20.8		0.0	21.5
		256QAM	1	1		19.1		4.5	20.0		19.1		1.5	20.0
	CP-OFDM	QPSK	1	1		22.0		1.5	23.0		20.6		0.0	21.5

NR Band n5 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
					165800	167300	168800			165800	167300	168800		
					829 MHz	836.5 MHz	844 MHz			829 MHz	836.5 MHz	844 MHz		
10 MHz	DFT-s-OFDM	π/2 BPSK	1	1		23.5		0.0	24.5		20.8		0.0	21.5
			1	26		23.6		0.0	24.5		20.9		0.0	21.5
			1	50		23.7		0.0	24.5		20.9		0.0	21.5
			25	0		23.0		0.5	24.0		20.7		0.0	21.5
			25	14		23.7		0.0	24.5		20.8		0.0	21.5
			25	27		23.1		0.5	24.0		20.8		0.0	21.5
			50	0		23.1		0.5	24.0		20.8		0.0	21.5
		QPSK	1	1		23.5		0.0	24.5		20.6		0.0	21.5
			1	26		23.6		0.0	24.5		20.7		0.0	21.5
			1	50		23.6		0.0	24.5		20.8		0.0	21.5
			25	0		22.6		1.0	23.5		20.7		0.0	21.5
			25	14		23.7		0.0	24.5		20.8		0.0	21.5
			25	27		22.6		1.0	23.5		20.7		0.0	21.5
			50	0		22.6		1.0	23.5		20.8		0.0	21.5
		16QAM	1	1		22.7		1.0	23.5		20.9		0.0	21.5
		64QAM	1	1		21.5		2.5	22.0		20.9		0.0	21.5
		256QAM	1	1		19.0		4.5	20.0		19.0		1.5	20.0
	CP-OFDM	QPSK	1	1		21.9		1.5	23.0		20.5		0.0	21.5

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					165300	167300	169300			165300	167300	169300		
					826.5 MHz	836.5 MHz	846.5 MHz			826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.7	23.6	23.6	0.0	24.5	21.0	20.9	21.0	0.0	21.5
			1	13	23.6	23.7	23.5	0.0	24.5	20.9	20.9	20.9	0.0	21.5
			1	23	23.5	23.6	23.4	0.0	24.5	20.8	20.9	20.8	0.0	21.5
			12	0	23.2	23.2	23.1	0.5	24.0	20.9	20.9	20.8	0.0	21.5
			12	7	23.6	23.7	23.6	0.0	24.5	20.8	20.8	20.8	0.0	21.5
			12	13	23.1	23.1	23.0	0.5	24.0	20.7	20.8	20.7	0.0	21.5
			25	0	23.1	23.1	23.1	0.5	24.0	20.8	20.8	20.8	0.0	21.5
		QPSK	1	1	23.7	23.5	23.6	0.0	24.5	20.9	20.7	20.8	0.0	21.5
			1	13	23.6	23.6	23.5	0.0	24.5	20.8	20.8	20.7	0.0	21.5
			1	23	23.5	23.5	23.4	0.0	24.5	20.6	20.8	20.6	0.0	21.5
			12	0	22.7	22.7	22.6	1.0	23.5	20.9	20.8	20.8	0.0	21.5
			12	7	23.6	23.7	23.6	0.0	24.5	20.8	20.8	20.7	0.0	21.5
			12	13	22.6	22.6	22.5	1.0	23.5	20.8	20.8	20.7	0.0	21.5
			25	0	22.6	22.6	22.6	1.0	23.5	20.8	20.8	20.8	0.0	21.5
		16QAM	1	1	22.8	22.7	22.8	1.0	23.5	21.1	20.9	21.0	0.0	21.5
		64QAM	1	1	21.5	21.3	21.4	2.5	22.0	21.0	20.9	21.0	0.0	21.5
		256QAM	1	1	19.4	19.4	19.4	4.5	20.0	19.3	19.4	19.4	1.5	20.0
	CP-OFDM	QPSK	1	1	22.1	22.0	22.1	1.5	23.0	20.8	20.6	20.7	0.0	21.5

NR Band n66 Measured Results

NR Band n66 Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)									
					DSI = 0					DSI = 1				
					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	23.5	23.4	23.3	0.0	24.5	17.1	16.6	16.9	0.0	17.5
			1	53	23.4	23.3	23.2	0.0	24.5	17.0	16.8	16.7	0.0	17.5
			1	104	23.4	23.3	23.2	0.0	24.5	17.0	16.7	16.7	0.0	17.5
			50	0	23.0	22.9	22.9	0.5	24.0	17.0	17.0	16.9	0.0	17.5
			50	28	23.5	23.4	23.3	0.0	24.5	17.0	16.9	16.8	0.0	17.5
			50	56	23.0	22.8	22.8	0.5	24.0	17.0	16.9	16.8	0.0	17.5
			100	0	23.0	22.9	22.9	0.5	24.0	17.1	16.9	16.8	0.0	17.5
		QPSK	1	1	23.6	23.4	23.4	0.0	24.5	17.0	16.9	16.8	0.0	17.5
			1	53	23.5	23.3	23.3	0.0	24.5	17.0	16.8	16.7	0.0	17.5
			1	104	23.4	23.2	23.2	0.0	24.5	16.9	16.8	16.6	0.0	17.5
			50	0	22.6	22.5	22.5	1.0	23.5	17.1	17.0	16.8	0.0	17.5
			50	28	23.5	23.4	23.4	0.0	24.5	17.1	16.9	16.7	0.0	17.5
			50	56	22.5	22.4	22.5	1.0	23.5	17.0	16.8	16.7	0.0	17.5
			100	0	22.6	22.5	22.5	1.0	23.5	17.1	16.9	16.8	0.0	17.5
		16QAM	1	1	22.7	22.6	22.6	1.0	23.5	17.0	16.8	16.7	0.0	17.5
		64QAM	1	1	21.7	21.7	21.7	2.5	22.0	17.2	17.0	17.0	0.0	17.5
		256QAM	1	1	19.0	19.0	18.9	4.5	20.0	17.0	16.8	16.8	0.0	17.5
	CP-OFDM	QPSK	1	1	22.0	22.0	22.0	1.5	23.0	17.0	16.9	16.8	0.0	17.5
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	23.7	23.5	23.4	0.0	24.5	17.1	16.9	16.7	0.0	17.5
			1	40	23.5	23.3	23.2	0.0	24.5	16.9	16.7	16.7	0.0	17.5
			1	77	23.5	23.3	23.2	0.0	24.5	16.9	16.7	16.6	0.0	17.5
			36	0	23.1	23.0	22.9	0.5	24.0	17.0	16.9	16.8	0.0	17.5
			36	22	23.6	23.4	23.3	0.0	24.5	16.9	16.8	16.7	0.0	17.5
			36	43	23.1	22.9	22.8	0.5	24.0	16.9	16.8	16.7	0.0	17.5
			75	0	23.1	22.9	22.8	0.5	24.0	17.0	16.8	16.8	0.0	17.5
		QPSK	1	1	23.7	23.5	23.4	0.0	24.5	17.1	16.9	16.8	0.0	17.5
			1	40	23.5	23.4	23.3	0.0	24.5	16.9	16.7	16.7	0.0	17.5
			1	77	23.5	23.3	23.2	0.0	24.5	16.9	16.7	16.6	0.0	17.5
			36	0	22.7	22.6	22.5	1.0	23.5	17.1	16.9	16.8	0.0	17.5
			36	22	23.6	23.4	23.3	0.0	24.5	16.9	16.8	16.7	0.0	17.5
			36	43	22.6	22.4	22.4	1.0	23.5	17.0	16.8	16.7	0.0	17.5
			75	0	22.6	22.5	22.5	1.0	23.5	17.0	16.9	16.7	0.0	17.5
		16QAM	1	1	22.8	22.7	22.6	1.0	23.5	16.9	16.8	16.7	0.0	17.5
		64QAM	1	1	21.6	21.5	21.4	2.5	22.0	17.0	16.9	16.6	0.0	17.5
		256QAM	1	1	19.1	19.0	18.9	4.5	20.0	17.1	16.9	16.8	0.0	17.5
	CP-OFDM	QPSK	1	1	22.1	22.0	21.9	1.5	23.0	17.0	16.9	16.8	0.0	17.5

NR Band n66 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	23.4	23.3	23.3	0.0	24.5	16.8	16.7	16.8	0.0	17.5
			1	26	23.4	23.3	23.2	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			1	50	23.4	23.3	23.2	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			25	0	22.9	22.9	22.7	0.5	24.0	16.8	16.8	16.8	0.0	17.5
			25	14	23.4	23.4	23.3	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			25	27	22.9	22.9	22.8	0.5	24.0	16.9	16.8	16.9	0.0	17.5
			50	0	22.9	22.9	22.8	0.5	24.0	16.9	16.8	16.8	0.0	17.5
		QPSK	1	1	23.4	23.3	23.3	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			1	26	23.4	23.3	23.2	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			1	50	23.4	23.3	23.2	0.0	24.5	16.8	16.7	16.8	0.0	17.5
			25	0	22.5	22.4	22.5	1.0	23.5	16.8	16.8	16.8	0.0	17.5
			25	14	23.4	23.3	23.3	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			25	27	22.5	22.5	22.5	1.0	23.5	16.9	16.8	16.8	0.0	17.5
			50	0	22.5	22.4	22.5	1.0	23.5	16.8	16.8	16.8	0.0	17.5
		16QAM	1	1	22.6	22.5	22.5	1.0	23.5	16.6	16.6	16.6	0.0	17.5
		64QAM	1	1	21.5	21.4	21.5	2.5	22.0	16.8	16.8	16.8	0.0	17.5
		256QAM	1	1	18.9	18.9	18.9	4.5	20.0	16.8	16.7	16.8	0.0	17.5
	CP-OFDM	QPSK	1	1	21.9	21.8	21.9	1.5	23.0	16.8	16.7	16.8	0.0	17.5

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	23.4	22.8	22.5	0.0	24.5	16.8	16.7	16.8	0.0	17.5
			1	13	23.4	23.3	23.2	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			1	23	23.4	23.3	23.2	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			12	0	22.9	22.8	22.8	0.5	24.0	16.8	16.8	16.8	0.0	17.5
			12	7	23.5	23.4	23.3	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			12	13	22.9	22.9	22.8	0.5	24.0	16.9	16.8	16.8	0.0	17.5
			25	0	22.9	22.8	22.7	0.5	24.0	16.9	16.8	16.8	0.0	17.5
		QPSK	1	1	23.4	23.3	23.2	0.0	24.5	16.8	16.7	16.7	0.0	17.5
			1	13	23.4	23.4	23.3	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			1	23	23.4	23.4	23.2	0.0	24.5	16.9	16.8	16.8	0.0	17.5
			12	0	22.5	22.4	22.4	1.0	23.5	16.9	16.8	16.8	0.0	17.5
			12	7	23.4	23.4	23.3	0.0	24.5	16.8	16.8	16.8	0.0	17.5
			12	13	22.5	22.5	22.5	1.0	23.5	16.9	16.8	16.8	0.0	17.5
			25	0	22.5	22.4	22.4	1.0	23.5	16.9	16.8	16.8	0.0	17.5
		16QAM	1	1	22.6	22.5	22.5	1.0	23.5	16.7	16.6	16.6	0.0	17.5
		64QAM	1	1	21.6	21.5	21.5	2.5	22.0	16.7	16.6	16.6	0.0	17.5
		256QAM	1	1	18.8	18.8	18.8	4.5	20.0	16.8	16.7	16.8	0.0	17.5
	CP-OFDM	QPSK	1	1	21.9	21.8	21.8	1.5	23.0	16.7	16.7	16.8	0.0	17.5

NR Band n77 – Lower Band Measured Results

NR Band n77 – Lower Band Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)					
					DSI = 0			DSI = 1		
					Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					633333			633333		
					3500 MHz			3500 MHz		
100 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.3	0.0	25.0	14.5	0.0	15.0
			1	137	24.2	0.0	25.0	14.5	0.0	15.0
			1	271	23.9	0.0	25.0	14.2	0.0	15.0
			135	0	24.0	0.5	24.5	14.7	0.0	15.0
			135	69	24.2	0.0	25.0	14.6	0.0	15.0
			135	138	23.5	0.5	24.5	14.4	0.0	15.0
			270	0	23.8	0.5	24.5	14.5	0.0	15.0
		QPSK	1	1	24.2	0.0	25.0	14.4	0.0	15.0
			1	137	24.3	0.0	25.0	14.5	0.0	15.0
			1	271	23.8	0.0	25.0	14.2	0.0	15.0
			135	0	23.3	1.0	24.0	14.6	0.0	15.0
			135	69	24.1	0.0	25.0	14.6	0.0	15.0
			135	138	24.0	1.0	24.0	14.4	0.0	15.0
			270	0	23.3	1.0	24.0	14.6	0.0	15.0
		16QAM	1	1	23.3	1.0	24.0	14.5	0.0	15.0
		64QAM	1	1	21.4	2.5	22.5	14.4	0.0	15.0
		256QAM	1	1	18.3	4.5	20.5	13.5	0.0	15.0
	CP-OFDM	QPSK	1	1	21.2	1.5	23.5	13.4	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					633333			633333		
					3500 MHz			3500 MHz		
90 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.0	0.0	25.0	14.4	0.0	15.0
			1	123	24.0	0.0	25.0	14.4	0.0	15.0
			1	243	23.8	0.0	25.0	14.3	0.0	15.0
			120	0	23.7	0.5	24.5	14.5	0.0	15.0
			120	63	23.9	0.0	25.0	14.4	0.0	15.0
			120	125	23.4	0.5	24.5	14.2	0.0	15.0
			243	0	23.5	0.5	24.5	14.4	0.0	15.0
		QPSK	1	1	24.2	0.0	25.0	14.4	0.0	15.0
			1	123	23.9	0.0	25.0	14.3	0.0	15.0
			1	243	24.0	0.0	25.0	14.3	0.0	15.0
			120	0	23.3	1.0	24.0	14.4	0.0	15.0
			120	63	24.0	0.0	25.0	14.4	0.0	15.0
			120	125	22.9	1.0	24.0	14.2	0.0	15.0
			243	0	23.1	1.0	24.0	14.4	0.0	15.0
		16QAM	1	1	23.0	1.0	24.0	14.2	0.0	15.0
		64QAM	1	1	21.3	2.5	22.5	14.2	0.0	15.0
		256QAM	1	1	18.5	4.5	20.5	13.4	0.0	15.0
	CP-OFDM	QPSK	1	1	21.6	1.5	23.5	13.7	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Lower Band 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
					633333			633333		
					3500 MHz			3500 MHz		
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.4	0.0	25.0	14.6	0.0	15.0
			1	109	24.0	0.0	25.0	14.5	0.0	15.0
			1	215	23.9	0.0	25.0	14.2	0.0	15.0
			108	0	24.0	0.5	24.5	14.7	0.0	15.0
			108	55	24.2	0.0	25.0	14.6	0.0	15.0
			108	109	23.5	0.5	24.5	14.4	0.0	15.0
			216	0	23.7	0.5	24.5	14.6	0.0	15.0
		QPSK	1	1	24.3	0.0	25.0	14.7	0.0	15.0
			1	109	24.1	0.0	25.0	14.6	0.0	15.0
			1	215	24.0	0.0	25.0	14.7	0.0	15.0
			108	0	23.4	1.0	24.0	14.6	0.0	15.0
			108	55	24.2	0.0	25.0	14.4	0.0	15.0
			108	109	23.0	1.0	24.0	14.6	0.0	15.0
			216	0	23.3	1.0	24.0	14.6	0.0	15.0
		16QAM	1	1	23.5	1.0	24.0	14.6	0.0	15.0
		64QAM	1	1	21.6	2.5	22.5	14.5	0.0	15.0
		256QAM	1	1	18.7	4.5	20.5	13.5	0.0	15.0
	CP-OFDM	QPSK	1	1	21.5	1.5	23.5	13.5	0.0	15.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					633333			633333		
					3500 MHz			3500 MHz		
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	24.0	0.0	25.0	14.2	0.0	15.0
			1	81	24.0	0.0	25.0	14.3	0.0	15.0
			1	160	23.8	0.0	25.0	14.2	0.0	15.0
			81	0	23.6	0.5	24.5	14.4	0.0	15.0
			81	41	24.0	0.0	25.0	14.4	0.0	15.0
			81	81	23.4	0.5	24.5	14.3	0.0	15.0
			162	0	23.6	0.5	24.5	14.4	0.0	15.0
		QPSK	1	1	24.1	0.0	25.0	14.4	0.0	15.0
			1	81	24.0	0.0	25.0	14.5	0.0	15.0
			1	160	23.8	0.0	25.0	14.2	0.0	15.0
			81	0	23.1	1.0	24.0	14.4	0.0	15.0
			81	41	24.1	0.0	25.0	14.3	0.0	15.0
			81	81	22.9	1.0	24.0	14.3	0.0	15.0
			162	0	23.0	1.0	24.0	14.4	0.0	15.0
		16QAM	1	1	23.0	1.0	24.0	14.4	0.0	15.0
		64QAM	1	1	21.2	2.5	22.5	14.3	0.0	15.0
		256QAM	1	1	18.7	4.5	20.5	13.6	0.0	15.0
	CP-OFDM	QPSK	1	1	21.3	1.5	23.5	13.5	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Lower Band 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
					633333			633333		
					3500 MHz			3500 MHz		
50 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.9	0.0	25.0	14.4	0.0	15.0
			1	67	23.7	0.0	25.0	14.3	0.0	15.0
			1	131	23.6	0.0	25.0	14.2	0.0	15.0
			64	0	23.4	0.5	24.5	14.5	0.0	15.0
			64	35	23.8	0.0	25.0	14.4	0.0	15.0
			64	69	23.3	0.5	24.5	14.3	0.0	15.0
			128	0	23.3	0.5	24.5	14.3	0.0	15.0
		QPSK	1	1	24.1	0.0	25.0	14.4	0.0	15.0
			1	67	23.7	0.0	25.0	14.3	0.0	15.0
			1	131	23.6	0.0	25.0	14.3	0.0	15.0
			64	0	23.1	1.0	24.0	14.5	0.0	15.0
			64	35	23.9	0.0	25.0	14.4	0.0	15.0
			64	69	22.7	1.0	24.0	14.2	0.0	15.0
			128	0	22.8	1.0	24.0	14.3	0.0	15.0
		16QAM	1	1	23.2	1.0	24.0	14.5	0.0	15.0
		64QAM	1	1	21.2	2.5	22.5	14.3	0.0	15.0
		256QAM	1	1	18.5	4.5	20.5	13.8	0.0	15.0
	CP-OFDM	QPSK	1	1	21.5	1.5	23.5	13.5	0.0	15.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)	MPR	Tune-up Limit	Measured Pwr (dBm)	MPR	Tune-up Limit
					633333			633333		
					3500 MHz			3500 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	22.8	0.0	25.0	13.7	0.0	15.0
			1	53	22.8	0.0	25.0	13.6	0.0	15.0
			1	104	22.8	0.0	25.0	13.7	0.0	15.0
			50	0	22.6	0.5	24.5	13.8	0.0	15.0
			50	28	22.9	0.0	25.0	13.8	0.0	15.0
			50	56	22.3	0.5	24.5	13.7	0.0	15.0
			100	0	22.2	0.5	24.5	13.8	0.0	15.0
		QPSK	1	1	23.0	0.0	25.0	13.7	0.0	15.0
			1	53	22.9	0.0	25.0	13.7	0.0	15.0
			1	104	22.9	0.0	25.0	13.6	0.0	15.0
			50	0	21.8	1.0	24.0	13.8	0.0	15.0
			50	28	22.9	0.0	25.0	13.7	0.0	15.0
			50	56	21.8	1.0	24.0	13.7	0.0	15.0
			100	0	21.9	1.0	24.0	13.8	0.0	15.0
		16QAM	1	1	21.8	1.0	24.0	13.8	0.0	15.0
		64QAM	1	1	20.2	2.5	22.5	13.5	0.0	15.0
		256QAM	1	1	18.4	4.5	20.5	13.7	0.0	15.0
	CP-OFDM	QPSK	1	1	21.3	1.5	23.5	13.7	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Lower Band 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
										630667		636000		
					3460 MHz	3500 MHz	3540 MHz			3460 MHz	3500 MHz	3540 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.2	23.1	22.9	0.0	25.0	13.7	13.6	13.4	0.0	15.0
			1	26	23.3	23.0	22.7	0.0	25.0	13.6	13.4	13.2	0.0	15.0
			1	49	23.3	23.0	22.9	0.0	25.0	13.7	13.4	13.3	0.0	15.0
			25	0	23.0	22.6	22.4	0.5	24.5	13.7	13.7	13.4	0.0	15.0
			25	13	23.2	23.0	22.8	0.0	25.0	13.6	13.6	13.3	0.0	15.0
			25	26	22.8	22.6	22.3	0.5	24.5	13.7	13.5	13.4	0.0	15.0
			50	0	23.0	22.7	22.3	0.5	24.5	13.8	13.6	13.4	0.0	15.0
		QPSK	1	1	23.5	23.4	22.9	0.0	25.0	13.7	13.7	13.5	0.0	15.0
			1	26	23.5	23.1	22.9	0.0	25.0	13.8	13.6	13.3	0.0	15.0
			1	49	23.3	23.0	22.9	0.0	25.0	13.8	13.6	13.3	0.0	15.0
			25	0	22.3	22.3	21.8	1.0	24.0	13.7	13.7	13.4	0.0	15.0
			25	13	23.5	23.1	22.8	0.0	25.0	13.6	13.5	13.3	0.0	15.0
			25	26	22.3	21.9	21.7	1.0	24.0	13.7	13.5	13.4	0.0	15.0
			50	0	22.3	22.2	21.8	1.0	24.0	13.8	13.5	13.4	0.0	15.0
		16QAM	1	1	22.6	22.3	22.0	1.0	24.0	13.9	13.6	13.4	0.0	15.0
		64QAM	1	1	20.8	20.5	20.5	2.5	22.5	13.6	13.5	13.4	0.0	15.0
		256QAM	1	1	18.9	18.7	18.5	4.5	20.5	13.8	13.7	13.5	0.0	15.0
	CP-OFDM	QPSK	1	1	21.9	21.7	21.6	1.5	23.5	13.8	13.6	13.5	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Upper Band Measured Results

NR Band n77 – Upper Band Measured Results

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Maximum Allowed Average Power (dBm)										
					DSI = 0					DSI = 1					
					Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					650000	656000	662000			650000	656000	662000		
					3750 MHz	3840 MHz	3930 MHz			3750 MHz	3840 MHz	3930 MHz		
100 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.3	23.3	23.6	0.0	25.0	13.6	13.6	13.6	0.0	15.0
			1	137	23.3	23.5	23.3	0.0	25.0	13.7	13.9	13.5	0.0	15.0
			1	271	23.1	23.6	23.4	0.0	25.0	13.3	13.8	13.7	0.0	15.0
			135	0	22.9	22.9	23.1	0.5	24.5	13.8	13.8	13.5	0.0	15.0
			135	69	23.4	23.6	23.4	0.0	25.0	13.8	14.0	13.5	0.0	15.0
			135	138	22.7	23.2	22.9	0.5	24.5	13.6	14.0	13.8	0.0	15.0
			270	0	22.9	23.0	23.0	0.5	24.5	13.6	13.9	13.6	0.0	15.0
		QPSK	1	1	23.4	23.5	23.3	0.0	25.0	13.8	13.6	13.7	0.0	15.0
			1	137	23.3	23.5	23.3	0.0	25.0	13.7	14.0	13.7	0.0	15.0
			1	271	23.1	23.8	23.4	0.0	25.0	13.4	14.0	13.8	0.0	15.0
			135	0	22.4	22.4	22.6	1.0	24.0	13.9	13.7	13.6	0.0	15.0
			135	69	23.4	23.6	23.4	0.0	25.0	13.8	14.0	13.6	0.0	15.0
			135	138	22.2	22.8	22.4	1.0	24.0	13.6	14.0	13.7	0.0	15.0
			270	0	22.4	22.5	22.4	1.0	24.0	13.7	14.0	13.6	0.0	15.0
		16QAM	1	1	22.5	22.6	22.6	1.0	24.0	13.8	13.7	13.7	0.0	15.0
		64QAM	1	1	21.0	20.6	21.1	2.5	22.5	13.6	13.5	13.6	0.0	15.0
		256QAM	1	1	18.7	18.6	19.0	4.5	20.5	14.0	13.6	13.9	0.0	15.0
	CP-OFDM	QPSK	1	1	21.8	21.9	22.2	1.5	23.5	13.8	13.5	13.7	0.0	15.0
BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)			MPR	Tune-up Limit	Measured Pwr (dBm)			MPR	Tune-up Limit
					649668	656000	662332			649668	656000	662332		
					3745.02 MHz	3840 MHz	3934.98 MHz			3745.02 MHz	3840 MHz	3934.98 MHz		
90 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.5	23.4	23.6	0.0	25.0	13.9	13.7	13.9	0.0	15.0
			1	123	23.5	23.6	23.4	0.0	25.0	13.8	14.0	13.8	0.0	15.0
			1	243	23.1	23.7	23.4	0.0	25.0	13.4	14.0	14.0	0.0	15.0
			120	0	22.9	23.0	23.1	0.5	24.5	13.9	14.0	13.8	0.0	15.0
			120	63	23.5	23.6	23.5	0.0	25.0	13.9	14.2	13.8	0.0	15.0
			120	125	22.8	23.3	23.0	0.5	24.5	13.7	14.2	13.9	0.0	15.0
			243	0	23.0	23.2	22.9	0.5	24.5	13.8	14.3	13.8	0.0	15.0
		QPSK	1	1	23.6	23.4	23.7	0.0	25.0	13.9	13.9	13.8	0.0	15.0
			1	123	23.5	23.6	23.5	0.0	25.0	13.9	14.1	13.7	0.0	15.0
			1	243	23.2	23.7	23.5	0.0	25.0	13.5	14.2	14.1	0.0	15.0
			120	0	22.5	22.5	22.6	1.0	24.0	14.0	14.0	13.7	0.0	15.0
			120	63	23.6	23.7	23.6	0.0	25.0	13.8	14.2	13.9	0.0	15.0
			120	125	22.3	22.8	22.5	1.0	24.0	13.7	14.3	14.1	0.0	15.0
			243	0	22.4	22.7	22.5	1.0	24.0	13.9	14.1	13.8	0.0	15.0
		16QAM	1	1	22.6	22.5	22.8	1.0	24.0	13.9	14.0	13.7	0.0	15.0
		64QAM	1	1	21.0	20.6	21.1	2.5	22.5	13.6	13.7	13.6	0.0	15.0
		256QAM	1	1	19.0	18.9	19.1	4.5	20.5	14.2	13.9	14.0	0.0	15.0
	CP-OFDM	QPSK	1	1	21.9	21.9	22.2	1.5	23.5	14.0	13.8	13.9	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Upper Band 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
					649334	656000	662666			649334	656000	662666		
					3740.01 MHz	3840 MHz	3939.99 MHz			3740.01 MHz	3840 MHz	3939.99 MHz		
80 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.5	23.3	23.6	0.0	25.0	13.9	13.6	13.6	0.0	15.0
			1	109	23.5	23.6	23.4	0.0	25.0	13.8	13.9	13.6	0.0	15.0
			1	215	23.2	23.6	23.4	0.0	25.0	13.4	13.8	13.7	0.0	15.0
			108	0	23.0	22.9	23.0	0.5	24.5	14.0	13.8	13.7	0.0	15.0
			108	55	23.6	23.7	23.5	0.0	25.0	14.0	14.0	13.8	0.0	15.0
			108	109	22.9	23.2	22.9	0.5	24.5	13.8	14.0	13.9	0.0	15.0
			216	0	23.0	23.1	23.0	0.5	24.5	13.9	13.9	13.7	0.0	15.0
		QPSK	1	1	23.6	23.4	23.6	0.0	25.0	13.8	13.6	13.6	0.0	15.0
			1	109	23.5	23.7	23.5	0.0	25.0	13.8	14.0	13.6	0.0	15.0
			1	215	23.2	23.7	23.4	0.0	25.0	13.6	14.0	13.7	0.0	15.0
			108	0	22.5	22.5	22.5	1.0	24.0	13.9	13.8	13.6	0.0	15.0
			108	55	23.6	23.7	23.5	0.0	25.0	13.9	13.9	13.7	0.0	15.0
			108	109	22.4	22.8	22.5	1.0	24.0	13.7	14.0	13.8	0.0	15.0
			216	0	22.5	22.7	22.5	1.0	24.0	13.9	14.1	13.8	0.0	15.0
		16QAM	1	1	22.7	22.5	22.7	1.0	24.0	14.1	13.6	13.6	0.0	15.0
		64QAM	1	1	20.8	21.1	21.1	2.5	22.5	13.8	13.7	13.4	0.0	15.0
		256QAM	1	1	19.2	18.7	19.2	4.5	20.5	14.1	13.9	13.6	0.0	15.0
	CP-OFDM	QPSK	1	1	21.9	21.9	22.1	1.5	23.5	13.8	13.6	13.6	0.0	15.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)				MPR	Tune-up Limit	Measured Pwr (dBm)				MPR	Tune-up Limit
					648668	653556	658444	663332			648668	653556	658444	663332		
					3730.02 MHz	3803.34 MHz	3876.66 MHz	3949.98 MHz			3730.02 MHz	3803.34 MHz	3876.66 MHz	3949.98 MHz		
60 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.4	23.3	23.7	23.4	0.0	25.0	13.9	14.1	14.1	13.9	0.0	15.0
			1	81	23.5	23.3	23.7	23.4	0.0	25.0	13.9	14.2	14.1	14.1	0.0	15.0
			1	160	23.3	23.5	23.5	23.4	0.0	25.0	13.7	14.3	13.9	14.2	0.0	15.0
			81	0	23.0	22.9	23.2	23.0	0.5	24.5	13.9	14.2	14.2	14.1	0.0	15.0
			81	41	23.5	23.4	23.7	23.5	0.0	25.0	14.0	14.4	14.2	14.3	0.0	15.0
			81	81	23.1	23.0	23.2	23.0	0.5	24.5	13.9	14.5	14.1	14.2	0.0	15.0
			162	0	23.0	22.9	23.2	22.9	0.5	24.5	14.0	14.3	14.1	14.2	0.0	15.0
		QPSK	1	1	23.4	23.4	23.7	23.4	0.0	25.0	13.8	14.1	14.2	13.9	0.0	15.0
			1	81	23.5	23.3	23.7	23.4	0.0	25.0	14.0	14.3	14.2	14.1	0.0	15.0
			1	160	23.4	23.6	23.6	23.5	0.0	25.0	13.6	14.3	14.0	14.2	0.0	15.0
			81	0	22.6	22.4	22.8	22.5	1.0	24.0	13.9	14.3	14.2	14.1	0.0	15.0
			81	41	23.5	23.4	23.8	23.4	0.0	25.0	13.9	14.4	14.1	14.2	0.0	15.0
			81	81	22.5	22.5	22.8	22.5	1.0	24.0	14.0	14.3	14.1	14.2	0.0	15.0
			162	0	22.5	22.4	22.8	22.4	1.0	24.0	13.9	14.4	14.2	14.2	0.0	15.0
		16QAM	1	1	22.6	22.5	22.9	22.5	1.0	24.0	14.0	14.2	14.2	13.9	0.0	15.0
		64QAM	1	1	20.6	20.6	21.1	20.8	2.5	22.5	13.6	13.8	14.1	13.7	0.0	15.0
		256QAM	1	1	18.8	18.9	19.4	19.1	4.5	20.5	13.8	14.1	14.1	13.8	0.0	15.0
	CP-OFDM	QPSK	1	1	21.8	21.9	22.2	21.9	1.5	23.5	13.8	14.1	14.1	13.8	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Upper Band 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
					648334	652166	656000		659834	663666			648334	652166	656000		659834	663666		
					3725.01 MHz	3782.49 MHz	3840 MHz		3897.51 MHz	3954.99 MHz			3725.01 MHz	3782.49 MHz	3840 MHz		3897.51 MHz	3954.99 MHz		
50 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.5	23.3	23.3		23.6	23.5	0.0	25.0	13.7	13.8	14.1		13.8	14.0	0.0	15.0
			1	67	23.5	23.3	23.6		23.5	23.5	0.0	25.0	13.8	14.1	14.1		13.8	13.9	0.0	15.0
			1	131	23.4	23.4	23.8		23.5	23.8	0.0	25.0	13.7	14.3	14.1		13.9	14.2	0.0	15.0
			64	0	23.1	23.0	23.0		23.3	23.0	0.5	24.5	13.8	14.0	14.2		13.9	14.1	0.0	15.0
			64	35	23.6	23.4	23.7		23.7	23.6	0.0	25.0	13.9	14.1	14.2		14.0	14.1	0.0	15.0
			64	69	23.1	22.9	23.4		23.0	23.2	0.5	24.5	13.9	14.3	14.3		14.0	14.1	0.0	15.0
			128	0	23.0	22.9	23.2		23.2	23.1	0.5	24.5	13.8	14.1	14.2		13.9	14.2	0.0	15.0
		QPSK	1	1	23.5	23.4	23.4		23.7	23.6	0.0	25.0	13.8	13.9	14.1		13.9	13.9	0.0	15.0
			1	67	23.5	23.4	23.6		23.5	23.5	0.0	25.0	13.8	14.1	14.2		13.7	14.0	0.0	15.0
			1	131	23.5	23.4	23.8		23.6	23.8	0.0	25.0	13.9	14.3	14.2		14.0	14.2	0.0	15.0
			64	0	22.6	22.5	22.5		22.8	22.5	1.0	24.0	13.8	14.0	14.2		13.9	14.0	0.0	15.0
			64	35	23.6	23.5	23.7		23.6	23.6	0.0	25.0	13.9	14.2	14.2		14.0	14.0	0.0	15.0
			64	69	22.6	22.5	22.9		22.6	22.7	1.0	24.0	13.9	14.4	14.3		13.9	14.2	0.0	15.0
			128	0	22.5	22.4	22.7		22.7	22.6	1.0	24.0	13.9	14.2	14.2		14.0	14.1	0.0	15.0
		16QAM	1	1	22.7	22.4	22.6		22.9	22.8	1.0	24.0	13.6	13.9	14.2		14.0	13.9	0.0	15.0
		64QAM	1	1	20.9	20.9	20.8		21.1	20.9	2.5	22.5	13.7	13.7	14.1		14.0	13.8	0.0	15.0
		256QAM	1	1	19.2	18.9	18.9		19.3	19.2	4.5	20.5	13.8	13.8	14.3		13.9	14.2	0.0	15.0
	CP-OFDM	QPSK	1	1	22.0	21.9	21.9		22.2	22.1	1.5	23.5	13.9	13.8	14.2		13.9	14.1	0.0	15.0

BW (MHz)	Modulation	Mode	RB Allocation	RB offset	Measured Pwr (dBm)						MPR	Tune-up Limit							MPR	Tune-up Limit
					648000	651200	654400	657600	660800	664000			648000	651200	654400	657600	660800	664000		
					3720 MHz	3768 MHz	3816 MHz	3864 MHz	3912 MHz	3960 MHz			3720 MHz	3768 MHz	3816 MHz	3864 MHz	3912 MHz	3960 MHz		
40 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.4	23.3	23.1	23.5	23.5	23.3	0.0	25.0	14.2	14.2	14.5	14.5	14.1	14.4	0.0	15.0
			1	53	23.2	23.1	23.0	23.5	23.2	23.3	0.0	25.0	14.1	14.3	14.4	14.4	14.1	14.2	0.0	15.0
			1	104	23.3	23.2	23.4	23.6	23.3	23.6	0.0	25.0	14.3	14.5	14.5	14.3	14.4	14.5	0.0	15.0
			50	0	22.8	22.7	22.7	23.1	22.9	22.9	0.5	24.5	14.1	14.3	14.5	14.4	14.2	14.4	0.0	15.0
			50	28	23.3	23.1	23.2	23.6	23.4	23.4	0.0	25.0	14.2	14.4	14.4	14.5	14.3	14.3	0.0	15.0
			50	56	22.9	22.8	22.8	23.1	22.9	23.1	0.5	24.5	14.3	14.5	14.5	14.4	14.4	14.4	0.0	15.0
			100	0	22.8	22.7	22.7	23.2	22.9	23.0	0.5	24.5	14.2	14.4	14.5	14.5	14.3	14.5	0.0	15.0
		QPSK	1	1	23.4	23.4	23.2	23.6	23.5	23.4	0.0	25.0	14.2	14.3	14.5	14.4	14.2	14.4	0.0	15.0
			1	53	23.3	23.1	23.1	23.6	23.3	23.4	0.0	25.0	14.1	14.4	14.4	14.4	14.2	14.3	0.0	15.0
			1	104	23.4	23.2	23.5	23.7	23.4	23.7	0.0	25.0	14.3	14.5	14.5	14.5	14.4	14.5	0.0	15.0
			50	0	22.2	22.2	22.2	22.6	22.4	22.4	1.0	24.0	14.2	14.3	14.5	14.5	14.3	14.3	0.0	15.0
			50	28	23.3	23.1	23.3	23.7	23.4	23.4	0.0	25.0	14.3	14.4	14.5	14.4	14.4	14.4	0.0	15.0
			50	56	22.3	22.2	22.3	22.6	22.4	22.6	1.0	24.0	14.4	14.4	14.5	14.5	14.3	14.5	0.0	15.0
			100	0	22.2	22.2	22.2	22.7	22.4	22.5	1.0	24.0	14.2	14.5	14.4	14.5	14.3	14.3	0.0	15.0
		16QAM	1	1	22.4	22.4	22.3	22.5	22.9	22.5	1.0	24.0	14.4	14.3	14.4	14.5	14.4	14.5	0.0	15.0
		64QAM	1	1	20.5	20.6	20.5	21.0	20.9	20.6	2.5	22.5	14.2	14.1	14.3	14.4	14.1	14.3	0.0	15.0
		256QAM	1	1	18.7	18.7	18.6	19.0	19.2	18.8	4.5	20.5	14.4	14.3	14.5	14.5	14.1	14.4	0.0	15.0
	CP-OFDM	QPSK	1	1	21.7	21.7	21.6	22.1	22.1	21.9	1.5	23.5	14.2	14.3	14.5	14.5	14.3	14.4	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

NR Band n77 – Upper Band 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
					647334	650800	654266	657734	661200	664666			647334	650800	654266	657734	661200	664666		
					3710.01 MHz	3762 MHz	3813.99 MHz	3866.01 MHz	3918 MHz	3969.99 MHz			3710.01 MHz	3762 MHz	3813.99 MHz	3866.01 MHz	3918 MHz	3969.99 MHz		
20 MHz	DFT-s-OFDM	π/2 BPSK	1	1	23.8	23.6	23.5	24.0	23.7	23.8	0.0	25.0	13.9	13.9	14.1	14.1	13.9	14.1	0.0	15.0
			1	26	23.6	23.5	23.4	23.9	23.6	23.8	0.0	25.0	13.7	13.9	14.0	14.0	13.8	13.9	0.0	15.0
			1	49	23.7	23.6	23.7	24.0	23.7	23.9	0.0	25.0	13.7	14.0	14.1	14.2	14.0	14.0	0.0	15.0
			25	0	23.3	23.2	23.1	23.5	23.2	23.3	0.5	24.5	13.9	13.9	14.2	14.2	14.0	14.1	0.0	15.0
			25	13	23.6	23.5	23.5	24.0	23.6	23.8	0.0	25.0	13.8	14.0	14.1	14.0	13.9	14.1	0.0	15.0
			25	26	23.2	23.1	23.2	23.4	23.2	23.4	0.5	24.5	13.9	14.1	14.1	14.1	14.0	14.1	0.0	15.0
			50	0	23.2	23.1	23.0	23.5	23.2	23.4	0.5	24.5	13.8	14.1	14.2	14.2	14.0	14.1	0.0	15.0
		QPSK	1	1	23.8	23.7	23.6	24.0	23.8	23.8	0.0	25.0	14.0	13.9	14.2	14.2	13.9	14.1	0.0	15.0
			1	26	23.6	23.5	23.5	24.0	23.6	23.8	0.0	25.0	13.8	14.0	14.1	14.0	13.9	14.0	0.0	15.0
			1	49	23.7	23.6	23.8	24.0	23.8	23.9	0.0	25.0	13.9	14.1	14.2	14.2	14.0	14.2	0.0	15.0
			25	0	22.8	22.6	22.6	23.1	22.7	22.8	1.0	24.0	13.9	13.9	14.2	14.2	13.9	14.1	0.0	15.0
			25	13	23.7	23.6	23.5	24.0	23.6	23.8	0.0	25.0	13.7	14.0	14.1	14.1	14.0	14.1	0.0	15.0
			25	26	22.7	22.6	22.7	22.9	22.7	22.9	1.0	24.0	13.9	14.0	14.1	14.1	14.0	14.1	0.0	15.0
			50	0	22.6	22.6	22.6	23.0	22.7	22.8	1.0	24.0	13.9	14.1	14.1	14.1	14.0	14.0	0.0	15.0
		16QAM	1	1	23.0	22.9	22.7	23.2	23.0	23.0	1.0	24.0	14.0	13.9	14.1	14.2	14.0	14.1	0.0	15.0
		64QAM	1	1	21.1	21.1	21.1	21.7	21.2	21.3	2.5	22.5	13.8	13.9	14.0	14.0	13.8	14.1	0.0	15.0
		256QAM	1	1	19.1	19.2	19.3	19.7	19.5	19.2	4.5	20.5	14.2	14.2	14.1	14.1	14.0	14.2	0.0	15.0
	CP-OFDM	QPSK	1	1	22.1	22.2	22.1	22.5	22.2	22.3	1.5	23.5	14.2	14.1	14.2	14.2	14.0	14.1	0.0	15.0

Note(s):

Of NR Band n77 and NR Band n78, NR Band n77 was only measured output power. because NR Band n78 is covered by NR Band n77.

9.4 Wi-Fi 2.4 GHz (DTS Band)

Measured Results

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
2.4	WiFi SISO Ant.1	802.11b	1 Mbps	1	2412.0	**16.8**	17.0	Yes	**12.5**	13.0	Yes
				6	2437.0	**15.9**			**12.0**		
				11	2462.0	**16.9**			**12.8**		
		802.11g	6 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	15.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
	WiFi SISO Ant.2	802.11b	1 Mbps	1	2412.0	**17.0**	17.0	Yes	**12.9**	13.0	Yes
				6	2437.0	**16.9**			**12.9**		
				11	2462.0	**16.8**			**12.5**		
		802.11g	6 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	15.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						

Band (GHz)	Antenna	Mode	Data Rate	Ch #	Freq. (MHz)	Meas. Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Meas. Avg Pwr (dBm)	Reduced. Output Power (dBm)	SAR Test (Yes/No)
2.4	WiFi MIMO Ant.1	802.11g	6 Mbps	1	2412.0	**14.7**	16.0	Yes	**11.8**	13.0	Yes
				6	2437.0	**15.0**			**12.0**		
				11	2462.0	**14.9**			**12.0**		
		802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	15.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
	WiFi MIMO Ant.2	802.11g	6 Mbps	1	2412.0	**14.7**	16.0	Yes	**11.9**	13.0	Yes
				6	2437.0	**14.9**			**11.9**		
				11	2462.0	**14.6**			**11.5**		
		802.11n (HT20)	6.5 Mbps	1	2412.0	Not Required	16.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						
		802.11ax (HE20)	7.3 Mbps	1	2412.0	Not Required	15.0	No	Not Required	13.0	No
				6	2437.0						
				11	2462.0						

Note(s):

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

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

Measured Results of WLAN SISO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	**13.7**	15.0	Yes	Not Required	11.0	No
				56	5280.0	**13.4**			Not Required		
				60	5300.0	**14.1**			Not Required		
				64	5320.0	**13.9**			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	15.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	13.0	No	**10.0**	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	11.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	11.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	**13.9**	15.0	Yes	Not Required	11.0	No
				120	5600.0	**13.9**			Not Required		
				124	5620.0	**13.9**			Not Required		
				144	5720.0	**13.7**			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	15.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	110	5550.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	13.0	No	**9.2**	11.0	No
				122	5610.0	Not Required			**8.7**		
				138	5690.0	Not Required			**9.5**		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	11.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	11.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	**13.8**	15.0	Yes	Not Required	11.0	No
				157	5785.0	**13.9**			Not Required		
				165	5825.0	**13.9**			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	15.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	151	5755.0	Not Required	14.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
				151	5755.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	13.0	No	**9.4**	11.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	14.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	11.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	11.0	No	Not Required	11.0	Yes

Measured Results of WLAN SISO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	**14.4**	15.0	Yes	Not Required	11.0	No
				56	5280.0	**14.1**			Not Required		
				60	5300.0	**14.6**			Not Required		
				64	5320.0	**14.6**			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	15.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	62	5310.0	Not Required	14.0	No	Not Required	11.0	No
				54	5270.0	Not Required			Not Required		
				62	5310.0	Not Required			Not Required		
				54	5270.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	13.0	No	**9.1**	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	11.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	11.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	**14.2**	15.0	Yes	Not Required	11.0	No
				120	5600.0	**13.4**			Not Required		
				124	5620.0	**13.5**			Not Required		
				144	5720.0	**14.5**			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	15.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	110	5550.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	13.0	No	**9.7**	11.0	Yes
				122	5610.0	Not Required			**8.5**		
				138	5690.0	Not Required			**9.3**		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	11.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	11.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	**13.8**	15.0	Yes	Not Required	11.0	No
				157	5785.0	**13.9**			Not Required		
				165	5825.0	**13.7**			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	15.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	151	5755.0	Not Required	14.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
				151	5755.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	13.0	No	**9.1**	11.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	14.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	11.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	11.0	No	Not Required	11.0	Yes

Measured Results of WLAN MIMO Ant.1

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
MIMO Ant.1	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	**13.6**	15.0	Yes	Not Required	11.0	No
				56	5280.0	**13.4**			Not Required		
				60	5300.0	**14.1**			Not Required		
				64	5320.0	**13.8**			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	15.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	13.0	No	**9.8**	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	11.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	11.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	**13.8**	15.0	Yes	Not Required	11.0	No
				120	5600.0	**14.0**			Not Required		
				124	5620.0	**13.8**			Not Required		
				144	5720.0	**13.6**			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	15.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	110	5550.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	13.0	No	**9.2**	11.0	No
				122	5610.0	Not Required			**8.7**		
				138	5690.0	Not Required			**9.4**		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	11.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	11.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	**13.7**	15.0	Yes	Not Required	11.0	No
				157	5785.0	**13.8**			Not Required		
				165	5825.0	**13.8**			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	15.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	151	5755.0	Not Required	14.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
				151	5755.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	13.0	No	**9.2**	11.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	14.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	11.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	11.0	No	Not Required	11.0	Yes

Measured Results of WLAN MIMO Ant.2

Antenna	Band (GHz)	Mode	Data Rate	Ch #	Freq. (MHz)	Max Pwr.			Reduction Pwr.		
						Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)	Avg Pwr (dBm)	Max Output Power (dBm)	SAR Test (Yes/No)
SISO Ant.2	5.3 (UNII 2A)	802.11a	6 Mbps	52	5260.0	**13.3**	15.0	Yes	Not Required	11.0	No
				56	5280.0	**13.1**			Not Required		
				60	5300.0	**13.5**			Not Required		
				64	5320.0	**13.6**			Not Required		
		802.11n (HT20)	6.5 Mbps	52	5260.0	Not Required	15.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	62	5310.0	Not Required	14.0	No	Not Required	11.0	No
				54	5270.0	Not Required			Not Required		
				62	5310.0	Not Required			Not Required		
				54	5270.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	54	5270.0	Not Required	13.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	58	5290.0	Not Required	13.0	No	**9.0**	11.0	Yes
		802.11ax (HE20)	7.3 Mbps	52	5260.0	Not Required	14.0	No	Not Required	11.0	No
				56	5280.0	Not Required			Not Required		
				60	5300.0	Not Required			Not Required		
				64	5320.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	54	5270.0	Not Required	11.0	No	Not Required	11.0	No
				62	5310.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	58	5290.0	Not Required	11.0	No	Not Required	11.0	No
	5.5 (U-NII 2C)	802.11a	6 Mbps	100	5500.0	**14.1**	15.0	Yes	Not Required	11.0	No
				120	5600.0	**13.4**			Not Required		
				124	5620.0	**13.5**			Not Required		
				144	5720.0	**14.4**			Not Required		
		802.11n (HT20)	6.5 Mbps	100	5500.0	Not Required	15.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	110	5550.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	102	5510.0	Not Required	13.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	106	5530.0	Not Required	13.0	No	**9.6**	11.0	Yes
				122	5610.0	Not Required			**8.5**		
				138	5690.0	Not Required			**9.3**		
		802.11ax (HE20)	7.3 Mbps	100	5500.0	Not Required	14.0	No	Not Required	11.0	No
				120	5600.0	Not Required			Not Required		
				124	5620.0	Not Required			Not Required		
				144	5720.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	102	5510.0	Not Required	11.0	No	Not Required	11.0	No
				118	5590.0	Not Required			Not Required		
				126	5630.0	Not Required			Not Required		
				142	5710.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	106	5530.0	Not Required	11.0	No	Not Required	11.0	No
				122	5610.0	Not Required			Not Required		
				138	5690.0	Not Required			Not Required		
	5.8 (U-NII 3)	802.11a	6 Mbps	149	5745.0	**13.7**	15.0	Yes	Not Required	11.0	No
				157	5785.0	**13.8**			Not Required		
				165	5825.0	**13.6**			Not Required		
		802.11n (HT20)	6.5 Mbps	149	5745.0	Not Required	15.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11n (HT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT20)	6.5 Mbps	151	5755.0	Not Required	14.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
				151	5755.0	Not Required			Not Required		
		802.11ac (VHT40)	13.5 Mbps	151	5755.0	Not Required	13.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ac (VHT80)	29.3 Mbps	155	5775.0	Not Required	13.0	No	**9.0**	11.0	No
		802.11ax (HE20)	7.3 Mbps	149	5745.0	Not Required	14.0	No	Not Required	11.0	No
				157	5785.0	Not Required			Not Required		
				165	5825.0	Not Required			Not Required		
		802.11ax (HE40)	14.6 Mbps	151	5755.0	Not Required	11.0	No	Not Required	11.0	No
				159	5795.0	Not Required			Not Required		
		802.11ax (HE80)	30.6 Mbps	155	5775.0	Not Required	11.0	No	Not Required	11.0	Yes

Note(s):

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

9.6 Bluetooth

Measured Results

Band (GHz)	Mode	Ch #	Freq. (MHz)	Maximum Average Power (dBm)	
				Meas Pwr	Tune-up Limit
2.4	GFSK	0	2402	13.5	16.0
		39	2441	15.4	
		78	2480	13.0	
	EDR, 8-DPSK	0	2402	12.8	15.0
		39	2441	14.7	
		78	2480	12.2	
	LE, GFSK-1M, 125/500 kbps	0	2402	5.2	8.0
		19	2440	7.6	
		39	2480	5.6	
	LE, GFSK-2M	0	2402	5.0	8.0
		19	2440	7.3	
		39	2480	5.4	

Note(s):

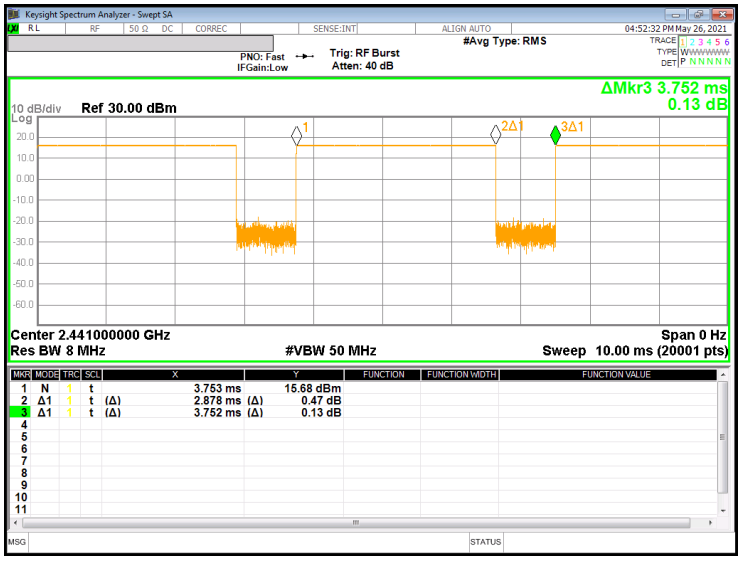
SAR test is evaluated at GFSK mode in Bluetooth

Duty Factor Measured Results

Mode	Type	T on (ms)	Period (ms)	Duty Cycle	Crest Factor (1/duty cycle)
GFSK	DH5	2.878	3.752	76.7%	1.30

Duty Cycle plots

GFSK



10. Measured and Reported (Scaled) SAR Results

SAR Test Reduction criteria are as follows:

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

KDB 447498 D01 General RF Exposure Guidance:

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

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

KDB 648474 D04 Handset SAR:

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

KDB 648474 D04 Handset SAR (Phablet Only):

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

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

KDB 941225 D01 SAR test for 3G devices:

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

KDB 941225 D05 SAR for LTE Devices:

SAR test reduction is applied using the following criteria:

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

KDB 248227 D01 SAR meas for 802.11:

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

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

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

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

10.1 W-CDMA Band II

RF Exposure Conditions	Antenna	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	
Standalone	Main 2 Ant.	Rel 99 RMC	Off	11	Rear	9400	1880.0	23.5	22.9	0.647	0.740	
		Rel 99 RMC	On	0	Rear	9262	1852.4	17.5	17.0	0.810	0.901	
						9400	1880.0	17.5	17.0	0.951	1.078	1
						9538	1907.6	17.5	17.0	0.787	0.881	

10.2 W-CDMA Band IV

RF Exposure Conditions	Antenna	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	
Standalone	Main 2 Ant.	Rel 99 RMC	Off	11	Rear	1413	1732.6	23.5	22.9	0.668	0.768	
		Rel 99 RMC	On	0	Rear	1312	1712.4	17.0	16.5	0.724	0.812	
						1413	1732.6	17.0	16.5	0.822	0.933	2
						1513	1752.6	17.0	16.3	0.748	0.878	

10.3 W-CDMA Band V

RF Exposure Conditions	Antenna	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	
Standalone	Main 1 Ant.	Rel 99 RMC	Off	14	Rear	4183	836.6	24.5	24.0	0.509	0.577	
		Rel 99 RMC	On	0	Rear	4183	836.6	21.0	20.4	0.620	0.716	3

10.4 LTE Band 2 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 2 Ant.	QPSK	Off	11	Rear	18700	1860.0	1	0	24.5	23.7	0.730	0.878	
								50	24	23.5	22.8	0.635	0.751	
						18900	1880.0	1	0	24.5	23.6	0.761	0.930	
						19100	1900.0	1	0	24.5	23.7	0.815	0.986	
		QPSK	On	0	Rear	18700	1860.0	1	0	17.5	16.5	0.725	0.910	
								50	24	17.5	16.5	0.831	1.041	
								100	0	17.5	16.4	0.815	1.040	
						18900	1880.0	1	0	17.5	16.4	0.815	1.060	4
								50	24	17.5	16.5	0.827	1.050	
						19100	1900.0	1	0	17.5	16.4	0.808	1.042	
								50	24	17.5	16.5	0.816	1.035	

10.5 LTE Band 5 (10MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 1 Ant.	QPSK	Off	14	Rear	20525	836.5	1	49	24.5	23.6	0.446	0.543	
								25	25	23.5	22.7	0.375	0.446	
		QPSK	On	0	Rear	20525	836.5	1	49	21.5	20.6	0.650	0.792	
								25	25	21.5	20.7	0.680	0.817	

UL CA 5B

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 1 Ant.	QPSK	On	0	Rear	20525	836.5	25	25	20597	843.7	12	0	21.5	20.5	0.728	0.910	5

10.6 LTE Band 7 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 2 Ant.	QPSK	Off	11	Rear	20850	2510.0	1	49	24.0	23.3	0.862	1.024	
						21100	2535.0	1	49	24.0	23.4	0.766	0.875	
								50	24	23.0	22.5	0.641	0.726	
						21350	2560.0	1	49	24.0	23.3	0.715	0.843	
		QPSK	On	0	Rear	20850	2510.0	1	49	17.5	16.7	0.950	1.152	
								50	24	17.5	16.8	0.919	1.082	
						21100	2535.0	1	49	17.5	16.8	0.927	1.089	
								50	24	17.5	16.9	0.943	1.092	
								100	0	17.5	16.8	0.993	1.177	6
						21350	2560.0	1	49	17.5	16.8	0.958	1.132	
								50	24	17.5	16.7	0.961	1.143	

10.7 LTE Band 12 (10MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 1 Ant.	QPSK	Off	14	Rear	23095	707.5	1	0	24.5	23.8	0.406	0.475	
								25	12	23.5	23.0	0.342	0.383	
		QPSK	On	0	Rear	23095	707.5	1	0	21.0	20.3	0.506	0.594	
								25	12	21.0	20.4	0.546	0.629	7

10.8 LTE Band 13 (10MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 1 Ant.	QPSK	Off	14	Rear	23230	782.0	1	0	24.5	23.6	0.561	0.689	
								25	0	23.5	22.5	0.450	0.561	
		QPSK	On	0	Rear	23230	782.0	1	0	21.0	19.9	0.637	0.826	
								25	0	21.0	19.9	0.653	0.843	
								50	0	21.0	19.8	0.641	0.844	8

10.9 LTE Band 14 (10MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 1 Ant.	QPSK	Off	14	Rear	23330	793.0	1	0	24.5	23.7	0.568	0.688	
								25	0	23.5	22.5	0.451	0.562	
		QPSK	On	0	Rear	23330	793.0	1	0	21.0	19.9	0.664	0.858	9
								25	0	21.0	19.9	0.647	0.837	
								50	0	21.0	19.8	0.638	0.841	

10.10 LTE Band 66 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Plot No.
										Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 2 Ant.	QPSK	Off	11	Rear	132072	1720.0	1	99	24.5	23.8	0.883	1.032	
								50	0	23.5	22.9	0.776	0.884	
								100	0	23.5	22.9	0.758	0.878	
						132322	1745.0	1	99	24.5	23.7	0.988	1.177	10
								50	0	23.5	22.8	0.795	0.934	
						132572	1770.0	1	99	24.5	23.7	0.928	1.114	
								50	0	23.5	22.7	0.823	0.990	
		QPSK	On	0	Rear	132072	1720.0	1	49	17.5	16.7	0.789	0.950	
								50	0	17.5	16.8	0.807	0.952	
								100	0	17.5	16.7	0.802	0.968	
						132322	1745.0	1	49	17.5	16.5	0.876	1.105	
								50	0	17.5	16.6	0.863	1.056	
						132572	1770.0	1	49	17.5	16.5	0.865	1.088	
								50	0	17.5	16.5	0.871	1.094	

UL CA 66C

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 2 Ant.	QPSK	Off	11	Rear	132072	1720.0	1	99	132270	1739.8	1	0	24.5	24.5	1.000	1.007	

UL CA 66B

RF Exposure Conditions	Antenna	Mode	PWR Back-off	Dist. (mm)	Test Position	PCC UL				SCC UL				Power (dBm)		1-g SAR (W/kg)		Plot No.
						Ch #.	Freq. (MHz)	RB Allocation	RB offest	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Tune-up limit	Meas.	Meas.	Scaled	
Standalone	Main 2 Ant.	QPSK	Off	11	Rear	132022	1715.0	1	49	132121	1724.9	1	0	24.5	24.2	0.880	0.954	

10.11 NR Band n2 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Modulation	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
Standalone	Main 2 Ant.	DFT-s-OFDM	QPSK	Off	11	Rear	372000	1860.0	1	104	24.5	23.7	0.872	1.051		
									50	28	24.5	23.7	0.902	1.096		
									100	0	23.5	22.6	0.724	0.883		
							376000	1880.0	1	104	24.5	23.4	0.908	1.160		
									50	28	24.5	23.5	0.932	1.173		
							380000	1900.0	1	104	24.5	23.4	0.931	1.201		11
									50	28	24.5	23.5	0.943	1.186		
		DFT-s-OFDM	QPSK	On	0	Rear	372000	1860.0	1	104	16.5	15.8	0.832	0.978		
									50	28	16.5	15.8	0.829	0.978		
									100	0	16.5	15.7	0.814	0.972		
							376000	1880.0	1	104	16.5	15.7	0.836	1.017		
									50	28	16.5	15.7	0.840	1.012		
							380000	1900.0	1	104	16.5	15.5	0.818	1.025		
									50	28	16.5	15.5	0.837	1.054		
		CP-OFDM	QPSK	Off	11	Rear	380000	1900.0	1	1	23.0	21.9	0.643	0.828	1	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.

10.12 NR Band n5 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Modulation	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
Standalone	Main 1 Ant.	DFT-s-OFDM	QPSK	Off	14	Rear	167300	836.5	1	1	24.5	23.7	0.497	0.601		
									50	28	24.5	23.6	0.452	0.550		
		DFT-s-OFDM	QPSK	On	0	Rear	167300	836.5	1	1	21.5	20.8	0.691	0.817		12
									50	0	21.5	20.9	0.709	0.815		
									100	0	21.5	20.8	0.695	0.809		
		CP-OFDM	QPSK	On	0	Rear	167300	836.5	1	1	21.5	20.7	0.677	0.809	1	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.

10.13 NR Band n66 (20MHz Bandwidth)

RF Exposure Conditions	Antenna	Modulation	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
Standalone	Main 2 Ant.	DFT-s-OFDM	QPSK	Off	11	Rear	344000	1720.0	1	1	24.5	23.6	0.879	1.093		
									50	28	24.5	23.5	0.941	1.196		
									100	0	23.5	22.6	0.739	0.907		
							349000	1745.0	1	1	24.5	23.4	0.927	1.195		
									50	28	24.5	23.4	0.964	1.246		
							354000	1770.0	1	1	24.5	23.4	0.972	1.239		
									50	28	24.5	23.4	0.977	1.247		13
		DFT-s-OFDM	QPSK	On	0	Rear	344000	1720.0	1	1	17.5	17.0	0.784	0.870		
									50	28	17.5	17.1	0.924	1.012		
									100	0	17.5	17.1	0.797	0.881		
							349000	1745.0	1	1	17.5	16.9	0.853	0.975		
									50	28	17.5	16.9	0.904	1.047		
							354000	1770.0	1	1	17.5	16.8	0.930	1.083		
									50	28	17.5	16.7	0.914	1.087		
		CP-OFDM	QPSK	Off	11	Rear	354000	1770.0	1	1	23.0	22.0	0.667	0.838	1	

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.

10.14 NR Band n77 (100MHz Bandwidth)

RF Exposure Conditions	Antenna	Modulation	Mode	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	RB Allocation	RB offest	Power (dBm)		1-g SAR (W/kg)		Note	Plot No.
											Tune-up limit	Meas.	Meas.	Scaled		
Standalone	Main 1 Ant.	DFT-s-OFDM	QPSK	Off	14	Rear	650000	3750.0	1	271	25.0	23.1	0.533	0.827		
									135	69	25.0	23.4	0.593	0.857		
							656000	3840.0	1	271	25.0	23.8	0.934	1.244		14
									135	69	25.0	23.6	0.860	1.185		
									270	0	24.0	22.5	0.668	0.946		
							662000	3930.0	1	271	25.0	23.4	0.667	0.961		
									135	69	25.0	23.4	0.794	1.139		
		DFT-s-OFDM	QPSK	On	0	Rear	650000	3750.0	1	271	15.0	13.4	0.670	0.968		
									135	69	15.0	13.8	0.660	0.878		
							656000	3840.0	1	271	15.0	14.0	0.622	0.788		
									135	69	15.0	14.0	0.680	0.850		
									270	0	15.0	14.0	0.583	0.741		
							662000	3930.0	1	271	15.0	13.8	0.541	0.718		
									135	69	15.0	13.6	0.576	0.793		
Standalone	Main 1 Ant.	CP-OFDM	QPSK	Off	14	Rear	656000	3840.0	1	1	23.5	21.9	0.735	1.074	1	
Standalone	Main 1 Ant.	DFT-s-OFDM	QPSK	Off	14	Rear	633333	3500.0	1	271	25.0	23.8	0.701	0.924	2	
			QPSK	On	0	Rear	633333	3500.0	1	271	15.0	14.2	0.658	0.789		

Note(s):

1. CP-OFDM mode were evaluated at worst configuration of DFT-s-OFDM in standalone exposure conditions.
2. NR Band n77-Lower Band- are tested at worst configuration of NR Band n77-Upper band.

10.15 Wi-Fi (DTS Band)

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)		Note	Plot No.
									Tune-up limit	Meas.	Meas.	Scaled		
2.4GHz SISO Ant 1	802.11b 1 Mbps	Standalone	Off	3	Rear	11	2462.0	99.4%	17.0	16.9	0.410	0.418		15
			On	0	Rear	11	2462.0	99.4%	13.0	12.8	0.277	0.291		
2.4GHz SISO Ant 2	802.11b 1 Mbps	Standalone	Off	3	Rear	1	2412.0	99.4%	17.0	17.0	0.387	0.391		
			On	0	Rear	6	2437.0	99.4%	13.0	12.9	0.290	0.301		
2.4GHz MIMO Ant 1	802.11g 6 Mbps	Standalone	Off	3	Rear	6	2437.0	96.4%	16.0	15.0	0.544	0.709		
			On	0	Rear	6	2437.0	96.4%	13.0	12.0	0.369	0.480		
2.4GHz MIMO Ant 2	802.11g 6 Mbps	Standalone	Off	3	Rear	6	2437.0	96.4%	16.0	14.9	0.567	0.765		16
			On	0	Rear	6	2437.0	96.4%	13.0	11.9	0.364	0.486		

Note(s):

1. 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).
2. 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.
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. MIMO SAR test were additionally evaluated for determining simultaneous transmission SAR test exclusion.

10.16 Wi-Fi (U-NII Bands)

U-NII 2A Results

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)		Note	Plot No.
									Tune-up limit	Meas.	Meas.	Scaled		
5.3 GHz U-NII 2A (SISO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	60	5300.0	96.6%	15.0	14.1	0.307	0.389		
	802.11ac (VHT80) MCS0		On	0	Rear	58	5290.0	95.8%	11.0	10.0	0.281	0.373		
5.3 GHz U-NII 2A (SISO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	60	5300.0	96.6%	15.0	14.6	0.403	0.457		
	802.11ac (VHT80) MCS0		On	0	Rear	58	5290.0	95.8%	11.0	9.1	0.360	0.578		17
5.3 GHz U-NII 2A (MIMO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	60	5300.0	96.7%	15.0	14.1				
					Rear	64	5320.0	96.7%	15.0	13.8	0.351	0.481		
	802.11ac (VHT80) MCS0		On	0	Rear	58	5290.0	92.1%	11.0	9.8	0.251	0.357		
5.3 GHz U-NII 2A (MIMO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	60	5300.0	96.7%	15.0	13.5	0.562	0.814	3	18
					Rear	64	5320.0	96.7%	15.0	13.6	0.560	0.805		
	802.11ac (VHT80) MCS0		On	0	Rear	58	5290.0	92.1%	11.0	9.0	0.422	0.724		

U-NII 2C Results

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)		Note	Plot No.
									Tune-up limit	Meas.	Meas.	Scaled		
5.5 GHz U-NII 2C (SISO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	124	5620.0	96.6%	15.0	13.9	0.275	0.368		
	802.11ac (VHT80) MCS0		On	0	Rear	138	5690.0	95.8%	11.0	9.5	0.314	0.463		
5.5 GHz U-NII 2C (SISO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	100	5500.0	96.6%	15.0	14.2	0.531	0.658	3	
					Rear	144	5720.0	96.6%	15.0	14.5	0.818	0.941		19
	802.11ac (VHT80) MCS0		On	0	Rear	106	5530.0	95.8%	11.0	9.7	0.463	0.656		
5.5 GHz U-NII 2C (MIMO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	100	5500.0	96.7%	15.0	13.8				
					Rear	144	5720.0	96.7%	15.0	13.6				
	802.11ac (VHT80) MCS0		On	0	Rear	106	5530.0	92.1%	11.0	9.2				
					Rear	138	5690.0	92.1%	11.0	9.4				
5.5 GHz U-NII 2C (MIMO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	100	5500.0	96.7%	15.0	14.1	0.571	0.720	3	
					Rear	144	5720.0	96.7%	15.0	14.4	0.767	0.903		20
	802.11ac (VHT80) MCS0		On	0	Rear	106	5530.0	92.1%	11.0	9.6	0.553	0.832		
					Rear	138	5690.0	92.1%	11.0	9.3	0.533	0.856	3	

Note(s):

1. 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).
2. 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.
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. MIMO SAR test were additionally evaluated for determining simultaneous transmission SAR test exclusion.

U-NII 3 Results

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)		Note	Plot No.
									Tune-up limit	Meas.	Meas.	Scaled		
5.8 GHz U-NII 3 (SISO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	157	5785.0	96.6%	15.0	13.9	0.295	0.398		
	802.11ac (VHT80) MCS0		On	0	Rear	155	5775.0	95.8%	11.0	9.4	0.360	0.549		
5.8 GHz U-NII 3 (SISO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	149	5745.0	96.6%	15.0	13.8	0.632	0.856	3	
					Rear	157	5785.0	96.6%	15.0	13.9	0.618	0.830		
	802.11ac (VHT80) MCS0		On	0	Rear	155	5775.0	95.8%	11.0	9.1	0.672	1.094		21
5.8 GHz U-NII 3 (MIMO Ant 1)	802.11a 6 Mbps	Standalone	Off	3	Rear	157	5785.0	96.7%	15.0	13.8				
					Rear	165	5825.0	96.7%	15.0	13.8				
	802.11ac (VHT80) MCS0		On	0	Rear	155	5775.0	92.1%	11.0	9.2				
5.8 GHz U-NII 3 (MIMO Ant 2)	802.11a 6 Mbps	Standalone	Off	3	Rear	157	5785.0	96.7%	15.0	13.8	0.644	0.887		
					Rear	165	5825.0	96.7%	15.0	13.6	0.648	0.928		
	802.11ac (VHT80) MCS0		On	0	Rear	155	5775.0	92.1%	11.0	9.0	0.697	1.199		22

Note(s):

1. 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).
2. 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.
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. MIMO SAR test were additionally evaluated for determining simultaneous transmission SAR test exclusion.

10.17 Bluetooth

Frequency Band	Mode	RF Exposure Conditions	PWR Back-off	Dist. (mm)	Test Position	Ch #.	Freq. (MHz)	Duty Cycle (%)	Power (dBm)		1-g SAR (W/kg)		Plot No.
									Tune-up limit	Meas.	Meas.	Scaled	
2.4GHz	GFSK	Standalone	N/A	0	Rear	39	2441.0	76.7%	16.0	15.4	0.241	0.361	23

11. SAR Measurement Variability

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

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

Peak spatial-average (1g of tissue)

Frequency Band (MHz)	Air Interface	RF Exposure Conditions	Test Position	Repeated SAR (Yes/No)	Highest Measured SAR (W/kg)	Repeated Measured SAR (W/kg)	Largest to Smallest SAR Ratio
700	LTE Band 12	Standalone	Rear	No	0.546	N/A	N/A
	LTE Band 13	Standalone	Rear	No	0.653	N/A	N/A
	LTE Band 14	Standalone	Rear	No	0.664	N/A	N/A
835	WCDMA Band V	Standalone	Rear	No	0.620	N/A	N/A
	LTE Band 5	Standalone	Rear	No	0.728	N/A	N/A
	NR Band n5	Standalone	Rear	No	0.709	N/A	N/A
1750	WCDMA Band IV	Standalone	Rear	No	0.822	N/A	N/A
	LTE Band 66	Standalone	Rear	Yes	1.000	0.951	1.05
	NR Band n66	Standalone	Rear	No	0.977	N/A	N/A
1900	WCDMA Band II	Standalone	Rear	Yes	0.951	0.951	1.00
	LTE Band 2	Standalone	Rear	No	0.831	N/A	N/A
	NR Band n2	Standalone	Rear	No	0.943	N/A	N/A
2400	Wi-Fi 802.11b/g/n	Standalone	Rear	No	0.567	N/A	N/A
	Bluetooth	Standalone	Rear	No	0.241	N/A	N/A
2600	LTE Band 7	Standalone	Rear	Yes	0.993	0.962	1.03
3700	NR Band n77	Standalone	Rear	Yes	0.934	0.911	1.03
5250	Wi-Fi 802.11a/n	Standalone	Rear	No	0.562	N/A	N/A
5500	Wi-Fi 802.11a/n	Standalone	Rear	Yes	0.818	0.801	1.02
5800	Wi-Fi 802.11a/n	Standalone	Rear	No	0.697	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					
Standalone	1			DTS_Ant.1	+	DTS_Ant.2	Non-RSDB
	2			UNII Ant.1			Non-RSDB
	3			UNII Ant.2			Non-RSDB
	4			UNII Ant.1	+	UNII Ant.2	Non-RSDB
	5			UNII Ant.1 + UNII Ant.2	+	BT	Non-RSDB
	6			DTS_Ant.1 + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	7			BT + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	8			DTS_Ant.1	+	DTS_Ant.2	Non-RSDB
	9			UNII Ant.1			Non-RSDB
	10			UNII Ant.2			Non-RSDB
	11			UNII Ant.1	+	UNII Ant.2	Non-RSDB
	12			UNII Ant.1 + UNII Ant.2	+	BT	Non-RSDB
	13			DTS_Ant.1 + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	14			BT + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	15	W-CDMA or LTE	+	DTS_Ant.1	+	DTS_Ant.2	Non-RSDB
	16	W-CDMA or LTE	+	UNII Ant.1			Non-RSDB
	17	W-CDMA or LTE	+	UNII Ant.2			Non-RSDB
	18	W-CDMA or LTE	+	UNII Ant.1	+	UNII Ant.2	Non-RSDB
	19	W-CDMA or LTE	+	UNII Ant.1 + UNII Ant.2	+	BT	Non-RSDB
	20	W-CDMA or LTE	+	DTS_Ant.1 + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	21	W-CDMA or LTE	+	BT + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	22	NR or EN-DC (LTE + NR)	+	DTS_Ant.1	+	DTS_Ant.2	Non-RSDB
	23	NR or EN-DC (LTE + NR)	+	UNII Ant.1			Non-RSDB
	24	NR or EN-DC (LTE + NR)	+	UNII Ant.2			Non-RSDB
	25	NR or EN-DC (LTE + NR)	+	UNII Ant.1	+	UNII Ant.2	Non-RSDB
	26	NR or EN-DC (LTE + NR)	+	UNII Ant.1 + UNII Ant.2	+	BT	Non-RSDB
	27	NR or EN-DC (LTE + NR)	+	DTS_Ant.1 + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB
	28	NR or EN-DC (LTE + NR)	+	BT + DTS Ant_2	+	UNII Ant.1 + UNII Ant.2	RSDB

Notes:

1. DTS supports Wi-Fi Direct, Hotspot and VoIP.
2. U-NII supports Wi-Fi Direct, Hotspot and VoIP.
3. DTS Radio and Bluetooth cannot transmit SISO mode.
4. U-NII Radio can transmit simultaneously with Bluetooth Radio.
5. DTS Ant.2 Radio only can transmit simultaneously with Bluetooth Radio.
6. NR Radio can transmit through both SA & NSA(EN-DC) modes.

Note(s):

For EN-DC mode, Qualcomm Smart Transmit algorithm in WWAN adds directly the time-averaged RF exposure from 4G(LTE) and time-averaged RF exposure from 5G NR. Smart Transmit algorithm controls the total RF exposure from both 4G and 5G NR to not exceed FCC limit. Therefore, simultaneous transmission compliance between 4G+5G NR operation is demonstrated in the Part 2 Report during algorithm validation. In Part 1 Report, simultaneous transmission compliance was evaluated individually with other Radios (WLAN or BT) using one of 4G or 5G NR.

Simultaneous transmission SAR test exclusion considerations

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

Sum of SAR

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

SAR to Peak Location Ratio (SPLSR)

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

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

Where:

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

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

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

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

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

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

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

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

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

Simultaneous transmission SAR measurement

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

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

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

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

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

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.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.078	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.887	1.627	2.172	2.721	3.082	3.313	3.383

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.078	0.418	0.391									1+2+3	1.887				1
		1.078	0.418										1+2	1.496	213.9	0.01	No	
		1.078		0.391									1+3	1.469	168.3	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.078							0.549				1+8	1.627	202.4	0.01	No	2
Rear	N/A	1.078								1.094			1+9	2.172	165.0	0.02	No	
		1.078							0.549	1.094			1+8+9	2.721				
Rear	N/A	1.078							0.549				1+8	1.627	202.4	0.01	No	
		1.078								1.094			1+9	2.172	165.0	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		1.078							0.549	1.094		0.361	1+8+9+11	3.082				3
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.078							1.199			0.361	1+(8+9)+11	2.638				
		1.078							1.199				1+(8+9)	2.277	166.9	0.02	No	
		1.078										0.361	1+11	1.439	212.3	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		1.078				0.291	0.301		0.549	1.094			1+5+6+8+9	3.313				4
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.078				0.486			1.199				1+(5+6)+(8+9)	2.763				
		1.078				0.486							1+(5+6)	1.564	170.4	0.01	No	
		1.078							1.199				1+(8+9)	2.277	166.9	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.078						1.320					1+(5+6)+(8+9)	2.398	157.8	0.02	No	4-a
Rear		1.078					0.301		0.549	1.094		0.361	1+6+8+9+11	3.383				5
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		1.078							1.199			0.478	1+(8+9)+(6+11)	2.755				
		1.078							1.199				1+(8+9)	2.277	166.9	0.02	No	
		1.078										0.478	1+(6+11)	1.556	160.8	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.078					1.310						1+(8+9+6+11)	2.388	157.8	0.02	No	5-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.933	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.742	1.482	2.027	2.576	2.937	3.168	3.238

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.933	0.418	0.391									1+2+3	1.742				6
		0.933	0.418										1+2	1.351	213.9	0.01	No	
		0.933		0.391									1+3	1.324	168.3	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	0.933								1.094			1+9	2.027	165.0	0.02	No	7
Rear	N/A	0.933							0.549	1.094			1+8+9	2.576				
		0.933							0.549				1+8	1.482	202.4	0.01	No	
		0.933								1.094			1+9	2.027	165.0	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.933							0.549	1.094		0.361	1+8+9+11	2.937				8
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.933							1.199			0.361	1+(8+9)+11	2.493				
		0.933							1.199				1+(8+9)	2.132	166.9	0.02	No	
		0.933										0.361	1+11	1.294	212.3	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.933				0.291	0.301		0.549	1.094			1+5+6+8+9	3.168				9
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.933				0.486			1.199				1+(5+6)+(8+9)	2.618				
		0.933				0.486							1+(5+6)	1.419	170.3	0.01	No	
		0.933							1.199				1+(8+9)	2.132	166.9	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.933				1.320							1+(5+6)+(8+9)	2.253	157.8	0.02	No	9-a
Rear		0.933					0.301		0.549	1.094		0.361	1+6+8+9+11	3.238				10
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.933							1.199			0.478	1+(8+9)+(6+11)	2.610				
		0.933							1.199				1+(8+9)	2.132	166.9	0.02	No	
		0.933										0.478	1+(6+11)	1.411	160.8	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.933					1.310						1+(8+9+6+11)	2.243	157.8	0.02	No	10-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant.1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.716	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.525	1.265	1.810	2.359	2.720	2.951	3.021

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.716								1.094			1+9	1.810	202.3	0.01	No	
		0.716							0.549	1.094			1+8+9	2.359				11
Rear	N/A	0.716							0.549				1+8	1.265	225.9	0.01	No	
		0.716								1.094			1+9	1.810	202.3	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
		0.716							0.549	1.094		0.361	1+8+9+11	2.720				
Rear	MIMO SAR Note.3								1.199				(8+9)	1.199				12
		0.716							1.199			0.361	1+(8+9)+11	2.276				
		0.716							1.199				1+(8+9)	1.915	203.6	0.01	No	
		0.716										0.361	1+11	1.077	236.5	0.00	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
		0.716				0.291	0.301		0.549	1.094			1+5+6+8+9	2.951				
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				13
Rear		0.716				0.486			1.199				1+(5+6)+(8+9)	2.401				
		0.716				0.486							1+(5+6)	1.202	207.6	0.01	No	
		0.716							1.199				1+(8+9)	1.915	203.6	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.716				1.320							1+(5+6)+(8+9)	2.036	194.6	0.01	No	13-a
		0.716					0.301		0.549	1.094		0.361	1+6+8+9+11	3.021				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				14
Rear		0.716							1.199			0.478	1+(8+9)+(6+11)	2.393				
		0.716							1.199				1+(8+9)	1.915	203.6	0.01	No	
		0.716										0.478	1+(6+11)	1.194	198.3	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.716					1.310						1+(8+9+6+11)	2.026	194.6	0.01	No	14-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.060	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.869	1.609	2.154	2.703	3.064	3.295	3.365

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.060	0.418	0.391									1+2+3	1.869				
		1.060	0.418										1+2	1.478	210.6	0.01	No	15
		1.060		0.391									1+3	1.451	166.4	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.060							0.549				1+8	1.609	199.0	0.01	No	
Rear	N/A	1.060								1.094			1+9	2.154	163.2	0.02	No	
		1.060							0.549	1.094			1+8+9	2.703				16
Rear	N/A	1.060							0.549				1+8	1.609	199.0	0.01	No	
		1.060								1.094			1+9	2.154	163.2	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
		1.060							0.549	1.094		0.361	1+8+9+11	3.064				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
Rear		1.060							1.199			0.361	1+(8+9)+11	2.620				17
		1.060							1.199				1+(8+9)	2.259	165.1	0.02	No	
		1.060										0.361	1+11	1.421	209.0	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
		1.060				0.291	0.301		0.549	1.094			1+5+6+8+9	3.295				
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				18
Rear		1.060				0.486			1.199				1+(5+6)+(8+9)	2.745				
		1.060				0.486							1+(5+6)	1.546	168.6	0.01	No	
		1.060							1.199				1+(8+9)	2.259	165.1	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.060						1.320					1+(5+6)+(8+9)	2.380	155.9	0.02	No	18-a
		1.060					0.301		0.549	1.094		0.361	1+6+8+9+11	3.365				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				19
Rear		1.060							1.199			0.478	1+(8+9)+(6+11)	2.737				
		1.060							1.199				1+(8+9)	2.259	165.1	0.02	No	
		1.060										0.478	1+(6+11)	1.538	159	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.060						1.310					1+(8+9+6+11)	2.370	155.9	0.02	No	19-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.910	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.719	1.459	2.004	2.553	2.914	3.145	3.215

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.910	0.418	0.391									1+2+3	1.719				20
		0.910	0.418										1+2	1.328	239.1	0.01	No	
		0.910		0.391									1+3	1.301	206.5	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	0.910								1.094			1+9	2.004	203.8	0.01	No	21
Rear	N/A	0.910							0.549	1.094			1+8+9	2.553				
		0.910							0.549				1+8	1.459	227.3	0.01	No	
		0.910								1.094			1+9	2.004	203.8	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.910							0.549	1.094		0.361	1+8+9+11	2.914				22
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.910							1.199			0.361	1+(8+9)+11	2.470				
		0.910							1.199				1+(8+9)	2.109	205.1	0.01	No	
		0.910										0.361	1+11	1.271	237.9	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.910				0.291	0.301		0.549	1.094			1+5+6+8+9	3.145				23
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.910				0.486			1.199				1+(5+6)+(8+9)	2.595				
		0.910				0.486							1+(5+6)	1.396	209.1	0.01	No	
		0.910							1.199				1+(8+9)	2.109	205.1	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.910						1.320					1+(5+6)+(8+9)	2.230	196.1	0.02	No	23-a
Rear		0.910					0.301		0.549	1.094		0.361	1+6+8+9+11	3.215				24
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.910							1.199			0.478	1+(8+9)+(6+11)	2.587				
		0.910							1.199				1+(8+9)	2.109	205.1	0.01	No	
		0.910										0.478	1+(6+11)	1.388	199.8	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.910						1.310					1+(8+9+6+11)	2.220	196.1	0.02	No	24-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.177	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.986	1.726	2.271	2.820	3.181	3.412	3.482

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.177	0.418	0.391									1+2+3	1.986				
		1.177	0.418										1+2	1.595	211.4	0.01	No	25
		1.177		0.391									1+3	1.568	165.9	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.177							0.549				1+8	1.726	199.9	0.01	No	
Rear	N/A	1.177								1.094			1+9	2.271	162.7	0.02	No	
		1.177							0.549	1.094			1+8+9	2.820				26
Rear	N/A	1.177							0.549				1+8	1.726	199.9	0.01	No	
		1.177								1.094			1+9	2.271	162.7	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
		1.177							0.549	1.094		0.361	1+8+9+11	3.181				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
Rear		1.177							1.199			0.361	1+(8+9)+11	2.737				27
		1.177							1.199				1+(8+9)	2.376	164.6	0.02	No	
		1.177										0.361	1+11	1.538	209.8	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
		1.177				0.291	0.301		0.549	1.094			1+5+6+8+9	3.412				
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				28
Rear		1.177				0.486			1.199				1+(5+6)+(8+9)	2.862				
		1.177				0.486							1+(5+6)	1.663	168.0	0.01	No	
		1.177							1.199				1+(8+9)	2.376	164.6	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.177				1.320							1+(5+6)+(8+9)	2.497	155.5	0.03	No	28-a
		1.177					0.301		0.549	1.094		0.361	1+6+8+9+11	3.482				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				29
Rear		1.177							1.199			0.478	1+(8+9)+(6+11)	2.854				
		1.177							1.199				1+(8+9)	2.376	164.6	0.02	No	
		1.177										0.478	1+(6+11)	1.655	158.4	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.177					1.310						1+(8+9+6+11)	2.487	155.5	0.03	No	29-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant 1	WWAN + U-NII Ant 2	WWAN + U-NII Ant 1 + U-NII Ant 2	WWAN + UNII Ant 1 + UNII Ant 2 + BT	WWAN + DTS (Ant 1 + Ant 2) + U-NII (Ant 1 + Ant 2)	WWAN + BT + DTS Ant 2 + U-NII (Ant 1 + Ant 2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.629	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.438	1.178	1.723	2.272	2.633	2.864	2.934

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.629								1.094			1+9	1.723	201.1	0.01	No	
Rear	N/A	0.629							0.549	1.094			1+8+9	2.272				30
		0.629							0.549				1+8	1.178	224.2	0.01	No	
		0.629								1.094			1+9	1.723	201.1	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.629							0.549	1.094		0.361	1+8+9+11	2.633				31
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.629							1.199			0.361	1+(8+9)+11	2.189				
		0.629							1.199				1+(8+9)	1.828	202.4	0.01	No	
		0.629										0.361	1+11	0.990	234.8	0.00	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.629				0.291	0.301		0.549	1.094			1+5+6+8+9	2.864				32
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.629				0.486			1.199				1+(5+6)+(8+9)	2.314				
		0.629				0.486							1+(5+6)	1.115	206.4	0.01	No	
		0.629							1.199				1+(8+9)	1.828	202.4	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.629				1.320							1+(5+6)+(8+9)	1.949	193.4	0.01	No	32-a
Rear		0.629					0.301		0.549	1.094		0.361	1+6+8+9+11	2.934				33
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.629							1.199			0.478	1+(8+9)+(6+11)	2.306				
		0.629							1.199				1+(8+9)	1.828	202.4	0.01	No	
		0.629										0.478	1+(6+11)	1.107	197.1	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.629					1.310						1+(8+9+6+11)	1.939	193.4	0.01	No	33-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.844	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.653	1.393	1.938	2.487	2.848	3.079	3.149

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.844	0.418	0.391									1+2+3	1.653				34
		0.844	0.418										1+2	1.262	255.0	0.01	No	
		0.844		0.391									1+3	1.235	217.6	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	0.844								1.094			1+9	1.938	201.1	0.01	No	35
Rear	N/A	0.844							0.549	1.094			1+8+9	2.487				
		0.844							0.549				1+8	1.393	243.2	0.01	No	
		0.844								1.094			1+9	1.938	214.6	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.844							0.549	1.094		0.361	1+8+9+11	2.848				36
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.844							1.199			0.361	1+(8+9)+11	2.404				
		0.844							1.199				1+(8+9)	2.043	216.2	0.01	No	
		0.844										0.361	1+11	1.205	253.7	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.844				0.291	0.301		0.549	1.094			1+5+6+8+9	3.079				37
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.844				0.486			1.199				1+(5+6)+(8+9)	2.529				
		0.844				0.486							1+(5+6)	1.330	220.0	0.01	No	
		0.844							1.199				1+(8+9)	2.043	216.2	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.844				1.320							1+(5+6)+(8+9)	2.164	207	0.02	No	37-a
Rear		0.844					0.301		0.549	1.094		0.361	1+6+8+9+11	3.149				38
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.844							1.199			0.478	1+(8+9)+(6+11)	2.521				
		0.844							1.199				1+(8+9)	2.043	216.2	0.01	No	
		0.844										0.478	1+(6+11)	1.322	210.5	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.844					1.310						1+(8+9+6+11)	2.154	207	0.02	No	38-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.858	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.667	1.407	1.952	2.501	2.862	3.093	3.163

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.858	0.418	0.391									1+2+3	1.667				39
		0.858	0.418										1+2	1.276	237.0	0.01	No	
		0.858		0.391									1+3	1.249	204.5	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	0.858								1.094			1+9	1.952	201.8	0.01	No	40
Rear	N/A	0.858							0.549	1.094			1+8+9	2.501				
		0.858							0.549				1+8	1.407	225.2	0.01	No	
		0.858								1.094			1+9	1.952	201.8	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.858							0.549	1.094		0.361	1+8+9+11	2.862				41
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.858							1.199			0.361	1+(8+9)+11	2.418				
		0.858							1.199				1+(8+9)	2.057	203.1	0.01	No	
		0.858										0.361	1+11	1.219	235.8	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.858				0.291	0.301		0.549	1.094			1+5+6+8+9	3.093				42
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.858				0.486			1.199				1+(5+6)+(8+9)	2.543				
		0.858				0.486							1+(5+6)	1.344	207.1	0.01	No	
		0.858							1.199				1+(8+9)	2.057	203.1	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.858				1.320							1+(5+6)+(8+9)	2.178	194.1	0.02	No	42-a
Rear		0.858					0.301		0.549	1.094		0.361	1+6+8+9+11	3.163				43
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.858							1.199			0.478	1+(8+9)+(6+11)	2.535				
		0.858							1.199				1+(8+9)	2.057	203.1	0.01	No	
		0.858										0.478	1+(6+11)	1.336	197.8	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.858					1.310						1+(8+9+6+11)	2.168	194.1	0.02	No	43-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

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

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.177	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.986	1.726	2.271	2.820	3.181	3.412	3.482

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.177	0.418	0.391									1+2+3	1.986				
		1.177	0.418										1+2	1.595	211.6	0.01	No	44
		1.177		0.391									1+3	1.568	166	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.177							0.549				1+8	1.726	200.1	0.01	No	
Rear	N/A	1.177								1.094			1+9	2.271	162.8	0.02	No	
		1.177							0.549	1.094			1+8+9	2.820				45
Rear	N/A	1.177							0.549				1+8	1.726	200.1	0.01	No	
		1.177								1.094			1+9	2.271	162.8	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
		1.177							0.549	1.094		0.361	1+8+9+11	3.181				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
Rear		1.177							1.199			0.361	1+(8+9)+11	2.737				46
		1.177							1.199				1+(8+9)	2.376	164.7	0.02	No	
		1.177										0.361	1+11	1.538	210.0	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
		1.177				0.291	0.301		0.549	1.094			1+5+6+8+9	3.412				
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				47
Rear		1.177				0.486			1.199				1+(5+6)+(8+9)	2.862				
		1.177				0.486							1+(5+6)	1.663	168.1	0.01	No	
		1.177							1.199				1+(8+9)	2.376	164.7	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.177					1.320						1+(5+6)+(8+9)	2.497	155.6	0.03	No	47-a
		1.177					0.301		0.549	1.094		0.361	1+6+8+9+11	3.482				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				48
Rear		1.177							1.199			0.478	1+(8+9)+(6+11)	2.854				
		1.177							1.199				1+(8+9)	2.376	164.7	0.02	No	
		1.177										0.478	1+(6+11)	1.655	158.5	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.177					1.310						1+(8+9+6+11)	2.487	155.6	0.03	No	48-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

12.11 Sum of the SAR for NR Band n2 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.201	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	2.010	1.750	2.295	2.844	3.205	3.436	3.506

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.201	0.418	0.391									1+2+3	2.010				49
		1.201	0.418										1+2	1.619	212.6	0.01	No	
		1.201		0.391									1+3	1.592	167.2	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.201							0.549				1+8	1.750	201.1	0.01	No	
Rear	N/A	1.201								1.094			1+9	2.295	164.0	0.02	No	
Rear	N/A	1.201							0.549	1.094			1+8+9	2.844				50
		1.201							0.549				1+8	1.750	201.1	0.01	No	
		1.201								1.094			1+9	2.295	164.0	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		1.201							0.549	1.094		0.361	1+8+9+11	3.205				51
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.201							1.199			0.361	1+(8+9)+11	2.761				
		1.201							1.199				1+(8+9)	2.400	165.9	0.02	No	
		1.201										0.361	1+11	1.562	211.1	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		1.201				0.291	0.301		0.549	1.094			1+5+6+8+9	3.436				52
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.201				0.486			1.199				1+(5+6)+(8+9)	2.886				
		1.201				0.486							1+(5+6)	1.687	169.3	0.01	No	
		1.201							1.199				1+(8+9)	2.400	165.9	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.201						1.320					1+(5+6)+(8+9)	2.521	156.7	0.03	No	52-a
Rear		1.201					0.301		0.549	1.094		0.361	1+6+8+9+11	3.506				53
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		1.201							1.199			0.478	1+(8+9)+(6+11)	2.878				
		1.201							1.199				1+(8+9)	2.400	165.9	0.02	No	
		1.201										0.478	1+(6+11)	1.679	159.7	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.201					1.310						1+(8+9+6+11)	2.511	156.7	0.03	No	53-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

12.12 Sum of the SAR for NR Band n5 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	0.817	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	1.626	1.366	1.911	2.460	2.821	3.052	3.122

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	0.817	0.418	0.391									1+2+3	1.626				54
		0.817	0.418										1+2	1.235	239.1	0.01	No	
		0.817		0.391									1+3	1.208	206.9	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	0.817								1.094			1+9	1.911	204.2	0.01	No	55
Rear	N/A	0.817							0.549	1.094			1+8+9	2.460				
		0.817							0.549				1+8	1.366	227.3	0.01	No	
		0.817								1.094			1+9	1.911	204.2	0.01	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		0.817							0.549	1.094		0.361	1+8+9+11	2.821				56
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.817							1.199			0.361	1+(8+9)+11	2.377				
		0.817							1.199				1+(8+9)	2.016	205.4	0.01	No	
		0.817										0.361	1+11	1.178	237.9	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		0.817				0.291	0.301		0.549	1.094			1+5+6+8+9	3.052				57
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		0.817				0.486			1.199				1+(5+6)+(8+9)	2.502				
		0.817				0.486							1+(5+6)	1.303	209.5	0.01	No	
		0.817							1.199				1+(8+9)	2.016	205.4	0.01	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	0.817				1.320							1+(5+6)+(8+9)	2.137	196.5	0.02	No	57-a
Rear		0.817					0.301		0.549	1.094		0.361	1+6+8+9+11	3.122				58
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		0.817							1.199			0.478	1+(8+9)+(6+11)	2.494				
		0.817							1.199				1+(8+9)	2.016	205.4	0.01	No	
		0.817										0.478	1+(6+11)	1.295	200.2	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	0.817					1.310						1+(8+9+6+11)	2.127	196.5	0.02	No	58-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

12.13 Sum of the SAR for NR Band n66 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)						
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB scenarios	
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant.1	WWAN + U-NII Ant.2	WWAN + U-NII Ant 1 + U-NII Ant.2	WWAN + UNII Ant.1 + UNII Ant.2 + BT	WWAN + DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	WWAN + BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9	1+6+8+9+11
Rear	1.247	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	2.056	1.796	2.341	2.890	3.251	3.482	3.552

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.247	0.418	0.391									1+2+3	2.056				59
		1.247	0.418										1+2	1.665	210.6	0.01	No	
		1.247		0.391									1+3	1.638	165.1	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.247							0.549				1+8	1.796	199.0	0.01	No	60
Rear	N/A	1.247								1.094			1+9	2.341	161.8	0.02	No	
Rear	N/A	1.247							0.549	1.094			1+8+9	2.890				
		1.247							0.549				1+8	1.796	199	0.01	No	
		1.247								1.094			1+9	2.341	161.8	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		1.247							0.549	1.094		0.361	1+8+9+11	3.251				61
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.247							1.199			0.361	1+(8+9)+11	2.807				
		1.247							1.199				1+(8+9)	2.446	163.7	0.02	No	
		1.247										0.361	1+11	1.608	209.0	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		1.247				0.291	0.301		0.549	1.094			1+5+6+8+9	3.482				62
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.247				0.486			1.199				1+(5+6)+(8+9)	2.932				
		1.247				0.486							1+(5+6)	1.733	167.2	0.01	No	
		1.247							1.199				1+(8+9)	2.446	163.7	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.247						1.320					1+(5+6)+(8+9)	2.567	154.6	0.03	No	62-a
Rear		1.247					0.301		0.549	1.094		0.361	1+6+8+9+11	3.552				63
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		1.247							1.199			0.478	1+(8+9)+(6+11)	2.924				
		1.247							1.199				1+(8+9)	2.446	163.7	0.02	No	
		1.247										0.478	1+(6+11)	1.725	157.6	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.247					1.310						1+(8+9+6+11)	2.557	154.6	0.03	No	63-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

12.14 Sum of the SAR for NR Band n77 & Wi-Fi & BT

Test Position	Standalone SAR (W/kg)											∑ 1-g SAR (W/kg)					
	WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios					RSDB sc
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		WWAN + DTS Ant 1 + DTS Ant 2	WWAN + U-NII Ant 1	WWAN + U-NII Ant 2	WWAN + U-NII Ant 1 + U-NII Ant 2	WWAN + UNII Ant 1 + UNII Ant 2 + BT	WWAN + DTS (Ant 1 + Ant 2) + U-NII (Ant 1 + Ant 2)
	1	2	3	4	5	6	7	8	9	10	11	1+2+3	1+8	1+9	1+8+9	1+8+9+11	1+5+6+8+9
Rear	1.244	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	2.053	1.793	2.338	2.887	3.248	3.479

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)											SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1	Figure
		WWAN	Non RSDB			RSDB			Non RSDB & RSDB			BT						
			DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO							
		1	2	3	4	5	6	7	8	9	10	11						
Rear	N/A	1.244	0.418	0.391									1+2+3	2.053				64
		1.244	0.418										1+2	1.662	245.7	0.01	No	
		1.244		0.391									1+3	1.635	213.6	0.01	No	
			0.418	0.391									2+3	0.809	56.8	0.01	No	
Rear	N/A	1.244							0.549				1+8	1.793	234.0	0.01	No	65
Rear	N/A	1.244								1.094			1+9	2.338	210.8	0.02	No	
Rear	N/A	1.244							0.549	1.094			1+8+9	2.887				
		1.244							0.549				1+8	1.793	234	0.01	No	
		1.244								1.094			1+9	2.338	210.8	0.02	No	
									0.549	1.094			8+9	1.643	51.2	0.04	No	
Rear		1.244							0.549	1.094		0.361	1+8+9+11	3.248				66
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.244							1.199			0.361	1+(8+9)+11	2.804				
		1.244							1.199				1+(8+9)	2.443	212.1	0.02	No	
		1.244										0.361	1+11	1.605	244.6	0.01	No	
									1.199			0.361	(8+9)+11	1.560	55.0	0.04	No	
Rear		1.244				0.291	0.301		0.549	1.094			1+5+6+8+9	3.479				67
	MIMO SAR Note.3					0.486							(5+6)	0.486				
	MIMO SAR Note.3								1.199				(8+9)	1.199				
		1.244				0.486			1.199				1+(5+6)+(8+9)	2.929				
		1.244				0.486							1+(5+6)	1.730	216.2	0.01	No	
		1.244							1.199				1+(8+9)	2.443	212.1	0.02	No	
						0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes	
	Hybrid SPLSR Note.2	1.244				1.320							1+(5+6)+(8+9)	2.564	203.1	0.02	No	67-a
Rear		1.244					0.301		0.549	1.094		0.361	1+6+8+9+11	3.549				68
	MIMO SAR Note.3								1.199				(8+9)	1.199				
	Volume Scan Note.4						0.478						(6+11)	0.478				
		1.244							1.199			0.478	1+(8+9)+(6+11)	2.921				
		1.244							1.199				1+(8+9)	2.443	212.1	0.02	No	
		1.244										0.478	1+(6+11)	1.722	206.9	0.01	No	
									1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes	
	Hybrid SPLSR Note.2	1.244					1.310						1+(8+9+6+11)	2.554	203.1	0.02	No	68-a

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.

12.15 Sum of the SAR for Wi-Fi (RSDB & Non RSDB) & BT

Test Position	Standalone SAR (W/kg)										∑ 1-g SAR (W/kg)				
	Non RSDB			RSDB			Non RSDB & RSDB			BT	Non RSDB scenarios			RSDB scenarios	
	DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO		DTS Ant 1 + DTS Ant 2	U-NII Ant 1 + U-NII Ant 2	UNII Ant.1 + UNII Ant.2 + BT	DTS (Ant.1 + Ant.2) + U-NII (Ant.1 + Ant.2)	BT + DTS Ant.2 + U-NII (Ant.1 + Ant.2)
	2	3	4	5	6	7	8	9	10	11	2+3	8+9	8+9+11	5+6+8+9	6+8+9+11
Rear	0.418	0.391	0.765	0.291	0.301	0.486	0.549	1.094	1.199	0.361	0.809	1.199	1.560	2.235	2.305

SAR to Peak Location Separation Ratio (SPLSR)

Test Position	Hybrid SPLSR	Standalone SAR (W/kg)										SUM 1-g SAR (W/kg)		Calculated distance (mm)	SPLSR (=< 0.04)	Volume Scan (Yes/No) Note.1
		Non RSDB			RSDB			Non RSDB & RSDB			BT					
		DTS Ant 1	DTS Ant 2	DTS MIMO	DTS Ant 1	DTS Ant 2	DTS MIMO	U-NII Ant 1	U-NII Ant 2	U-NII MIMO						
		2	3	4	5	6	7	8	9	10	11					
Rear					0.291	0.301		0.549	1.094			5+6+8+9	2.235			
	MIMO SAR Note.3				0.486							(5+6)	0.486			
	MIMO SAR Note.3							1.199				(8+9)	1.199			
					0.486			1.199				(5+6)+(8+9)	1.685	5.2	0.42	Yes
					1.320											
Rear						0.301		0.549	1.094		0.361	6+8+9+11	2.305			
	MIMO SAR Note.3							1.199				(8+9)	1.199			
	Volume Scan Note.4					0.478						(6+11)	0.478			
								1.199			0.478	(8+9)+(6+11)	1.677	6.4	0.34	Yes
						1.310										

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.12.16 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. MIMO SAR was used for Simultaneous transmission analysis.
4. Volume Scan SAR was used for Simultaneous transmission analysis.
5. Blue value is the result including MIMO SAR test result of UNII Ant.1 and UNII Ant.2.

12.16 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.
Standalone	Rear	BT +DTS Ant 2 + UNII MIMO	BT	0.241	0.226	1	1.499	1.310	6, 7
			DTS Ant 2	0.290	0.333	2	1.036		
			UNII Ant 1	0.360	0.275	3	1.526		
			UNII Ant 2	0.672	0.555	4	1.628		
		DTS MIMO + UNII MIMO	DTS Ant 1	0.277	0.351	5	1.051	1.320	8, 9
			DTS Ant 2	0.290	0.333		1.036		
			UNII Ant 1	0.360	0.275		1.526		
			UNII Ant 2	0.672	0.555		1.628		
		BT +DTS Ant 2	BT	0.241	0.226		1.499	0.478	10
			DTS Ant 2	0.290	0.333		1.036		

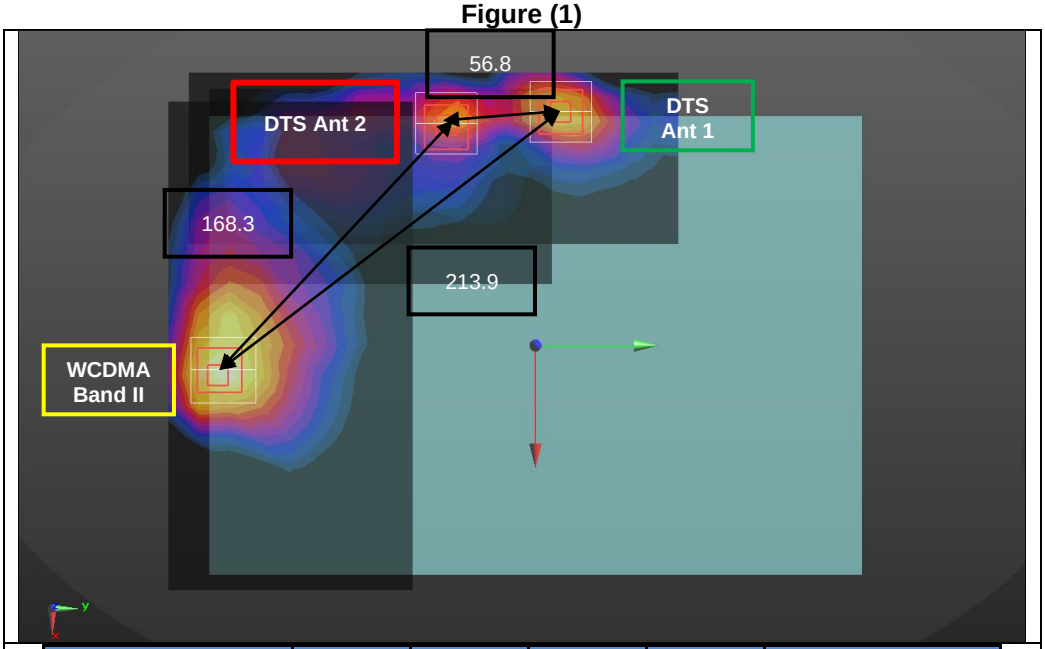
Note(s):

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 I.

Conclusion:

Simultaneous Transmission SAR analysis results is satisfied the FCC Limit requirement according to follow procedures with "Sum of SAR" or "SPLSR" or "SPLSR Hotspot combination(including Volume Scan)".

Figure (1)

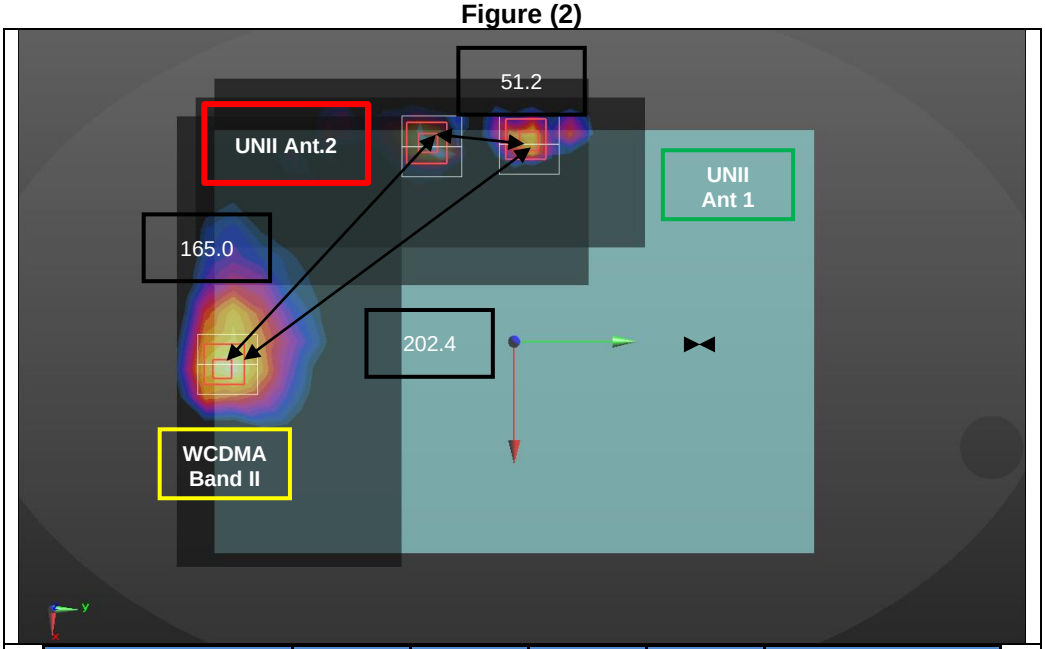


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	213.9
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	168.3
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (2)

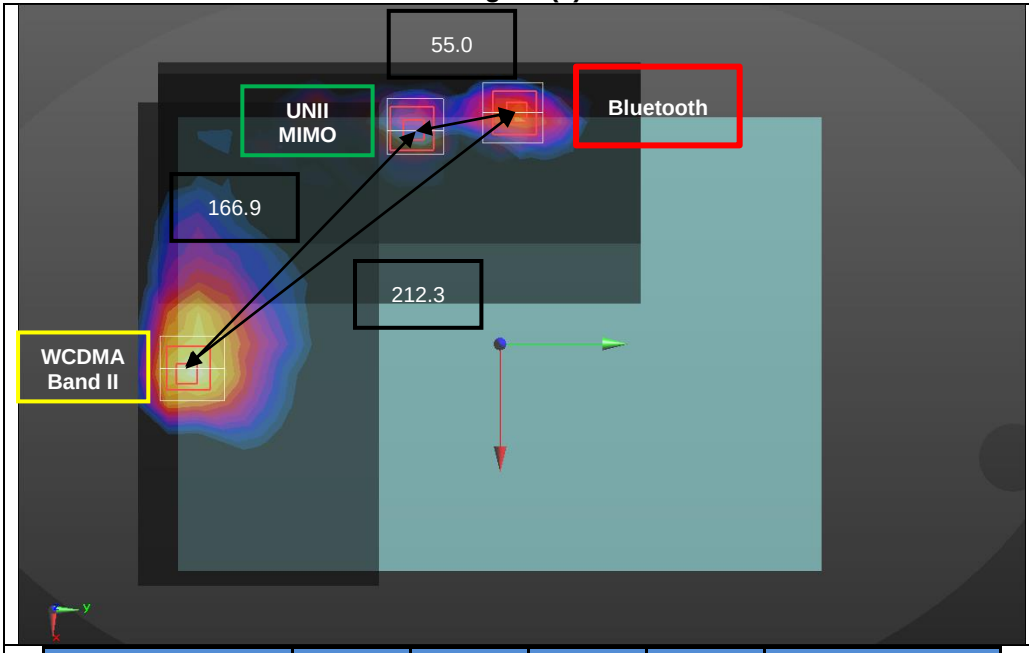


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	202.4
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	165.0
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (3)

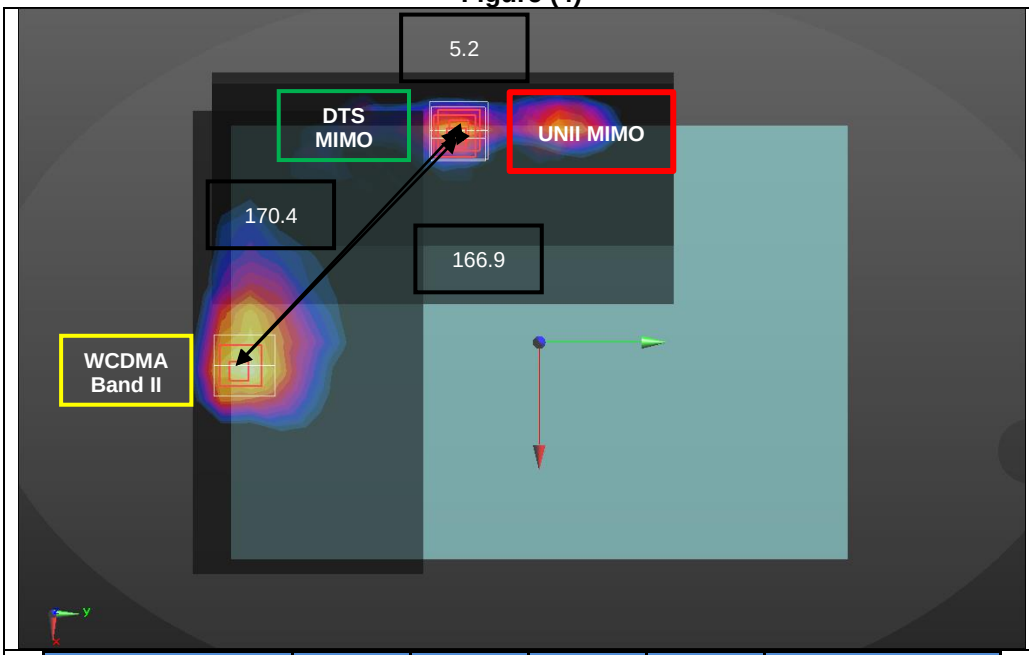


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	166.9
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	212.3
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (4)

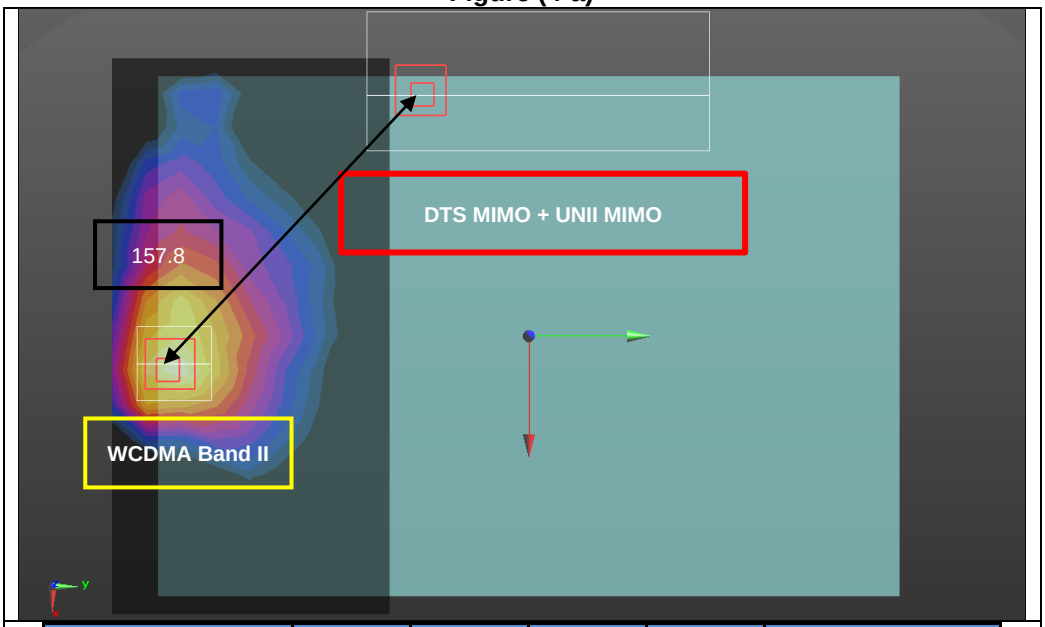


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	170.4
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	166.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (4-a)

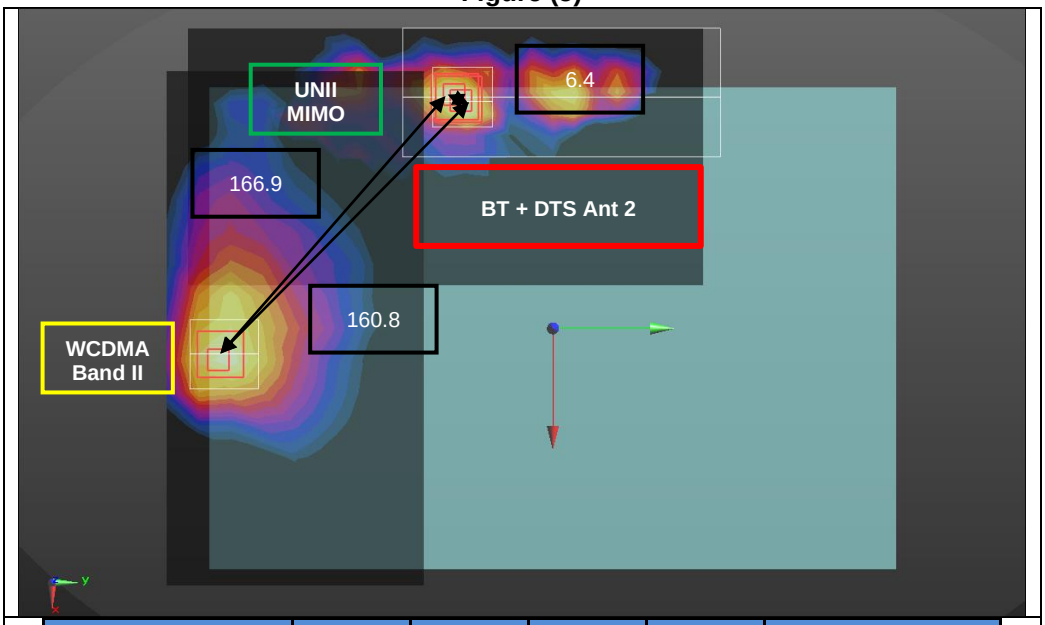


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	157.8
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (5)

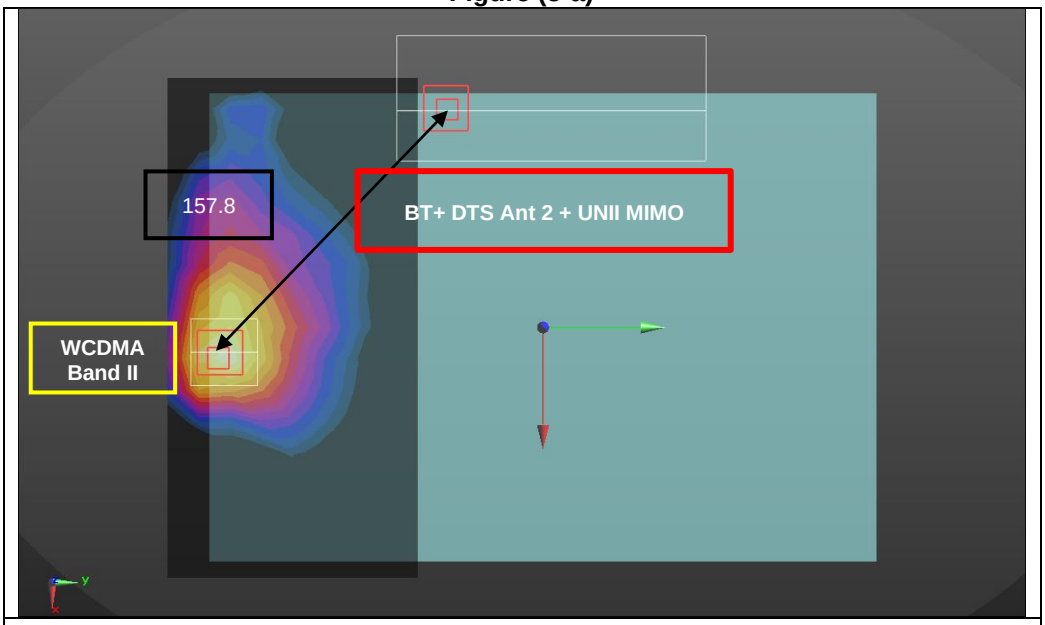


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	160.8
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	166.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (5-a)

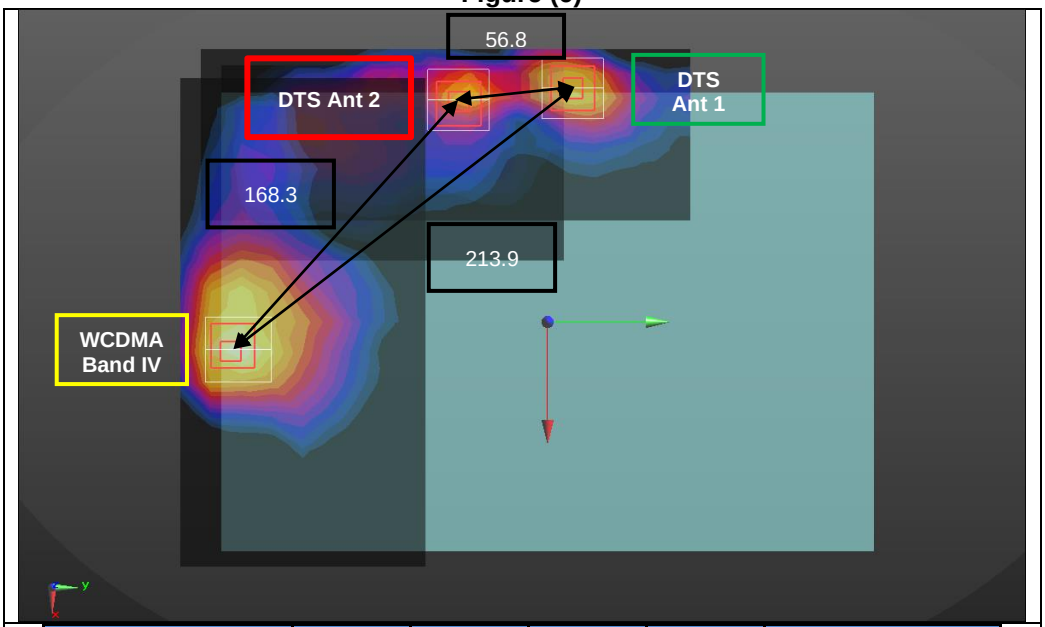


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band II	1	1.078	0.0168	-0.1562	-0.0013	1 + 2	157.8
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (6)

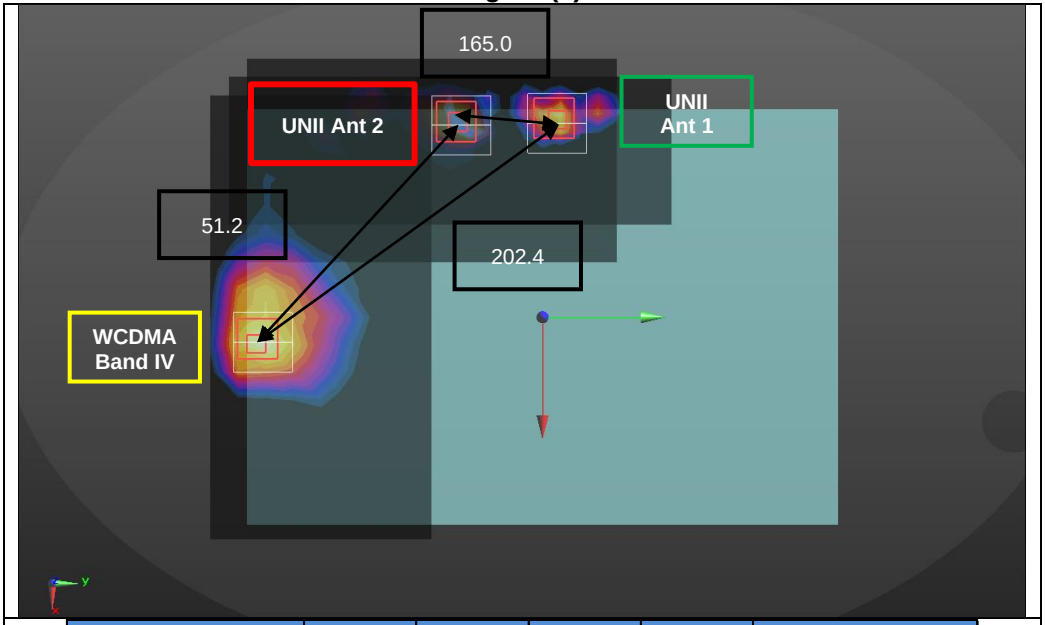


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	213.9
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	168.3
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (7)

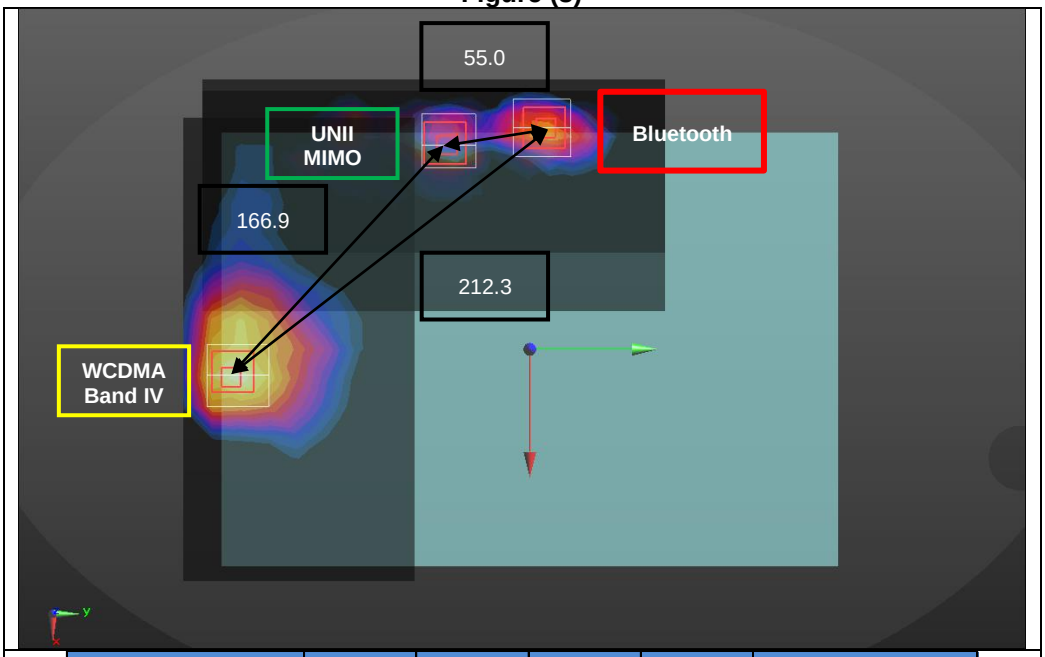


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	202.4
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	165.0
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (8)

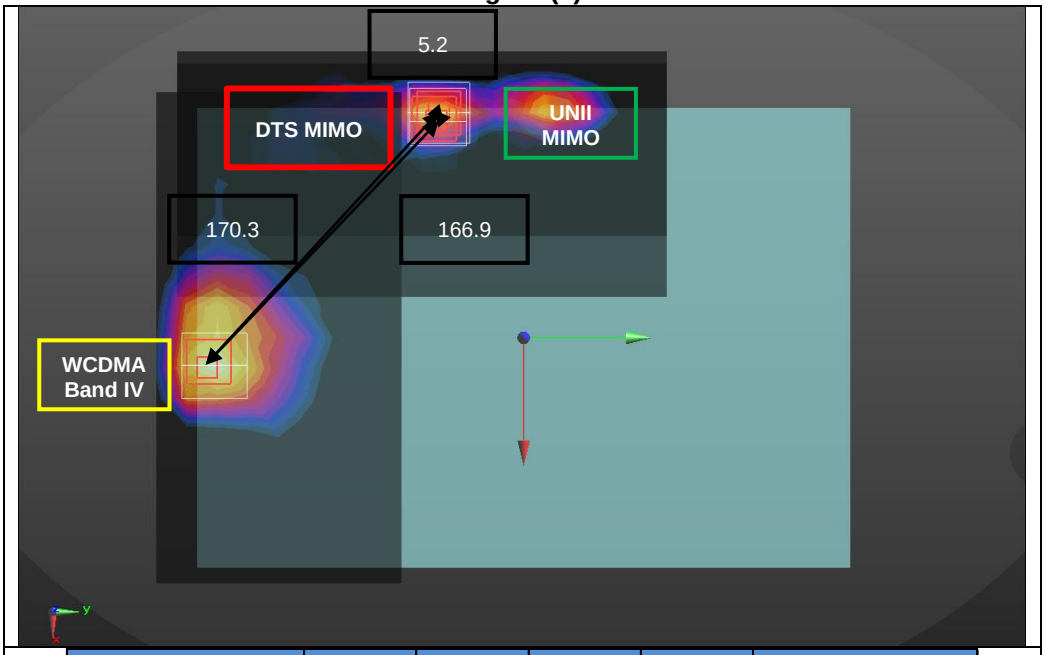


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	166.9
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	212.3
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (9)

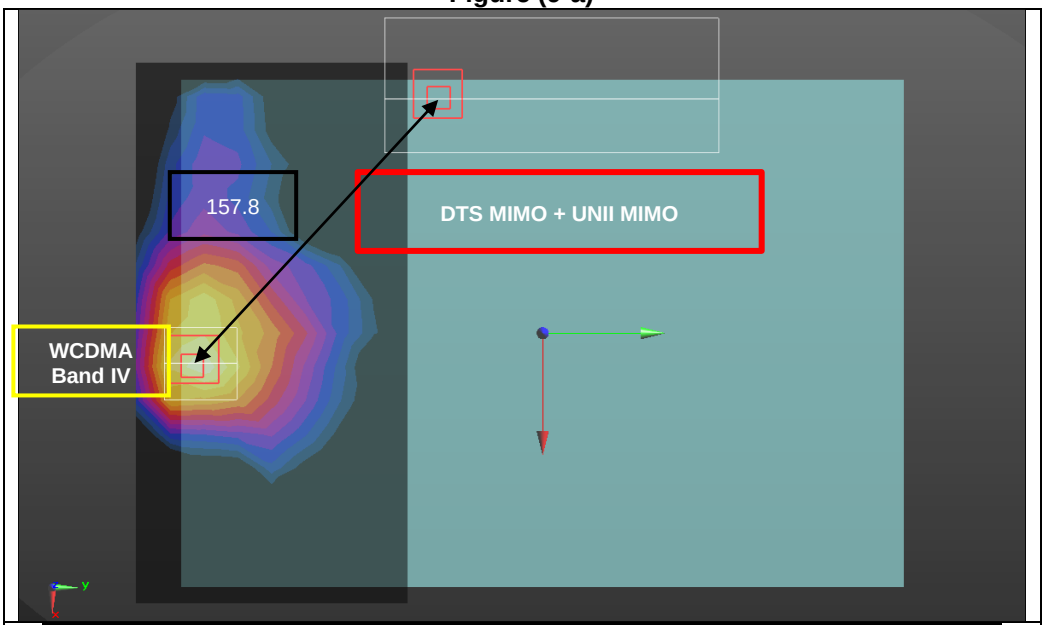


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	170.3
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	166.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (9-a)

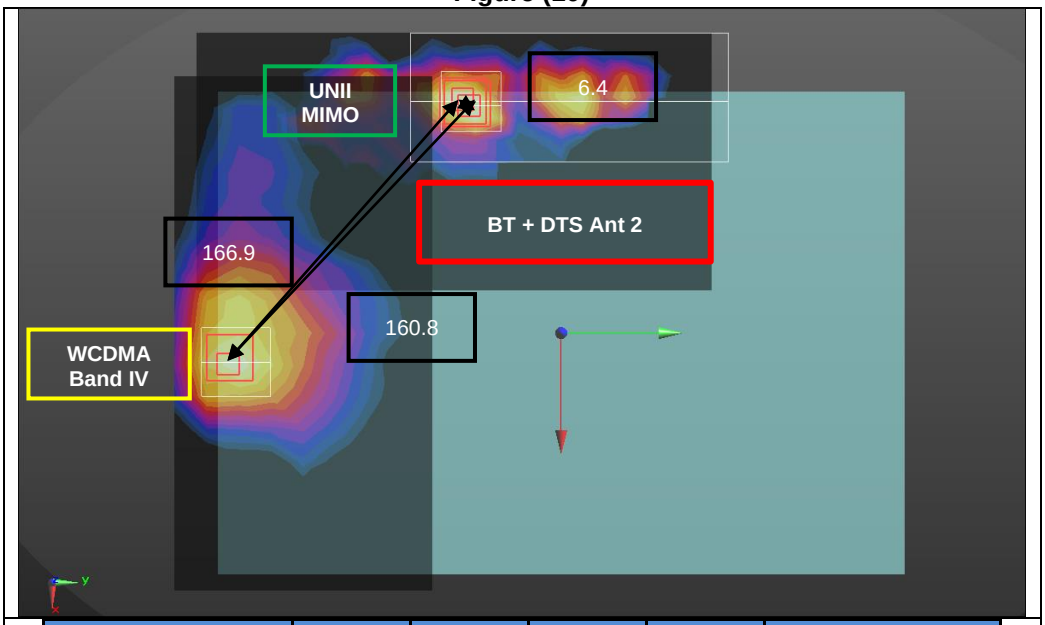


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	157.8
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (10)

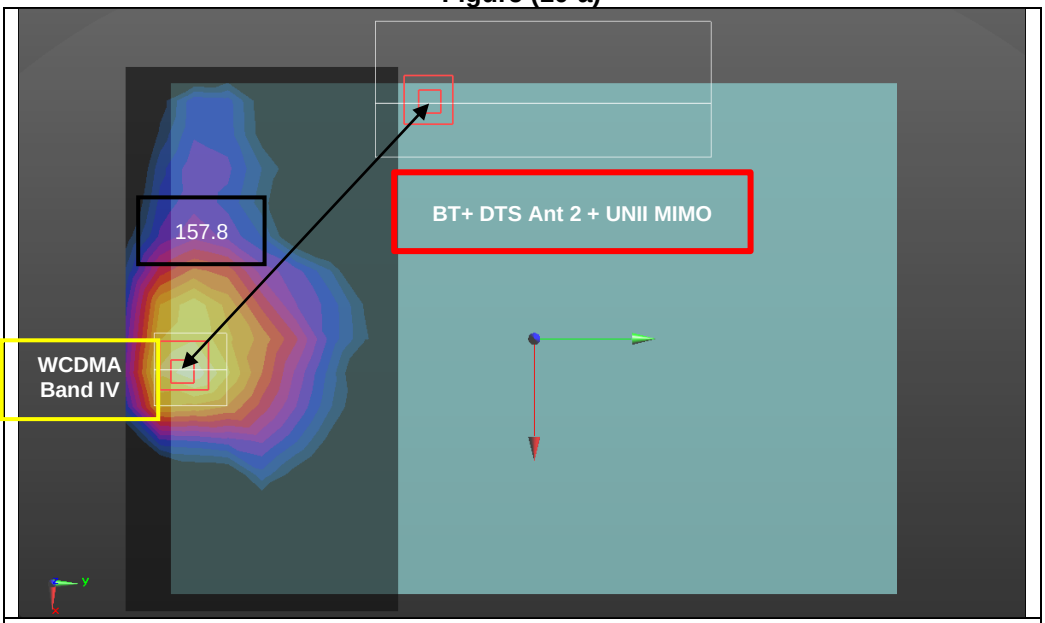


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	160.8
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	166.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (10-a)

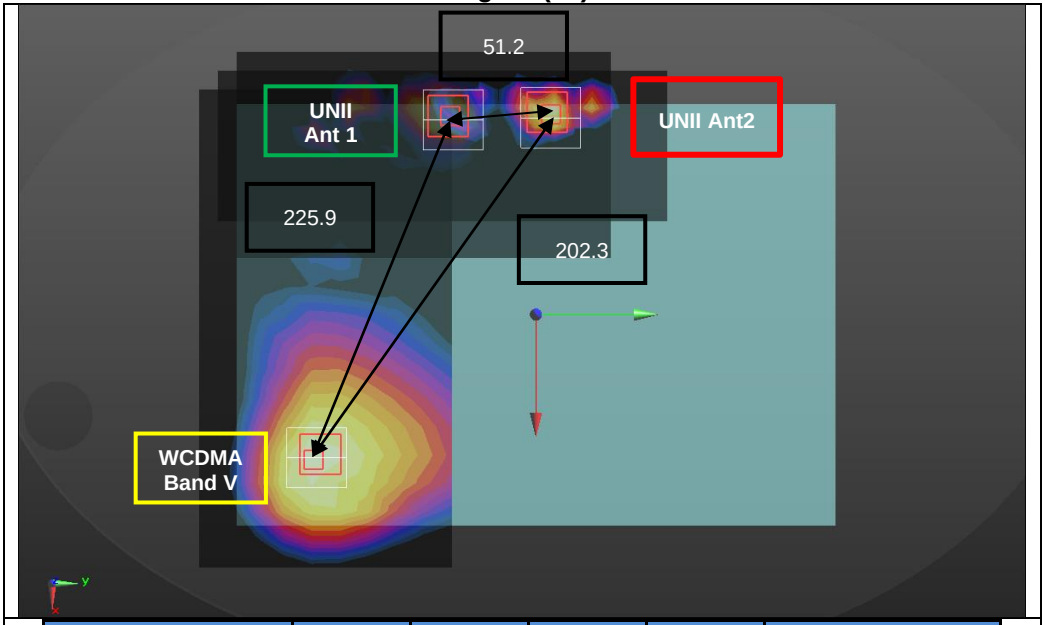


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band IV	1	0.933	0.0167	-0.1563	-0.0014	1 + 2	157.8
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (11)

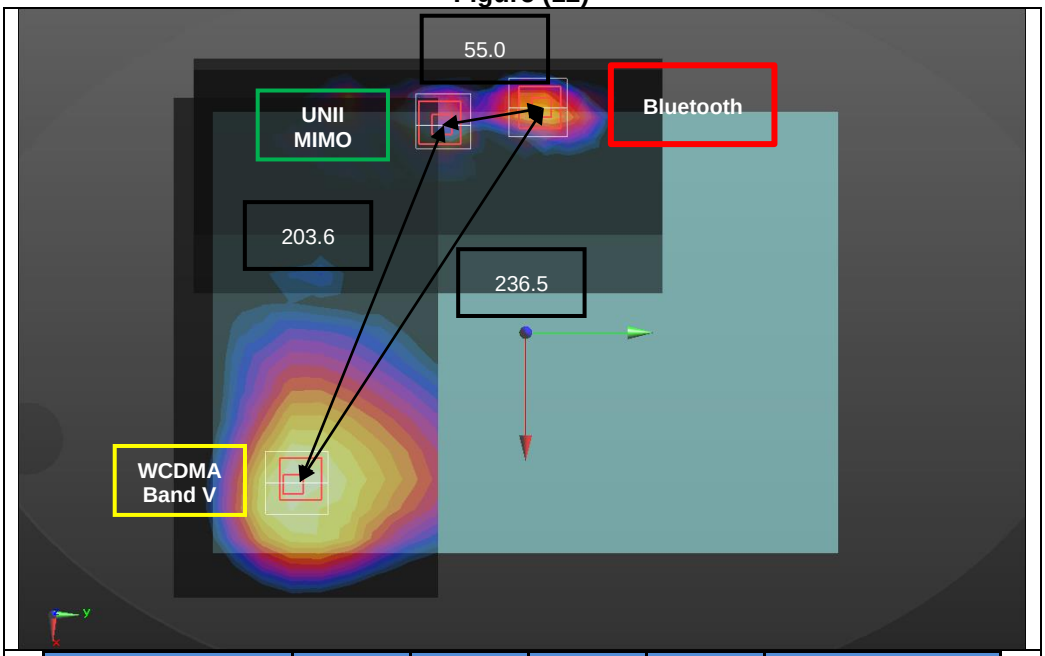


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	225.9
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	202.3
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (12)

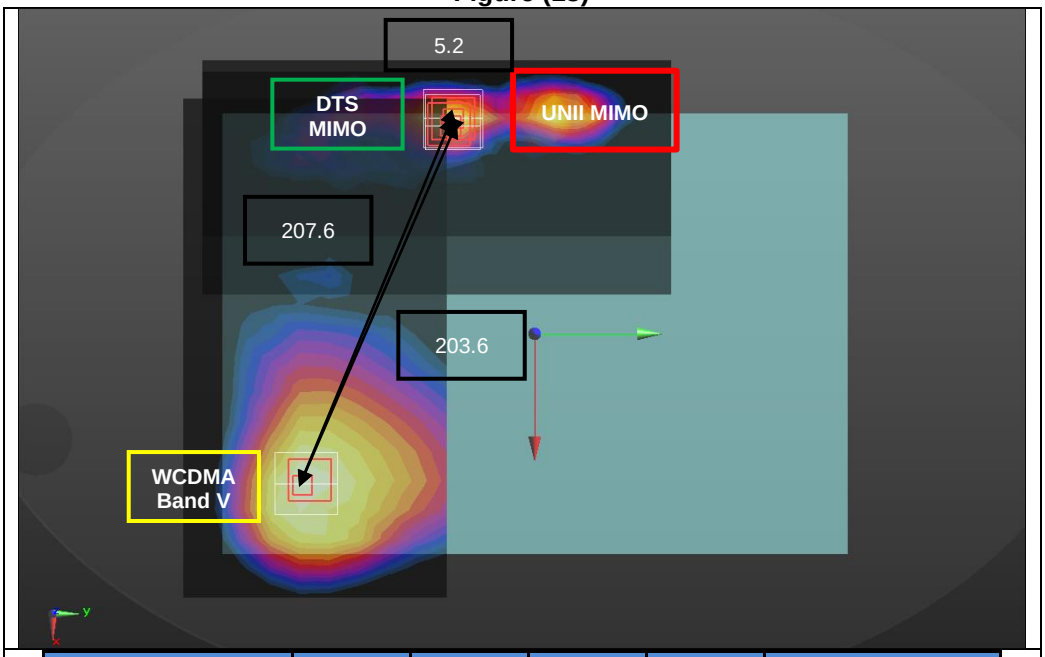


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	203.6
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	236.5
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (13)

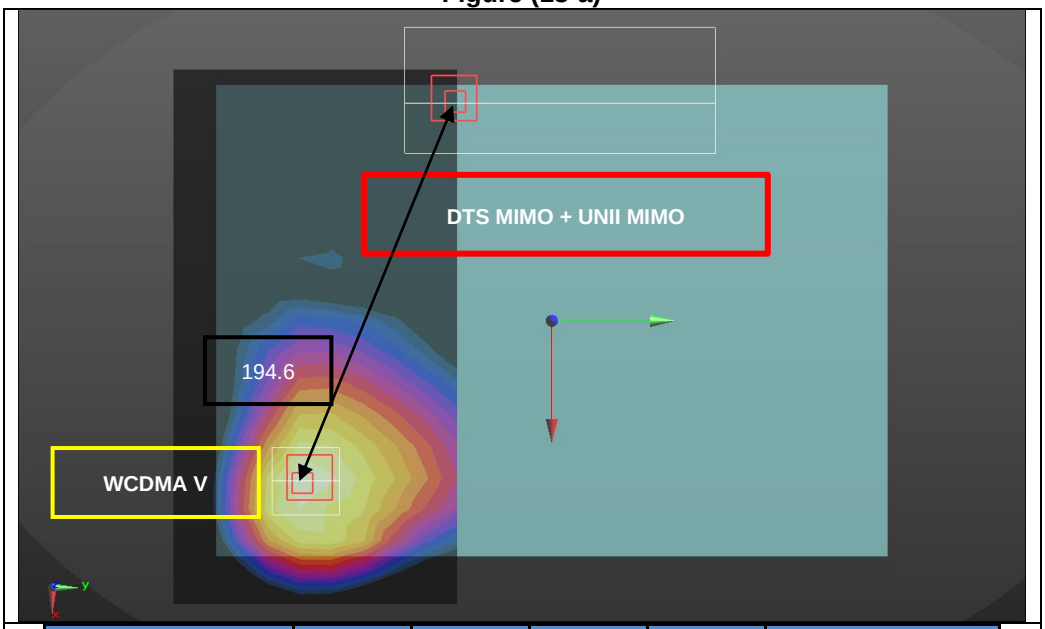


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	207.6
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	203.6
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (13-a)

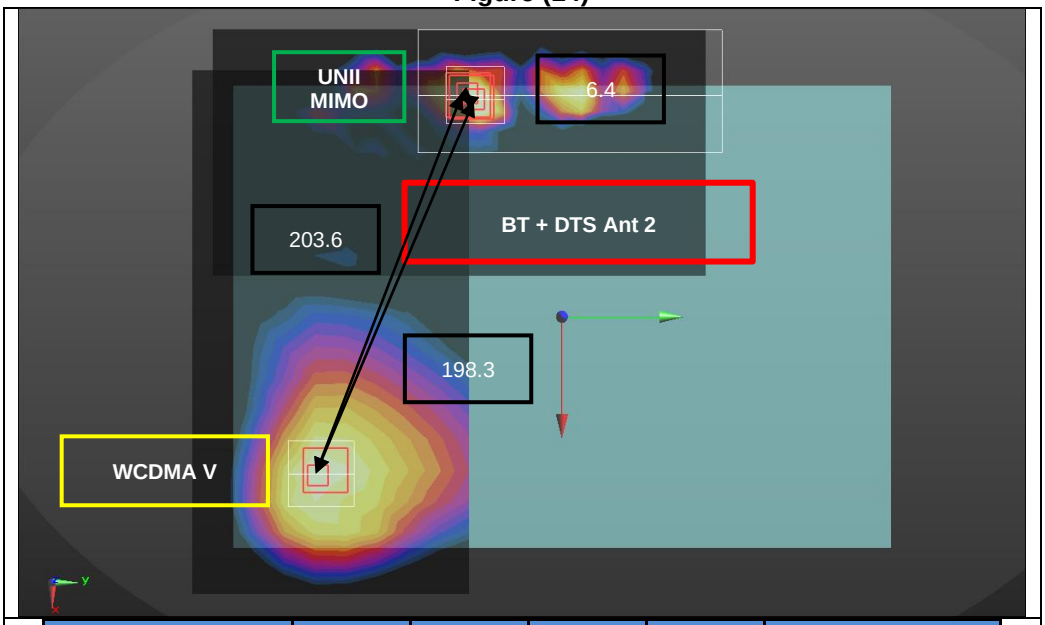


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	194.6
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (14)

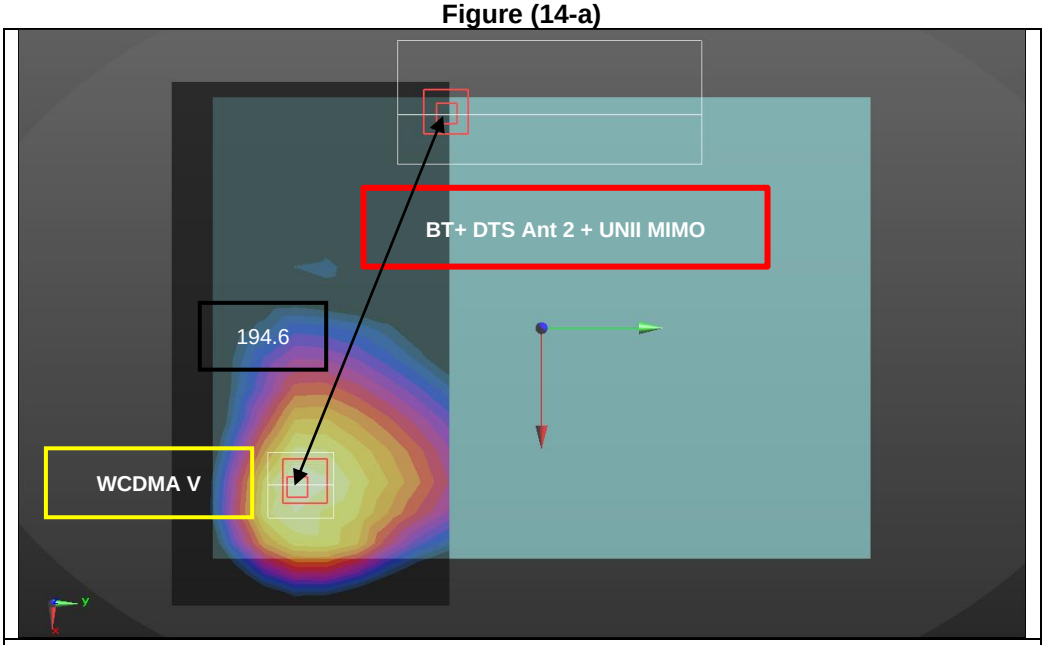


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	198.3
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	203.6
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (14-a)

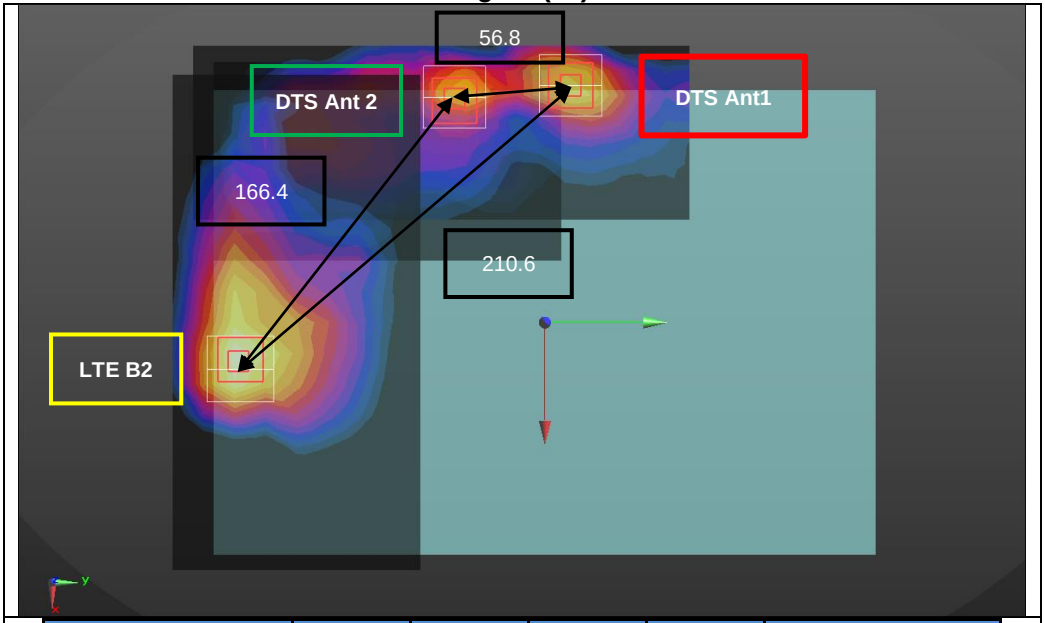


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
WCDMA Band V	1	0.716	0.0813	-0.1218	-0.0033	1 + 2	194.6
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (15)

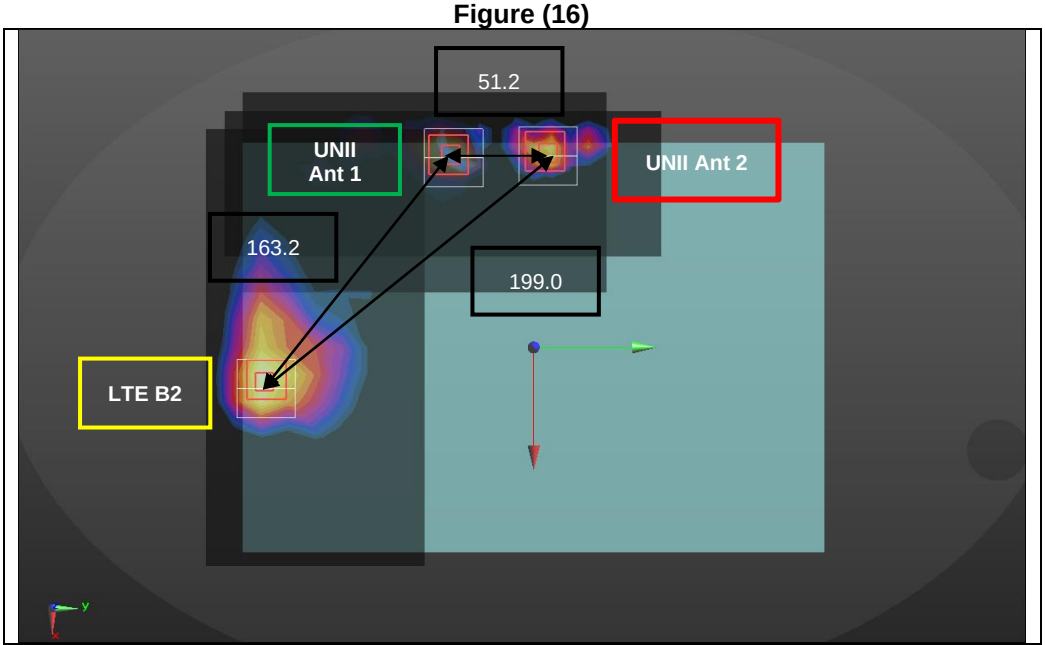


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.060	0.0209	-0.1486	-0.0011	1 + 2	210.6
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	166.4
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (16)

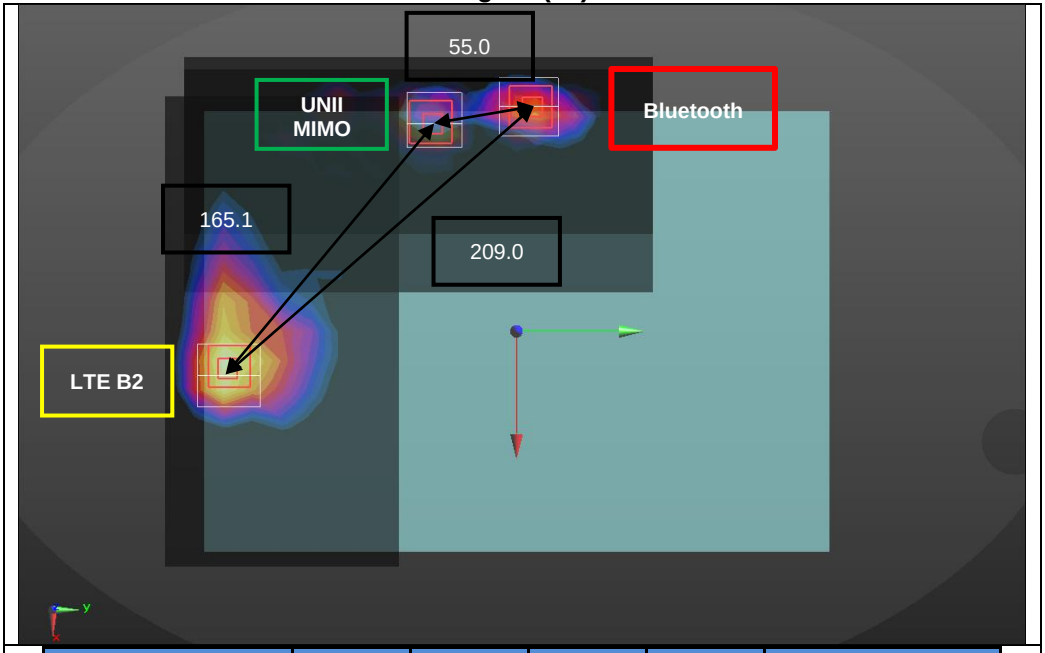


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	199.0
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	163.2
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (17)

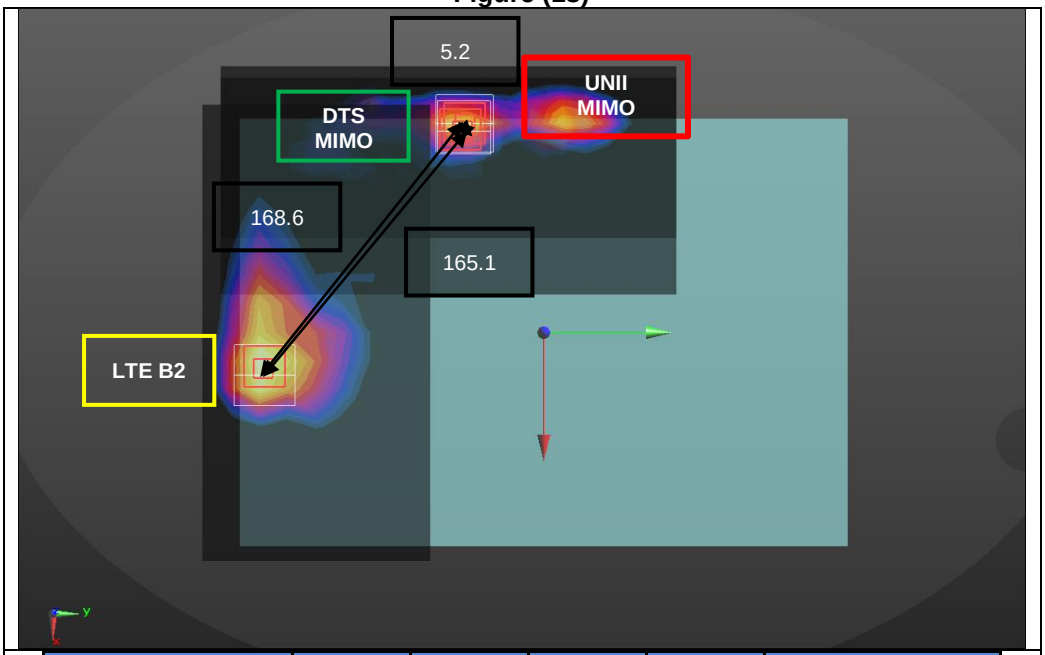


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	165.1
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	209.0
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (18)

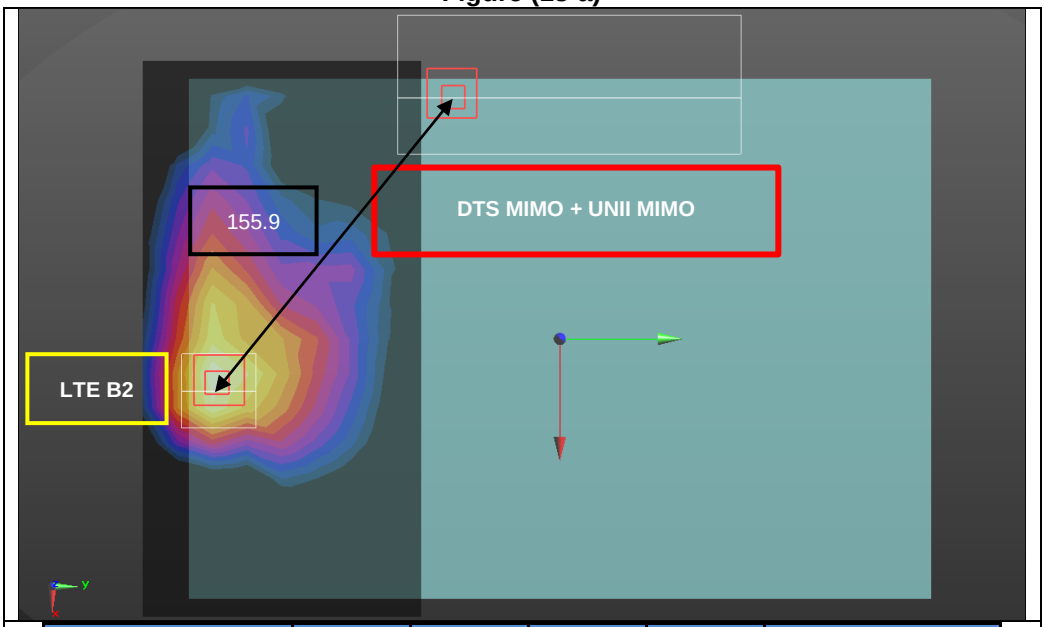


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	168.6
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	165.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (18-a)

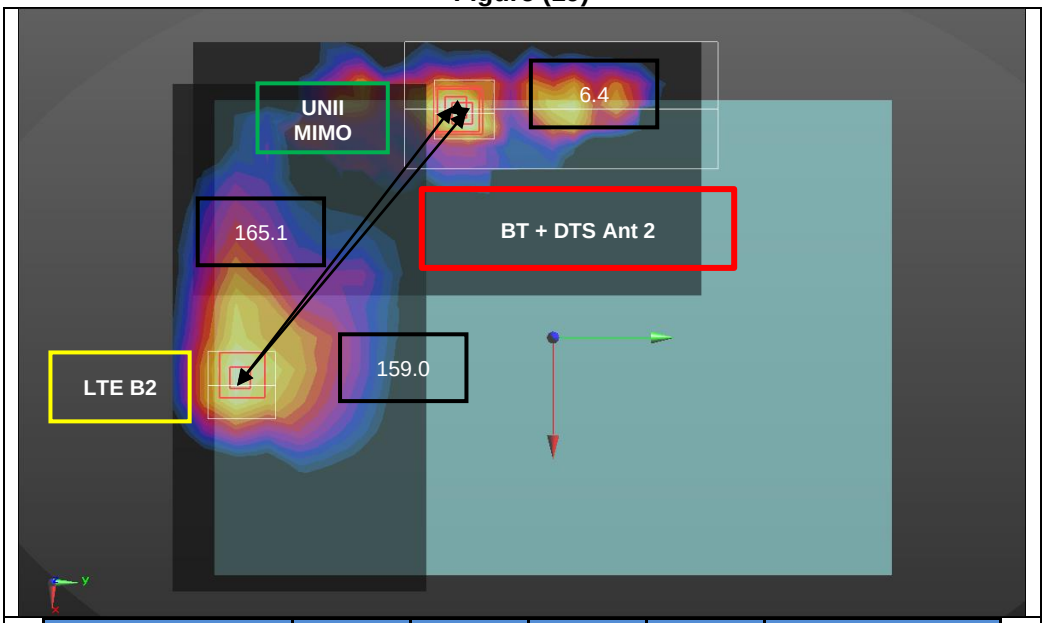


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	155.9
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (19)

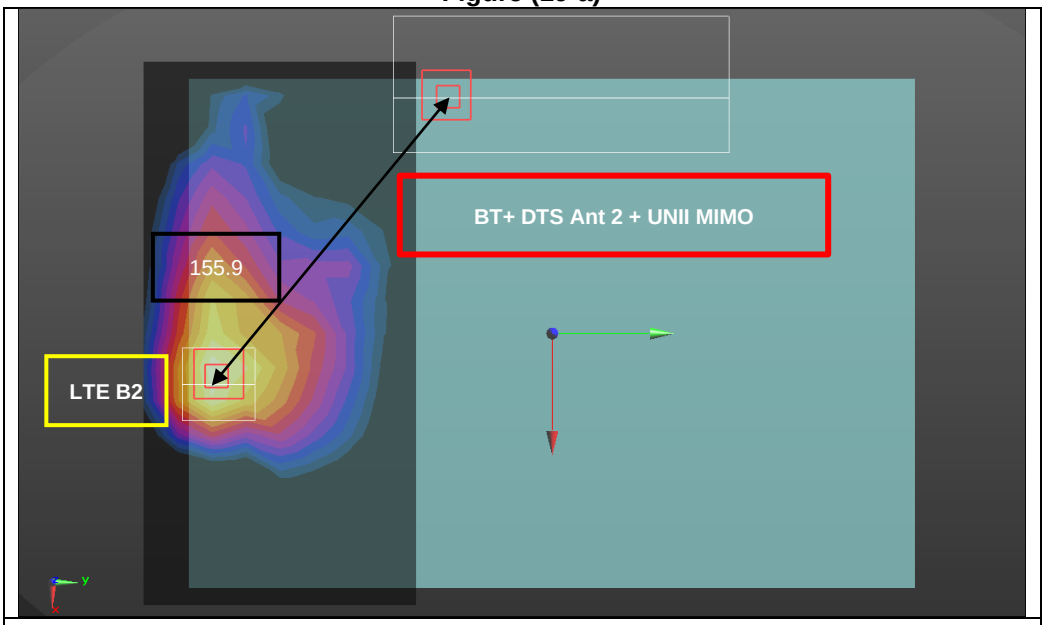


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	159.0
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	165.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (19-a)

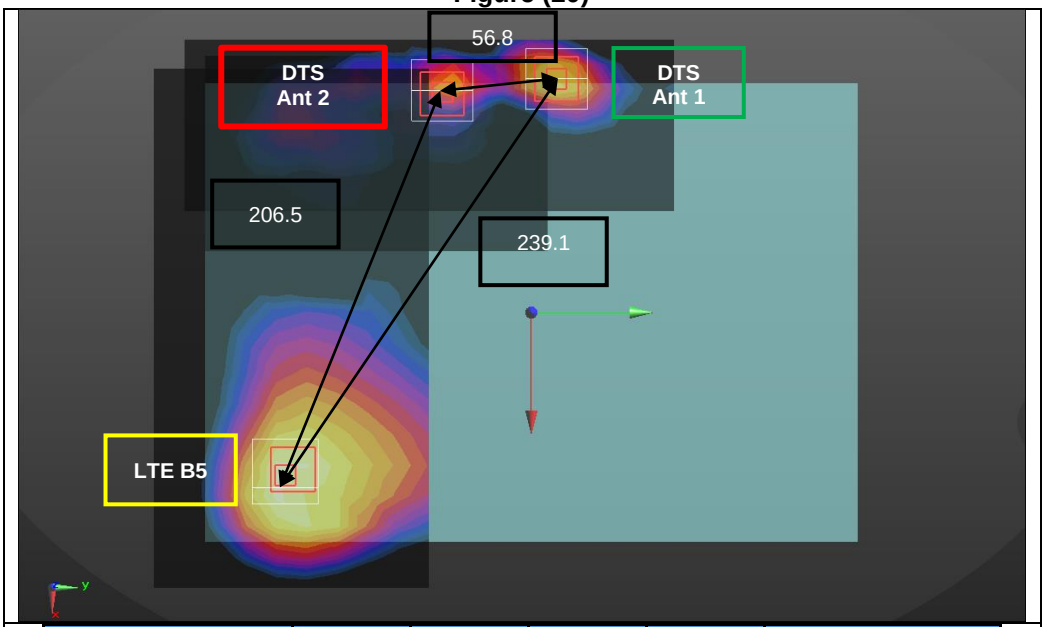


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 2	1	1.06	0.0209	-0.1486	-0.0011	1 + 2	155.9
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (20)

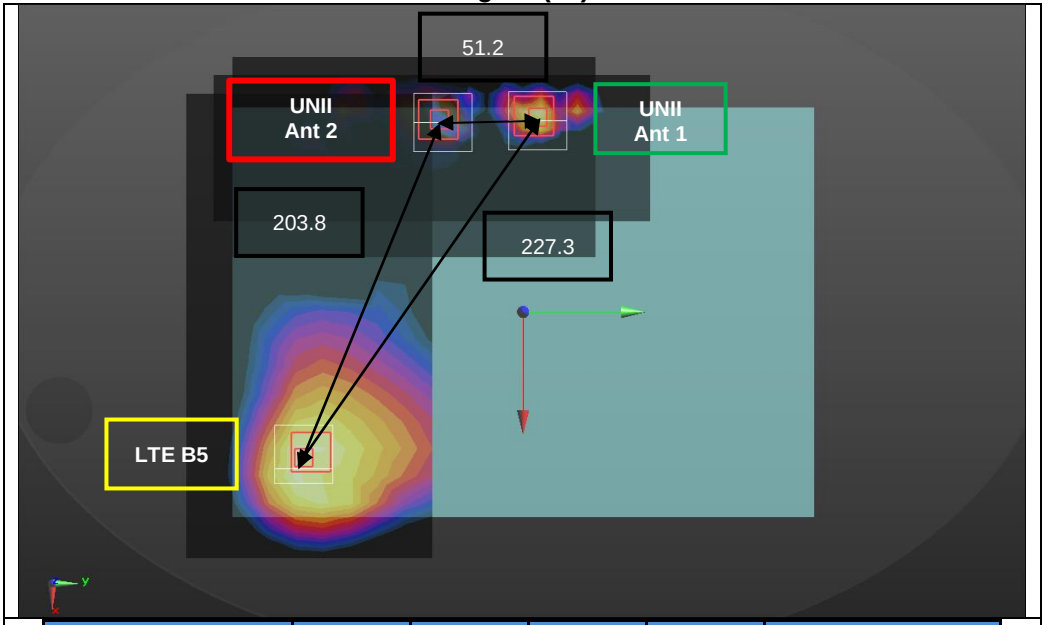


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.910	0.0828	-0.1221	-0.0035	1 + 2	239.1
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	206.5
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (21)

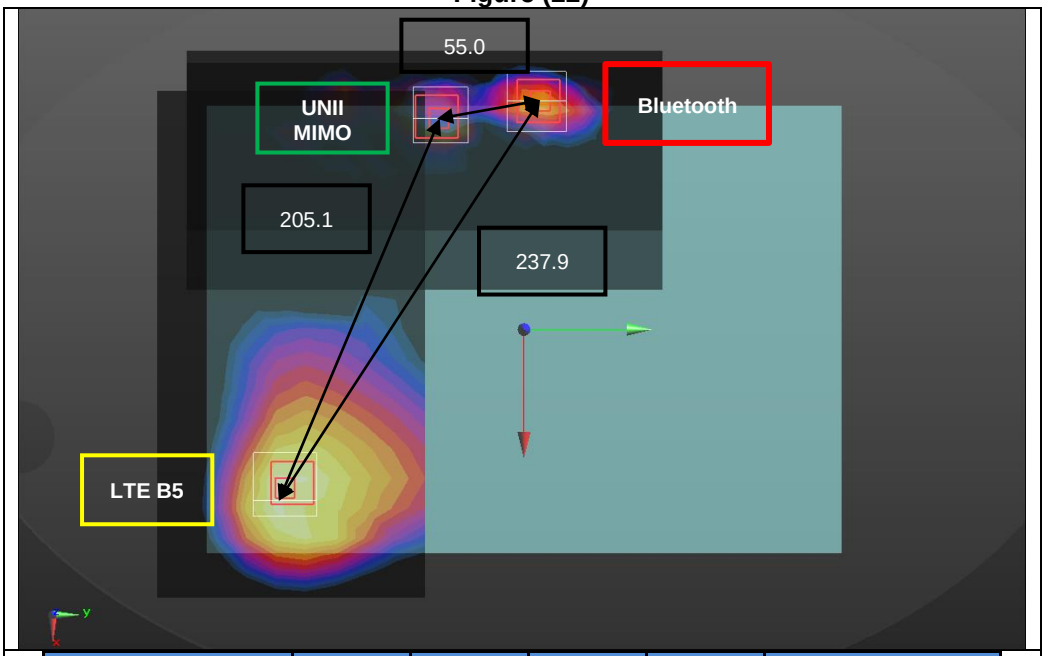


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	227.3
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	203.8
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (22)

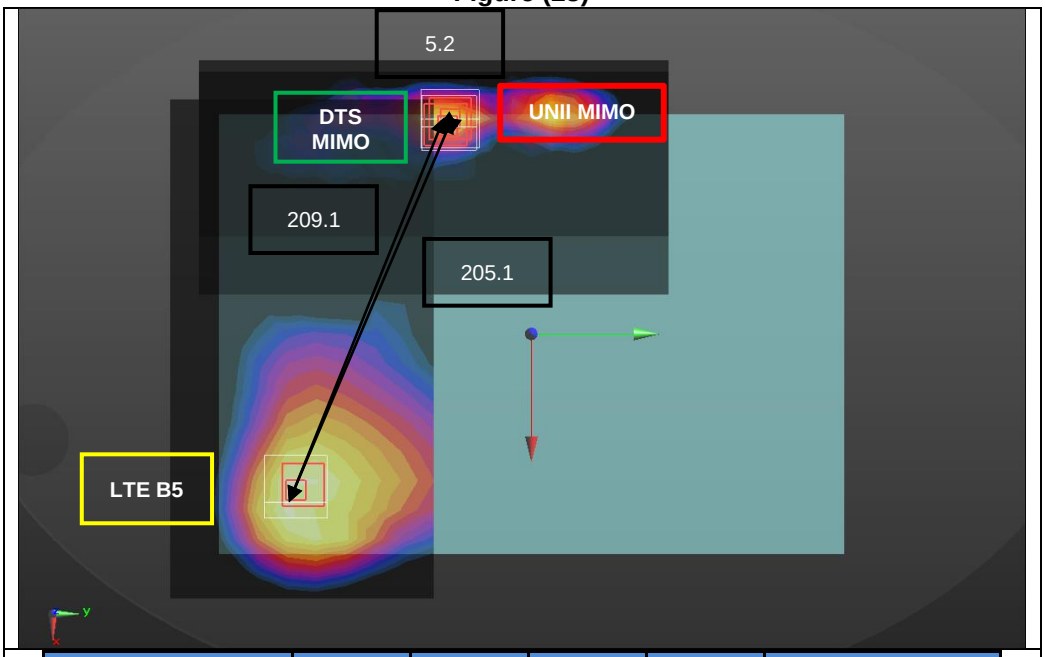


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	205.1
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	237.9
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (23)

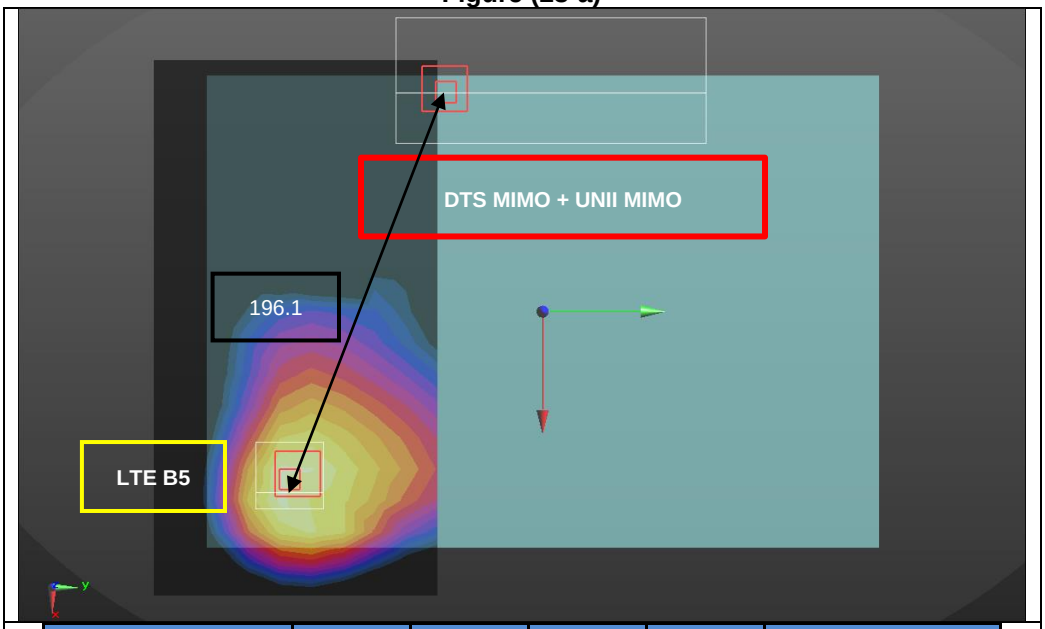


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	209.1
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	205.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (23-a)

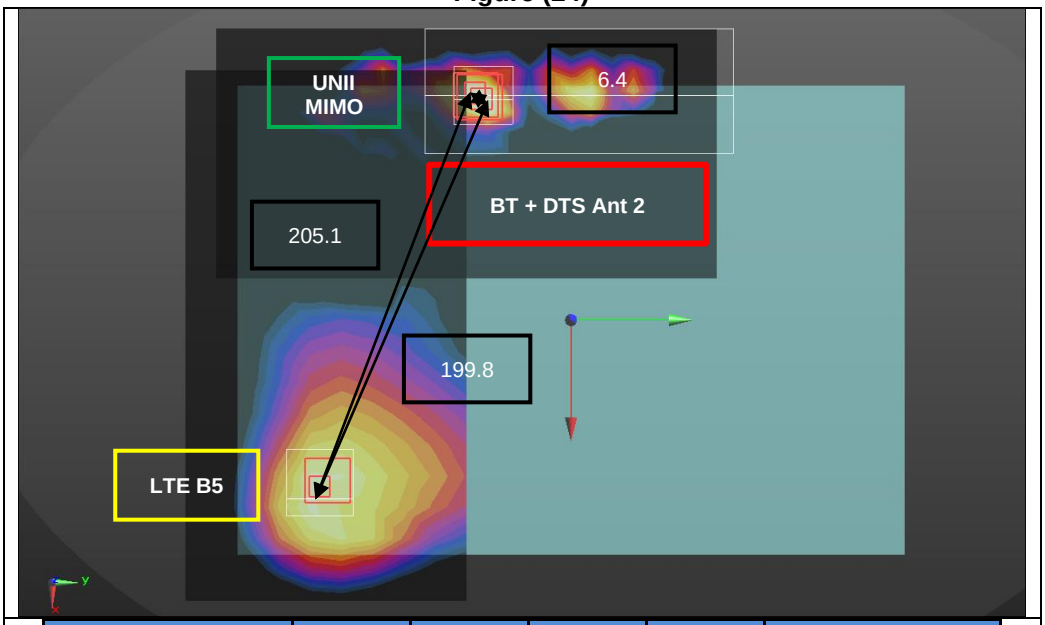


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	196.1
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (24)

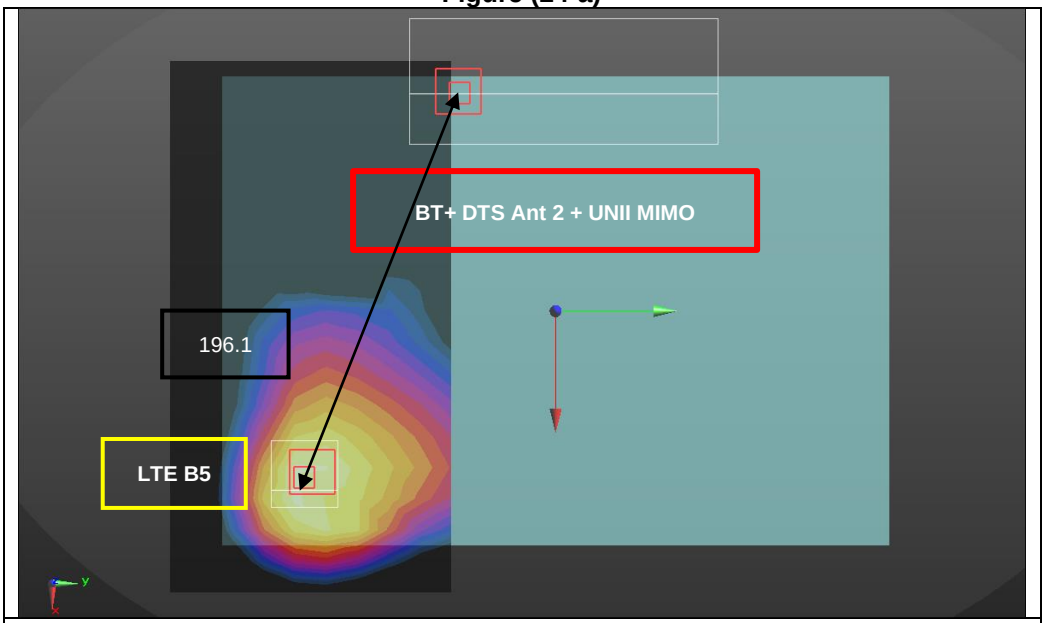


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	199.8
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	205.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (24-a)

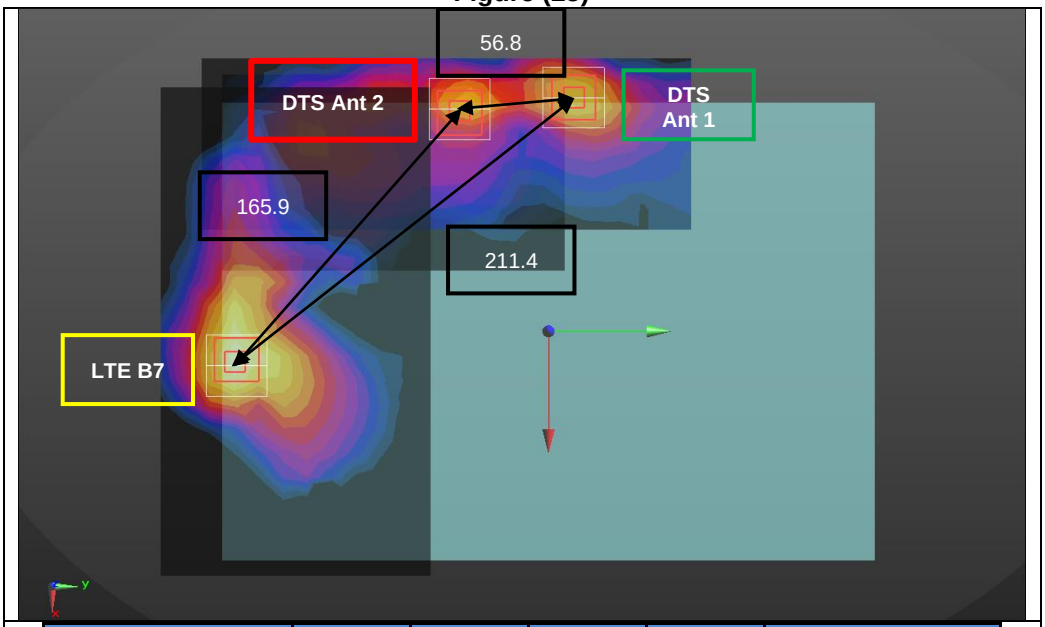


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 5	1	0.91	0.0828	-0.1221	-0.0035	1 + 2	196.1
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (25)

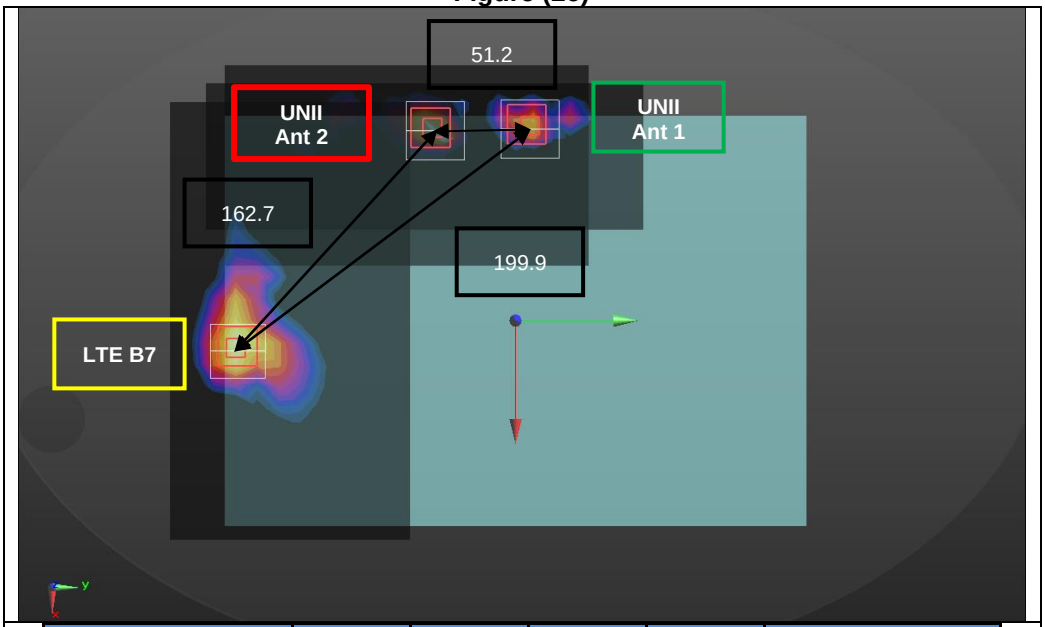


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	211.4
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	165.9
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (26)

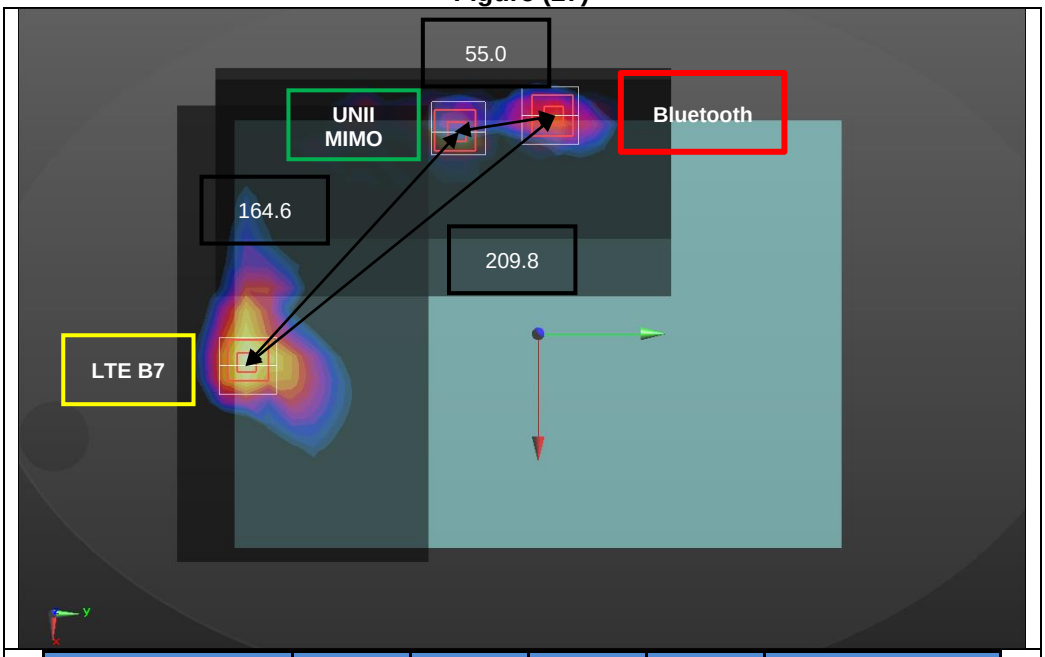


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	199.9
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	162.7
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (27)

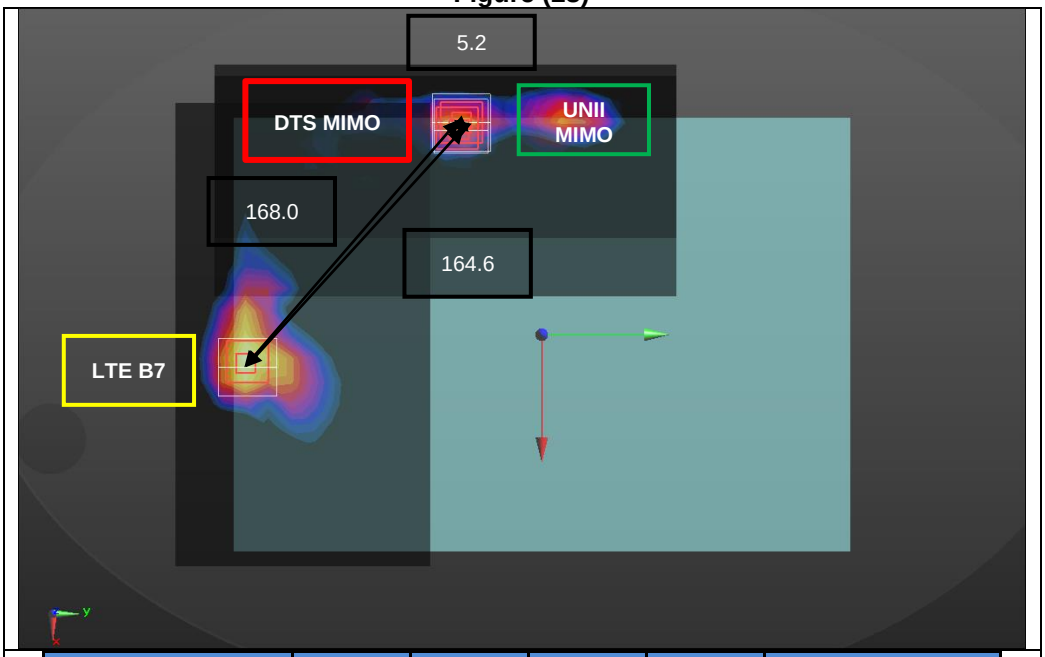


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	164.6
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	209.8
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (28)

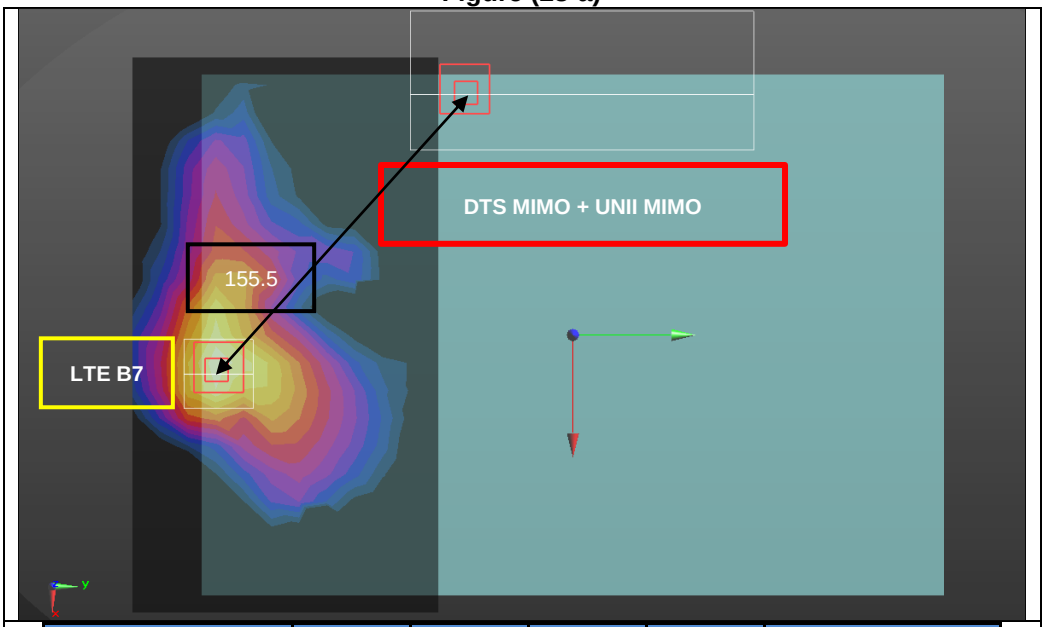


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	168.0
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	164.6
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (28-a)

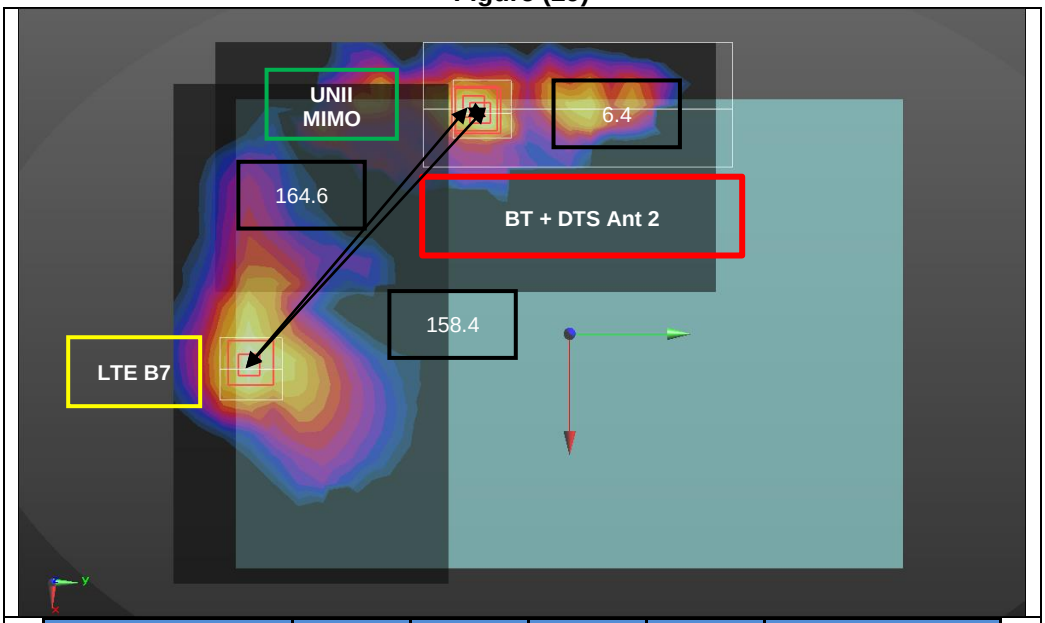


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	155.5
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (29)

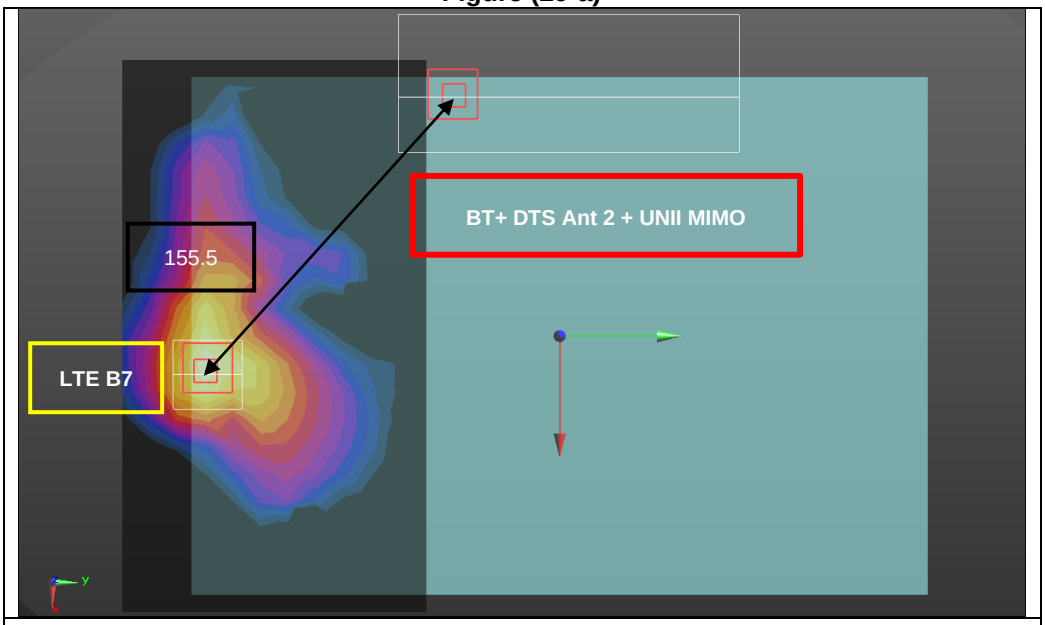


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	158.4
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	164.6
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (29-a)

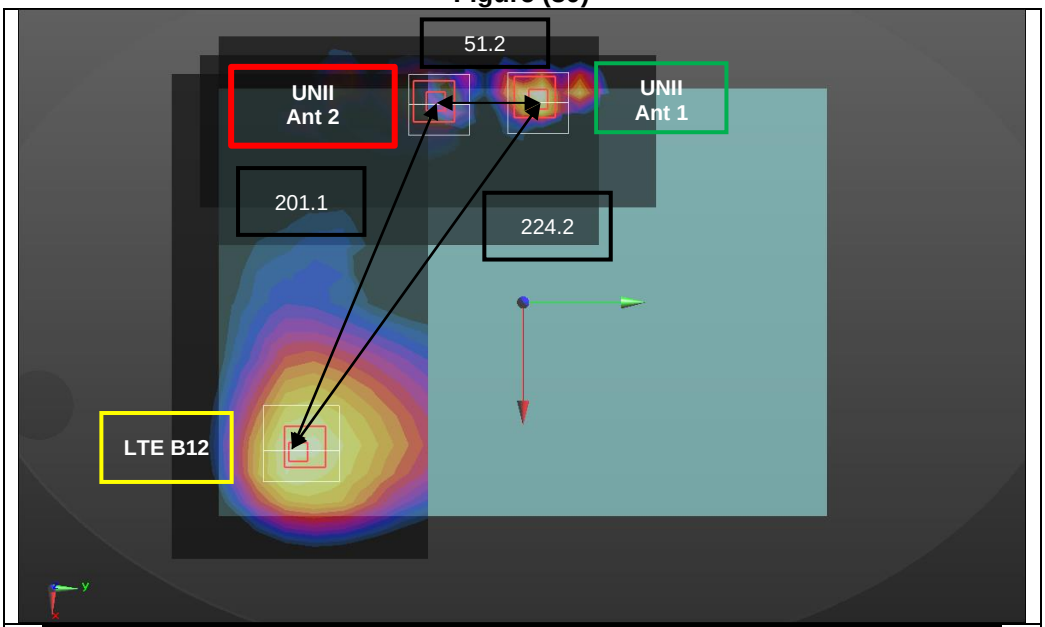


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 7	1	1.177	0.0158	-0.1538	-0.0035	1 + 2	155.5
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (30)

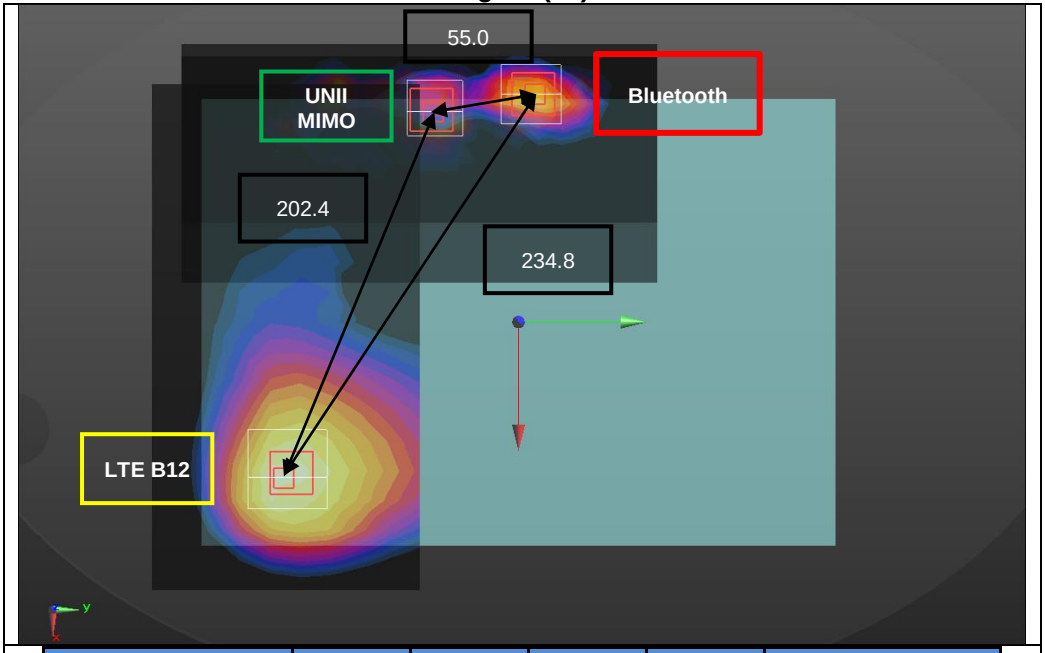


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	224.2
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	201.1
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (31)

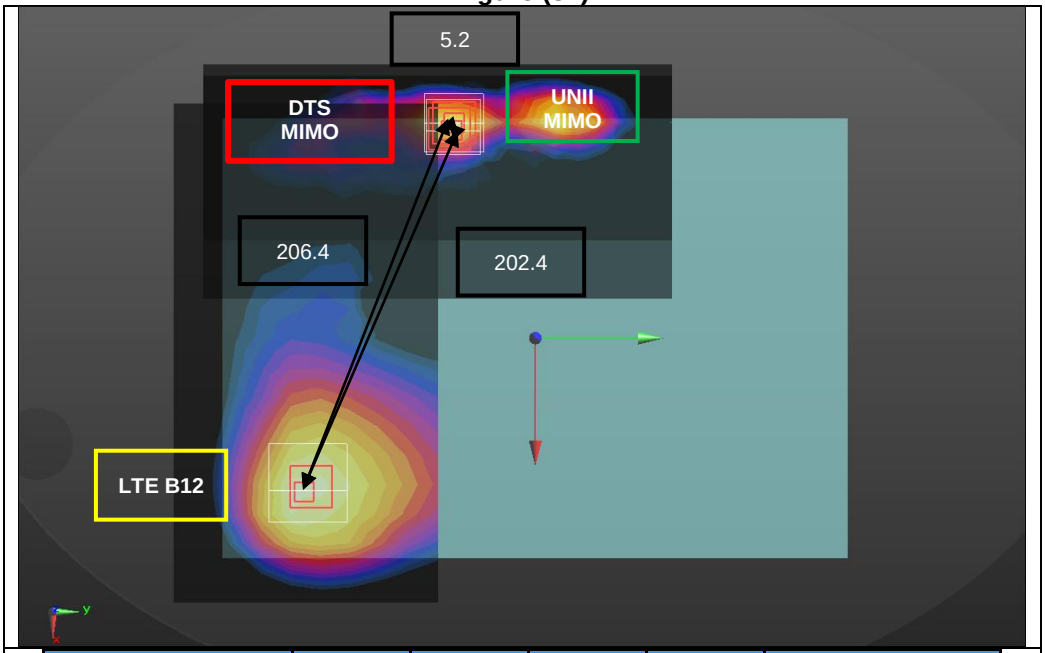


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	202.4
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	234.8
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (32)

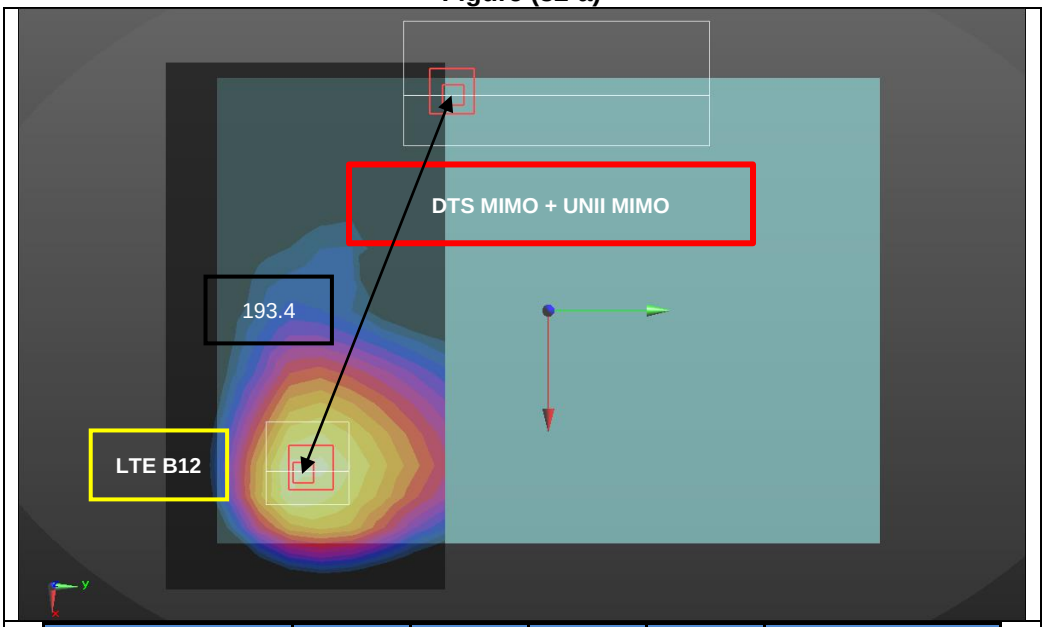


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	206.4
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	202.4
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (32-a)

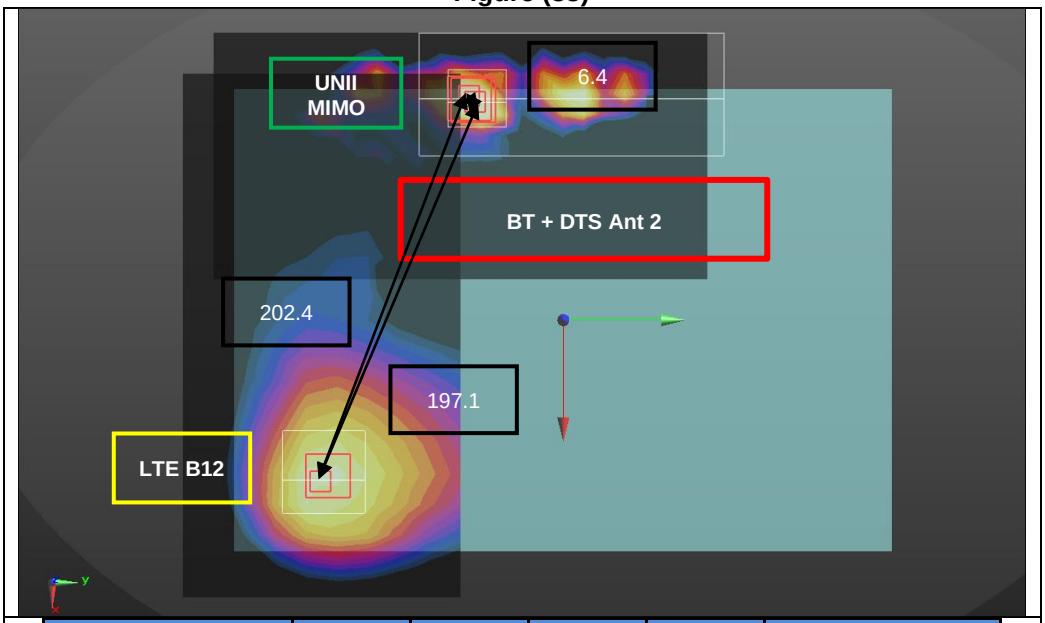


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	193.4
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (33)

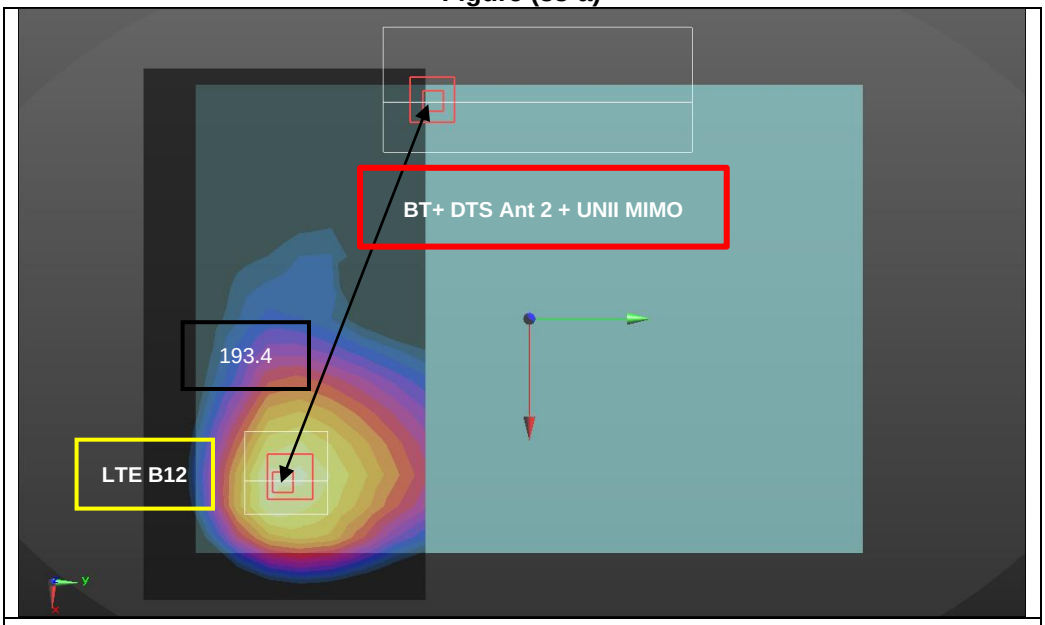


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	197.1
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	202.4
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (33-a)

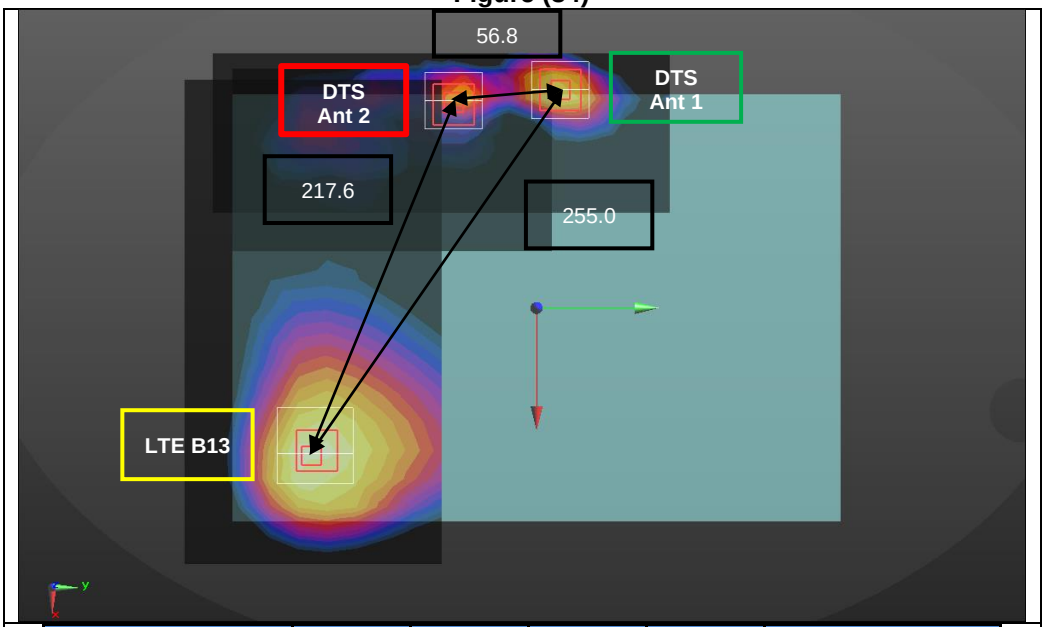


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 12	1	0.629	0.0812	-0.1189	-0.0034	1 + 2	193.4
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (34)

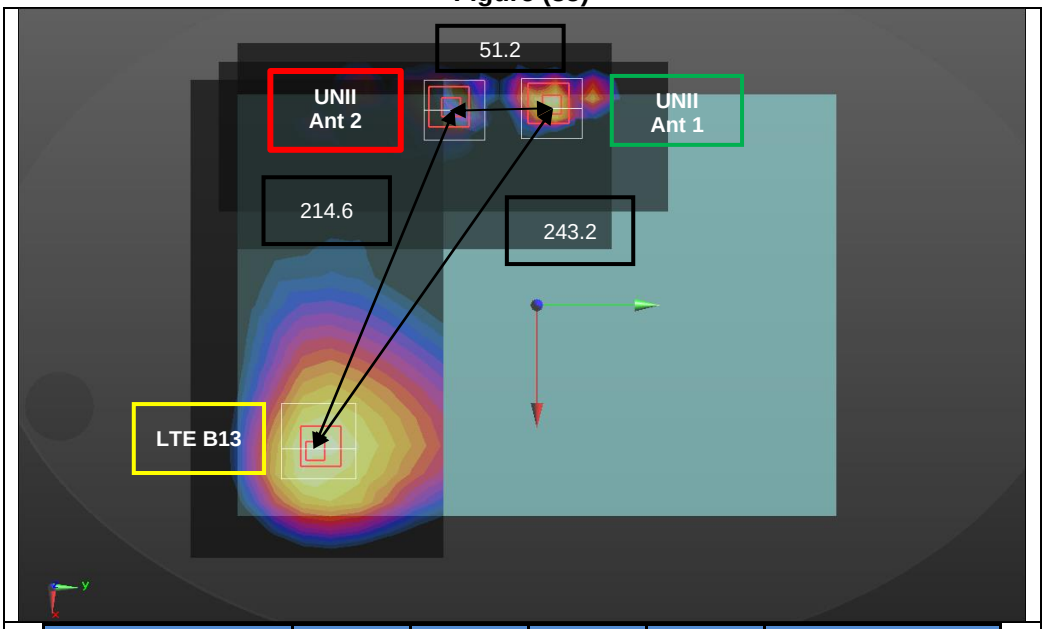


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	255.0
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	217.6
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (35)

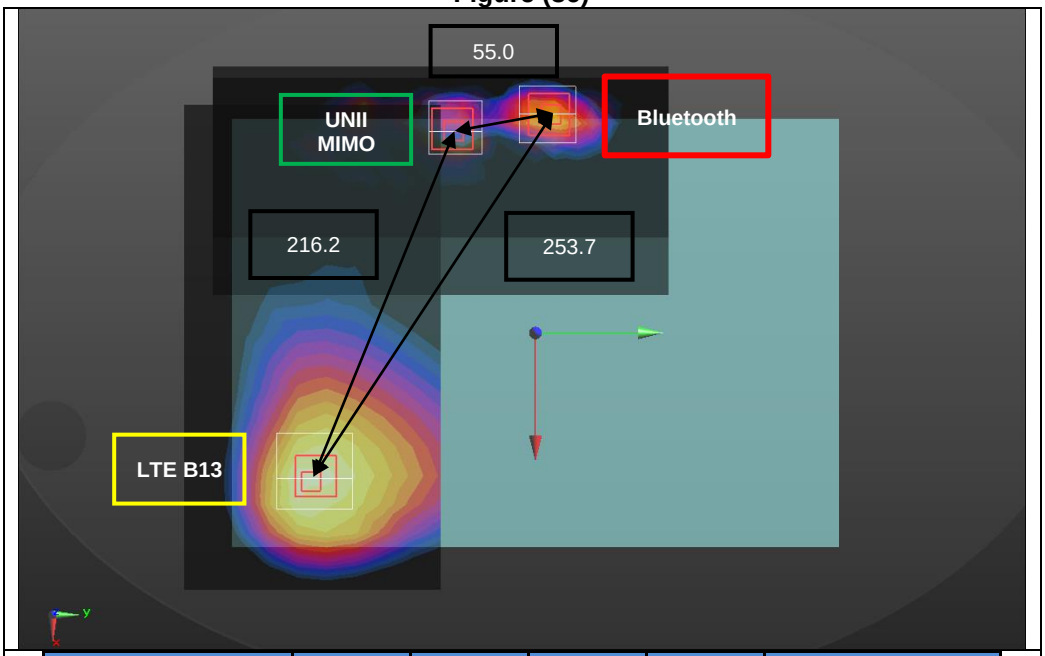


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	243.2
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	214.6
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (36)

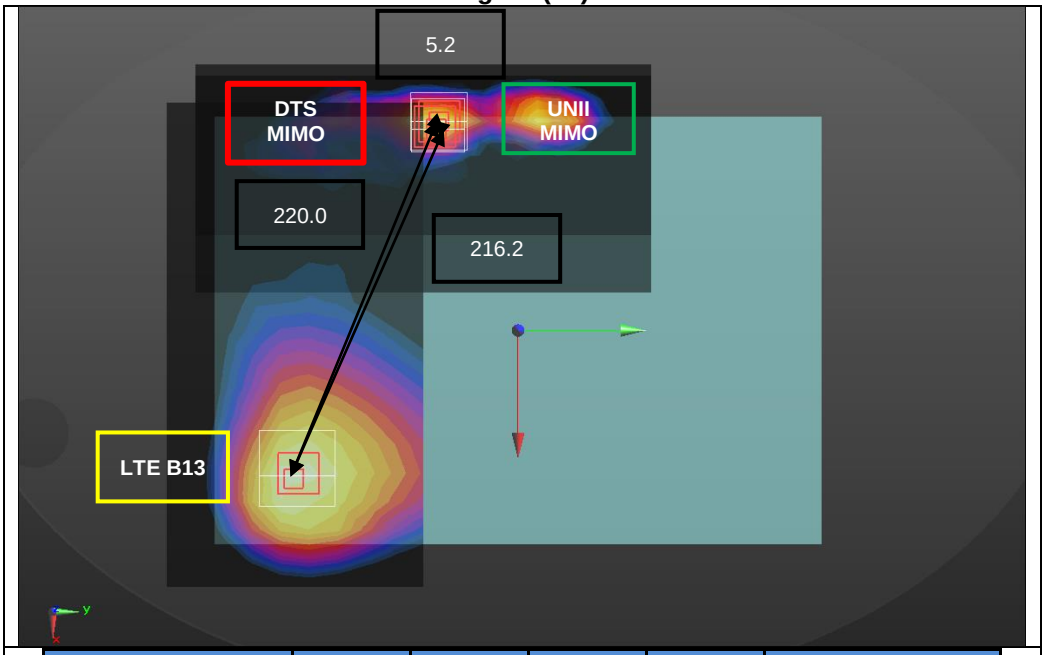


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	216.2
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	253.7
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (37)

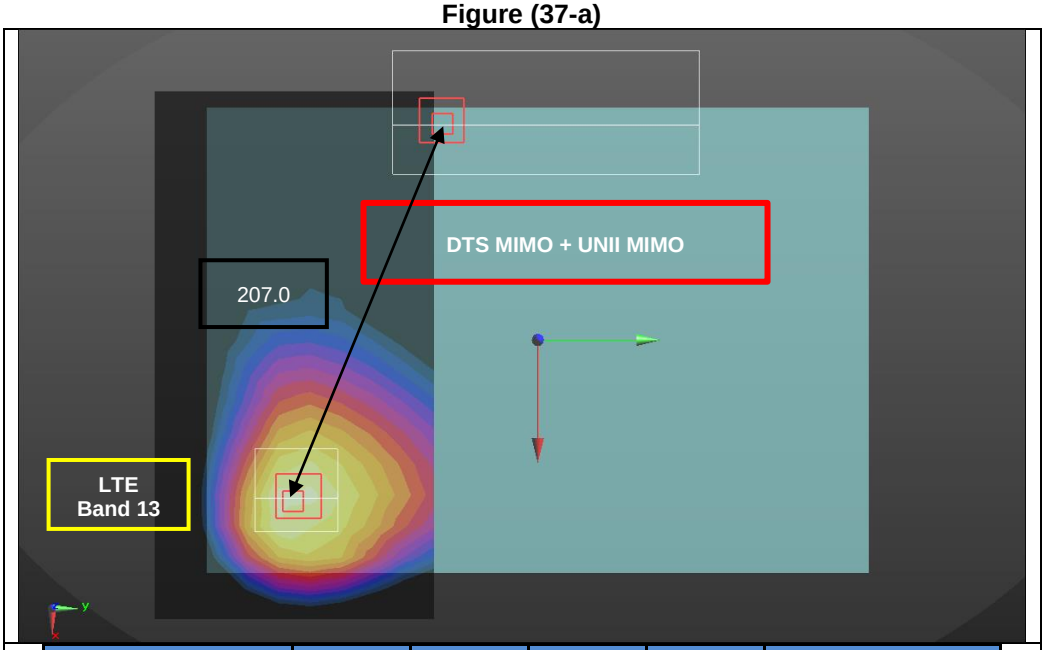


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	220.0
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	216.2
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (37-a)

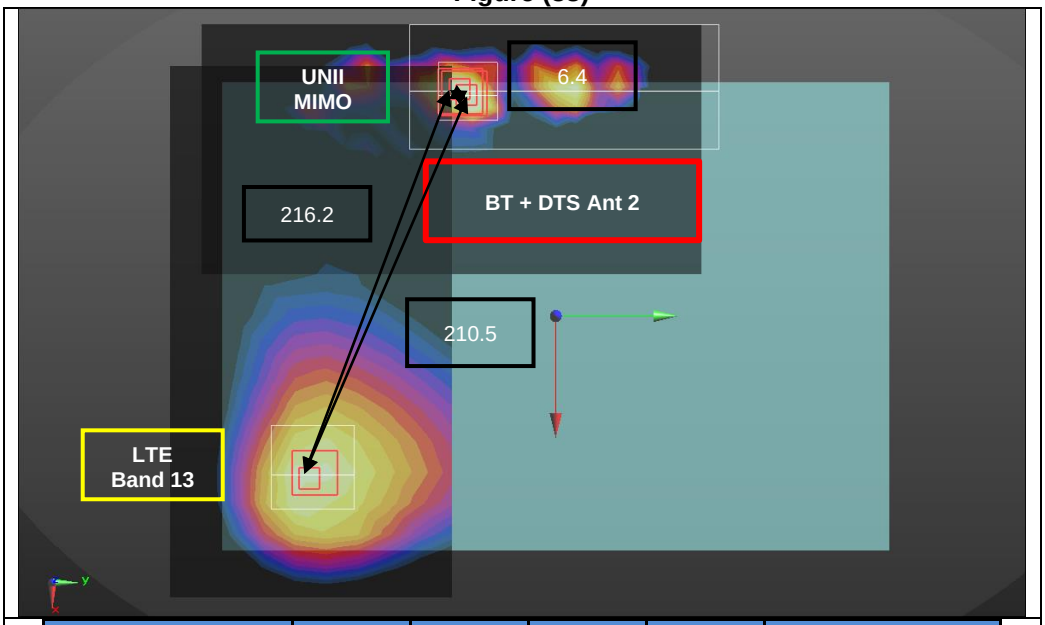


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	207.0
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (38)

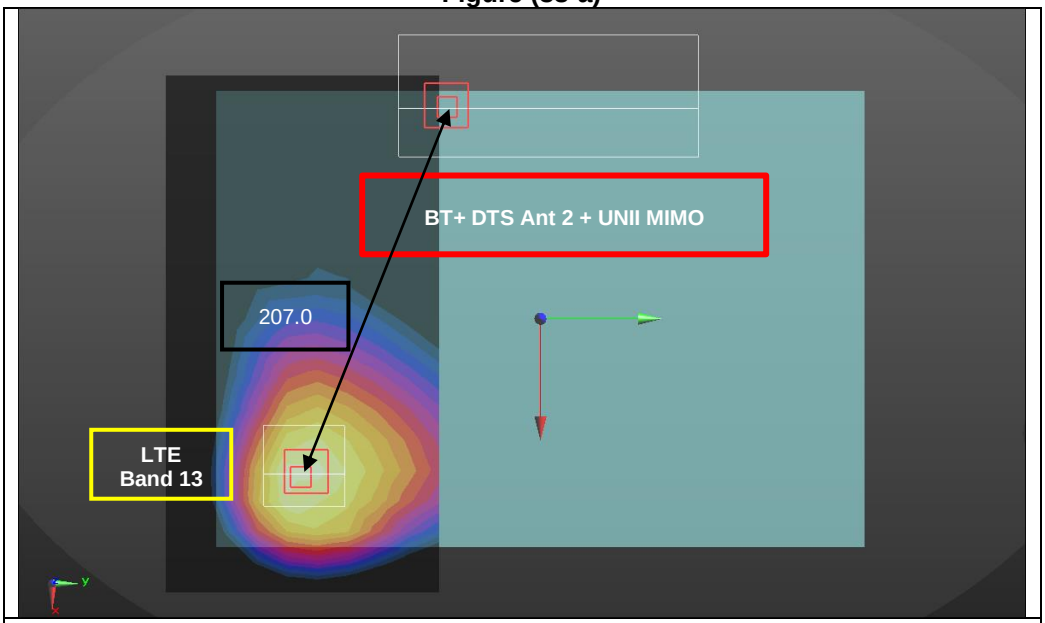


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	210.5
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	216.2
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (38-a)

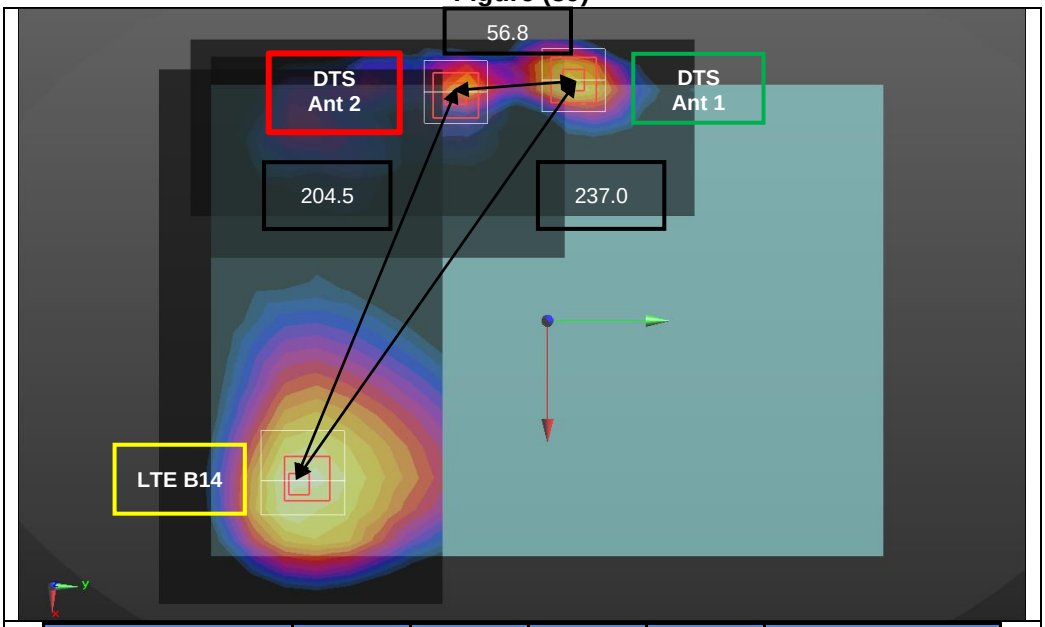


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 13	1	0.844	0.0813	-0.1505	-0.0034	1 + 2	207.0
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (39)

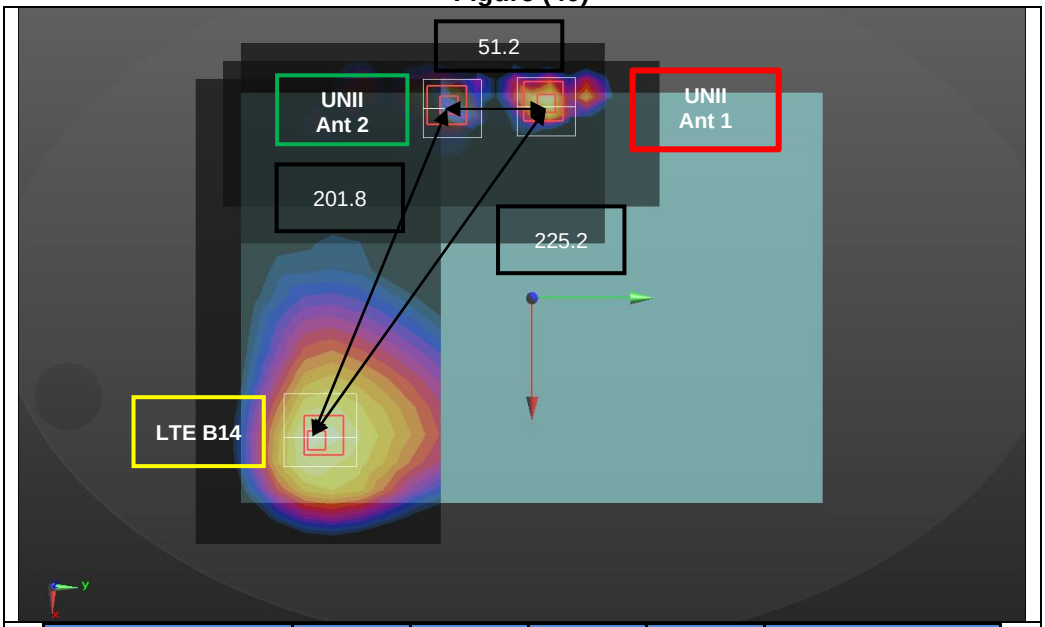


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	237.0
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	204.5
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (40)

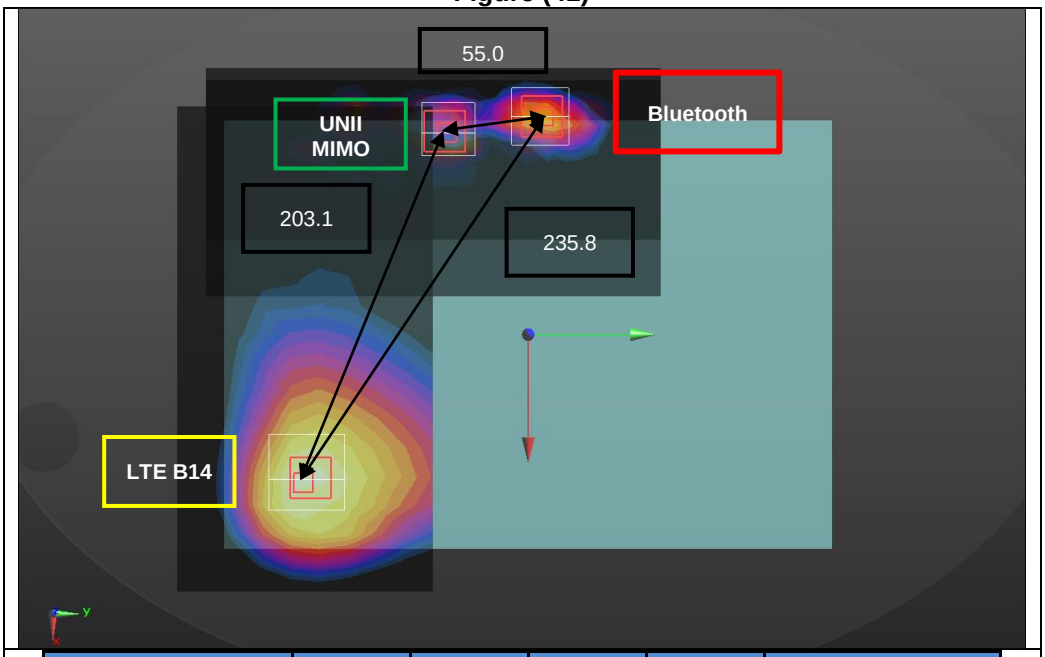


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	225.2
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	201.8
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (41)

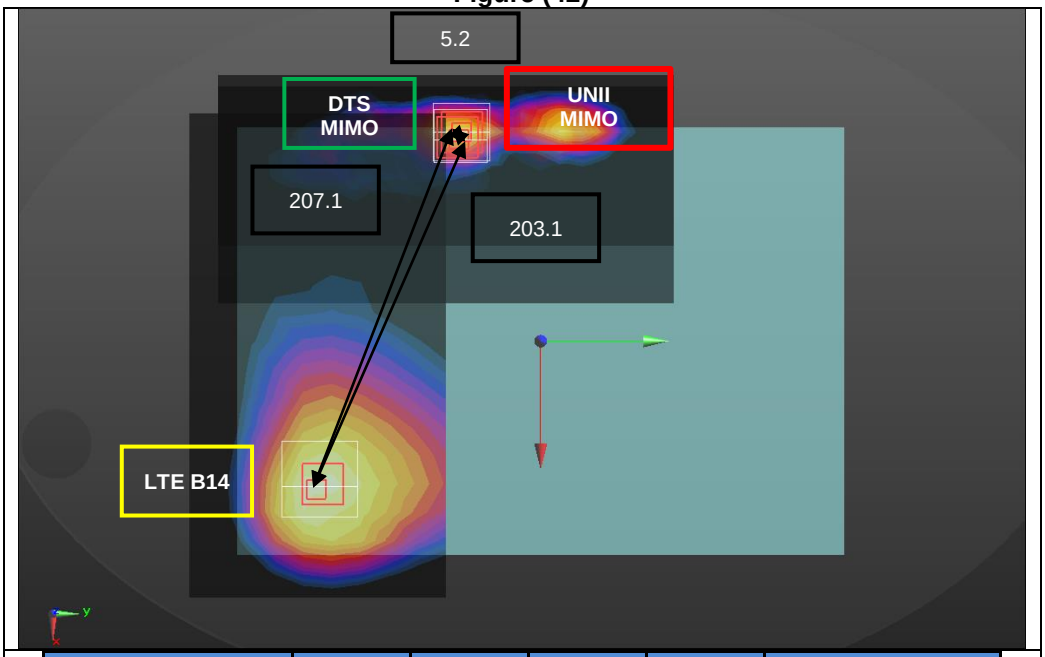


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	203.1
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	235.8
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (42)

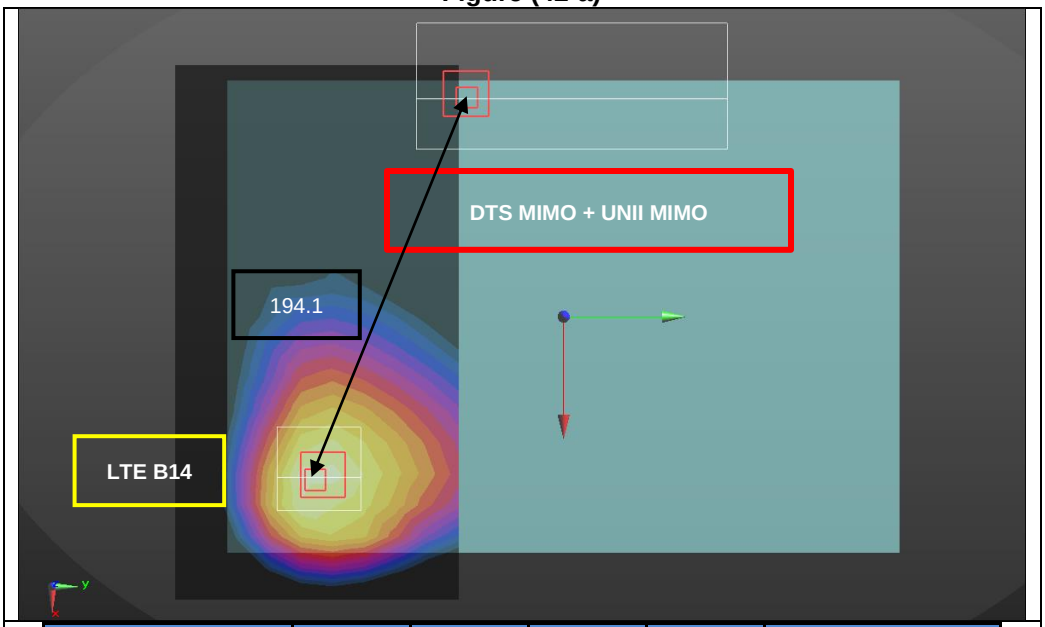


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	207.1
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	203.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (42-a)

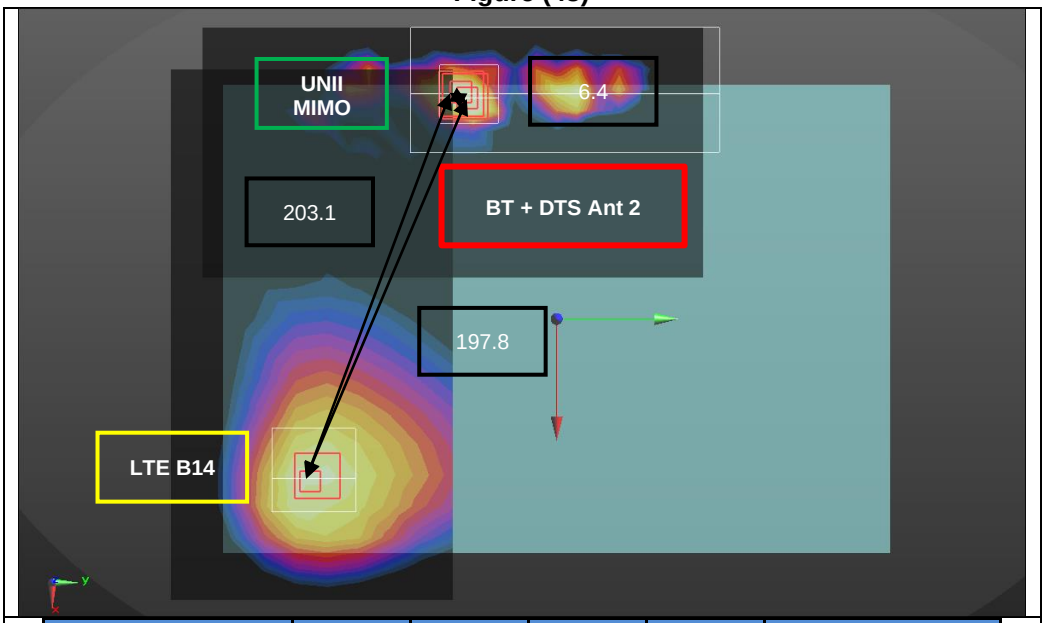


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	194.1
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (43)

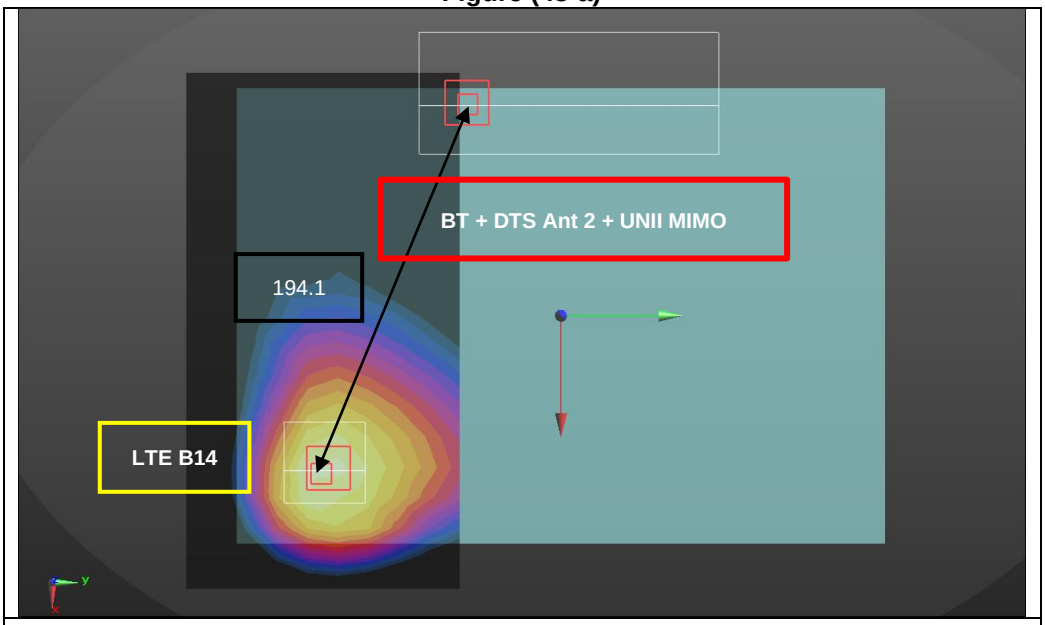


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	197.8
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	203.1
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (43-a)

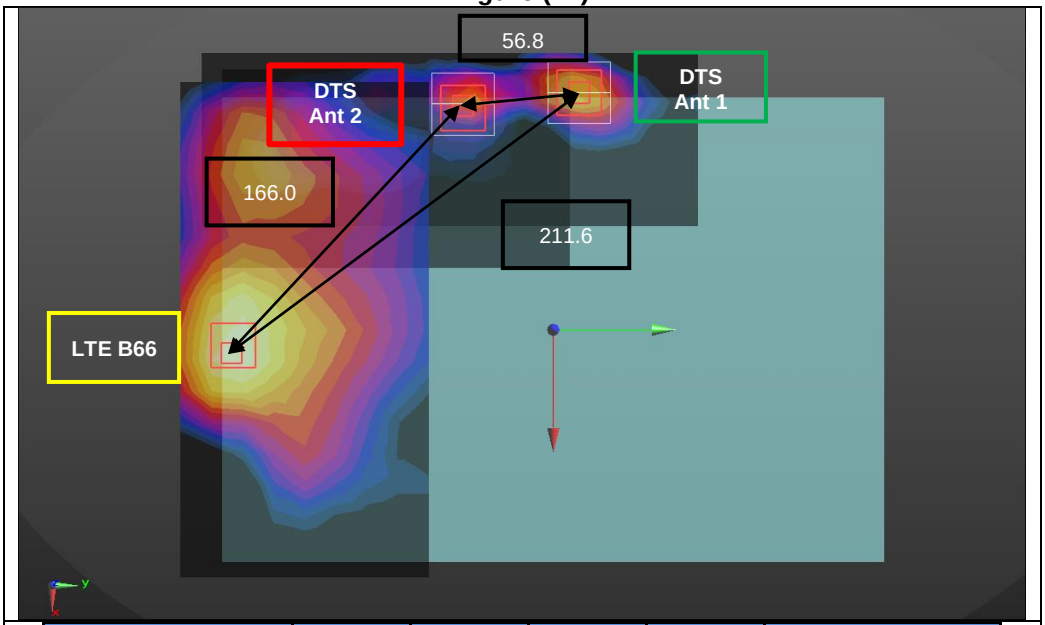


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 14	1	0.858	0.0813	-0.1205	-0.0034	1 + 2	194.1
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (44)

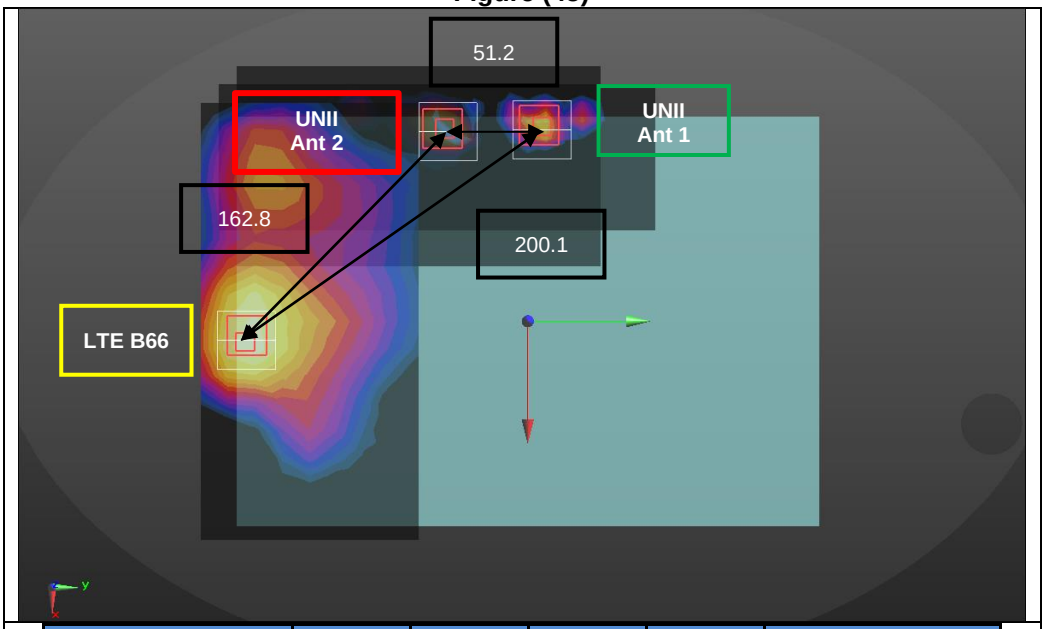


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	211.6
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	166.0
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (45)

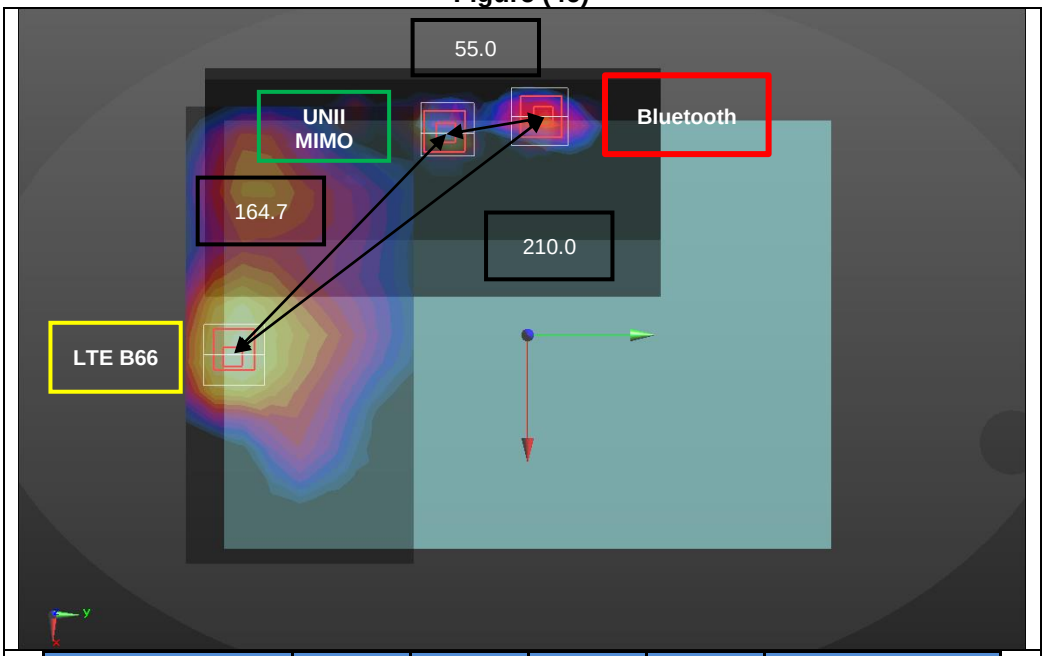


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	200.1
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	162.8
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (46)

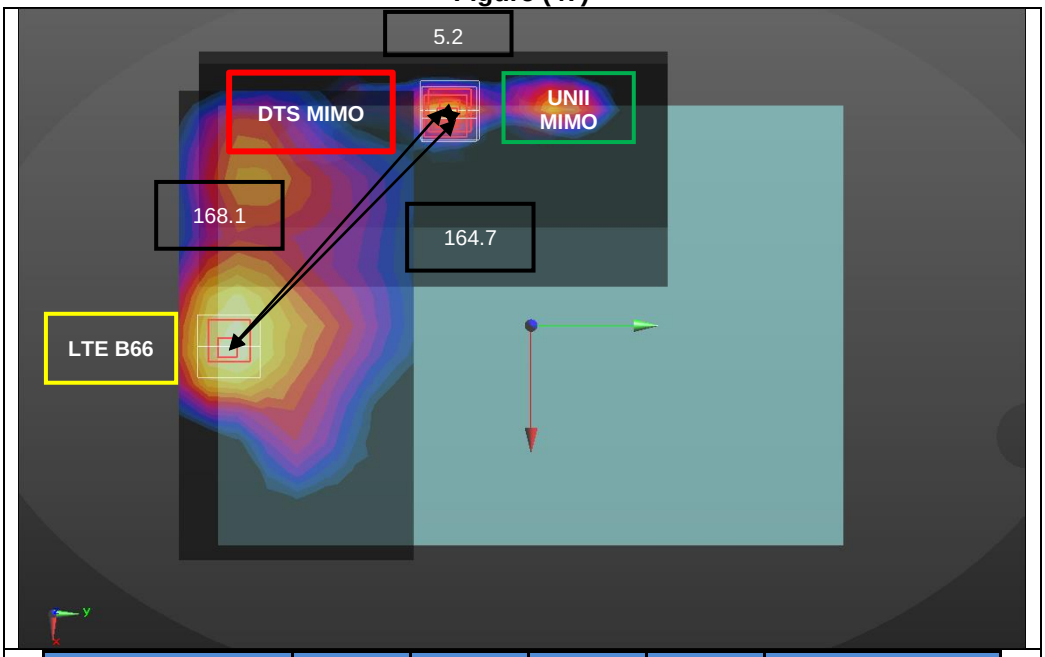


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	164.7
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	210.0
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (47)

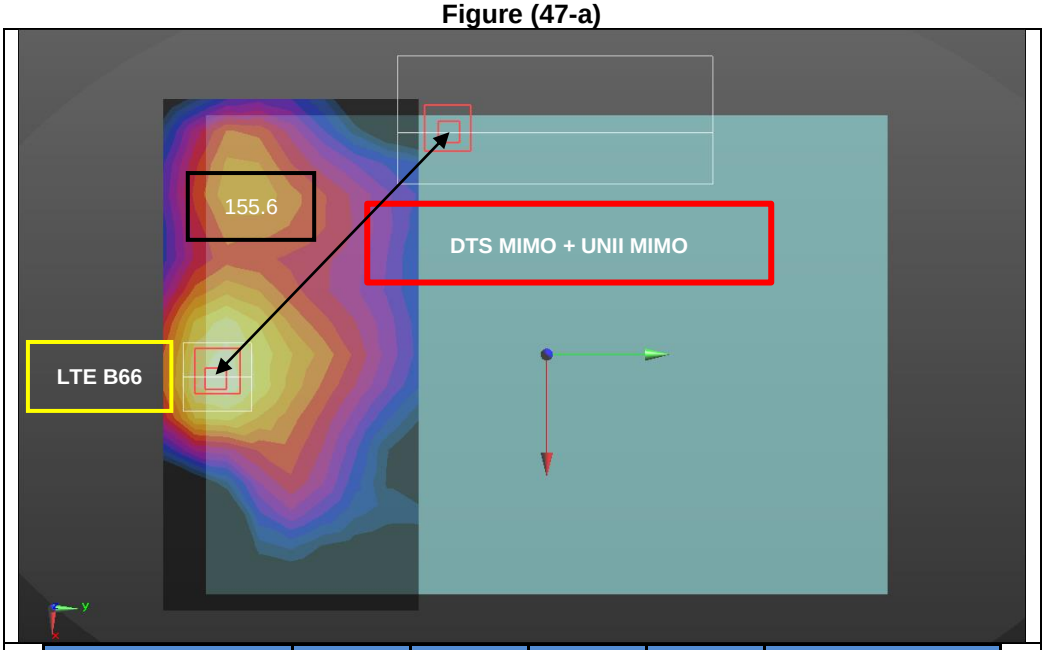


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	168.1
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	164.7
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (47-a)

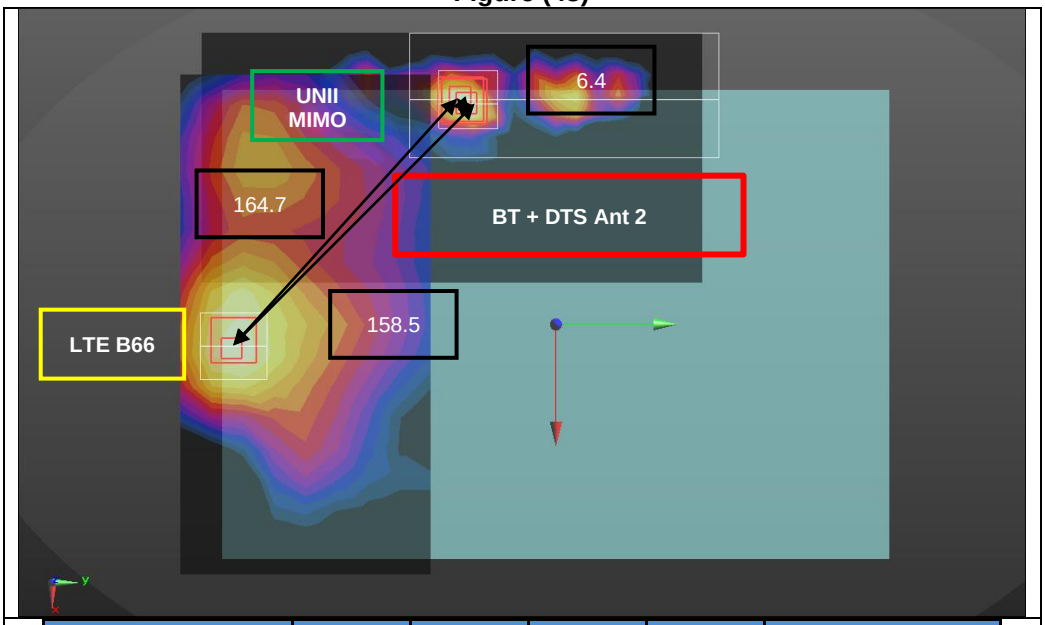


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	155.6
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

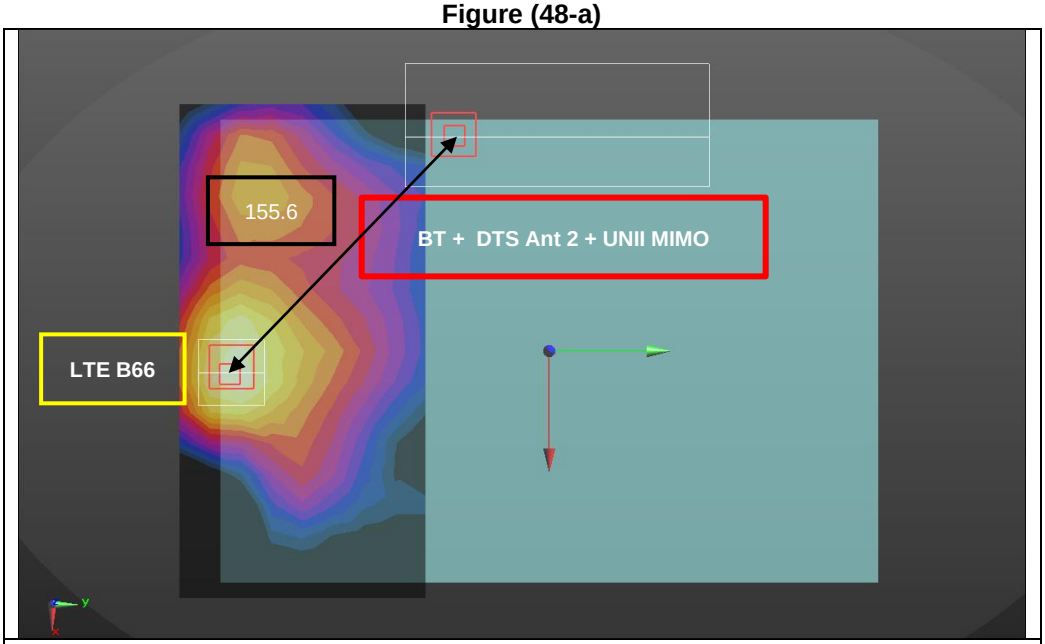
Figure (48)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	158.5
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	164.7
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

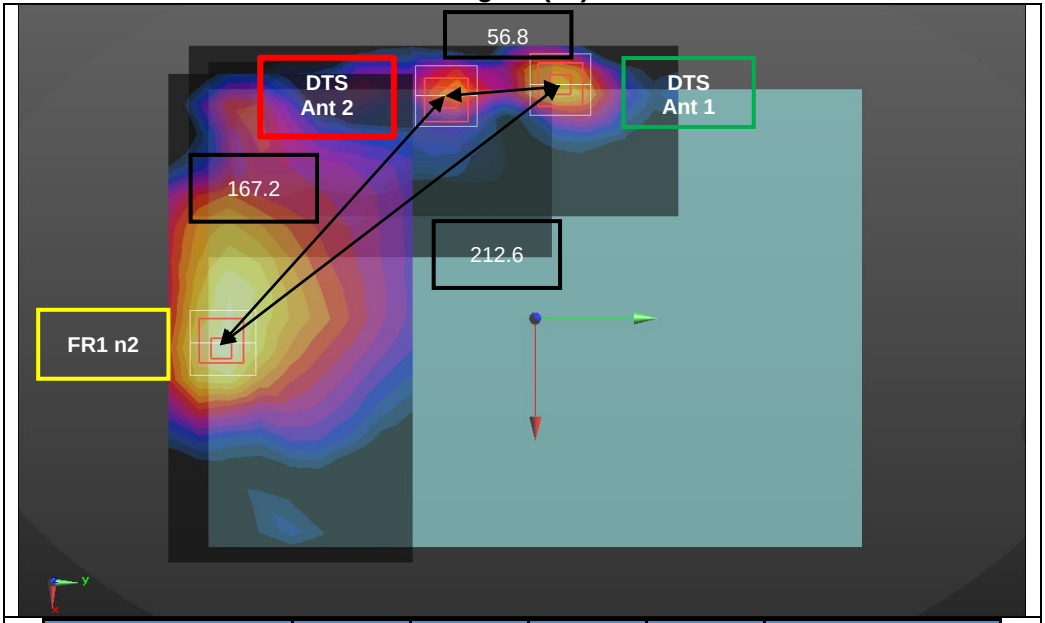
Figure (48-a)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
LTE Band 66	1	1.177	0.0153	-0.1545	-0.0014	1 + 2	155.6
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

Figure (49)

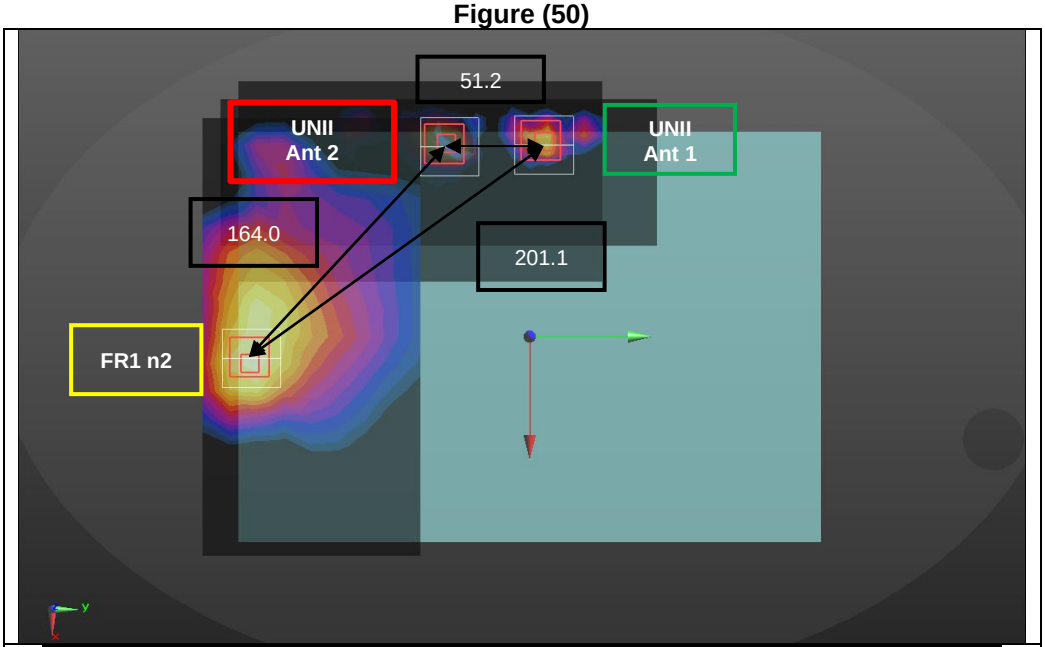


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	212.6
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	167.2
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (50)

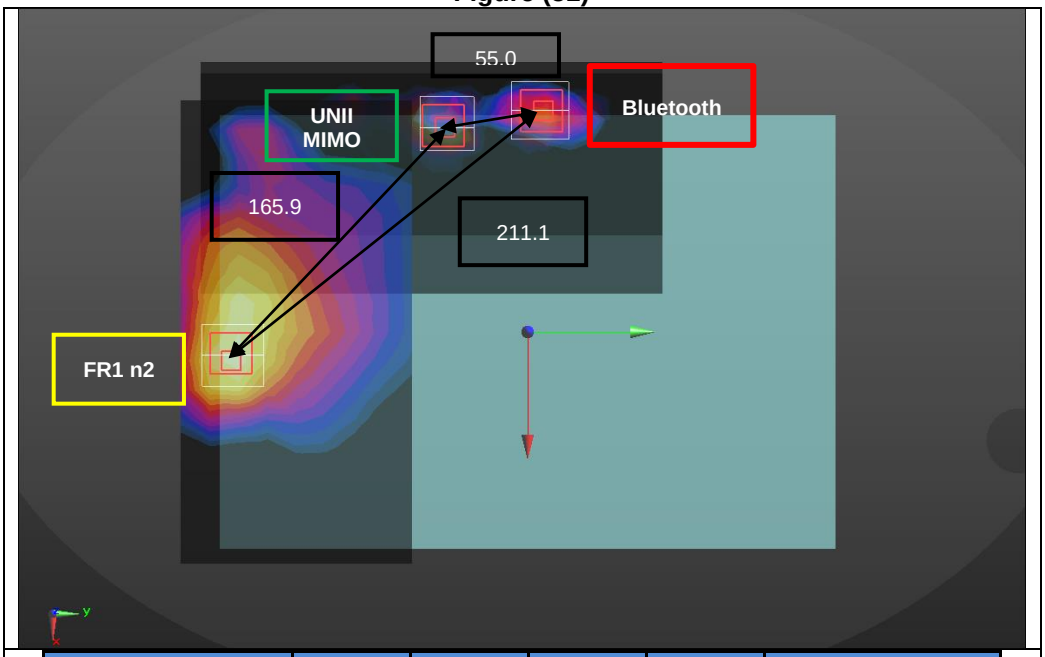


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	201.1
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	164.0
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (51)

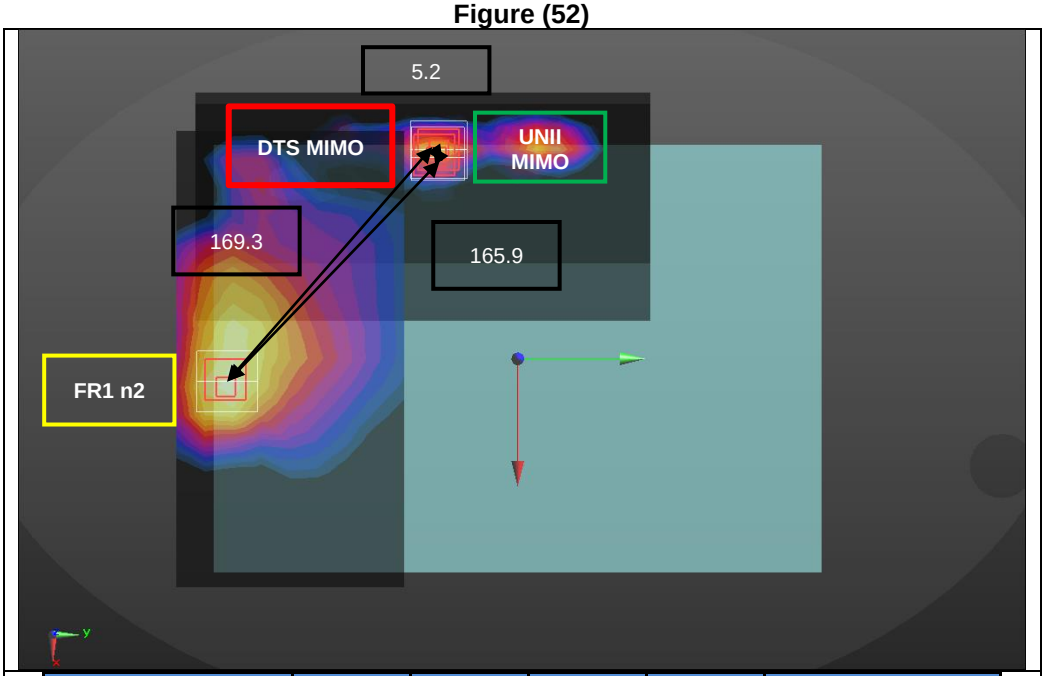


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	165.9
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	211.1
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (52)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	169.3
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	165.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

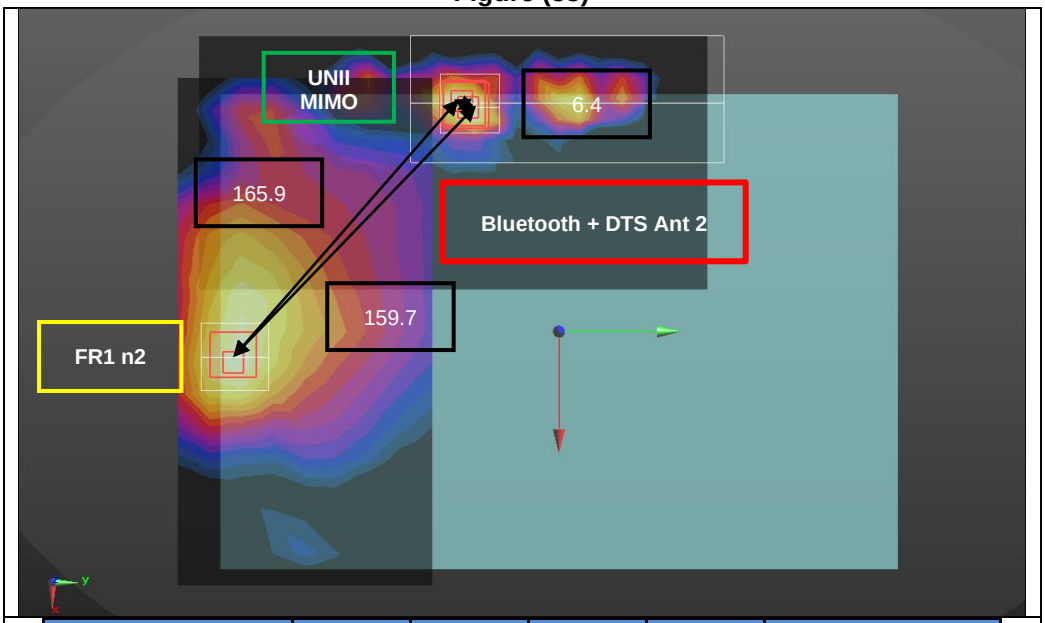
Figure (52-a)

Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	156.7
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (53)

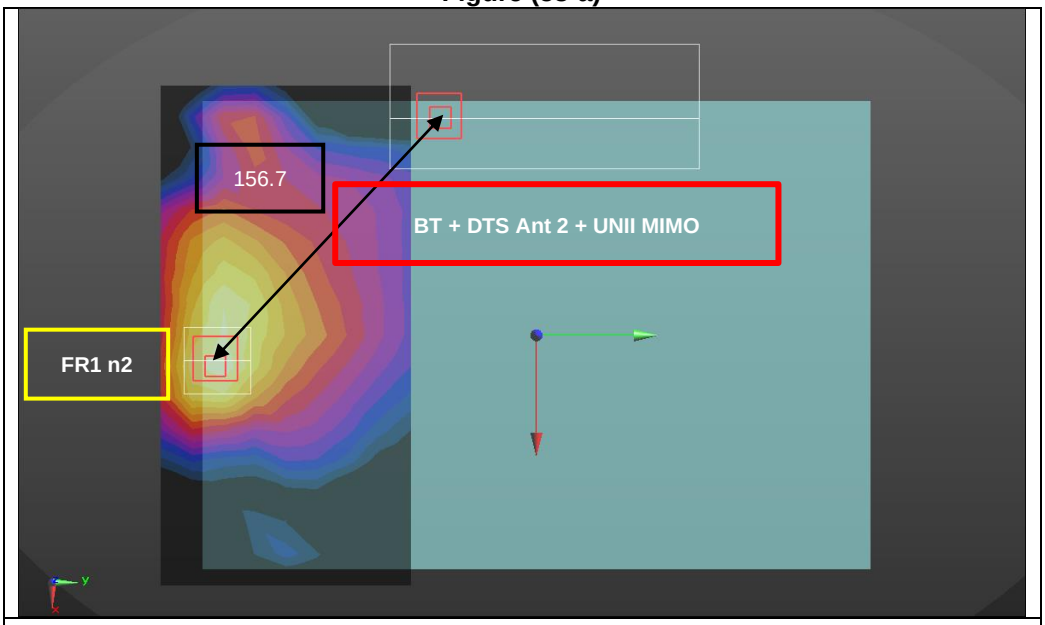


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	159.7
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	165.9
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (53-a)

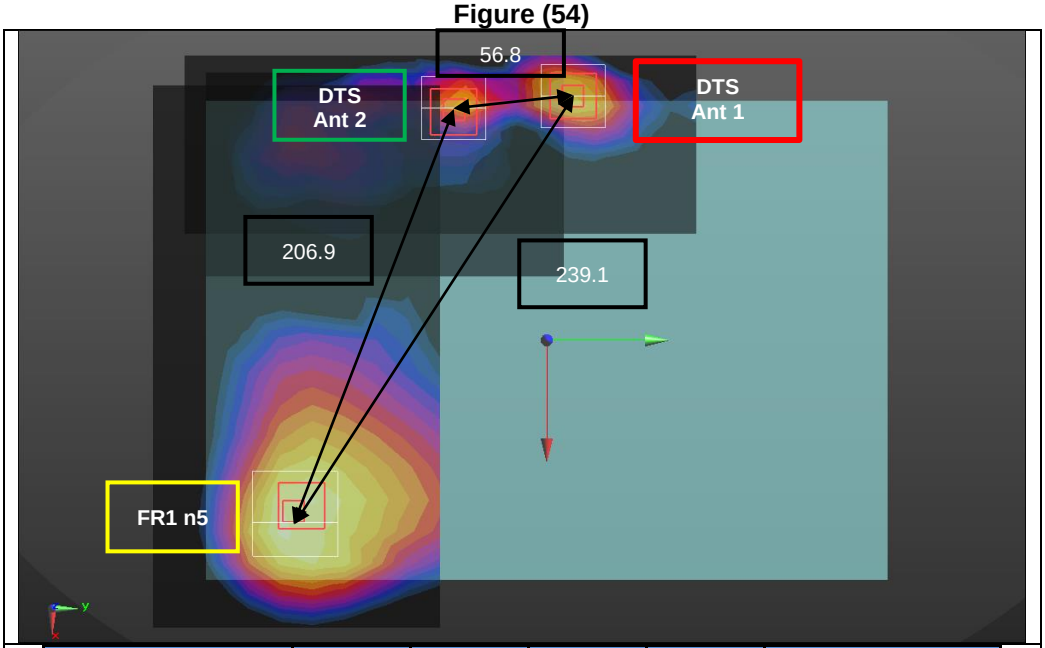


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n2	1	1.201	0.0168	-0.1546	-0.0011	1 + 2	156.7
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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

Figure (54)

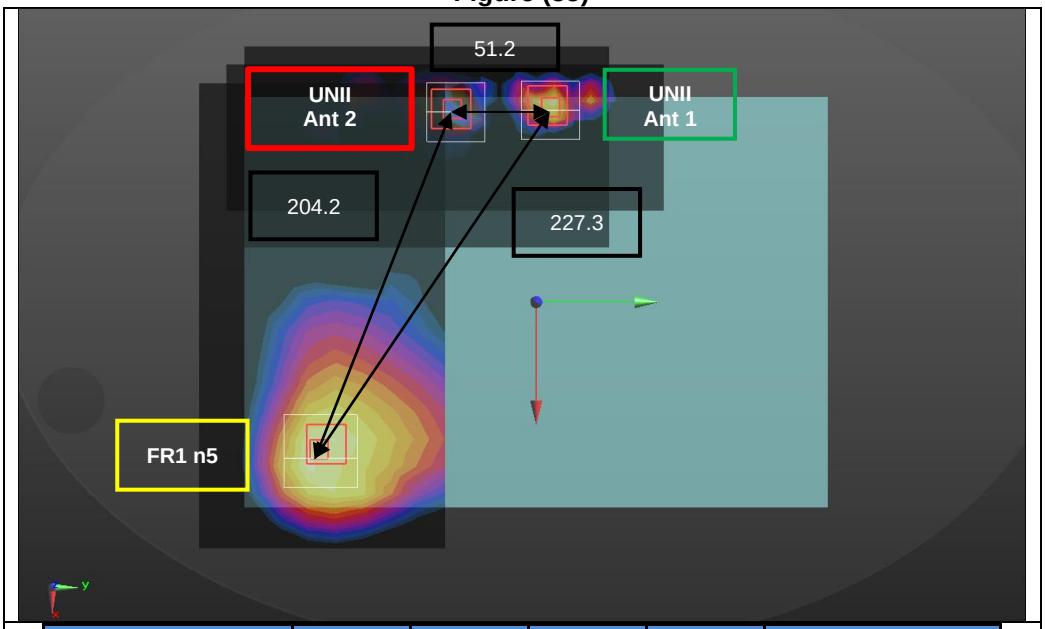


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	239.1
DTS Ant.1	2	0.418	-0.1148	0.0124	0.0019	1 + 3	206.9
DTS Ant.2	3	0.391	-0.1082	-0.0436	-0.0047	2 + 3	56.8

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

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

Figure (55)

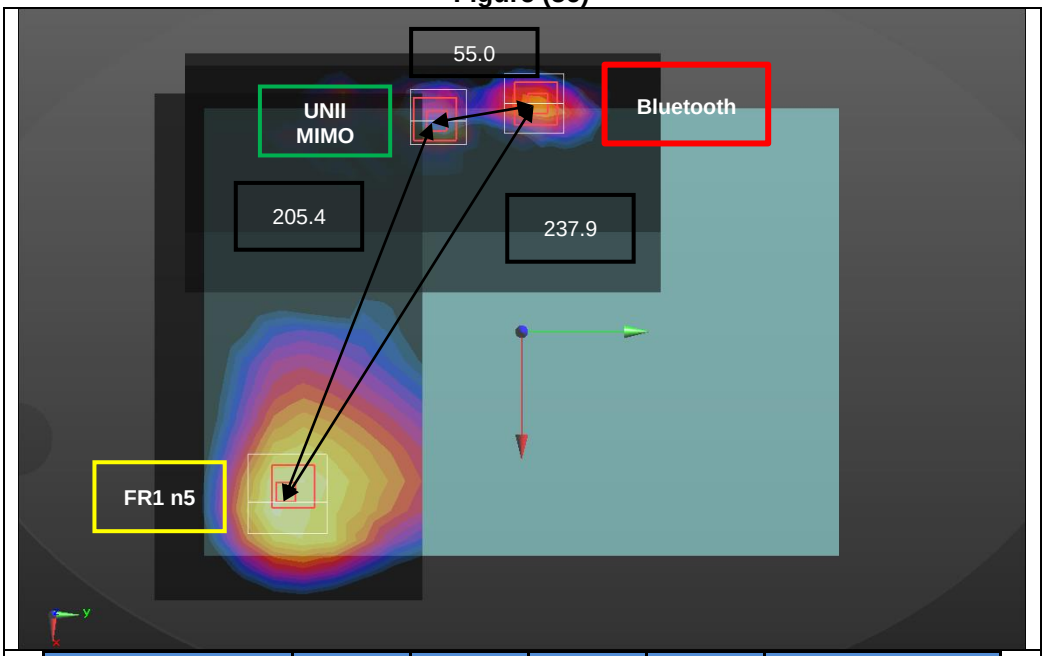


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	227.3
UNII Ant.1	2	0.549	-0.1058	0.0048	-0.0010	1 + 3	204.2
UNII Ant.2	3	1.094	-0.1064	-0.0464	-0.0012	2 + 3	51.2

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

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

Figure (56)

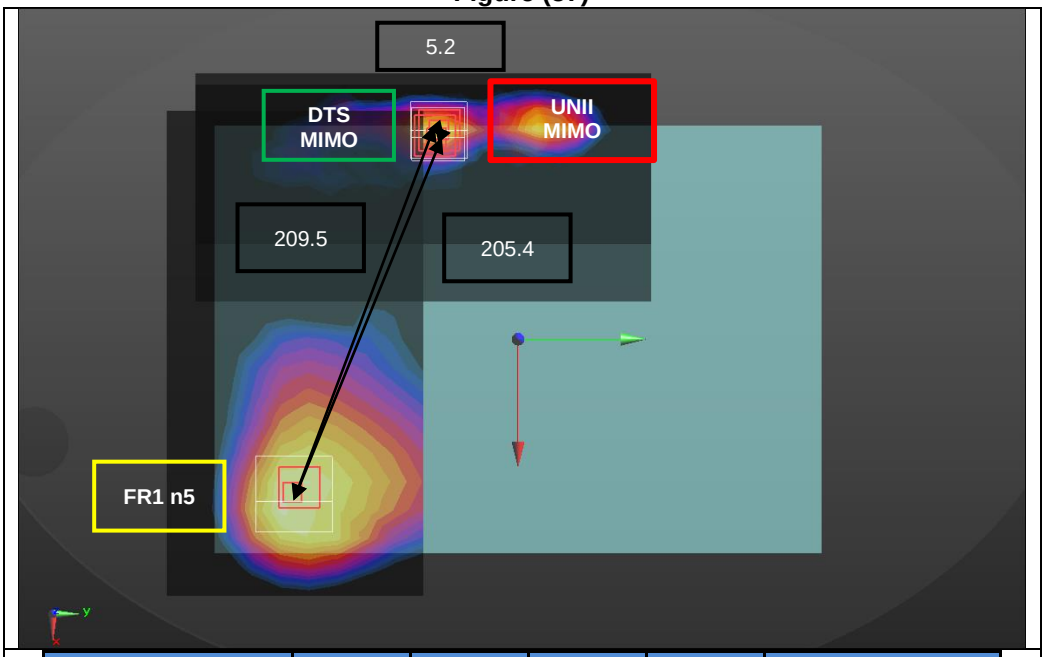


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	205.4
UNII MIMO	2	1.199	-0.1068	-0.0440	-0.0011	1 + 3	237.9
BT	3	0.361	-0.1148	0.0104	-0.0031	2 + 3	55.0

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

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

Figure (57)

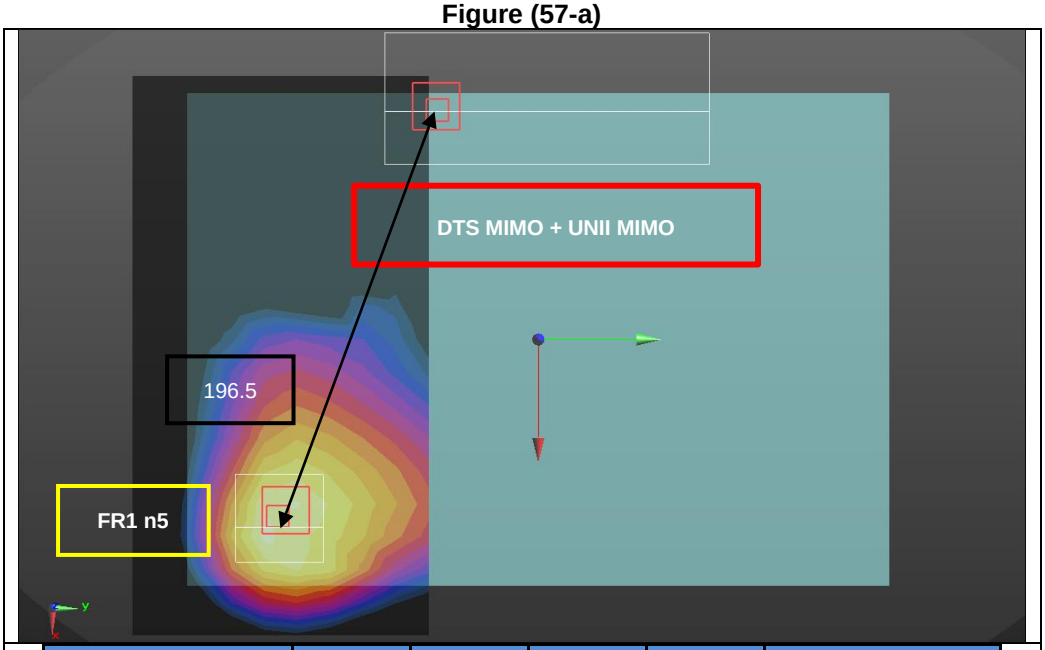


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	209.5
DTS MIMO	2	0.486	-0.1110	-0.0436	-0.0042	1 + 3	205.4
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	5.2

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

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

Figure (57-a)

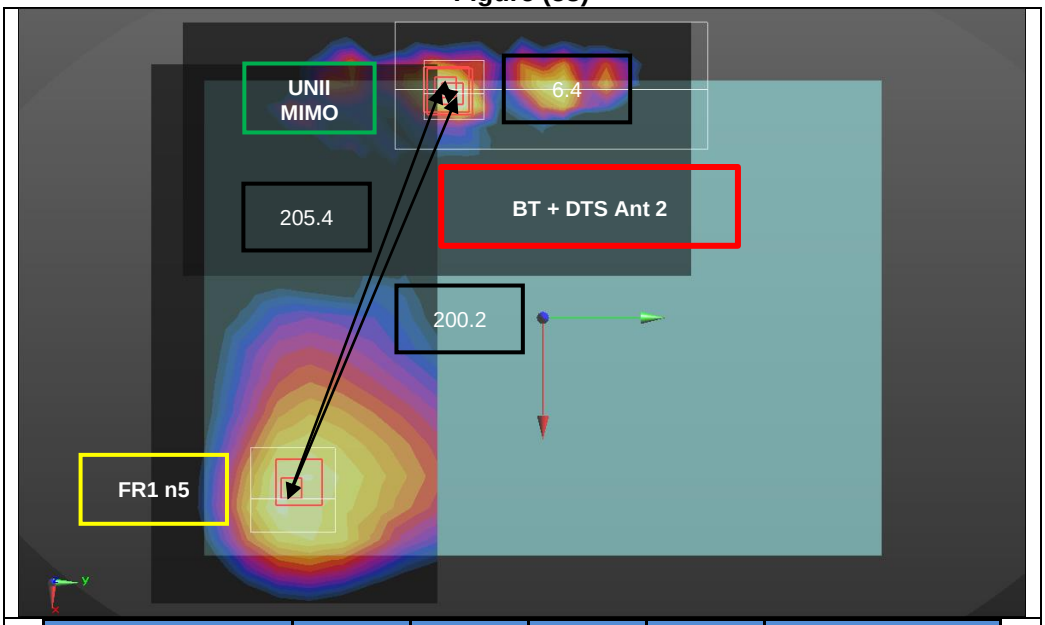


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	196.5
DTS MIMO + UNII MIMO	2	1.320	-0.0992	-0.0492	-0.0023		

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

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

Figure (58)

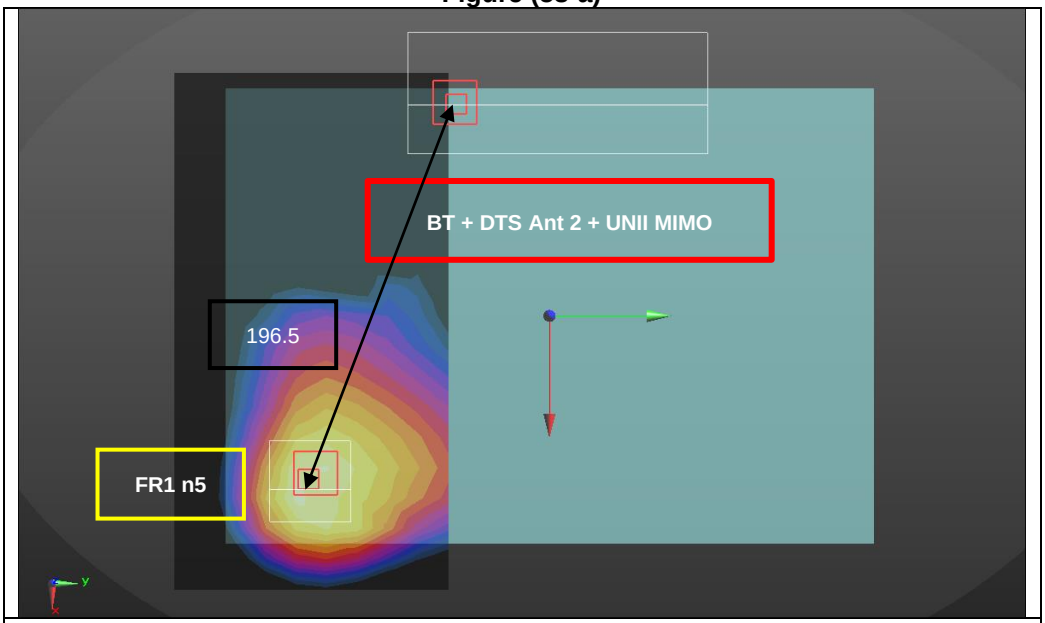


Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	200.2
BT+DTS Ant.2	2	0.478	-0.1032	-0.0492	-0.0023	1 + 3	205.4
UNII MIMO	3	1.199	-0.1068	-0.0440	-0.0011	2 + 3	6.4

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

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

Figure (58-a)



Mode		SAR	X	Y	Z	d: Calculated distance (mm)	
		W/kg	m	m	m		
NR Band n5	1	0.817	0.0839	-0.1204	-0.0035	1 + 2	196.5
BT+DTS Ant.2 UNII MIMO	2	1.310	-0.0992	-0.0492	-0.0023		

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

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