CERTIFICATE #3478.01

TEST REPORT

EUT Description	**Convertible PC**
Brand Name	**HP**
Model Name	**TPN-Q250**
FCC ID	**B94TNQ250HPKVD**
Date of Test Start/End	**2021-04-26 / 2021-07-07**
Features	**WWAN (5G NR, LTE, UMTS), WLAN, BT** (see section 5)
Description	**Platform: TPN-Q250 + INPAQ antenna**

Applicant	**HP Inc.**
Address	**1501 Page Mill Road, Palo Alto CA 94304 USA**
Contact Person	**Sam Lin**
Telephone/Fax/ Email	**+886 2 37896331/sam.lin2@hp.com**

Reference Standards	**FCC 47 CFR Part §2.1093** (see section 1)	
RF Exposure Environment	**Portable devices - General population/uncontrolled exposure**	
Exposure Conditions	**Body worn**	
	SAR Result	SAR Limit
Maximum SAR Result & Limit	**1.44 W/kg (1g)**	**1.6 W/kg (1g)**
Min. test separation distance	**0mm to phantom, 1.74mm to antenna edge**	

Test Report identification	**210407-01.TR02**
Revision Control	**Rev. 02** **This test report revision replaces any previous test report revision** (see section 8)

The test results relate only to the samples tested.
Reference to accreditation shall be used only by full reproduction of test report.

Issued by

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1. Standards, reference documents and applicable test methods

FCC	1. FCC Title 47 CFR Part §2.1093 – Radiofrequency radiation exposure evaluation: portable devices. 2019-10-01 Edition 2. FCC OET KDB 447498 D01 v06 – RF Exposure Procedures and Equipment Authorization Policies for Mobile and Portable Devices. 3. FCC OET KDB 616217 D04 v01r02 – SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers. 4. FCC OET KDB 865664 D01 v01r04 – SAR Measurement Requirements for 100 MHz to 6 GHz. 5. FCC OET KDB 865664 D02 v01r02 – RF Exposure Compliance Reporting and Documentation Considerations. 6. FCC OET KDB 941225 D05 v02r05 – SAR Evaluation Considerations for LTE Devices. 7. FCC OET KDB 941225 D01 v03r01 – 3G SAR Measurement Procedures. 8. IEEE Std 1528-2013 – IEEE Recommended Practice Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques… 9. TCB workshop November 2017; RF Exposure Procedures (LTE UL/DL Carrier Aggregation SAR) 10. TCB workshop October 2018; RF Exposure Procedures (LTE Inter-Band Uplink Carrier Aggregation –Interim Procedures) 11. TCB workshop November 2019; RF Exposure Policy Updates (5G NR FR1 NSA EN-DC UE SAR Evaluations) 12. TCB workshop November 2019; 5G NR/ EN-DC Compliance Test Configurations

2. General conditions, competences and guarantees

- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2017 laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Corporation SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel WRF Lab declines any responsibility with respect to the identified information provided by the customer and that may affect the validity of results.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

3. Preface

The TPN-Q250 convertible PC includes the Time Averaging SAR (TAS) concept. The TAS algorithm is implemented in the Fibocom M2 FM350-GL Cellular Modem, which is incorporated in the TPN-Q250 cellular module (FCC ID: ZMOFM350GL).

The implementation details and TAS operating characteristics are described in a separated document [1]. The validation of algorithm operations is performed by Intel Corporation according to the range of commonly used accessible control parameters used for typical host products. The validation results are reported in document [2].

The FCC SAR limit is a time averaged exposure metric. At host level, the normally required SAR test procedures are applicable for SAR compliance testing at upper-threshold values of the algorithm, which is the maximum output power level for continuous time-averaging operations TAS algorithm enforces. The reliability of this has been demonstrated by results in the Algorithm Validation Test Report [2].

The model supports simultaneous transmission of WWAN, BT and WLAN. The TAS algorithm is only applied to WWAN cellular module. The WLAN / BT SAR evaluation is presented in the document [3].

The SAR evaluation of WWAN is performed in this report as well as the RF exposure assessment for simultaneous transmission of WWAN, WLAN and BT.

[1] 210317_TAS_Operational_Report_Rev01.pdf

[2] 201029-02.TR01_Rev01_Validation Report for Time Averaging Algorithm.pdf

[3] 210407-01.TR01 - HP-Wikus WLAN wAX201D2W, SAR

4. Environmental Conditions

✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	22.5ºC ± 2ºC
Humidity	50% ± 20%
Liquid Temperature	21ºC ± 2ºC

5. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt
#01	210407-01.S02	Convertible PC	TPN-Q250	5CD109G9H8	2021-04-12
#02	210407-01.S03*	Convertible PC	TPN-Q250	5CD109G9HP	2021-04-12

*Used for 5G NR B7 and B25 only

6. EUT Features

The herein information is provided by the customer

Brand Name	HP
Model Name	TPN-Q250
Prototype / Production	Production
Host Identification	TPN-Q250

The device is a 14-inches x360 convertible laptop computer with pre-defined Notebook/ Non-Notebook power mode to different device operation.
For Notebook power mode, the device is operated at high power.
For Non-Notebook power mode, the device operates at reduced power.
Both high power and reduced power mode are evaluated to comply with RF exposure requirements.

Supported radios

The applicable frequency bands and operating modes are identified in the following table.

WWAN:

Mode	Bands	Supported Tx Mode			
		WCDMA	HSDPA	HSUPA	DC-HSDPA
WCDMA / HSPA+	**FDD II (1850.0 – 1910.0 MHz)**	✓	✓	✓	✓
	FDD IV (1710.0 – 1755.0 MHz)	✓	✓	✓	✓
	FDD V (824.0 – 849.0 MHz)	✓	✓	✓	✓

	Bands	Modulation	Bandwidth (MHz)					
			1.4	3	5	10	15	20
LTE FDD	**Band 2 (1850.0 – 1910.0 MHz)**	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓	✓	✓
	Band 4 (1710.0 – 1755.0 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓	✓	✓
	Band 5 (824.0 – 849.0 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓		
	Band 7 (2500.0 – 2570.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓	✓	✓
	Band 12 (699.0 – 716.0 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓		
	Band 13 (777.0 – 787.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓		
	Band 14 (788.0 – 798.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓		
	Band 17 (704.0 – 716.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓		
	Band 25 (1850.0 – 1915 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓	✓	✓
	Band 26 (814.0 – 849.0 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓	✓	
	Band 30 (2305.0 – 2315.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓		
	Band 66 (1710.0 – 1780.0 MHz)	QPSK/16QAM/64QAM/256QAM	✓	✓	✓	✓	✓	✓
LTE TDD	**Band 38 (2570.0 – 2620.0 MHz)**	QPSK/16QAM/64QAM/256QAM			✓	✓	✓	✓
	Band 41 (2496.0 – 2690.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓	✓	✓
	Band 48 (3550.0 – 3700.0 MHz)	QPSK/16QAM/64QAM/256QAM			✓	✓	✓	✓

Bands	Modulation	SCS (KHz)	Bandwidth												
			5	10	15	20	25	30	40	50	60	70	80	90	100
N2 FDD (1850.0 – 1910.0 MHz)	Pl/2 BPSK														
	QPSK	15	✓	✓	✓	✓									
	16QAM	30		✓	✓	✓									
	64QAM	60		✓	✓	✓									
	256QAM														
N5 FDD (824.0 – 849.0 MHz)	PV2 BPSK														
	QPSK	15	✓	✓	✓	✓									
	16QAM	30		✓	✓	✓									
	64QAM	60													
	256QAM														
N7 FDD (2500.0 – 2570.0 MHz)	PV2 BPSK														
	QPSK	15	✓	✓	✓	✓									
	16QAM	30		✓	✓	✓									
	64QAM	60		✓	✓	✓									
	256QAM														
N25 FDD (1850.0 – 1915 MHz)	PV2 BPSK														
	QPSK	15	✓	✓	✓	✓									
	16QAM	30		✓	✓	✓									
	64QAM	60		✓	✓	✓									
	256QAM														
N30 FDD (2305.0 – 2315.0 MHz)	PV2 BPSK														
	QPSK	15	✓												
	16QAM	30		✓											
	64QAM	60		✓											
	256QAM														
N38 TDD (2570.0 – 2620.0 MHz)	PV2 BPSK														
	QPSK	15	✓	✓	✓	✓	✓	✓	✓						
	16QAM	30		✓	✓	✓	✓	✓	✓						
	64QAM	60		✓	✓	✓	✓	✓	✓						
	256QAM														
N41 TDD (2496.0 – 2690.0 MHz)	PV2 BPSK														
	QPSK	15				✓			✓	✓					
	16QAM	30				✓			✓	✓	✓	✓	✓	✓	✓
	64QAM	60				✓			✓	✓	✓	✓	✓	✓	✓
	256QAM														
N66 FDD (1710.0 – 1780.0 MHz)	PV2 BPSK														
	QPSK	15	✓	✓	✓	✓	✓	✓	✓						
	16QAM	30		✓	✓	✓	✓	✓	✓						
	64QAM	60		✓	✓	✓	✓	✓	✓						
	256QAM														
N77 TDD* (3700.0 – 3980.0 MHz)	PV2 BPSK														
	QPSK	15		✓	✓	✓	✓	✓	✓	✓					
	16QAM	30		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	64QAM	60		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	256QAM														
N78 TDD (3700.0 – 3800.0 MHz)**	PV2 BPSK														
	QPSK	15		✓	✓	✓	✓	✓	✓	✓					
	16QAM	30		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	64QAM	60		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	256QAM														

*FCC limits 5G NR B77 to 3700-3980MHz
** FCC limits 5G NR B78 to 3700-3800MHz

UL carrier aggregation LTE (Inter-Band)	UL carrier aggregation LTE (Intra-band)
2A – 5A	**FDD Band 5B**
2A – 12A	**FDD Band 7C**
2A – 13A	**FDD Band 41C**
2A – 14A	**FDD Band 66**
2A – 48A	
4A – 5A	
4A – 12A	
4A – 13A	
5A – 7A	
5A – 30A	
5A – 48A	
5A – 66A	
12A – 30A	
12A – 66A	
13A – 48A	
13A – 66A	
14A – 30A	
14A – 66A	
25A – 26A	
48A – 66A	

EN/DC possible combinations	
NR 5G Band	**Associated LTE Bands**
N2A	**LTE Band 5, 12, 13**
N5A	**LTE Band 2, 30, 66, 48**
N66A	**LTE Band 5, 12, 13, 48**
N41A	**LTE Band 40, 41**
N77A	**LTE Band 41A, 41C**
N78A	**LTE Band 2, 5, 38**

UL carrier aggregation 5G FR1
n2A – n5A
n5A – n66A

WLAN

Intel Wi-Fi 6 Intel® AX201 supports (IEEE802.11ax compliant) Wi-Fi and Bluetooth (BT)

Mode	UL Freq Range
802.11b/g/n/ax	2.4GHz (2400.0 – 2483.5 MHz)
802.11a/n/ac/ax	5.2GHz (5150.0 – 5250.0 MHz) 5.3GHz (5250.0 – 5350.0 MHz) 5.6GHz (5470.0 – 5725.0 MHz) 5.8GHz (5725.0 – 5825.0 MHz)
Bluetooth & BLE v5.0	2.4GHz (2400.0 – 2483.5 MHz)

Antenna Information & Mapping

Antenna Information "information provided by the applicant"

The DUT has 2 WWAN TX antenna:

Transmitter	Main (Antenna 5)	Aux (Antenna 8)
Manufacturer	INPAQ	INPAQ
Antenna type	PIFA antenna	PIFA antenna
Part number	DQ6PS6G1S01 (WA-P-S6G1S6G1S6G2S6G2-02-001)	DQ6PS6G1S01 (WA-P-S6G1S6G1S6G2S6G2-02-001)

See Annex *F* for more details on antennas location.

WWAN Antenna Mapping

Configuration	**Main (Ant 5)**	**Aux (Ant 8)**
WCDMA	LB / MHB	
LTE	LB / MHB	
		UHB
NR 5G SA	(LB / MHB)	
		UHB
LTE ULCA	LB	MHB /UHB
	MHB	UHB
	B41	UHB
NR 5G ENDC	LB	MHB / B41
	B41	N41
	MHB	B41/N41
	B41/N41	UHB
	MHB	UHB
NR 5G ULCA	LB	MHB

- LB: WCDMA FDD V, LTE B5/12/13/14/17/26, 5G NR n5
- MHB: WCDMA FDD II/ FDD IV, LTE B4/7/25/30/66/38, 5G NR n2/n7/n25/n30/n38/n40/n66
- UHB: LTE: B48; NR 5G: n48/n77/n78

Note: For EN-DC mode the 4G and 5G carriers transmit on separate antennas.
For inter-bands on LTE and NR 5G ULCA the carriers transmit on separate antennas.

Simultaneous Transmission Configurations

WWAN Main + WWAN Aux+ WLAN 2.4GHz Main + BT Aux
WWAN Main + WWAN Aux + WLAN 2.4GHz Main + WLAN 2.4GHz Aux
WWAN Main + WWAN Aux + WLAN 5GHz Main + BT Aux
WWAN Main + WWAN Aux + WLAN 5GHz Main + WLAN 5GHz Aux
WWAN Main + WWAN Aux + WLAN 5GHz Main + WLAN 5GHz Aux + BT Aux

WLAN transmitter is considered in this report just for the simultaneous transmission evaluation with the WWAN module (See section B.6.7)

Additional information

- 5.60-5.65 GHz band (TDWR) is supported by the device
- Band gap is supported by the device
- Two different power settings are implemented in the DUT:
  - Max power for Notebook mode
  - Reduced power for Tablet mode
- The DUT does not support VoLTE, so Head Exposure is not considered for LTE and WCDMA modes. Maximum Power Reduction (MPR) is implemented according to 3GPP, and it is a permanent feature, built-in by design on the tune-up power:

Modulation	Channel bandwidth / #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

- According to 3GPP 38-101-1, the UE is allowed to reduce the maximum output power due to higher order modulations and for channel bandwidths that meets both following criteria:
  - Channel bandwidth ≤ 100MHz.
  - Relative channel bandwidth ≤ 4% for TDD bands and ≤ 3% for FDD bands

Maximum power reduction (MPR) for power class 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]	0.5[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 PBSK modulation and if the IE [P-Boost-BPSK] is set to 1 and 40% or less slots in radio frame are used for UL transmission for bands n40, n77, n78 and n79. NOTE 2: Applicable for UE operating in FDD mode, or in TDD mode in bands other than n40, n77, n78 and n79 and if the IE [Pboost-BPSK] is set to 0 and if more than 40% of slots in radio frame are used for UL transmission for bands n40, n77, n78 and n79.			

Maximum power reduction (MPR) for power class 2			
Modulation	MPR (Db)		
	Edge RB allocations	Outer RB allocations	Inner RB allocations
DFT-s-OFDM PI/2 BPSK	≤ 3.5	≤ 0.5	0
DFT-s-OFDM QPSK	≤ 3.5	≤ 1	0
DFT-s-OFDM 16 QAM	≤ 3.5	≤ 2	≤ 1
DFT-s-OFDM 64 QAM	≤ 3.5	≤ 2.5	
DFT-s-OFDM 256 QAM	≤ 4.5		
CP-OFDM QPSK	≤ 3.5	≤ 3	≤ 1.5
CP-OFDM 16 QAM	≤ 3.5	≤ 3	≤ 2
CP-OFDM 64 QAM	≤ 3.5		
CP-OFDM 256 QAM	≤ 6.5		

The DUT uses the maximum MPR values described in the above tables.

The maximum power reduction is applicable on the Tune up tolerance.

The following table indicates the power levels and tolerance for each mode:

Maximum Output power specification + Tune up tolerance

Antenna	Tech.	Bands (MHz)	Class	Notebook Mode				Tablet Mode			
				Nominal (dBm)	Tolerance (Db)	Lower Tolerance (dBm)	Upper Tolerance (dBm)	Nominal (dBm)	Tolerance (Db)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
Ant.5	WCDMA	FDD II (1850.0 – 1910.0)	3	18.0	±1	17.0	19.0	16.0	±1	15.0	17.0
		FDD IV (1710.0 – 1755.0)	3	20.5	±1	19.5	21.5	17.0	±1	16.0	18.0
		FDD V (824.0 – 849.0)	3	23.5	±1	22.5	24.5	21.5	±1	20.5	22.5
	LTE	B2 (1850.0 – 1910.0)	3	18.0	±1	17.0	19.0	17.0	±1	16.0	18.0
		B4 (1710.0 – 1755.0)	3	20.5	±1	19.5	21.5	17.0	±1	16.0	18.0
		B5 (824.0 – 849.0)	3	24	±1	23.0	25.0	21.5	±1	20.5	22.5
		B7 (2500.0 – 2570.0)	3	17.0	±1	16.0	18.0	14.0	±1	13.0	15.0
		B12 (699.0 – 716.0)	3	22.0	±1	21.0	23.0	20.0	±1	19.0	21.0
		B13 (777.0 – 787.0)	3	23.0	±1	22.0	24.0	21.0	±1	20.0	22.0
		B14 (788.0 – 798.0)	3	23.0	±1	22.0	24.0	21.0	±1	20.0	22.0
		B17 (704.0 – 716.0)	3	22.0	±1	21.0	23.0	20.0	±1	19.0	21.0
		B25 (1850.0 – 1915.0)	3	18.0	±1	17.0	19.0	17.0	±1	16.0	18.0
		B26 (814.0 – 849.0 MHz)	3	24.0	±1	23.0	25.0	21.5	±1	20.5	22.5
		B30 (2305.0 – 2315.0 MHz)	3	17.0	±1	16.0	18.0	15.0	±1	14.0	16.0
		B38 (2570.0 – 2620.0 MHz)	3	18.5	±1	17.5	19.5	17.0	±1	16.0	18.0
		B41 (2496.0 – 2690.0 MHz)	2,3	18.5	±1	17.5	19.5	17.0	±1	16.0	18.0
		B48 (3550.0 – 3700.0 MHz)	3								
		B66 (1710.0 – 1780.0 MHz)	3	20.5	±1	19.5	21.5	17.0	±1	16.0	18.0
	5G NR	B2 (1850.0 – 1910.0)	3	18.0	±1	17.0	19.0	17.0	±1	16.0	18.0
		B5 (824.0 – 849.0)	3	24.0	±1	23.0	25.0	21.5	±1	20.5	22.5
		B7 (2500.0 – 2570.0)	3	17.0	±1	16.0	18.0	15.0	±1	14.0	16.0
		B25 (1850.0 – 1915.0)	3	18.0	±1	17.0	19.0	17.0	±1	16.0	18.0
		B30 (2305.0 – 2315.0 MHz)	3	17.0	±1	16.0	18.0	16.0	±1	15.0	17.0
		B38 (2570.0 – 2620.0 MHz)	3	17.5	±1	16.5	18.5	15.0	±1	14.0	16.0
		B41 (2496.0 – 2690.0 MHz)	2,3	17.5	±1	16.5	18.5	15.0	±1	14.0	16.0
		B66 (1710.0 – 1780.0 MHz)	3	20.5	±1	19.5	21.5	18.0	±1	17.0	19.0
		Band 77 (3700.0 – 3980.0 MHz)	2,3	18.0	±1	17.0	19.0	13.0	±1	12.0	14.0
		Band 78 (3700.0 – 3800.0 MHz)	2,3	18.0	±1	17.0	19.0	13.0	±1	12.0	14.0

Antenna	Tech.	Bands (MHz)	Class	Notebook Mode				Tablet Mode			
				Nominal (dBm)	Tolerance (Db)	Lower Tolerance (dBm)	Upper Tolerance (dBm)	Nominal (dBm)	Tolerance (Db)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
Ant.8	WCDMA	FDD II (1850.0 – 1910.0)	3								
		FDD IV (1710.0 – 1755.0)	3								
		FDD V (824.0 – 849.0)	3								
	LTE	B2 (1850.0 – 1910.0)	3	21.5	±1	20.5	22.5	15.0	±1	14.0	16.0
		B4 (1710.0 – 1755.0)	3	20.5	±1	19.5	21.5	15.0	±1	14.0	16.0
		B5 (824.0 – 849.0)	3								
		B7 (2500.0 – 2570.0)	3	20.0	±1	19.0	21.0	13.0	±1	12.0	14.0
		B12 (699.0 – 716.0)	3								
		B13 (777.0 – 787.0)	3								
		B14 (788.0 – 798.0)	3								
		B17 (704.0 – 716.0)	3								
		B25 (1850.0 – 1915.0)	3	21.5	±1	20.5	22.5	15.0	±1	14.0	16.0
		B26 (814.0 – 849.0 MHz)	3								
		B30 (2305.0 – 2315.0 MHz)	3	21.0	±1	20.0	22.0	15.0	±1	14.0	16.0
		B38 (2570.0 – 2620.0 MHz)	3								
		B41 (2496.0 – 2690.0 MHz)	2,3	23.0	±1	22.0	24.0	14.0	±1	13.0	15.0
		B48 (3550.0 – 3700.0 MHz)	3	18.5	±1	17.5	19.5	12.0	±1	11.0	13.0
		B66 (1710.0 – 1780.0 MHz)	3	20.5	±1	19.5	21.5	15.0	±1	14.0	16.0
	5G NR	B2 (1850.0 – 1910.0)	3	21.5	±1	20.5	22.5	15.0	±1	14.0	16.0
		B5 (824.0 – 849.0)	3								
		B7 (2500.0 – 2570.0)	3								
		B25 (1850.0 – 1915.0)	3								
		B30 (2305.0 – 2315.0 MHz)	3								
		B38 (2570.0 – 2620.0 MHz)	3	20.0	±1	19.0	21.0	12.0	±1	11.0	13.0
		B41 (2496.0 – 2690.0 MHz)	2,3	20.0	±1	19.0	21.0	12.0	±1	11.0	13.0
		B66 (1710.0 – 1780.0 MHz)	3	20.5	±1	19.5	21.5	15.0	±1	14.0	16.0
		Band 77 (3700.0 – 3980.0 MHz)	2,3	14.0	±1	15.0	15.0	10.0	±1	9.0	11.0
		Band 78 (3700.0 – 3800.0 MHz)	2,3	14.0	±1	15.0	15.0	10.0	±1	9.0	11.0

As mentioned in Section 3, the SAR compliance testing is performed at upper-threshold values of the algorithm, which is the maximum output power level for continuous time-averaging operations TAS algorithm enforces.
In TAS operation, the control parameters including the upper-threshold value are stored in NVM. They are inaccessible to the normal users and no other interface is available for changing these control parameters.
The table below shows the upper-threshold values used as continuous power for SAR testing as well as the different TAS parameters defined in [1] and [2] to be embedded in the host:

Antenna	Tech.	Bands (MHz)	Class	Notebook Mode				Tablet Mode			
				Nominal Full Power (dBm)	Upper Threshold (dBm)	Lower Threshold (dBm)	DPR_ON Power (dBm)	Nominal Full Power (dBm)	Upper Threshold (dBm)	Lower Threshold (dBm)	DPR_ON Power (dBm)
Ant.5	WCDMA	FDD II (1850.0 – 1910.0)	3	23.5	18.0	17.0	16.0	23.5	16.0	15.0	14.0
		FDD IV (1710.0 – 1755.0)	3	23.5	20.5	19.5	18.5	23.5	17.0	16.0	15.0
		FDD V (824.0 – 849.0)	3	23.5	23.5	22.5	21.5	23.5	21.5	20.5	19.5
	LTE	B2 (1850.0 – 1910.0)	3	23.0	18.0	17.0	16.0	23.0	17.0	16.0	15.0
		B4 (1710.0 – 1755.0)	3	23.0	20.5	19.5	18.5	23.0	17.0	16.0	15.0
		B5 (824.0 – 849.0)	3	24.0	24.0	23.0	22.0	24.0	21.5	20.5	19.5
		B7 (2500.0 – 2570.0)	3	23.0	17.0	16.0	15.0	23.0	14.0	13.0	12.0
		B12 (699.0 – 716.0)	3	23.0	22.0	21.0	20.0	23.0	20.0	19.0	18.0
		B13 (777.0 – 787.0)	3	23.0	23.0	22.0	21.0	23.0	21.0	20.0	19.0
		B14 (788.0 – 798.0)	3	23.0	23.0	22.0	21.0	23.0	21.0	20.0	19.0
		B17 (704.0 – 716.0)	3	23.0	22.0	21.0	20.0	23.0	20.0	19.0	18.0
		B25 (1850.0 – 1915.0)	3	23.0	18.0	17.0	16.0	23.0	17.0	16.0	15.0
		B26 (814.0 – 849.0 MHz)	3	24.0	24.0	23.0	22.0	24.0	21.5	20.5	19.5
		B30 (2305.0 – 2315.0 MHz)	3	23.0	17.0	16.0	15.0	23.0	15.0	14.0	13.0
		B38 (2570.0 – 2620.0 MHz)	3	23.0	18.5	17.5	16.5	23.0	17.0	16.0	15.0
		B41 (2496.0 – 2690.0 MHz)	2,3	26.0	18.5	17.5	16.5	26.0	17.0	16.0	15.0
		B48 (3550.0 – 3700.0 MHz)	3								
		B66 (1710.0 – 1780.0 MHz)	3	23.0	20.5	19.5	18.5	23.0	17.0	16.0	15.0
	5G NR	B2 (1850.0 – 1910.0)	3	23.0	18.0	17.0	16.0	23.0	17.0	16.0	15.0
		B5 (824.0 – 849.0)	3	24.0	24.0	23.0	22.0	24.0	21.5	20.5	19.5
		B7 (2500.0 – 2570.0)	3	23.0	17.0	16.0	15.0	23.0	15.0	14.0	13.0
		B25 (1850.0 – 1915.0)	3	23.0	18.0	17.0	16.0	23.0	17.0	16.0	15.0
		B30 (2305.0 – 2315.0 MHz)	3	23.0	17.0	16.0	15.0	23.0	16.0	15.0	14.0
		B38 (2570.0 – 2620.0 MHz)	3	23.0	17.5	16.5	15.5	23.0	15.0	14.0	13.0
		B41 (2496.0 – 2690.0 MHz)	2,3	26.0	17.5	16.5	15.5	26.0	15.0	14.0	13.0
		B66 (1710.0 – 1780.0 MHz)	3	23.0	20.5	19.5	18.5	23.0	18.0	17.0	16.0
		Band 77 (3700.0 – 3980.0 MHz)	2,3	26.0	18.0	17.0	16.0	26.0	13.0	12.0	11.0
		Band 78 (3700.0 – 3800.0 MHz)	2,3	26.0	18.0	17.0	16.0	26.0	13.0	12.0	11.0

Antenna	Tech.	Bands (MHz)	Class	Notebook Mode				Tablet Mode			
				Nominal Full Power (dBm)	Upper Threshold (dBm)	Lower Threshold (dBm)	DPR_ON Power (dBm)	Nominal Full Power (dBm)	Upper Threshold (dBm)	Lower Threshold (dBm)	DPR_ON Power (dBm)
Ant.8	WCDMA	FDD II (1850.0 – 1910.0)	3								
		FDD IV (1710.0 – 1755.0)	3								
		FDD V (824.0 – 849.0)	3								
	LTE	B2 (1850.0 – 1910.0)	3	23.0	21.5	20.5	19.5	23.0	15.0	14.0	13.0
		B4 (1710.0 – 1755.0)	3	23.0	20.5	19.5	18.5	23.0	15.0	14.0	13.0
		B5 (824.0 – 849.0)	3								
		B7 (2500.0 – 2570.0)	3	23.0	20.0	19.0	18.0	23.0	13.0	12.0	11.0
		B12 (699.0 – 716.0)	3								
		B13 (777.0 – 787.0)	3								
		B14 (788.0 – 798.0)	3								
		B17 (704.0 – 716.0)	3								
		B25 (1850.0 – 1915.0)	3	23.0	21.5	20.5	19.5	23.0	15.0	14.0	13.0
		B26 (814.0 – 849.0 MHz)	3								
		B30 (2305.0 – 2315.0 MHz)	3	23.0	21.0	20.0	19.0	23.0	15.0	14.0	13.0
		B38 (2570.0 – 2620.0 MHz)	3								
		B41 (2496.0 – 2690.0 MHz)	2,3	26.0	23.0	22.0	21.0	26.0	14.0	13.0	12.0
		B48 (3550.0 – 3700.0 MHz)	3	23.0	18.5	17.5	16.5	23.0	12.0	11.0	10.0
		B66 (1710.0 – 1780.0 MHz)	3	23.0	20.5	19.5	18.5	23.0	15.0	14.0	13.0
	5G NR	B2 (1850.0 – 1910.0)	3	23.0	21.5	20.5	19.5	23.0	15.0	14.0	13.0
		B5 (824.0 – 849.0)	3								
		B7 (2500.0 – 2570.0)	3								
		B25 (1850.0 – 1915.0)	3								
		B30 (2305.0 – 2315.0 MHz)	3								
		B38 (2570.0 – 2620.0 MHz)	3	23.0	20.0	19.0	18.0	23.0	12.0	11.0	10.0
		B41 (2496.0 – 2690.0 MHz)	2,3	26.0	20.0	19.0	18.0	26.0	12.0	11.0	10.0
		B66 (1710.0 – 1780.0 MHz)	3	23.0	20.5	19.5	18.5	23.0	15.0	14.0	13.0
		Band 77 (3700.0 – 3980.0 MHz)	2,3	26.0	14.0	13.0	12.0	26.0	10.0	9.0	8.0
		Band 78 (3700.0 – 3800.0 MHz)	2,3	26.0	14.0	13.0	12.0	26.0	10.0	9.0	8.0

SAR compliance is demonstrated with the *Reported SAR*:

Reported SAR = measured 1gSAR @ Reported Upper Threshold < FCC SAR limit
Where, *Reported Upper Threshold = Upper Threshold (stored in NVM) + Tolerance*

Note: The TAS parameters used in LTE and NR standalone mode are also applied to ENDC combinations, as defined in Section.5

7. Remarks and comments

1. Only the plots for the test positions with the highest measured SAR per band/mode are included in Annex C as required per FCC OET KDB 865664 D02, paragraph 2.3.h

8. Test Verdicts summary

The statement of conformity to applicable standards in the table below are based on the measured values, without taking into account the measurement uncertainties.

Mode	Band (UL)	Highest Reported SAR (1g) (W/kg)	Verdict
WCDMA	FDD II (1850.0 – 1910.0 MHz)	1.18	P
	FDD IV (1710.0 – 1755.0 MHz)	1.03	P
	FDD V (824.0 – 849.0 MHz)	1.15	P
LTE FDD	Band 2 (1850.0 – 1910.0 MHz)	NM	NA
	Band 4 (1710.0 – 1755.0 MHz)	NM	NA
	Band 5 (824.0 – 849.0 MHz)	NM	NA
	Band 7 (2500.0 – 2570.0 MHz)	1.42	P
	Band 12 (699.0 – 716.0 MHz)	1.13	P
	Band 13 (777.0 – 787.0 MHz)	1.13	P
	Band 14 (788.0 – 798.0 MHz)	1.17	P
	Band 17 (704.0 – 716.0 MHz)	NM	NA
	Band 25 (1850.0 – 1915.0 MHz)	1.44	P
	Band 26 (814.0 – 849.0 MHz)	1.22	P
	Band 30 (2305.0 – 2315.0 MHz)	1.34	P
	Band 66 (1710.0 – 1780.0 MHz)	1.40	P
LTE TDD	Band 38 (2570.0 – 2620.0 MHz)	NM	NA
	Band 41 (2496.0 – 2690.0 MHz)	1.33	P
	Band 48 (3550.0 – 3700.0 MHz)	1.19	P
5G NR FR1 FDD	Band 2 (1850.0 – 1910.0 MHz)	0.76	P
	Band 5 (824.0 – 849.0 MHz)	1.34	P
	Band 7 (2500.0 – 2570.0 MHz)	1.41	P
	Band 25 (1850.0 – 1915.0 MHz)	1.35	P
	Band 30 (2305.0 – 2315.0 MHz)	0.94	P
	Band 66 (1710.0 – 1780.0 MHz)	1.24	P
5G NR FR1 TDD	Band 38 (2570.0 – 2620.0 MHz)	NM	NA
	Band 41 (2496.0 – 2690.0 MHz)	0.50	P
	Band 77 (3700.0 – 3980.0 MHz)	0.75	P
	Band 78 (3700.0 – 3800.0 MHz)	NM	NA

P: Pass
F: Fail
NM: Not Measured
NA: Not Applicable

According to the FCC OET KDB 690783 D01, this is the summary of the values for the Grant Listing:

Highest Reported SAR (1g) (W/kg)				
Exposure Condition	Equipment Class			
	PCE	DTS	DSS	U-NII
Body Worn	1.44	0.61	0.15	0.92
Simultaneous Tx	Sum-SAR: 3.39 SPLSR: 0.02	Sum-SAR: 3.23 SPLSR: 0.01	Sum-SAR: 3.39 SPLSR: 0.02	Sum-SAR: 3.39 SPLSR: 0.02

Considering the results of the performed test according to FCC 47CFR Part 2.1093 the item under test is IN COMPLIANCE with the requested specifications specified in Section1. Standards, reference documents and applicable test methods

9. Document Revision History

Revision #	Modified by	Revision Details
Rev. 00	V. Kaculini	First Issue
Rev. 01	I. Kharrat	Remove 5G NR 71 Band upon customer request Editorial updates
Rev. 02	V. Kaculini	Added TAS mechanism on section 3 and section 6

Annex A. Test & System Description

A.1 SAR Definition

Specific Absorption rate is defined as the time derivative of the incremental energy (dW) absorbed by (dissipated in) and incremental mass (dm) contained in a volume element (dV) of a given density (ρ).

$$SAR = \frac{d}{dt} \cdot \left(\frac{dW}{dm}\right) = \frac{d}{dt} \cdot \left(\frac{dW}{\rho \cdot dV}\right)$$

SAR is expressed in units of watts per kilogram (W/kg). SAR can be related to the electric field at a point by

$$SAR = \frac{\sigma |E|^2}{\rho}$$

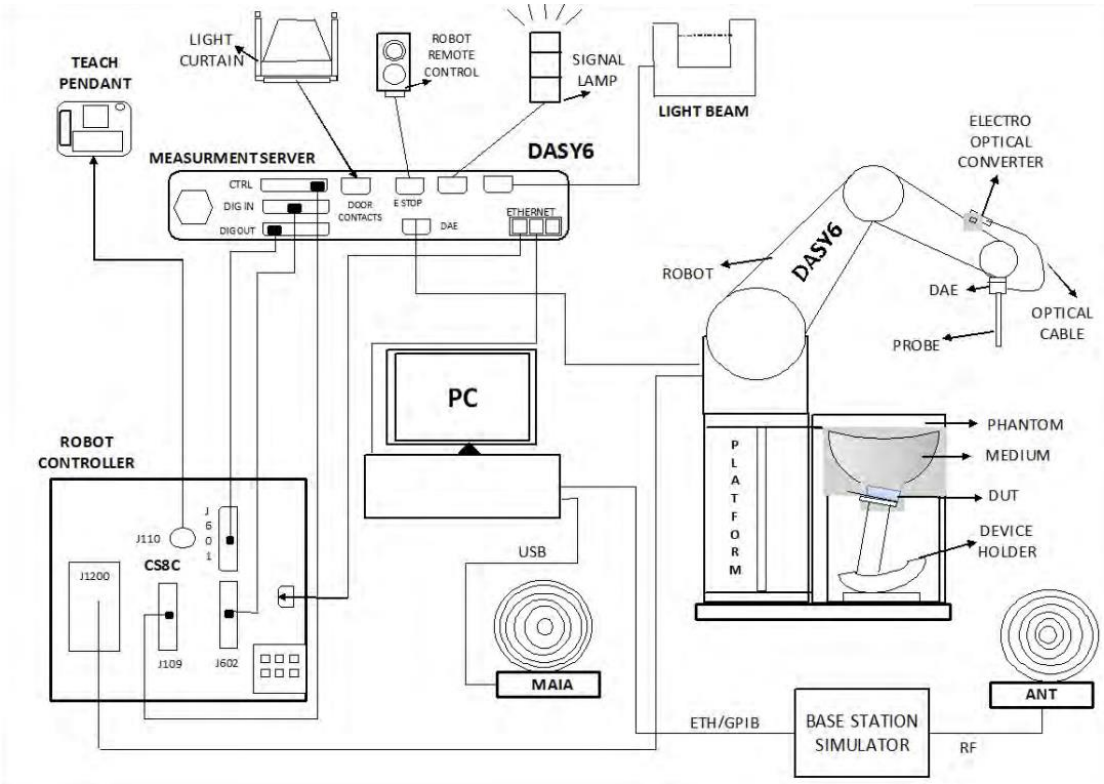
Where:

σ = Conductivity of the tissue (S/m)
ρ = Mass density of the tissue (kg/m3)
E = RMS electric field strength (V/m)

A.2 SAR Measurement System

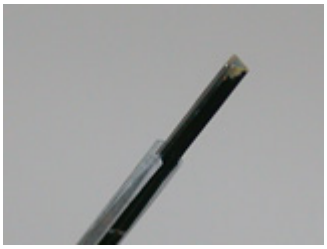
A.2.1 SAR Measurement Setup

The DASY6 system for performing compliance tests consists of the following items:



- ✓ A standard high precision 6-axis robot (Staübli TX/RX family) with controller, teach pendant and software. It includes an arm extension for accommodating the data acquisition electronics (DAE)
- ✓ An isotropic field probe optimized and calibrated for the targeted measurements.
- ✓ 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. 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 movements interrupts.
- ✓ The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- ✓ A computer running Win7 professional operating system and the DASY6 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.
- ✓ MAIA is a hardware interface (Antenna) used to evaluate the modulation and audio interference characteristics of RF signals.
- ✓ ANT is an ultra-wideband antenna for use with the base station simulators over 600 MHz to 6GHz.
- ✓ The base station simulator is an equipment used for SAR cellular tests in order to emulate the cellular signals characteristics and behavior between a regular base station and the equipment under test.
- ✓ Tissue simulating liquid.
- ✓ System Validation dipoles.

A.2.2 E-Field Measurement Probe



The probe is constructed using three orthogonal dipole sensors arranged on an interlocking, triangular prism core. The probe has built-in shielding against static charges and is contained within a PEEK cylindrical enclosure material at the tip.

The probe's characteristics are:

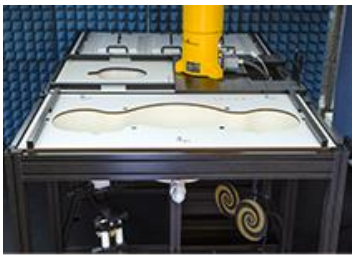
Frequency Range	30MHz – 6GHz
Length	337 mm
Probe tip external diameter	2.5 mm
Typical distance between dipoles and the probe tip	1 mm
Axial Isotropy (in human-equivalent liquids)	±0.3 dB
Hemispherical Isotropy (in human-equivalent liquids)	±0.5 dB
Linearity	±0.2 dB
Maximum operating SAR	100 W/kg
Lower SAR detection threshold	0.001 W/kg

A.2.3 SAM Phantom

The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528 and IEC 62209-1. It enables the dosimetric evaluation of left- and right-hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by teaching three points with the robot.

The phantom's characteristics are:

Material	Vinylester, glass fiber reinforced (VE-GF)
Shell thickness	2 mm ± 0.2 mm
Shell thickness at ERP	6 ± 0.2 mm
Filling volume	25 Liters
Dimensions	Length: 1000mm / Width: 500mm

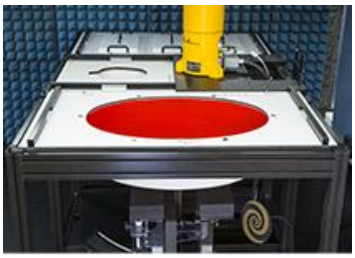


A.2.4 Flat Phantom

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEEE 1528 and IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG dosimetric probes and dipoles.

The phantom's characteristics are:

Material	Vinylester, glass fiber reinforced (VE-GF)
Shell thickness	2 mm ± 0.2 mm
Filling volume	30 Liters approx.
Dimensions	Major axis: 600mm / Minor axis: 400mm



A.2.5 Device Positioner

The SAR in the phantom is approximately inversely proportional to the square of the distance between the source and the liquid surface. For a source at 5 mm distance, a positioning uncertainty of 0.5 mm would produce a SAR uncertainty of 20%. Accurate device positioning is therefore crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards.

The DASY device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles.

The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

A simple but effective and easy-to-use extension for the Mounting Device; facilitates testing of larger devices according to IEC 62209-2 (e.g., laptops, cameras, etc.); lightweight and fits easily on the upper part of the Mounting Device in place of the phone positioner. The extension is fully compatible with the Twin SAM, ELI and other Flat Phantoms.

A.3 Data Evaluation

- **Power Reference measurement**

The robot measures the E field in a specified reference position that can be either the selected section's grid reference point or a user point in this section at 4mm of the inner surface of the phantom, 2mm for frequencies above 3GHz.

- **Area Scan**

Measurement procedures for evaluating SAR from wireless handsets typically start with a coarse measurement grid to determine the approximate location of the local peak SAR values. This is known as the area-scan procedure. The SAR distribution is scanned along the inside surface of one side of the phantom head, at least for an area larger than the projection of the handset and antenna. The distance between the measured points and phantom surface should be less than 8 mm, and should remain constant (with variation less than ± 1 mm) during the entire scan in order to determine the locations of the local peak SAR with sufficient accuracy. The angle between the probe axis and the surface normal line is recommended but not required to be less than 30°. If this angle is larger than 30° and the closest point on the probe-tip housing to the phantom surface is closer than a probe diameter, the boundary effect may become larger and polarization dependent. This additional uncertainty needs to be analyzed and accounted for. To achieve this, modified test procedures and additional uncertainty analyses not described in this recommended practice may be required. The measurement and interpolation point spacing should be chosen such as to allow identification of the local peak locations to within one-half of the linear dimension of a side of the zoom-scan volume. Because a local peak having specific amplitude and steep gradients may produce a lower peak spatial-average SAR compared to peaks with slightly lower amplitude and less steep gradients, it is necessary to evaluate these other peaks as well. However, since the spatial gradients of local SAR peaks are a function of the wavelength inside the tissue-equivalent liquid and the incident magnetic field strength, it is not necessary to evaluate local peaks that are less than 2 dB or more below the global maximum peak. Two-dimensional spline algorithms (Brishoual et al. 2001; Press et al., 1996) are typically used to determine the peaks and gradients within the scanned area. If a peak is found at a distance from the scan border of less than one-half the edge dimension of the desired 1 g or 10 g cube, the measurement area should be enlarged if possible.

- **Zoom Scan**

To evaluate the peak spatial-average SAR values for 1 g or 10 g cubes, fine resolution volume scans, called zoom scans, are performed at the peak SAR locations identified during the area scan. The minimum zoom scan volume size should extend at least 1.5 times the edge dimension of a 1 g cube in all directions from the center of the scan volume, for both 1 g and 10 g peak spatial-average SAR evaluations. Along the phantom curved surfaces, the front face of the volume facing the tissue/liquid interface conforms to the curved boundary, to ensure that all SAR peaks are captured. The back face should be equally distorted to maintain the correct averaging mass. The flatness and orientation of the four side faces are unchanged from that of a cube whose orientation is within ± 30° of the line normal to the phantom at the center of the cube face next to the phantom surface. The peak local SAR locations that were determined in the area scan (interpolated values) should be used for the centers of the zoom scans. If a scan volume cannot be centered due to proximity of a phantom shape feature, the probe should be tilted to allow scan volume enlargement. If probe tilt is not feasible, the zoom-scan origin may be shifted, but not by more than half of the 1 g or 10 g cube edge dimension.

After the zoom-scan measurement, extrapolations from the closest measured points to the surface, for example along lines parallel to the zoom-scan centerline, and interpolations to a finer resolution between all measured and extrapolated points are performed. Extrapolation algorithm considerations are described in 6.5.3, and 3-D spline methods (Brishoual et al., 2001; Kreyszig, 1983; Press et al., 1996) can be used for interpolation. The peak spatial-average SAR is finally determined by a numerical averaging of the local SAR values in the interpolation grid, using for example a trapezoidal algorithm for the integration (averaging).

In some areas of the phantom, such as the jaw and upper head regions, the angle of the probe with respect to the line normal to the surface may be relatively large, e.g., greater than ± 30º, which could increase the boundary effect error to a larger level. In these cases, during the zoom scan a change in the orientation of the probe, the phantom, or both is recommended but not required for the duration of the zoom scan, so that the angle between the probe axis and the line normal to the surface is within 30º for all measurement points.

- **Power Drift measurement**

The robot re-measures the E-Field in the same reference location measured at the Power Reference. The drift measurement gives the field difference in dB from the first to the last reference reading. This allows a user to monitor the power drift of the device under test that must remain within a maximum variation of ±5%.

- **Post-processing**

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1528 and IEC 62209-1/2 standards. It can be conducted for 1g and 10g.

The software allows evaluations that combine measured data and robot positions, such as:

- ✓ Maximum search
- ✓ Extrapolation
- ✓ Boundary correction
- ✓ Peak search for averaged SAR

Interpolation between the measured points is performed when the resolution of the grid is not fine enough to compute the average SAR over a given mass.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.

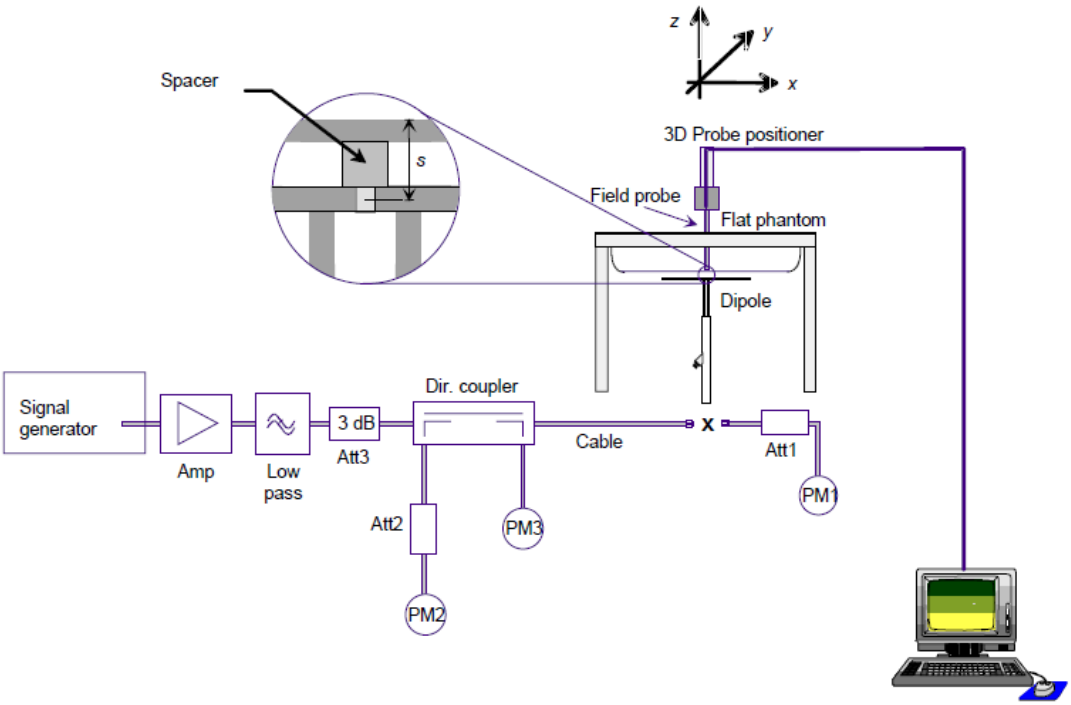
A.4 System and Liquid Check

A.4.1 System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results.

The system performance check uses normal SAR measurements in a simplified setup with a well characterized source. This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

In the simplified setup for system check, the EUT is replaced by a calibrated dipole and the power source is replaced by a controlled continuous wave generated by a signal generator. The calibrated dipole must be placed beneath the flat phantom section of the phantom at the correct distance.



The equipment setup is shown below:

- ✓ Signal Generator
- ✓ Amplifier
- ✓ Directional coupler
- ✓ Power meter
- ✓ Calibrated dipole

First, the power meter PM1 (including attenuator Att1) is connected to the cable to measure the forward power at the location of the connector (x) to the system check source. The signal generator is adjusted for the desired forward power at the connector as read by power meter PM1 after attenuation Att1 and also as coupled through Att2 to PM2. After connecting the cable to the source, the signal generator is readjusted for the same reading at power meter PM2.

SAR results are normalized to a forward power of 1W to compare the values with the calibration reports results as described at IEEE 1528 and IEC 62209 standards.

A.4.2 Liquid Check

The dielectric parameters check is done prior to the use of the tissue simulating liquid. The verification is made by comparing the relative permittivity and conductivity to the values recommended by the applicable standards.

The liquid verification was performed using the following test setup:

- ✓ VNA (Vector Network Analyzer)
- ✓ Open-Short-Load calibration kit
- ✓ RF Cable
- ✓ Open-Ended Coaxial probe
- ✓ DAK software tool
- ✓ SAR Liquid
- ✓ De-ionized water
- ✓ Thermometer

These are the target dielectric properties of the tissue-equivalent liquid material as defined in FCC OET KDB 865664 D01.

Frequency	Body SAR	
(MHz)	ε_r (F/m)	σ (S/m)
150	61.9	0.80
300	58.2	0.92
450	56.7	0.94
835	55.2	0.97
900	55.0	1.05
1450	54.0	1.30
1800-2000	53.3	1.52
2450	52.7	1.95
3000	52.0	2.73
5800	48.2	6.00

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m3)

The measurement system implement a SAR error compensation algorithm as documented in IEEE Std 1528-2013 (equivalent to draft standard IEEE P1528-2011) to automatically compensate the measured SAR results for deviations between the measured and required tissue dielectric parameters (applied to only scale up the measured SAR, and not downward) so, according to FCC OET KDB 865664 D01, the tolerance for ε_r and σ may be relaxed to ± 10%.

A.5 Test Equipment List

A.5.1 SAR System #2

ID #	Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
002-009*	Dosimetric E-field Probe	EX3DV4	3978	SPEAG	2021-05-21	2022-05-21
002-008*	Data Acquisition Electronics	DAE4	1429	SPEAG	2021-05-11	2023-05-11
086-000	Dosimetric E-field Probe	EX3DV4	7455	SPEAG	2021-03-19	2022-03-19
085-000	Data Acquisition Electronics	DAE4	1517	SPEAG	2021-03-11	2022-03-11
002-000	6-axis Robot	TX60 L	F16/55FXA1/A/01	STAÜBLI	NA	NA
002-001	Robot Controller	CS8C	F16/55FXA1/C/01	STAÜBLI	NA	NA
002-002	Measurement Server	DASY6 P/N: SE UMS 028 BB	1489	SPEAG	NA	NA
002-003	Electro-Optical Converter	EOC60	1098	SPEAG	NA	NA
002-004	Light Beam Unit	SE UKS 030 AA	-	Di-soric	NA	NA
002-005	Oval Flat Phantom	ELI v8.0	2048	SPEAG	NA	NA
002-007	Measurement SW	DASY6 6.8.0.14623	9-5DEE27C2	SPEAG	NA	NA
002-006	Laptop Holder	P/N SM LH1 001 CD	-	SPEAG	NA	NA

*Item not used during out of calibration period

A.5.2 Shared Instrumentation

ID #	Device	Type/Model	Serial Number	Manufacturer	Cal. Date	Cal. Due Date
123-000	USB Power Sensor	NRP-Z81	102278	R&S	2021-04-13	2023-04-13
124-000	USB Power Sensor	NRP-Z81	102279	R&S	2021-04-13	2023-04-13
135-000	Network Emulator	CMW500	152721	R&S	2020-03-26	2022-03-26
023-000	5G Network Emulator	CMX500	101444	R&S	2020-08-24	2022-08-24
023-001	Network Emulator	CMW500	169349	R&S	2020-08-28	2022-08-28
126-000*	Vector Signal Generator	ESG E4438C	MY45092885	Agilent	2021-05-27	2023-05-27
384-000	Power Amplifier	AMT-A0328	1818	Agile Microwave Technology	2021-04-08	2021-10-08
099-000	Liquid measurement SW	DAK-3.5 V2.6.0.5	9-2687B491	SPEAG	NA	NA
069-000	Dielectric Probe Kit	DAK-3.5	1037	SPEAG	2019-07-16	2021-07-16
071-000	750 MHz System Validation Dipole	D750V3	1136	SPEAG	2021-01-21	2023-01-21
072-000	835 MHz System Validation Dipole	D835V2	4d192	SPEAG	2021-01-21	2023-01-21
073-000	1750 MHz System Validation Dipole	D1750V2	1133	SPEAG	2021-01-14	2023-01-14
074-000	1900 MHz System Validation Dipole	D1900V2	5d197	SPEAG	2021-01-14	2023-01-14
075-000	2300 MHz System Validation Dipole	D2300V2	1046	SPEAG	2021-01-13	2023-01-13
076-000	2600 MHz System Validation Dipole	D2600V2	1100	SPEAG	2021-01-13	2023-01-13
404-000*	3700 MHz System Validation Dipole	D3700V2	1093	SPEAG	2021-05-04	2023-05-04
077-000	Coupler	CD0.5-8-20-30	1251-002	Amd-group	2021-03-18	2021-09-18
167-000	RF Cable	584-4103-3000D	AF497	ATEM	2021-02-24	2021-08-24
078-000	RF Cable	ST-18/SMAm/SMAm/48	1158830	Huber & Suhner	2021-02-15	2021-08-15
079-000	RF Cable	ST-18/SMAm/SMAm/48	1158831	Huber & Suhner	2021-02-15	2021-08-15
089-000	Vector Reflectometer	PLANAR R140	0190616	Copper Mountain Technologies	2019-08-07	2021-08-07
327-000	Temperature & Humidity Logger	RA32E-TH1-RAS	RA32-F0DED9	AVTECH	2021-03-09	2023-03-09
095-000	Thermometer	925	34822881	Testo	2019-11-19	2021-11-19

*Item not used during out of calibration period

A.5.3 Tissue Simulant Liquid

TSL	Manufacturer / Model	Freq Range (MHz)	Main Ingredients
Body WideBand	SPEAG MBBL600-6000V6 Batch 160603-01	600-6000	Ethanediol, Sodium petroleum sulfonate, Hexylene Glycol / 2-Methyl-pentane-2.4-diol, Alkoxylated alcohol

A.6 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the table below with a coverage factor of k = 2 to indicate a 95% level of confidence:

SPEAG DASY6 Uncertainty Budget According to IEC/IEEE 62209-1528 (4 MHz - 6 GHz) including IEEE 1528-2013 and IEC 62209-1/2016, IEC 62209-2/2010								
Symbol	Error Description	Uncert. Value	Prob Dist.	Div.	(ci) 1g	(ci) 10g	Std Unc. (1g)	Std Unc. (10g)
Measurement System Errors								
CF	*Probe Calibration*	±14.0 %	N	2	1	1	±7.0 %	±7.0 %
CF_{drift}	Probe Calibration Drift	±1.0 %	N	1	1	1	±1.0 %	±1.0 %
LIN	Probe Linearity	±4.7 %	R	√3	1	1	±2.7 %	±2.7 %
BBS	Broadband Signal	±3.0 %	N	2	1	1	±1.5 %	±1.5 %
ISO	*Axial Isotropy*	±4.7 %	R	√3	0.5	0.5	±1.4 %	±1.4 %
ISO	Hemispherical Isotropy	±9.6 %	R	√3	0.5	0.5	±2.8 %	±2.8 %
DAE	Data Acquisition	±0.3 %	N	1	1	1	±0.3 %	±0.3 %
AMB	RF Ambient	±1.8 %	N	1	1	1	±1.8 %	±1.8 %
Δ_{sys}	Probe Positioning	±0.2 %	N	1	0.33	0.33	±0.1 %	±0.1 %
DAT	Data Processing	±2.3 %	N	1	1	1	±2.3 %	±2.3 %
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas.)$_{DAK}$	±2.5 %	N	1	0.78	0.71	±2.0 %	±1.8 %
LIQ(T_σ)	Conductivity (temp.)$_{BB}$	±3.4 %	R	√3	0.78	0.71	±1.5 %	±1.4 %
EPS	Phantom Permittivity	±14.0 %	R	√3	0.25	0.25	±2.0 %	±2.0 %
DAS	Distance DUT - TSL	±2.0 %	N	1	2	2	±4.0 %	±4.0 %
H	Device Holder	±3.6 %	N	1	1	1	±3.6 %	±3.6 %
MOD	DUT Modulation$_m$	±2.4 %	R	√3	1	1	±1.4 %	±1.4 %
TAS	Time-average SAR	±2.6 %	R	√3	1	1	±1.5 %	±1.5 %
RF_{drift}	DUT drift	±5.0 %	N	1	1	1	±2.9 %	±2.9 %
Correction to the SAR results								
C(ε, σ)	Deviation to Target	±1.9 %	N	1	1	0.84	±1.9 %	±1.6 %
Combined Std. Uncertainty							±11.5 %	±11.4 %
Expanded STD Uncertainty							**±23.1 %**	**±22.9 %**

A.7 RF Exposure Limits

SAR assessments have been made in line with the requirements of FCC 47 CFR Part 2.1093 on the limitation of exposure of the general population / uncontrolled exposure for portable devices.

Exposure Type	General Population / Uncontrolled Environment
Peak spatial-average SAR (averaged over any 1 gram of tissue)	**1.6 W/kg**
Whole body average SAR	**0.08 W/kg**
Peak spatial-average SAR (extremities) (averaged over any 10 grams of tissue)	**4.0 W/kg**

Annex B. Test Results

The herein test results were performed by:

Test case measurement	Test Personnel
Conducted measurement	Z. Ouachicha
SAR measurement	E. Garcia

B.1 Test Conditions

B.1.1 Test SAR Test positions relative to the phantom

The device under test was a TPN-Q250 card inside a convertible PC host platform (HP) using a set of PIFA antennas. The card was operated utilizing proprietary software and each channel was measured using a communication tester to determine the maximum average power.

The device has 2 power settings:
- Notebook mode
- Tablet mode

See section 6 for details about power values for each configuration
See Annex F.3 for information about the existing configurations

In the same manner the required test positions analysis is done considering the two possible user configurations and power levels for each one

Laptop mode

According to FCC OET KDB 616217 D04, laptop position should be tested for SAR compliance with the display screen opened at an angle of 90° to the keyboard compartment and the notebook bottom surface must be touching the phantom.

Notebook	WWAN Main/Aux
Position	• Laptop

Tablet mode

According to FCC OET KDB 616217 D04, the back surface and edges of the tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Test Exclusion Threshold in FCC OET KDB 447498 D01 can be applied to determine SAR test exclusion for adjacent edge configurations. (See section 6 for power specifications)

The reduced power values shown on section 6 and the closest distance from the antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

Considering the antenna location diagrams in Annex F and the test exclusions described before, the surfaces/edges to be measured for each antenna are:

Tablet	WWAN Main	WWAN Aux
Position	• Top Edge • Back Face • Right Edge	• Top Edge • Back Face • Left Edge

See B.*1.3.1* for a more detailed list of the applied reductions.

See *F.2 Test positions* section for more information on the tested positions.

B.1.2 Test signal, Output power and Test Frequencies

B.1.2.1 LTE TDD consideration

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

LTE TDD Bands support 3GPP TS 36.211 section 4.2 for Type 2 Frame structure and table 2 for uplink-downlink configurations and table 1 for special subframe configurations

Table 1

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	6592 T_S	(1+X) 2192 T_S	(1+X) 2560 T_S	7680 · T_S	(1+X) 2192 T_S	(1+X) 2560 T_S
1	19760 T_S			20480 T_S		
2	21952 T_S			23040 T_S		
3	24144 T_S			25600 T_S		
4	26336 T_S			7680 T_S	(2+X) 2192 T_S	(2+X) 2560 T_S
5	6592 T_S	(2+X) 2192 T_S	(2+X) 2560 T_S	20480 T_S		
6	19760 T_S			23040 T_S		
7	21952 T_S			12800 T_S		
8	24144 T_S			-	-	-
9	13168 T_S			-	-	-
10	13168 T_S	13150 T_S	12800 T_S	-	-	

Table2

Uplink-Downlink Config.	Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Calculated Duty Cycle (%)
		0	1	2	3	4	5	6	7	8	9	
0	5 ms	D	S	U	U	U	D	S	U	U	U	63.3%
1	5 ms	D	S	U	U	D	D	S	U	U	D	43.3%
2	5 ms	D	S	U	D	D	D	S	U	D	D	23.3%
3	10 ms	D	S	U	U	U	D	D	D	D	D	31.7%
4	10 ms	D	S	U	U	D	D	D	D	D	D	21.7%
5	10 ms	D	S	U	D	D	D	D	D	D	D	11.7%
6	5 ms	D	S	U	U	U	D	S	U	U	D	53.3%

Calculated duty cycle = Extended cyclic prefix in uplink *(TS)*# of S + # of U / period
The configuration used for SAR testing was the number 0 which corresponds to the highest duty cycle (Power Class 3)

Frame structure and maximal measured duty cycle for NR 5G FR1 are described in the table 3.

Table3

Downlink-to-Uplink Switch-point Periodicity	Subframe Number										Measured Duty Cycle (%)
	0	1	2	3	4	5	6	7	8	9	
5 ms	U	U	U	U	U	U	U	D	D	S	47%

For each slot, 4/6 symbols are transmitted

B.1.3 Evaluation Exclusion and Test Reductions

B.1.3.1 SAR evaluation exclusion

The SAR Test Exclusion Threshold in FCC OET KDB 447498 D01 v06 can be applied to determine SAR test exclusion for adjacent edge configurations. For 100MHz to 6GHz and test separation distances ≤50mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following formula:

$$[(\text{max. power of channel, including tune} - \text{up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot \left[\sqrt{f_{(GHz)}}\right] \leq 3.0\ for\ 1g\ SAR, and \leq 7.5\ for\ 10g\ extremity\ SAR \quad (1)$$

Where:

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm, and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

For test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined using the following formulas:

$$\langle(Power\ allowed\ at\ numeric\ threshold\ for\ 50\ mm\ in\ (1)) + (test\ separation\ distance - 50\ mm) \cdot (f_{MHz}/150)\rangle mW,\ for\ 100MHz\ to\ 1500MHz \quad (2)$$

$$\langle(Power\ allowed\ at\ numeric\ threshold\ for\ 50\ mm\ in\ (1)) + (test\ separation\ distance - 50\ mm) \cdot 10)\rangle mW,\ for\ 1500MHz\ and\ \leq 6GHz \quad (3)$$

Test Exclusion – Antenna 5

Antenna	Band Name	Output power				Back Face	Top Edge	Left Edge	Right Edge	Bottom Edge	Laptop	Back Face	Top Edge	Left Edge	Right Edge	Bottom Edge	Laptop
		Notebook		Tablet													
		dBm	mW	dBm	mW												
WWAN Main	UTRA II	19.0	79	17.0	50	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	UTRA IV	21.5	141	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	UTRA V	24.5	282	22.5	178	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 2	19.0	79	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 4	21.5	141	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 5	24.5	282	22.5	178	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 7	18.0	63	15.0	32	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 12	23.0	200	21.0	126	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 13	24.0	251	22.0	158	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 14	24.0	251	22.0	158	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 17	23.0	200	21.0	126	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 25	19.0	79	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 26	24.5	282	22.5	178	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 30	18.0	63	16.0	40	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 38	19.5	89	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 41	19.5	89	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	LTE 48	NA	NA	NA	NA	**<50**	**<50**	>50	**<50**	>50	**<50**	R	R	R	R	R	R
	LTE 66	21.5	141	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 2	19.0	79	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 5	25.0	316	22.5	178	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 7	18.0	63	16.0	40	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 25	19.0	79	18.0	63	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 30	18.0	63	17.0	50	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 38	18.5	71	16.0	40	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 41	18.5	71	16.0	40	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 66	21.5	141	19.0	79	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 77	19.0	79	14.0	25	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T
	NR 78	19.0	79	14.0	25	**<50**	**<50**	>50	**<50**	>50	**<50**	T	T	R	T	R	T

T: Tested position
R: Reduced
See Annex *F* for a more detailed explanation of the separation distance related to the platform.

Test Exclusion – Antenna 8

Antenna	Band Name	Output power				Back Face	Top Edge	Left Edge	Right Edge	Bottom Edge	Laptop	Back Face	Top Edge	Left Edge	Right Edge	Bottom Edge	Laptop
		Notebook		Tablet													
		dBm	**mW**	**dBm**	**mW**												
WWAN Aux	UTRA II	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	UTRA IV	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	UTRA V	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 2	22.5	177	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 4	21.5	141	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 5	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 7	21.0	125	14.0	25.0	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	LTE 12	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 13	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 14	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 17	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 25	22.5	177	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	LTE 26	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 30	22.0	156	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	LTE 38	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	LTE 41	24.0	251	15.0	32.0	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	LTE 48	19.5	89.0	13.0	20.0	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	LTE 66	21.5	141	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 2	22.5	177	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 5	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	NR 7	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	NR 25	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	NR 30	NA	NA	NA	NA	**<50**	**<50**	**<50**	>50	>50	**<50**	R	R	R	R	R	R
	NR 38	21.0	112	13.0	20.0	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 41	21.0	112	13.0	20.0	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 66	21.5	141	16.0	39.8	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 77	15.0	31.6	11.0	12.5	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T
	NR 78	15.0	31.6	11.0	12.5	**<50**	**<50**	**<50**	>50	>50	**<50**	T	T	T	R	R	T

T: Tested position
R: Reduced
See Annex *F* for a more detailed explanation of the separation distance related to the platform.

In order to evaluate SAR test exclusion for laptop and tablet user positions in which the separation distance passes the 50mm limit, equations (2) and (3) are used with the corresponding frequencies for each band, the user distances for the two positions and with the power values described on Section 6. The table below shows all cellular bands evaluated in this report grouped by frequency band, separation distances and the corresponding Power threshold in mW for each combination (distance and frequency)

Bands	Freq	Separation distance to the body on mm										
		60	70	80	90	100	110	160	170	190	200	
LTE 12,13, 14 17	750	223	273	323	373	423	473	723	773	873	923	Threshold values in mW
FDD V LTE 5, 26, NR 5	835	220	275	331	387	442	498	776	832	943	999	
FDD IV LTE 4, 66, NR 66	1750	213	313	413	513	613	713	1213	1313	1513	1613	
FDD II LTE 2, 25 NR 2, 25	1900	209	309	409	509	609	709	1209	1309	1509	1609	
LTE 30, NR 30	2300	199	299	399	499	599	699	1199	1299	1499	1599	
LTE 7, 38, 41, NR 7, 38, 41	2600	193	293	393	493	593	693	1193	1293	1493	1593	
LTE 48, NR 77, NR78	3700	180	280	380	480	580	680	1180	1280	1480	1580	

The highest output power for all bands in tablet mode is 177mW which is smaller than all the values of the table, SAR is not required for the tablet bottom position, right edge (Antenna 8) and left edge (Antenna 5)

B.1.3.2 General SAR test reduction

According to FCC OET KDB 447498 D01, 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

WLAN SAR Test reduction

Transmission Mode	SAR test exclusion/reduction
DSSS	According to FCC OET KDB 248227 D01, SAR is measured for 2.4 GHz 802.11b, SAR test reduction is determined according to the following: ▪ When the reported SAR of the highest measured maximum output power channel for the exposure configuration is ≤ 0.8 W/kg, no further SAR testing is required for 802.11b DSSS in that exposure configuration. ▪ When the reported SAR is > 0.8 W/kg, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. According to FCC OET KDB 248227 D01, SAR is not required for 2.4 GHz OFDM conditions 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.
OFDM	According to FCC OET KDB 248227 D01, 802.11a/g/n/ac modes have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected; i.e., 802.11a is chosen over 802.11n then 802.11ac or 802.11g is chosen over 802.11n. According to FCC OET KDB 248227 D01, an *initial test configuration* is determined for OFDM and DSSS transmission modes according to the channel bandwidth, modulation and data rate combination(s) with the highest maximum output power specified for production units in each standalone and aggregated frequency band. SAR is measured using the highest measured maximum output power channel. SAR test reduction for subsequent highest output test channels is determined according to reported SAR of the initial test configuration. The *initial test configuration* for 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures. According to FCC OET KDB 248227 D01, when the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.

WWAN SAR Test reduction

Transmission Mode	SAR test exclusion/reduction
HSDPA	According to FCC OET KDB 941225 D01, SAR evaluation is not required when the maximum average output power is < ¼ dB higher than the measured on the corresponding channels without HSDPA, using 12.2kbps RMC, and the maximum SAR for 12.2kbps RMC is < 1.2 W/kg.
HSUPA DC+HSDPA HSPA+	According to FCC OET KDB 941225 D01, SAR evaluation is not required when the maximum average output power is < ¼ dB higher than the measured on the corresponding channels without HSUPA, using 12.2kbps RMC, and the maximum SAR for 12.2kbps RMC is < 1.2 W/kg.
LTE	According to FCC OET KDB 941225 D05, testing of 100% RB allocation, higher order modulations or lower BW is not required when these conditions are met: ○ For QPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. ○ For each modulation besides QPSK, SAR is required only when the highest maximum output power for the configuration in the higher order modulation is > ½ dB higher than the same configuration in QPSK or when the reported SAR for the QPSK configuration is > 1.45 W/kg. ○ For lower BW, only measure SAR when the highest maximum output power of a configuration requiring testing in the smaller channel bandwidth is > ½ dB higher than the equivalent channel configurations in the largest channel bandwidth configuration or the reported SAR of a configuration for the largest channel bandwidth is > 1.45 W/kg. 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 The conducted power for the higher order modulations i.e 64 QAM and 256 QAM has not been measured since the applicable MPR is respectively 2dB and 5dB.
5G NR	According to TCB workshop November 2019; RF Exposure Policy Updates (5G NR FR1 NSA EN-DC UE SAR Evaluations), the FCC OET KDB 941225 D05 rules apply.

B.2 Conducted Power Measurements – Notebook mode

B.2.1 WCDMA/ HSPA/ DC-HSPA – Antenna 5

B.2.1.1 WCDMA Band II

Mode	Channel Number	Freq (MHz)	Subset	Average Power Measured (dBm)	Factory Upper Tolerance (dBm)
RMC	9262	1852.4	-	18.36	19.00
	9400	1880	-	18.37	19.00
	9538	1907.6	-	18.28	19.00
HSDPA	9262	1852.4	1	18.30	19.00
			2	18.26	19.00
			3	18.13	19.00
			4	18.27	19.00
	9400	1880	1	18.28	19.00
			2	18.11	19.00
			3	18.34	19.00
			4	18.30	19.00
	9538	1907.6	1	18.18	19.00
			2	18.31	19.00
			3	18.28	19.00
			4	18.12	19.00
HSUPA	9262	1852.4	1	18.30	19.00
			2	18.29	19.00
			3	18.26	19.00
			4	18.27	19.00
			5	18.13	19.00
	9400	1880	1	18.14	19.00
			2	18.27	19.00
			3	18.30	19.00
			4	18.28	19.00
			5	18.26	19.00
	9538	1907.6	1	18.11	19.00
			2	18.09	19.00
			3	18.34	19.00
			4	18.35	19.00
			5	18.30	19.00

B.2.1.2 WCDMA Band IV

Mode	Channel Number	Freq (MHz)	Subset	Average Power Measured (dBm)	Factory Upper Tolerance (dBm)
RMC	1312	1712.4	-	21.02	21.50
	1413	1732.6	-	21.10	21.50
	1513	1752.6	-	20.88	21.50
HSDPA	1312	1712.4	1	19.55	21.50
			2	19.52	21.50
			3	19.58	21.50
			4	19.49	21.50
	1413	1732.6	1	19.41	21.50
			2	19.41	21.50
			3	19.39	21.50
			4	19.38	21.50
	1513	1752.6	1	19.42	21.50
			2	19.38	21.50
			3	19.44	21.50
			4	19.43	21.50
HSUPA	1312	1712.4	1	19.39	21.50
			2	19.44	21.50
			3	19.56	21.50
			4	19.51	21.50
			5	19.59	21.50
	1413	1732.6	1	19.45	21.50
			2	19.48	21.50
			3	19.47	21.50
			4	19.48	21.50
			5	19.48	21.50
	1513	1752.6	1	19.46	21.50
			2	19.39	21.50
			3	19.37	21.50
			4	19.46	21.50
			5	19.47	21.50

B.2.1.3 **WCDMA Band V**

Mode	Channel Number	Freq (MHz)	Subset	Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
RMC	4132	826.4	-	23.94	24.50
	4183	836.6	-	23.85	24.50
	4233	846.6	-	23.86	24.50
HSDPA	4132	826.4	1	23.88	24.50
			2	23.91	24.50
			3	23.94	24.50
			4	23.94	24.50
	4183	836.6	1	23.79	24.50
			2	23.77	24.50
			3	23.70	24.50
			4	23.69	24.50
	4233	846.6	1	23.81	24.50
			2	23.81	24.50
			3	23.77	24.50
			4	23.69	24.50
HSUPA	4132	826.4	1	23.88	24.50
			2	23.81	24.50
			3	23.86	24.50
			4	23.88	24.50
			5	23.86	24.50
	4183	836.6	1	23.81	24.50
			2	23.81	24.50
			3	23.79	24.50
			4	23.61	24.50
			5	23.69	24.50
	4233	846.6	1	23.86	24.50
			2	23.77	24.50
			3	23.78	24.50
			4	23.77	24.50
			5	23.84	24.50

B.2.2 LTE

B.2.2.1 LTE Band 2 FDD

SAR Measurement for LTE Band 2 FDD (Frequency range: 1850 – 1910MHz) is covered by LTE Band 25 FDD (Frequency range: 1850 – 1915MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.2.2.2 LTE Band 4 FDD

SAR Measurement for LTE Band 4 FDD (Frequency range: 1710 – 1755MHz) is covered by LTE Band 66 FDD (Frequency range: 1710 – 1780MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.2.2.3 LTE band 5 FDD

SAR Measurement for LTE Band 5 FDD (Frequency range: 824 – 849MHz) is covered by LTE Band 26 FDD (Frequency range: 814 – 849MHz) due to overlapping frequency range, lower maximum tune-up and similar bandwidth.

B.2.2.4 **LTE Band 7 FDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE7	20 MHz	20850	2510	1RB Low	1 Pos 0	0	1	18.00	17.52	16.48	21.00	20.05	19.26
				1RB Mid	1 Pos 50	0	1	18.00	17.59	16.58	21.00	20.10	19.35
				1RB High	1 Pos 99	0	1	18.00	17.50	16.53	21.00	20.02	19.28
				50% RB Low	50 Pos 0	1	2	18.00	16.50	15.49	21.00	19.21	18.19
				50% RB Mid	50 Pos 24	1	2	18.00	16.60	15.58	21.00	19.21	18.20
				50% RB High	50 Pos 50	1	2	18.00	16.60	15.60	21.00	19.18	18.20
				100% RB	100 Pos 0	1	2	18.00	16.54	15.54	21.00	19.18	18.14
		21100	2535	1RB Low	1 Pos 0	0	1	18.00	17.44	16.39	21.00	20.03	18.87
				1RB Mid	1 Pos 50	0	1	18.00	17.59	16.57	21.00	20.22	19.01
				1RB High	1 Pos 99	0	1	18.00	17.56	16.54	21.00	20.13	18.91
				50% RB Low	50 Pos 0	1	2	18.00	16.60	15.56	21.00	19.23	18.21
				50% RB Mid	50 Pos 24	1	2	18.00	16.52	15.51	21.00	19.19	18.21
				50% RB High	50 Pos 50	1	2	18.00	16.61	15.59	21.00	19.13	18.19
				100% RB	100 Pos 0	1	2	18.00	16.60	15.58	21.00	19.19	18.18
		21350	2560	1RB Low	1 Pos 0	0	1	18.00	17.50	16.50	21.00	20.19	18.98
				1RB Mid	1 Pos 50	0	1	18.00	17.71	16.71	21.00	20.30	19.12
				1RB High	1 Pos 99	0	1	18.00	17.76	16.75	21.00	20.19	18.93
				50% RB Low	50 Pos 0	1	2	18.00	16.71	15.68	21.00	19.30	18.23
				50% RB Mid	50 Pos 24	1	2	18.00	16.70	15.72	21.00	19.28	18.26
				50% RB High	50 Pos 50	1	2	18.00	16.75	15.71	21.00	19.28	18.23
				100% RB	100 Pos 0	1	2	18.00	16.73	15.67	21.00	19.27	18.26
	15 MHz	20825	2507.5	1RB Low	1 Pos 0	0	1	18.00	17.44	16.73	21.00	20.14	19.46
				1RB Mid	1 Pos 38	0	1	18.00	17.56	16.77	21.00	20.19	19.55
				1RB High	1 Pos 74	0	1	18.00	17.52	16.73	21.00	20.07	19.47
				50% RB Low	38 Pos 0	1	2	18.00	16.50	15.53	21.00	19.14	18.13
				50% RB Mid	38 Pos 19	1	2	18.00	16.52	15.60	21.00	19.15	18.17
				50% RB High	38 Pos 39	1	2	18.00	16.61	15.65	21.00	19.16	18.18
				100% RB	75 Pos 0	1	2	18.00	16.58	15.58	21.00	19.18	18.19
		21100	2535	1RB Low	1 Pos 0	0	1	18.00	17.40	16.66	21.00	20.15	19.12
				1RB Mid	1 Pos 38	0	1	18.00	17.46	16.75	21.00	20.17	19.15
				1RB High	1 Pos 74	0	1	18.00	17.49	16.70	21.00	20.06	19.07
				50% RB Low	38 Pos 0	1	2	18.00	16.52	15.58	21.00	19.19	18.16
				50% RB Mid	38 Pos 19	1	2	18.00	16.53	15.55	21.00	19.18	18.11
				50% RB High	38 Pos 39	1	2	18.00	16.58	15.60	21.00	19.14	18.13
				100% RB	75 Pos 0	1	2	18.00	16.59	15.53	21.00	19.17	18.15
		21375	2562.5	1RB Low	1 Pos 0	0	1	18.00	17.53	16.79	21.00	20.22	19.39
				1RB Mid	1 Pos 38	0	1	18.00	17.64	16.91	21.00	20.31	19.46
				1RB High	1 Pos 74	0	1	18.00	17.65	16.91	21.00	20.28	19.32
				50% RB Low	38 Pos 0	1	2	18.00	16.66	15.68	21.00	19.26	18.31
				50% RB Mid	38 Pos 19	1	2	18.00	16.70	15.77	21.00	19.25	18.27
				50% RB High	38 Pos 39	1	2	18.00	16.74	15.81	21.00	19.24	18.28
				100% RB	75 Pos 0	1	2	18.00	16.76	15.71	21.00	19.29	18.26
				1RB High	1 Pos 49	0	1	18.00	17.72	16.89	21.00	20.30	19.39
				50% RB Low	25 Pos 0	1	2	18.00	16.71	15.76	21.00	19.31	18.33
				50% RB Mid	25 Pos 12	1	2	18.00	16.67	15.74	21.00	19.31	18.33
				50% RB High	25 Pos 24	1	2	18.00	16.76	15.79	21.00	19.32	18.31
				100% RB	50 Pos 0	1	2	18.00	16.76	15.70	21.00	19.30	18.29

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE7	10 MHz	20800	2505	1RB Low	1 Pos 0	0	1	18.00	17.51	16.74	21.00	20.20	19.48
				1RB Mid	1 Pos 24	0	1	18.00	17.58	16.77	21.00	20.19	19.52
				1RB High	1 Pos 49	0	1	18.00	17.55	16.77	21.00	20.16	19.53
				50% RB Low	25 Pos 0	1	2	18.00	16.55	15.59	21.00	19.19	18.26
				50% RB Mid	25 Pos 12	1	2	18.00	16.57	15.64	21.00	19.20	18.24
				50% RB High	25 Pos 24	1	2	18.00	16.58	15.66	21.00	19.20	18.26
				100% RB	50 Pos 0	1	2	18.00	16.57	15.57	21.00	19.20	18.21
		21100	2535	1RB Low	1 Pos 0	0	1	18.00	17.49	16.73	21.00	20.12	19.11
				1RB Mid	1 Pos 24	0	1	18.00	17.51	16.71	21.00	20.14	19.13
				1RB High	1 Pos 49	0	1	18.00	17.49	16.70	21.00	20.11	19.09
				50% RB Low	25 Pos 0	1	2	18.00	16.57	15.60	21.00	19.21	18.19
				50% RB Mid	25 Pos 12	1	2	18.00	16.51	15.64	21.00	19.13	18.16
				50% RB High	25 Pos 24	1	2	18.00	16.55	15.61	21.00	19.13	18.13
				100% RB	50 Pos 0	1	2	18.00	16.60	15.51	21.00	19.20	18.17
		21400	2565	1RB Low	1 Pos 0	0	1	18.00	17.58	16.82	21.00	20.30	19.42
				1RB Mid	1 Pos 24	0	1	18.00	17.68	16.87	21.00	20.33	19.40
				1RB High	1 Pos 49	0	1	18.00	17.72	16.89	21.00	20.30	19.39
				50% RB Low	25 Pos 0	1	2	18.00	16.71	15.76	21.00	19.31	18.33
				50% RB Mid	25 Pos 12	1	2	18.00	16.67	15.74	21.00	19.31	18.33
				50% RB High	25 Pos 24	1	2	18.00	16.76	15.79	21.00	19.32	18.31
				100% RB	50 Pos 0	1	2	18.00	16.76	15.70	21.00	19.30	18.29
	5 MHz	20775	2502.5	1RB Low	1 Pos 0	0	1	18.00	17.64	16.71	21.00	20.14	19.37
				1RB Mid	1 Pos 12	0	1	18.00	17.69	16.72	21.00	20.13	19.40
				1RB High	1 Pos 24	0	1	18.00	17.68	16.76	21.00	20.14	19.34
				50% RB Low	12 Pos 0	1	2	18.00	16.56	15.56	21.00	19.19	18.22
				50% RB Mid	12 Pos 6	1	2	18.00	16.58	15.57	21.00	19.16	18.15
				50% RB High	12 Pos 11	1	2	18.00	16.58	15.59	21.00	19.14	18.19
				100% RB	25 Pos 0	1	2	18.00	16.59	15.60	21.00	19.10	18.12
		21100	2535	1RB Low	1 Pos 0	0	1	18.00	17.61	16.65	21.00	20.22	18.97
				1RB Mid	1 Pos 12	0	1	18.00	17.61	16.67	21.00	20.23	19.47
				1RB High	1 Pos 24	0	1	18.00	17.58	16.67	21.00	20.24	18.93
				50% RB Low	12 Pos 0	1	2	18.00	16.59	15.58	21.00	19.34	18.25
				50% RB Mid	12 Pos 6	1	2	18.00	16.49	15.51	21.00	19.29	18.29
				50% RB High	12 Pos 11	1	2	18.00	16.51	15.54	21.00	19.34	18.24
				100% RB	25 Pos 0	1	2	18.00	16.51	15.52	21.00	19.28	18.25
		21425	2567.5	1RB Low	1 Pos 0	0	1	18.00	17.76	16.85	21.00	20.14	19.37
				1RB Mid	1 Pos 12	0	1	18.00	17.88	16.91	21.00	20.13	19.40
				1RB High	1 Pos 24	0	1	18.00	17.85	16.91	21.00	20.14	19.34
				50% RB Low	12 Pos 0	1	2	18.00	16.76	15.74	21.00	19.19	18.22
				50% RB Mid	12 Pos 6	1	2	18.00	16.75	15.75	21.00	19.16	18.15
				50% RB High	12 Pos 11	1	2	18.00	16.71	15.79	21.00	19.14	18.19
				100% RB	25 Pos 0	1	2	18.00	16.73	15.78	21.00	19.10	18.12

B.2.2.5 LTE Band 12 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE12	10 MHz	23095	707.5	1RB Low	1 Pos 0	0	1	23.00	22.50	21.72
				1RB Mid	1 Pos 24	0	1	23.00	22.56	21.75
				1RB High	1 Pos 49	0	1	23.00	22.53	21.74
				50% RB Low	25 Pos 0	1	2	23.00	21.54	20.61
				50% RB Mid	25 Pos 12	1	2	23.00	21.56	20.60
				50% RB High	25 Pos 24	1	2	23.00	21.56	20.64
				100% RB	50 Pos 0	1	2	23.00	21.56	20.54
	5.0 MHz	23035	701.5	1RB Low	1 Pos 0	0	1	23.00	22.62	21.70
				1RB Mid	1 Pos 12	0	1	23.00	22.70	21.74
				1RB High	1 Pos 24	0	1	23.00	22.66	21.74
				50% RB Low	12 Pos 0	1	2	23.00	21.57	20.64
				50% RB Mid	12 Pos 6	1	2	23.00	21.60	20.53
				50% RB High	12 Pos 11	1	2	23.00	21.53	20.60
				100% RB	25 Pos 0	1	2	23.00	21.53	20.54
		23095	707.5	1RB Low	1 Pos 0	0	1	23.00	22.61	22.00
				1RB Mid	1 Pos 12	0	1	23.00	22.63	22.00
				1RB High	1 Pos 24	0	1	23.00	22.62	22.00
				50% RB Low	12 Pos 0	1	2	23.00	21.57	20.46
				50% RB Mid	12 Pos 6	1	2	23.00	21.58	20.57
				50% RB High	12 Pos 11	1	2	23.00	21.59	20.48
				100% RB	25 Pos 0	1	2	23.00	21.55	20.45
		23155	713.5	1RB Low	1 Pos 0	0	1	23.00	22.59	21.56
				1RB Mid	1 Pos 12	0	1	23.00	22.64	21.62
				1RB High	1 Pos 24	0	1	23.00	22.62	21.67
				50% RB Low	12 Pos 0	1	2	23.00	21.62	20.72
				50% RB Mid	12 Pos 6	1	2	23.00	21.55	20.60
				50% RB High	12 Pos 11	1	2	23.00	21.56	20.61
				100% RB	25 Pos 0	1	2	23.00	21.50	20.62
	3.0 MHz	23025	700.5	1RB Low	1 Pos 0	0	1	23.00	22.54	21.73
				1RB Mid	1 Pos 7	0	1	23.00	22.53	21.76
				1RB High	1 Pos 14	0	1	23.00	22.53	21.77
				50% RB Low	8 Pos 0	1	2	23.00	21.53	20.74
				50% RB Mid	8 Pos 4	1	2	23.00	21.58	20.72
				50% RB High	8 Pos 7	1	2	23.00	21.50	20.75
				100% RB	15 Pos 0	1	2	23.00	21.53	20.58
		23095	707.5	1RB Low	1 Pos 0	0	1	23.00	22.55	21.75
				1RB Mid	1 Pos 7	0	1	23.00	22.51	21.74
				1RB High	1 Pos 14	0	1	23.00	22.47	21.73
				50% RB Low	8 Pos 0	1	2	23.00	21.51	20.69
				50% RB Mid	8 Pos 4	1	2	23.00	21.59	20.72
				50% RB High	8 Pos 7	1	2	23.00	21.53	20.67
				100% RB	15 Pos 0	1	2	23.00	21.56	20.54
		23165	714.5	1RB Low	1 Pos 0	0	1	23.00	22.54	21.72
				1RB Mid	1 Pos 7	0	1	23.00	22.53	21.75
				1RB High	1 Pos 14	0	1	23.00	22.53	21.73
				50% RB Low	8 Pos 0	1	2	23.00	21.53	20.73
				50% RB Mid	8 Pos 4	1	2	23.00	21.55	20.68
				50% RB High	8 Pos 7	1	2	23.00	21.51	20.73
				100% RB	15 Pos 0	1	2	23.00	21.51	20.53

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE12	1.4 MHz	23017	699.7	1RB Low	1 Pos 0	0	1	23.00	22.36	21.31
				1RB Mid	1 Pos 24	0	1	23.00	22.34	21.33
				1RB High	1 Pos 49	0	1	23.00	22.37	21.29
				50% RB Low	25 Pos 0	1	2	23.00	21.41	20.84
				50% RB Mid	25 Pos 12	1	2	23.00	21.45	20.84
				50% RB High	25 Pos 24	1	2	23.00	21.45	20.88
				100% RB	50 Pos 0	1	2	23.00	21.40	20.44
		23095	707.5	1RB Low	1 Pos 0	0	1	23.00	22.37	21.37
				1RB Mid	1 Pos 12	0	1	23.00	22.40	21.34
				1RB High	1 Pos 24	0	1	23.00	22.44	21.35
				50% RB Low	12 Pos 0	1	2	23.00	21.46	20.91
				50% RB Mid	12 Pos 6	1	2	23.00	21.50	20.87
				50% RB High	12 Pos 11	1	2	23.00	21.44	20.84
				100% RB	25 Pos 0	1	2	23.00	21.42	20.48
		23173	715.3	1RB Low	1 Pos 0	0	1	23.00	22.32	21.32
				1RB Mid	1 Pos 12	0	1	23.00	22.28	21.27
				1RB High	1 Pos 24	0	1	23.00	22.32	21.31
				50% RB Low	12 Pos 0	1	2	23.00	21.38	20.84
				50% RB Mid	12 Pos 6	1	2	23.00	21.44	20.86
				50% RB High	12 Pos 11	1	2	23.00	21.40	20.87
				100% RB	25 Pos 0	1	2	23.00	21.41	20.47

B.2.2.6 **LTE Band 13 FDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE13	10 MHz	23230	782	1RB Low	1 Pos 0	0	1	24.00	23.96	22.19
				1RB Mid	1 Pos 24	0	1	24.00	23.95	22.21
				1RB High	1 Pos 49	0	1	24.00	23.84	22.12
				50% RB Low	25 Pos 0	1	2	24.00	22.82	21.89
				50% RB Mid	25 Pos 12	1	2	24.00	22.90	21.98
				50% RB High	25 Pos 24	1	2	24.00	22.95	22.00
				100% RB	50 Pos 0	1	2	24.00	22.92	21.91
	5.0 MHz	23230	782	1RB Low	1 Pos 0	0	1	24.00	24.00	22.65
				1RB Mid	1 Pos 12	0	1	24.00	24.00	22.65
				1RB High	1 Pos 24	0	1	24.00	23.99	22.60
				50% RB Low	12 Pos 0	1	2	24.00	22.91	21.88
				50% RB Mid	12 Pos 6	1	2	24.00	22.89	21.92
				50% RB High	12 Pos 11	1	2	24.00	22.89	21.85
				100% RB	25 Pos 0	1	2	24.00	22.87	21.84

B.2.2.7 **LTE Band 14 FDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE14	10 MHz	23330	793	1RB Low	1 Pos 0	0	1	24.00	24.00	23.00
				1RB Mid	1 Pos 24	0	1	24.00	24.00	23.00
				1RB High	1 Pos 49	0	1	24.00	24.00	23.00
				50% RB Low	25 Pos 0	1	2	24.00	23.00	21.82
				50% RB Mid	25 Pos 12	1	2	24.00	23.00	21.83
				50% RB High	25 Pos 24	1	2	24.00	22.95	21.86
				100% RB	50 Pos 0	1	2	24.00	23.00	21.78
	5.0 MHz	23330	793	1RB Low	1 Pos 0	0	1	24.00	24.00	22.89
				1RB Mid	1 Pos 12	0	1	24.00	23.99	22.97
				1RB High	1 Pos 24	0	1	24.00	24.00	23.00
				50% RB Low	12 Pos 0	1	2	24.00	22.99	22.00
				50% RB Mid	12 Pos 6	1	2	24.00	22.98	21.99
				50% RB High	12 Pos 11	1	2	24.00	23.00	21.98
				100% RB	25 Pos 0	1	2	24.00	23.00	22.00

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B.2.2.8 LTE Band 17 FDD

SAR Measurement for LTE Band 17 FDD (Frequency range: 704 – 716MHz) is covered by LTE Band 12 FDD (Frequency range: 699 – 716MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.2.2.10 LTE Band 25 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	20 MHz	26140	1860.0	1RB Low	1 Pos 0	0	1	19.00	17.34	17.44	22.50	21.60	20.81
				1RB Mid	1 Pos 50	0	1	19.00	17.49	17.51	22.50	21.68	20.92
				1RB High	1 Pos 99	0	1	19.00	17.37	17.43	22.50	21.59	20.77
				50% RB Low	50 Pos 0	1	2	19.00	17.49	16.94	22.50	20.70	19.72
				50% RB Mid	50 Pos 24	1	2	19.00	17.51	17.00	22.50	20.76	19.79
				50% RB High	50 Pos 50	1	2	19.00	17.47	16.93	22.50	20.69	19.74
				100% RB	100 Pos 0	1	2	19.00	17.45	16.96	22.50	20.72	19.66
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.28	17.38	22.50	21.63	20.43
				1RB Mid	1 Pos 50	0	1	19.00	17.30	17.40	22.50	21.70	20.47
				1RB High	1 Pos 99	0	1	19.00	17.25	17.35	22.50	21.55	20.37
				50% RB Low	50 Pos 0	1	2	19.00	17.31	16.74	22.50	20.63	19.70
				50% RB Mid	50 Pos 24	1	2	19.00	17.39	16.86	22.50	20.70	19.73
				50% RB High	50 Pos 50	1	2	19.00	17.31	16.75	22.50	20.65	19.65
				100% RB	100 Pos 0	1	2	19.00	17.38	16.91	22.50	20.64	19.61
		26590	1905.0	1RB Low	1 Pos 0	0	1	19.00	17.27	17.71	22.50	21.70	20.50
				1RB Mid	1 Pos 50	0	1	19.00	17.36	17.82	22.50	21.74	20.54
				1RB High	1 Pos 99	0	1	19.00	17.22	17.27	22.50	21.24	20.50
				50% RB Low	50 Pos 0	1	2	19.00	17.35	16.80	22.50	20.67	19.66
				50% RB Mid	50 Pos 24	1	2	19.00	17.42	16.92	22.50	20.71	19.71
				50% RB High	50 Pos 50	1	2	19.00	17.27	16.73	22.50	20.53	19.53
				100% RB	100 Pos 0	1	2	19.00	17.34	16.85	22.50	20.65	19.66
	15 MHz	26115	1857.5	1RB Low	1 Pos 0	0	1	19.00	17.38	17.62	22.50	21.74	20.97
				1RB Mid	1 Pos 38	0	1	19.00	17.41	17.65	22.50	21.73	21.02
				1RB High	1 Pos 74	0	1	19.00	17.36	17.61	22.50	21.60	20.94
				50% RB Low	38 Pos 0	1	2	19.00	17.39	16.92	22.50	20.67	19.66
				50% RB Mid	38 Pos 19	1	2	19.00	17.45	17.00	22.50	20.70	19.71
				50% RB High	38 Pos 39	1	2	19.00	17.41	17.00	22.50	20.65	19.69
				100% RB	75 Pos 0	1	2	19.00	17.42	16.94	22.50	20.71	19.72
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.25	17.30	22.50	21.65	20.63
				1RB Mid	1 Pos 38	0	1	19.00	17.30	17.36	22.50	21.60	20.64
				1RB High	1 Pos 74	0	1	19.00	17.27	17.25	22.50	21.55	20.59
				50% RB Low	38 Pos 0	1	2	19.00	17.30	16.74	22.50	20.59	19.61
				50% RB Mid	38 Pos 19	1	2	19.00	17.34	16.89	22.50	20.64	19.61
				50% RB High	38 Pos 39	1	2	19.00	17.29	16.77	22.50	20.54	19.58
				100% RB	75 Pos 0	1	2	19.00	17.29	16.96	22.50	20.63	19.59
		26615	1907.5	1RB Low	1 Pos 0	0	1	19.00	17.20	17.49	22.50	21.55	20.74
				1RB Mid	1 Pos 38	0	1	19.00	17.32	17.60	22.50	21.67	20.78
				1RB High	1 Pos 74	0	1	19.00	17.27	17.55	22.50	21.29	20.69
				50% RB Low	38 Pos 0	1	2	19.00	17.37	16.86	22.50	20.64	19.69
				50% RB Mid	38 Pos 19	1	2	19.00	17.38	16.94	22.50	20.69	19.74
				50% RB High	38 Pos 39	1	2	19.00	17.35	16.86	22.50	20.61	19.64
				100% RB	75 Pos 0	1	2	19.00	17.33	16.90	22.50	20.65	19.68

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	10 MHz	26090	1855.0	1RB Low	1 Pos 0	0	1	19.00	17.45	17.63	22.50	21.76	21.03
				1RB Mid	1 Pos 24	0	1	19.00	17.46	17.66	22.50	21.75	21.03
				1RB High	1 Pos 49	0	1	19.00	17.45	17.66	22.50	21.68	21.01
				50% RB Low	25 Pos 0	1	2	19.00	17.43	17.00	22.50	20.70	19.81
				50% RB Mid	25 Pos 12	1	2	19.00	17.51	17.00	22.50	20.73	19.83
				50% RB High	25 Pos 24	1	2	19.00	17.43	17.00	22.50	20.74	19.81
				100% RB	50 Pos 0	1	2	19.00	17.42	16.89	22.50	20.73	19.72
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.30	17.55	22.50	21.68	20.51
				1RB Mid	1 Pos 24	0	1	19.00	17.37	17.64	22.50	21.73	20.50
				1RB High	1 Pos 49	0	1	19.00	17.35	17.57	22.50	21.65	20.45
				50% RB Low	25 Pos 0	1	2	19.00	17.33	16.99	22.50	20.68	19.66
				50% RB Mid	25 Pos 12	1	2	19.00	17.41	17.00	22.50	20.63	19.66
				50% RB High	25 Pos 24	1	2	19.00	17.35	17.00	22.50	20.66	19.63
				100% RB	50 Pos 0	1	2	19.00	17.39	16.86	22.50	20.69	19.66
		26640	1910.0	1RB Low	1 Pos 0	0	1	19.00	17.28	17.54	22.50	21.69	20.79
				1RB Mid	1 Pos 24	0	1	19.00	17.36	17.60	22.50	21.70	20.82
				1RB High	1 Pos 49	0	1	19.00	17.30	17.58	22.50	21.34	20.70
				50% RB Low	25 Pos 0	1	2	19.00	17.47	16.96	22.50	20.74	19.77
				50% RB Mid	25 Pos 12	1	2	19.00	17.37	16.95	22.50	20.66	19.71
				50% RB High	25 Pos 24	1	2	19.00	17.31	16.88	22.50	20.62	19.60
				100% RB	50 Pos 0	1	2	19.00	17.41	16.91	22.50	20.60	19.81
	5 MHz	26065	1852.5	1RB Low	1 Pos 0	0	1	19.00	17.57	17.62	22.50	21.86	21.01
				1RB Mid	1 Pos 50	0	1	19.00	17.61	17.62	22.50	21.83	20.98
				1RB High	1 Pos 99	0	1	19.00	17.59	17.64	22.50	21.85	21.02
				50% RB Low	50 Pos 0	1	2	19.00	17.46	16.99	22.50	20.75	19.73
				50% RB Mid	50 Pos 24	1	2	19.00	17.41	16.97	22.50	20.72	19.72
				50% RB High	50 Pos 50	1	2	19.00	17.49	17.00	22.50	20.77	19.70
				100% RB	100 Pos 0	1	2	19.00	17.46	16.72	22.50	20.72	19.70
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.34	17.74	22.50	21.59	20.90
				1RB Mid	1 Pos 50	0	1	19.00	17.37	17.76	22.50	21.60	20.86
				1RB High	1 Pos 99	0	1	19.00	17.35	16.76	22.50	21.57	20.87
				50% RB Low	50 Pos 0	1	2	19.00	17.35	16.86	22.50	20.64	19.65
				50% RB Mid	50 Pos 24	1	2	19.00	17.32	16.76	22.50	20.64	19.68
				50% RB High	50 Pos 50	1	2	19.00	17.33	16.70	22.50	20.61	19.66
				100% RB	100 Pos 0	1	2	19.00	17.27	16.42	22.50	20.59	19.63
		26665	1912.5	1RB Low	1 Pos 0	0	1	19.00	17.32	17.45	22.50	21.62	20.89
				1RB Mid	1 Pos 50	0	1	19.00	17.32	17.47	22.50	21.73	20.84
				1RB High	1 Pos 99	0	1	19.00	17.28	17.01	22.50	21.31	20.76
				50% RB Low	50 Pos 0	1	2	19.00	17.38	16.89	22.50	20.75	19.66
				50% RB Mid	50 Pos 24	1	2	19.00	17.34	16.97	22.50	20.70	19.64
				50% RB High	50 Pos 50	1	2	19.00	17.38	16.93	22.50	20.71	19.65
				100% RB	100 Pos 0	1	2	19.00	17.33	16.65	22.50	20.65	19.57

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	3 MHz	26055	1851.5	1RB Low	1 Pos 0	0	1	19.00	17.43	17.69	22.50	21.69	21.02
				1RB Mid	1 Pos 38	0	1	19.00	17.46	17.65	22.50	21.70	21.01
				1RB High	1 Pos 74	0	1	19.00	17.43	16.97	22.50	21.66	21.00
				50% RB Low	38 Pos 0	1	2	19.00	17.40	16.88	22.50	20.67	19.72
				50% RB Mid	38 Pos 19	1	2	19.00	17.45	16.79	22.50	20.70	19.75
				50% RB High	38 Pos 39	1	2	19.00	17.43	16.98	22.50	20.71	19.73
				100% RB	75 Pos 0	1	2	19.00	17.45	16.99	22.50	20.75	19.66
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.33	17.56	22.50	21.60	20.93
				1RB Mid	1 Pos 38	0	1	19.00	17.33	17.49	22.50	21.56	20.88
				1RB High	1 Pos 74	0	1	19.00	17.28	17.02	22.50	21.53	20.86
				50% RB Low	38 Pos 0	1	2	19.00	17.32	16.98	22.50	20.60	19.63
				50% RB Mid	38 Pos 19	1	2	19.00	17.28	17.00	22.50	20.58	19.58
				50% RB High	38 Pos 39	1	2	19.00	17.27	16.85	22.50	20.61	19.56
				100% RB	75 Pos 0	1	2	19.00	17.28	16.98	22.50	20.58	19.52
		26675	1913.5	1RB Low	1 Pos 0	0	1	19.00	17.32	17.58	22.50	21.67	20.94
				1RB Mid	1 Pos 38	0	1	19.00	17.38	17.53	22.50	21.62	20.97
				1RB High	1 Pos 74	0	1	19.00	17.35	17.00	22.50	21.18	20.82
				50% RB Low	38 Pos 0	1	2	19.00	17.30	17.00	22.50	20.70	19.73
				50% RB Mid	38 Pos 19	1	2	19.00	17.28	17.00	22.50	20.68	19.72
				50% RB High	38 Pos 39	1	2	19.00	17.26	16.89	22.50	20.64	19.66
				100% RB	75 Pos 0	1	2	19.00	17.32	16.91	22.50	20.68	19.62
	1.4 MHz	26047	1850.7	1RB Low	1 Pos 0	0	1	19.00	17.39	17.43	22.50	21.59	20.48
				1RB Mid	1 Pos 24	0	1	19.00	17.39	17.42	22.50	21.63	20.56
				1RB High	1 Pos 49	0	1	19.00	17.39	16.41	22.50	21.57	20.47
				50% RB Low	25 Pos 0	1	2	19.00	17.45	16.42	22.50	20.99	19.95
				50% RB Mid	25 Pos 12	1	2	19.00	17.47	16.40	22.50	21.01	19.95
				50% RB High	25 Pos 24	1	2	19.00	17.44	16.89	22.50	21.01	19.99
				100% RB	50 Pos 0	1	2	19.00	17.45	16.73	22.50	20.47	19.49
		26365	1882.5	1RB Low	1 Pos 0	0	1	19.00	17.22	17.27	22.50	21.44	20.35
				1RB Mid	1 Pos 24	0	1	19.00	17.23	17.26	22.50	21.51	20.44
				1RB High	1 Pos 49	0	1	19.00	17.22	16.82	22.50	21.47	20.38
				50% RB Low	25 Pos 0	1	2	19.00	17.29	16.80	22.50	20.89	20.08
				50% RB Mid	25 Pos 12	1	2	19.00	17.34	16.77	22.50	20.92	20.08
				50% RB High	25 Pos 24	1	2	19.00	17.29	16.94	22.50	20.89	20.06
				100% RB	50 Pos 0	1	2	19.00	17.33	16.61	22.50	20.38	19.61
		26683	1914.3	1RB Low	1 Pos 0	0	1	19.00	17.19	17.56	22.50	21.42	20.34
				1RB Mid	1 Pos 24	0	1	19.00	17.23	17.58	22.50	21.47	20.44
				1RB High	1 Pos 49	0	1	19.00	17.23	16.75	22.50	21.41	20.35
				50% RB Low	25 Pos 0	1	2	19.00	17.36	16.79	22.50	20.93	19.93
				50% RB Mid	25 Pos 12	1	2	19.00	17.38	16.83	22.50	20.95	19.94
				50% RB High	25 Pos 24	1	2	19.00	17.39	16.95	22.50	20.94	19.96
				100% RB	50 Pos 0	1	2	19.00	17.34	16.97	22.50	20.43	19.71

B.2.2.11 **LTE Band 26 FDD**

Band	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE26	15 MHz	26775	821.5	1RB Low	1 Pos 0	0	1	25.00	24.11	23.28
				1RB Mid	1 Pos 38	0	1	25.00	24.23	23.40
				1RB High	1 Pos 74	0	1	25.00	24.18	23.33
				50% RB Low	38 Pos 0	1	2	25.00	23.69	22.24
				50% RB Mid	38 Pos 19	1	2	25.00	23.72	22.25
				50% RB High	38 Pos 39	1	2	25.00	23.69	22.27
				100% RB	75 Pos 0	1	2	25.00	23.69	22.49
		26865	831.5	1RB Low	1 Pos 0	0	1	25.00	24.23	23.58
				1RB Mid	1 Pos 38	0	1	25.00	24.26	23.64
				1RB High	1 Pos 74	0	1	25.00	24.18	23.55
				50% RB Low	38 Pos 0	1	2	25.00	23.66	22.15
				50% RB Mid	38 Pos 19	1	2	25.00	23.67	22.17
				50% RB High	38 Pos 39	1	2	25.00	23.64	22.10
				100% RB	75 Pos 0	1	2	25.00	23.68	22.20
		26965	841.5	1RB Low	1 Pos 0	0	1	25.00	24.00	23.26
				1RB Mid	1 Pos 38	0	1	25.00	24.04	23.32
				1RB High	1 Pos 74	0	1	25.00	23.96	23.19
				50% RB Low	38 Pos 0	1	2	25.00	23.63	22.20
				50% RB Mid	38 Pos 19	1	2	25.00	23.60	22.19
				50% RB High	38 Pos 39	1	2	25.00	23.56	22.08
				100% RB	75 Pos 0	1	2	25.00	23.59	22.44
	10 MHz	26750	820	1RB Low	1 Pos 0	0	1	25.00	24.19	23.35
				1RB Mid	1 Pos 24	0	1	25.00	24.24	23.43
				1RB High	1 Pos 49	0	1	25.00	24.21	23.36
				50% RB Low	25 Pos 0	1	2	25.00	23.69	22.27
				50% RB Mid	25 Pos 12	1	2	25.00	23.77	22.33
				50% RB High	25 Pos 24	1	2	25.00	23.76	22.34
				100% RB	50 Pos 0	1	2	25.00	23.74	22.50
		26865	831.5	1RB Low	1 Pos 0	0	1	25.00	24.26	23.41
				1RB Mid	1 Pos 24	0	1	25.00	24.28	23.45
				1RB High	1 Pos 49	0	1	25.00	24.24	23.40
				50% RB Low	25 Pos 0	1	2	25.00	23.72	22.20
				50% RB Mid	25 Pos 12	1	2	25.00	23.70	22.17
				50% RB High	25 Pos 24	1	2	25.00	23.66	22.16
				100% RB	50 Pos 0	1	2	25.00	23.73	22.50
		26990	844	1RB Low	1 Pos 0	0	1	25.00	24.09	23.35
				1RB Mid	1 Pos 24	0	1	25.00	24.06	23.36
				1RB High	1 Pos 49	0	1	25.00	24.00	23.28
				50% RB Low	25 Pos 0	1	2	25.00	23.67	22.23
				50% RB Mid	25 Pos 12	1	2	25.00	23.63	22.19
				50% RB High	25 Pos 24	1	2	25.00	23.53	22.11
				100% RB	50 Pos 0	1	2	25.00	23.67	22.50

Band	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm)	Measured Output Power (dBm)	
						QPSK	16QAM	Antenna 5	QPSK	16-QAM
LTE26	5.0 MHz	26715	816.5	1RB Low	1 Pos 0	0	1	25.00	24.34	23.49
				1RB Mid	1 Pos 12	0	1	25.00	24.39	23.58
				1RB High	1 Pos 24	0	1	25.00	24.40	23.57
				50% RB Low	12 Pos 0	1	2	25.00	23.70	22.27
				50% RB Mid	12 Pos 6	1	2	25.00	23.75	22.33
				50% RB High	12 Pos 11	1	2	25.00	23.75	22.27
				100% RB	25 Pos 0	1	2	25.00	23.73	22.28
		26865	831.5	1RB Low	1 Pos 0	0	1	25.00	24.20	23.50
				1RB Mid	1 Pos 12	0	1	25.00	24.21	23.48
				1RB High	1 Pos 24	0	1	25.00	24.19	23.47
				50% RB Low	12 Pos 0	1	2	25.00	23.72	22.34
				50% RB Mid	12 Pos 6	1	2	25.00	23.70	22.21
				50% RB High	12 Pos 11	1	2	25.00	23.70	22.35
				100% RB	25 Pos 0	1	2	25.00	23.67	22.32
		27015	846.5	1RB Low	1 Pos 0	0	1	25.00	24.23	23.34
				1RB Mid	1 Pos 12	0	1	25.00	24.21	23.29
				1RB High	1 Pos 24	0	1	25.00	24.19	23.27
				50% RB Low	12 Pos 0	1	2	25.00	23.60	22.15
				50% RB Mid	12 Pos 6	1	2	25.00	23.60	22.13
				50% RB High	12 Pos 11	1	2	25.00	23.57	22.09
				100% RB	25 Pos 0	1	2	25.00	23.54	22.05
	3.0 MHz	26705	815.5	1RB Low	1 Pos 0	0	1	25.00	24.20	23.39
				1RB Mid	1 Pos 38	0	1	25.00	24.23	23.38
				1RB High	1 Pos 74	0	1	25.00	24.21	23.39
				50% RB Low	38 Pos 0	1	2	25.00	23.65	22.23
				50% RB Mid	38 Pos 19	1	2	25.00	23.68	22.23
				50% RB High	38 Pos 39	1	2	25.00	23.70	22.26
				100% RB	75 Pos 0	1	2	25.00	23.69	22.50
		26865	831.5	1RB Low	1 Pos 0	0	1	25.00	24.24	23.40
				1RB Mid	1 Pos 38	0	1	25.00	24.22	23.35
				1RB High	1 Pos 74	0	1	25.00	24.16	23.33
				50% RB Low	38 Pos 0	1	2	25.00	23.68	22.26
				50% RB Mid	38 Pos 19	1	2	25.00	23.64	22.22
				50% RB High	38 Pos 39	1	2	25.00	23.66	22.23
				100% RB	75 Pos 0	1	2	25.00	23.69	22.50
		27025	847.5	1RB Low	1 Pos 0	0	1	25.00	24.19	23.38
				1RB Mid	1 Pos 38	0	1	25.00	24.19	23.29
				1RB High	1 Pos 74	0	1	25.00	24.14	23.28
				50% RB Low	38 Pos 0	1	2	25.00	23.57	22.16
				50% RB Mid	38 Pos 19	1	2	25.00	23.54	22.11
				50% RB High	38 Pos 39	1	2	25.00	23.51	22.07
				100% RB	75 Pos 0	1	2	25.00	23.56	22.50

	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm)	Measured Output Power (dBm)	
						QPSK	16QAM	Antenna 5	QPSK	16-QAM
Band 26	1.4 MHz	26697	814.7	1RB Low	1 Pos 0	0	1	25.00	23.05	23.11
				1RB Mid	1 Pos 24	0	1	25.00	23.08	23.15
				1RB High	1 Pos 49	0	1	25.00	23.12	23.13
				50% RB Low	25 Pos 0	1	2	25.00	23.51	22.50
				50% RB Mid	25 Pos 12	1	2	25.00	23.51	22.48
				50% RB High	25 Pos 24	1	2	25.00	23.52	22.50
				100% RB	50 Pos 0	1	2	25.00	23.52	22.50
		26865	831.5	1RB Low	1 Pos 0	0	1	25.00	23.08	23.11
				1RB Mid	1 Pos 24	0	1	25.00	23.01	23.18
				1RB High	1 Pos 49	0	1	25.00	23.09	23.12
				50% RB Low	25 Pos 0	1	2	25.00	23.52	22.45
				50% RB Mid	25 Pos 12	1	2	25.00	23.53	22.50
				50% RB High	25 Pos 24	1	2	25.00	23.48	22.46
				100% RB	50 Pos 0	1	2	25.00	23.55	22.50
		27033	848.3	1RB Low	1 Pos 0	0	1	25.00	23.87	22.86
				1RB Mid	1 Pos 24	0	1	25.00	23.88	22.90
				1RB High	1 Pos 49	0	1	25.00	23.84	22.83
				50% RB Low	25 Pos 0	1	2	25.00	23.43	22.44
				50% RB Mid	25 Pos 12	1	2	25.00	23.47	22.42
				50% RB High	25 Pos 24	1	2	25.00	23.45	22.41
				100% RB	50 Pos 0	1	2	25.00	23.42	22.04

B.2.2.12 **LTE Band 30 FDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE30	10 MHz	27710	2310	1RB Low	1 Pos 0	0	1	18.00	16.96	16.19	22.00	21.26	20.50
				1RB Mid	1 Pos 50	0	1	18.00	16.95	16.20	22.00	21.24	20.46
				1RB High	1 Pos 99	0	1	18.00	16.93	16.17	22.00	21.20	20.48
				50% RB Low	50 Pos 0	1	2	18.00	16.97	16.00	22.00	20.20	19.28
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	16.00	22.00	20.22	19.27
				50% RB High	50 Pos 50	1	2	18.00	16.87	15.95	22.00	20.15	19.22
				100% RB	100 Pos 0	1	2	18.00	16.97	15.95	22.00	20.20	19.22
	5.0 MHz	27710	2310	1RB Low	1 Pos 0	0	1	18.00	16.99	16.12	22.00	21.21	20.47
				1RB Mid	1 Pos 38	0	1	18.00	16.98	16.11	22.00	21.20	20.45
				1RB High	1 Pos 74	0	1	18.00	16.95	16.14	22.00	21.21	20.43
				50% RB Low	38 Pos 0	1	2	18.00	17.00	16.00	22.00	20.21	19.15
				50% RB Mid	38 Pos 19	1	2	18.00	16.91	15.96	22.00	20.20	19.15
				50% RB High	38 Pos 39	1	2	18.00	16.88	15.97	22.00	20.12	19.12
				100% RB	75 Pos 0	1	2	18.00	16.94	15.91	22.00	20.17	19.07

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B.2.2.13 LTE Band 38 TDD

SAR Measurement for LTE Band 38 TDD (Frequency range: 2570 – 2620MHz) is covered by LTE Band 41 TDD (Frequency range: 2496 – 2690MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.2.2.14 **LTE Band 41 TDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	20 MHz	39750	2506	1RB Low	1 Pos 0	0	1	19.50	19.50	18.44	24.00	23.69	22.80
				1RB Mid	1 Pos 50	0	1	19.50	19.41	18.15	24.00	24.00	22.95
				1RB High	1 Pos 99	0	1	19.50	18.83	18.04	24.00	23.70	22.88
				50% RB Low	50 Pos 0	1	2	19.50	18.50	17.09	24.00	22.79	21.80
				50% RB Mid	50 Pos 24	1	2	19.50	18.41	17.43	24.00	23.00	21.84
				50% RB High	50 Pos 50	1	2	19.50	18.13	17.18	24.00	22.78	21.76
				100% RB	100 Pos 0	1	2	19.50	18.40	17.34	24.00	23.00	21.74
		40185	2549.5	1RB Low	1 Pos 0	0	1	19.50	17.22	16.45	24.00	23.18	22.06
				1RB Mid	1 Pos 50	0	1	19.50	17.38	16.56	24.00	24.00	21.96
				1RB High	1 Pos 99	0	1	19.50	17.72	16.60	24.00	23.01	22.04
				50% RB Low	50 Pos 0	1	2	19.50	16.84	15.85	24.00	22.47	21.49
				50% RB Mid	50 Pos 24	1	2	19.50	16.79	15.81	24.00	23.00	21.54
				50% RB High	50 Pos 50	1	2	19.50	16.78	15.79	24.00	22.47	21.55
				100% RB	100 Pos 0	1	2	19.50	16.77	15.77	24.00	23.00	21.46
		40620	2593	1RB Low	1 Pos 0	0	1	19.50	18.20	17.22	24.00	22.92	22.20
				1RB Mid	1 Pos 50	0	1	19.50	18.34	17.34	24.00	24.00	22.39
				1RB High	1 Pos 99	0	1	19.50	18.31	17.27	24.00	23.29	22.63
				50% RB Low	50 Pos 0	1	2	19.50	17.32	16.28	24.00	22.84	21.81
				50% RB Mid	50 Pos 24	1	2	19.50	17.34	16.31	24.00	23.00	21.80
				50% RB High	50 Pos 50	1	2	19.50	17.37	16.29	24.00	22.77	21.73
				100% RB	100 Pos 0	1	2	19.50	17.32	16.33	24.00	23.00	21.79
		41055	2636.5	1RB Low	1 Pos 0	0	1	19.50	18.46	17.57	24.00	23.50	22.70
				1RB Mid	1 Pos 38	0	1	19.50	17.91	17.53	24.00	24.00	22.57
				1RB High	1 Pos 74	0	1	19.50	17.71	17.32	24.00	22.74	22.10
				50% RB Low	38 Pos 0	1	2	19.50	17.56	16.57	24.00	22.55	21.53
				50% RB Mid	38 Pos 19	1	2	19.50	17.56	16.57	24.00	23.00	21.54
				50% RB High	38 Pos 39	1	2	19.50	17.59	16.55	24.00	22.41	21.45
				100% RB	75 Pos 0	1	2	19.50	17.56	16.56	24.00	23.00	21.46
		41490	2680	1RB Low	1 Pos 0	0	1	19.50	18.48	17.14	24.00	22.65	21.76
				1RB Mid	1 Pos 38	0	1	19.50	18.47	17.09	24.00	24.00	21.86
				1RB High	1 Pos 74	0	1	19.50	18.11	16.77	24.00	22.94	21.88
				50% RB Low	38 Pos 0	1	2	19.50	17.52	16.52	24.00	22.44	21.49
				50% RB Mid	38 Pos 19	1	2	19.50	17.45	16.43	24.00	23.00	21.41
				50% RB High	38 Pos 39	1	2	19.50	17.31	16.37	24.00	22.30	21.32
				100% RB	75 Pos 0	1	2	19.50	17.42	16.40	24.00	23.00	21.90

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	15 MHz	39750	2506	1RB Low	1 Pos 0	0	1	19.50	19.50	18.05	24.00	23.64	22.99
				1RB Mid	1 Pos 50	0	1	19.50	19.34	18.30	24.00	23.72	23.00
				1RB High	1 Pos 99	0	1	19.50	18.90	18.36	24.00	23.62	23.00
				50% RB Low	50 Pos 0	1	2	19.50	18.50	17.50	24.00	22.77	21.76
				50% RB Mid	50 Pos 24	1	2	19.50	18.40	17.37	24.00	22.80	21.79
				50% RB High	50 Pos 50	1	2	19.50	18.17	17.18	24.00	22.71	21.73
				100% RB	100 Pos 0	1	2	19.50	18.35	17.37	24.00	22.74	21.73
		40185	2549.5	1RB Low	1 Pos 0	0	1	19.50	17.26	16.77	24.00	23.19	22.43
				1RB Mid	1 Pos 50	0	1	19.50	17.34	16.81	24.00	22.93	22.28
				1RB High	1 Pos 99	0	1	19.50	17.67	16.92	24.00	23.07	22.26
				50% RB Low	50 Pos 0	1	2	19.50	16.72	15.77	24.00	22.41	21.34
				50% RB Mid	50 Pos 24	1	2	19.50	16.72	15.75	24.00	22.37	21.43
				50% RB High	50 Pos 50	1	2	19.50	16.76	15.74	24.00	22.47	21.46
				100% RB	100 Pos 0	1	2	19.50	16.77	15.76	24.00	22.42	21.44
		40620	2593	1RB Low	1 Pos 0	0	1	19.50	18.26	17.32	24.00	23.08	22.35
				1RB Mid	1 Pos 50	0	1	19.50	18.34	17.39	24.00	23.16	22.42
				1RB High	1 Pos 99	0	1	19.50	18.32	17.33	24.00	23.27	22.60
				50% RB Low	50 Pos 0	1	2	19.50	17.31	16.31	24.00	22.81	21.81
				50% RB Mid	50 Pos 24	1	2	19.50	17.28	16.32	24.00	22.74	21.80
				50% RB High	50 Pos 50	1	2	19.50	17.27	16.35	24.00	22.72	21.81
				100% RB	100 Pos 0	1	2	19.50	17.28	16.26	24.00	22.78	21.75
		41055	2636.5	1RB Low	1 Pos 0	0	1	19.50	18.36	17.72	24.00	23.49	22.87
				1RB Mid	1 Pos 38	0	1	19.50	17.88	17.49	24.00	23.21	22.69
				1RB High	1 Pos 74	0	1	19.50	17.80	17.49	24.00	22.74	22.40
				50% RB Low	38 Pos 0	1	2	19.50	17.54	16.53	24.00	22.52	21.51
				50% RB Mid	38 Pos 19	1	2	19.50	17.51	16.50	24.00	22.40	21.48
				50% RB High	38 Pos 39	1	2	19.50	17.51	16.50	24.00	22.44	21.41
				100% RB	75 Pos 0	1	2	19.50	17.52	16.53	24.00	22.46	21.47
		41490	2680	1RB Low	1 Pos 0	0	1	19.50	18.55	17.64	24.00	22.71	22.12
				1RB Mid	1 Pos 38	0	1	19.50	18.32	17.47	24.00	22.90	22.15
				1RB High	1 Pos 74	0	1	19.50	18.17	17.24	24.00	23.02	22.27
				50% RB Low	38 Pos 0	1	2	19.50	17.41	16.41	24.00	22.42	21.40
				50% RB Mid	38 Pos 19	1	2	19.50	17.36	16.33	24.00	22.37	21.37
				50% RB High	38 Pos 39	1	2	19.50	17.32	16.29	24.00	22.34	21.33
				100% RB	75 Pos 0	1	2	19.50	17.40	16.34	24.00	22.36	21.34

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	10 MHz	39750	2506	1RB Low	1 Pos 0	0	1	19.50	19.50	18.49	24.00	23.70	23.00
				1RB Mid	1 Pos 50	0	1	19.50	19.38	18.36	24.00	23.76	22.64
				1RB High	1 Pos 99	0	1	19.50	19.08	18.50	24.00	23.67	23.00
				50% RB Low	50 Pos 0	1	2	19.50	18.49	17.50	24.00	22.80	21.88
				50% RB Mid	50 Pos 24	1	2	19.50	18.39	17.50	24.00	22.75	21.82
				50% RB High	50 Pos 50	1	2	19.50	18.31	17.37	24.00	22.79	21.84
				100% RB	100 Pos 0	1	2	19.50	18.42	17.41	24.00	22.78	21.77
		40185	2549.5	1RB Low	1 Pos 0	0	1	19.50	17.29	16.66	24.00	23.01	22.27
				1RB Mid	1 Pos 50	0	1	19.50	17.35	16.64	24.00	23.01	22.22
				1RB High	1 Pos 99	0	1	19.50	17.53	16.76	24.00	23.06	22.27
				50% RB Low	50 Pos 0	1	2	19.50	16.73	15.81	24.00	22.42	21.39
				50% RB Mid	50 Pos 24	1	2	19.50	16.77	15.78	24.00	22.43	21.47
				50% RB High	50 Pos 50	1	2	19.50	16.81	15.79	24.00	22.44	21.48
				100% RB	100 Pos 0	1	2	19.50	16.82	15.77	24.00	22.47	21.43
		40620	2593	1RB Low	1 Pos 0	0	1	19.50	18.33	17.40	24.00	23.12	22.51
				1RB Mid	1 Pos 50	0	1	19.50	18.37	17.40	24.00	23.23	22.48
				1RB High	1 Pos 99	0	1	19.50	18.37	17.38	24.00	23.42	22.62
				50% RB Low	50 Pos 0	1	2	19.50	17.33	16.37	24.00	22.84	21.82
				50% RB Mid	50 Pos 24	1	2	19.50	17.27	16.33	24.00	22.72	21.78
				50% RB High	50 Pos 50	1	2	19.50	17.35	16.37	24.00	22.75	21.86
				100% RB	100 Pos 0	1	2	19.50	17.36	16.33	24.00	22.80	21.77
		41055	2636.5	1RB Low	1 Pos 0	0	1	19.50	18.19	17.63	24.00	23.51	22.80
				1RB Mid	1 Pos 38	0	1	19.50	17.92	17.55	24.00	23.28	22.68
				1RB High	1 Pos 74	0	1	19.50	17.86	17.57	24.00	23.07	22.64
				50% RB Low	38 Pos 0	1	2	19.50	17.53	16.61	24.00	22.45	21.59
				50% RB Mid	38 Pos 19	1	2	19.50	17.51	16.60	24.00	22.41	21.50
				50% RB High	38 Pos 39	1	2	19.50	17.52	16.63	24.00	22.42	21.50
				100% RB	75 Pos 0	1	2	19.50	17.54	16.55	24.00	22.51	21.49
		41490	2680	1RB Low	1 Pos 0	0	1	19.50	18.54	17.44	24.00	22.80	22.07
				1RB Mid	1 Pos 38	0	1	19.50	18.44	17.34	24.00	22.94	22.08
				1RB High	1 Pos 74	0	1	19.50	18.31	17.25	24.00	23.04	22.19
				50% RB Low	38 Pos 0	1	2	19.50	17.44	16.44	24.00	22.40	21.41
				50% RB Mid	38 Pos 19	1	2	19.50	17.38	16.40	24.00	22.38	21.38
				50% RB High	38 Pos 39	1	2	19.50	17.39	16.40	24.00	22.40	21.43
				100% RB	75 Pos 0	1	2	19.50	17.41	16.40	24.00	22.42	21.42

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	5 MHz	39750	2506	1RB Low	1 Pos 0	0	1	19.50	19.48	18.43	24.00	23.77	22.96
				1RB Mid	1 Pos 50	0	1	19.50	19.32	18.31	24.00	23.77	22.88
				1RB High	1 Pos 99	0	1	19.50	19.21	18.12	24.00	23.80	22.89
				50% RB Low	50 Pos 0	1	2	19.50	18.43	17.44	24.00	22.78	21.62
				50% RB Mid	50 Pos 24	1	2	19.50	18.41	17.44	24.00	22.70	21.70
				50% RB High	50 Pos 50	1	2	19.50	18.39	17.39	24.00	22.71	21.66
				100% RB	100 Pos 0	1	2	19.50	18.36	17.35	24.00	22.67	21.63
		40185	2549.5	1RB Low	1 Pos 0	0	1	19.50	17.23	16.84	24.00	23.08	22.64
				1RB Mid	1 Pos 50	0	1	19.50	17.32	16.88	24.00	23.09	22.62
				1RB High	1 Pos 99	0	1	19.50	17.45	16.86	24.00	23.17	22.55
				50% RB Low	50 Pos 0	1	2	19.50	16.73	15.76	24.00	22.39	21.34
				50% RB Mid	50 Pos 24	1	2	19.50	16.78	15.78	24.00	22.43	21.41
				50% RB High	50 Pos 50	1	2	19.50	16.76	15.81	24.00	22.42	21.36
				100% RB	100 Pos 0	1	2	19.50	16.73	15.75	24.00	22.42	21.38
		40620	2593	1RB Low	1 Pos 0	0	1	19.50	18.33	17.67	24.00	23.23	22.69
				1RB Mid	1 Pos 50	0	1	19.50	18.30	17.66	24.00	23.24	22.70
				1RB High	1 Pos 99	0	1	19.50	18.34	17.66	24.00	23.33	22.85
				50% RB Low	50 Pos 0	1	2	19.50	17.33	16.25	24.00	22.77	21.82
				50% RB Mid	50 Pos 24	1	2	19.50	17.34	16.35	24.00	22.75	21.76
				50% RB High	50 Pos 50	1	2	19.50	17.29	16.24	24.00	22.75	21.76
				100% RB	100 Pos 0	1	2	19.50	17.29	16.24	24.00	22.74	21.75
		41055	2636.5	1RB Low	1 Pos 0	0	1	19.50	18.03	17.70	24.00	23.52	22.68
				1RB Mid	1 Pos 38	0	1	19.50	17.90	17.56	24.00	23.36	22.54
				1RB High	1 Pos 74	0	1	19.50	17.89	17.55	24.00	23.32	22.57
				50% RB Low	38 Pos 0	1	2	19.50	17.54	16.61	24.00	22.42	21.40
				50% RB Mid	38 Pos 19	1	2	19.50	17.53	16.51	24.00	22.41	21.39
				50% RB High	38 Pos 39	1	2	19.50	17.48	16.53	24.00	22.40	21.36
				100% RB	75 Pos 0	1	2	19.50	17.46	16.51	24.00	22.39	21.34
		41490	2680	1RB Low	1 Pos 0	0	1	19.50	18.46	17.68	24.00	22.91	22.38
				1RB Mid	1 Pos 38	0	1	19.50	18.39	17.64	24.00	22.98	22.44
				1RB High	1 Pos 74	0	1	19.50	18.43	17.58	24.00	23.03	22.51
				50% RB Low	38 Pos 0	1	2	19.50	17.43	16.34	24.00	22.37	21.38
				50% RB Mid	38 Pos 19	1	2	19.50	17.38	16.37	24.00	22.38	21.40
				50% RB High	38 Pos 39	1	2	19.50	17.37	16.31	24.00	22.36	21.35
				100% RB	75 Pos 0	1	2	19.50	17.36	16.31	24.00	22.35	21.33

B.2.2.15 **LTE Band 48 TDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5	
						QPSK	16QAM		QPSK	16-QAM
LTE48	20 MHz	55340	3560	1RB Low	1 Pos 0	0	1	19.50	18.73	17.74
				1RB Mid	1 Pos 50	0	1	19.50	18.78	17.80
				1RB High	1 Pos 99	0	1	19.50	18.54	17.57
				50% RB Low	50 Pos 0	1	2	19.50	17.72	16.80
				50% RB Mid	50 Pos 24	1	2	19.50	17.85	16.82
				50% RB High	50 Pos 50	1	2	19.50	17.86	16.88
				100% RB	100 Pos 0	1	2	19.50	17.79	16.79
		55990	3625	1RB Low	1 Pos 0	0	1	19.50	18.39	17.95
				1RB Mid	1 Pos 50	0	1	19.50	18.90	18.13
				1RB High	1 Pos 99	0	1	19.50	18.55	18.15
				50% RB Low	50 Pos 0	1	2	19.50	17.57	16.56
				50% RB Mid	50 Pos 24	1	2	19.50	17.80	16.51
				50% RB High	50 Pos 50	1	2	19.50	17.58	16.58
				100% RB	100 Pos 0	1	2	19.50	17.65	16.83
		56640	3690	1RB Low	1 Pos 0	0	1	19.50	18.56	17.94
				1RB Mid	1 Pos 50	0	1	19.50	18.74	18.13
				1RB High	1 Pos 99	0	1	19.50	18.78	18.19
				50% RB Low	50 Pos 0	1	2	19.50	17.74	16.74
				50% RB Mid	50 Pos 24	1	2	19.50	17.75	16.74
				50% RB High	50 Pos 50	1	2	19.50	17.78	16.77
				100% RB	100 Pos 0	1	2	19.50	17.93	16.94
	15 MHz	55315	3557.5	1RB Low	1 Pos 0	0	1	19.50	18.72	17.93
				1RB Mid	1 Pos 38	0	1	19.50	18.54	17.79
				1RB High	1 Pos 74	0	1	19.50	18.47	17.75
				50% RB Low	38 Pos 0	1	2	19.50	17.77	16.82
				50% RB Mid	38 Pos 19	1	2	19.50	17.77	16.84
				50% RB High	38 Pos 39	1	2	19.50	17.83	16.89
				100% RB	75 Pos 0	1	2	19.50	17.83	16.80
		55990	3625	1RB Low	1 Pos 0	0	1	19.50	18.59	17.83
				1RB Mid	1 Pos 38	0	1	19.50	18.74	17.98
				1RB High	1 Pos 74	0	1	19.50	18.73	17.97
				50% RB Low	38 Pos 0	1	2	19.50	17.72	16.70
				50% RB Mid	38 Pos 19	1	2	19.50	17.74	16.80
				50% RB High	38 Pos 39	1	2	19.50	17.79	16.84
				100% RB	75 Pos 0	1	2	19.50	17.76	16.80
		55665	3692.5	1RB Low	1 Pos 0	0	1	19.50	18.48	17.48
				1RB Mid	1 Pos 38	0	1	19.50	18.50	17.55
				1RB High	1 Pos 74	0	1	19.50	18.49	17.52
				50% RB Low	38 Pos 0	1	2	19.50	17.51	16.56
				50% RB Mid	38 Pos 19	1	2	19.50	17.54	16.57
				50% RB High	38 Pos 39	1	2	19.50	17.52	16.61
				100% RB	75 Pos 0	1	2	19.50	17.55	16.54

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5	
						QPSK	16QAM		QPSK	16-QAM
LTE48	10 MHz	55290	3555	1RB Low	1 Pos 0	0	1	19.50	18.76	17.96
				1RB Mid	1 Pos 24	0	1	19.50	18.58	17.79
				1RB High	1 Pos 49	0	1	19.50	18.57	17.79
				50% RB Low	25 Pos 0	1	2	19.50	17.75	16.86
				50% RB Mid	25 Pos 12	1	2	19.50	17.80	16.91
				50% RB High	25 Pos 24	1	2	19.50	17.81	16.94
				100% RB	50 Pos 0	1	2	19.50	17.84	16.85
		55990	3625	1RB Low	1 Pos 0	0	1	19.50	18.48	17.78
				1RB Mid	1 Pos 24	0	1	19.50	18.60	17.84
				1RB High	1 Pos 49	0	1	19.50	18.54	17.78
				50% RB Low	25 Pos 0	1	2	19.50	17.55	16.69
				50% RB Mid	25 Pos 12	1	2	19.50	17.57	16.70
				50% RB High	25 Pos 24	1	2	19.50	17.56	16.71
				100% RB	50 Pos 0	1	2	19.50	17.59	16.57
		56690	3695	1RB Low	1 Pos 0	0	1	19.50	18.68	17.93
				1RB Mid	1 Pos 24	0	1	19.50	18.75	17.96
				1RB High	1 Pos 49	0	1	19.50	18.75	18.04
				50% RB Low	25 Pos 0	1	2	19.50	17.73	16.79
				50% RB Mid	25 Pos 12	1	2	19.50	17.71	16.80
				50% RB High	25 Pos 24	1	2	19.50	17.81	16.87
				100% RB	50 Pos 0	1	2	19.50	17.77	16.77
	5 MHz	55265	3552.5	1RB Low	1 Pos 0	0	1	19.50	18.91	17.96
				1RB Mid	1 Pos 50	0	1	19.50	18.96	17.95
				1RB High	1 Pos 99	0	1	19.50	18.74	17.84
				50% RB Low	50 Pos 0	1	2	19.50	17.81	16.91
				50% RB Mid	50 Pos 24	1	2	19.50	17.86	16.83
				50% RB High	50 Pos 50	1	2	19.50	17.84	16.88
				100% RB	100 Pos 0	1	2	19.50	17.85	16.89
		55990	3625	1RB Low	1 Pos 0	0	1	19.50	18.56	18.01
				1RB Mid	1 Pos 50	0	1	19.50	18.56	18.02
				1RB High	1 Pos 99	0	1	19.50	18.61	18.04
				50% RB Low	50 Pos 0	1	2	19.50	17.60	16.51
				50% RB Mid	50 Pos 24	1	2	19.50	17.54	16.58
				50% RB High	50 Pos 50	1	2	19.50	17.57	16.47
				100% RB	100 Pos 0	1	2	19.50	17.54	16.43
		56715	3697.5	1RB Low	1 Pos 0	0	1	19.50	18.78	17.82
				1RB Mid	1 Pos 50	0	1	19.50	18.83	17.88
				1RB High	1 Pos 99	0	1	19.50	18.85	17.92
				50% RB Low	50 Pos 0	1	2	19.50	17.83	16.92
				50% RB Mid	50 Pos 24	1	2	19.50	17.80	16.85
				50% RB High	50 Pos 50	1	2	19.50	17.78	16.91
				100% RB	75 Pos 0	1	2	19.50	17.55	16.54

B.2.2.16 **LTE Band 66 FDD**

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	20 MHz	132072	1720	1RB Low	1 Pos 0	0	1	21.50	20.79	19.41	21.50	20.26	19.41
				1RB Mid	1 Pos 50	0	1	21.50	20.83	19.41	21.50	20.40	19.59
				1RB High	1 Pos 99	0	1	21.50	20.81	19.52	21.50	20.36	19.53
				50% RB Low	50 Pos 0	1	2	21.50	19.88	19.40	21.50	19.37	18.34
				50% RB Mid	50 Pos 24	1	2	21.50	20.00	19.50	21.50	19.42	18.42
				50% RB High	50 Pos 50	1	2	21.50	19.97	19.46	21.50	19.42	18.42
				100% RB	100 Pos 0	1	2	21.50	20.43	19.40	21.50	19.36	18.32
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.83	19.83	21.50	20.43	19.26
				1RB Mid	1 Pos 50	0	1	21.50	20.78	19.90	21.50	20.51	19.31
				1RB High	1 Pos 99	0	1	21.50	20.40	19.84	21.50	20.36	19.15
				50% RB Low	50 Pos 0	1	2	21.50	19.98	19.45	21.50	19.60	18.67
				50% RB Mid	50 Pos 24	1	2	21.50	20.00	19.42	21.50	19.56	18.58
				50% RB High	50 Pos 50	1	2	21.50	19.92	19.38	21.50	19.50	18.52
				100% RB	100 Pos 0	1	2	21.50	20.00	19.48	21.50	19.52	18.53
		132572	1770	1RB Low	1 Pos 0	0	1	21.50	20.66	19.50	21.50	20.44	19.37
				1RB Mid	1 Pos 50	0	1	21.50	20.71	19.55	21.50	20.43	19.41
				1RB High	1 Pos 99	0	1	21.50	20.58	19.45	21.50	20.27	19.23
				50% RB Low	50 Pos 0	1	2	21.50	19.84	19.36	21.50	19.40	18.36
				50% RB Mid	50 Pos 24	1	2	21.50	20.00	19.39	21.50	19.47	18.44
				50% RB High	50 Pos 50	1	2	21.50	19.87	18.67	21.50	19.35	18.33
				100% RB	100 Pos 0	1	2	21.50	19.88	19.40	21.50	19.45	18.44
	15 MHz	132047	1717.5	1RB Low	1 Pos 0	0	1	21.50	20.63	20.36	21.50	20.29	19.50
				1RB Mid	1 Pos 38	0	1	21.50	20.73	20.41	21.50	20.34	19.60
				1RB High	1 Pos 74	0	1	21.50	20.73	20.42	21.50	20.32	19.60
				50% RB Low	38 Pos 0	1	2	21.50	19.80	19.38	21.50	19.31	18.26
				50% RB Mid	38 Pos 19	1	2	21.50	19.91	19.50	21.50	19.32	18.31
				50% RB High	38 Pos 39	1	2	21.50	19.92	18.25	21.50	19.37	18.37
				100% RB	75 Pos 0	1	2	21.50	20.39	19.40	21.50	19.33	18.31
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.67	20.12	21.50	20.55	19.49
				1RB Mid	1 Pos 38	0	1	21.50	20.71	20.17	21.50	20.53	19.54
				1RB High	1 Pos 74	0	1	21.50	20.64	19.65	21.50	20.40	19.42
				50% RB Low	38 Pos 0	1	2	21.50	20.27	19.30	21.50	19.55	18.55
				50% RB Mid	38 Pos 19	1	2	21.50	20.25	19.24	21.50	19.52	18.47
				50% RB High	38 Pos 39	1	2	21.50	20.20	19.28	21.50	19.45	18.46
				100% RB	75 Pos 0	1	2	21.50	20.23	19.18	21.50	19.53	18.50
		132597	1772.5	1RB Low	1 Pos 0	0	1	21.50	20.69	20.26	21.50	20.43	19.60
				1RB Mid	1 Pos 38	0	1	21.50	20.69	20.12	21.50	20.43	19.56
				1RB High	1 Pos 74	0	1	21.50	20.70	19.24	21.50	20.30	19.44
				50% RB Low	38 Pos 0	1	2	21.50	19.60	19.12	21.50	19.43	18.45
				50% RB Mid	38 Pos 19	1	2	21.50	19.66	19.19	21.50	19.45	18.48
				50% RB High	38 Pos 39	1	2	21.50	19.59	19.17	21.50	19.30	18.36
				100% RB	75 Pos 0	1	2	21.50	19.64	19.17	21.50	19.42	18.40

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	10 MHz	132022	1715	1RB Low	1 Pos 0	0	1	21.50	20.21	19.44	21.50	20.34	19.54
				1RB Mid	1 Pos 24	0	1	21.50	20.24	19.43	21.50	20.36	19.59
				1RB High	1 Pos 49	0	1	21.50	20.25	19.98	21.50	20.36	19.63
				50% RB Low	25 Pos 0	1	2	21.50	19.63	19.21	21.50	19.33	18.33
				50% RB Mid	25 Pos 12	1	2	21.50	19.69	19.26	21.50	19.34	18.41
				50% RB High	25 Pos 24	1	2	21.50	19.74	19.30	21.50	19.31	18.42
				100% RB	50 Pos 0	1	2	21.50	20.26	19.24	21.50	19.35	18.34
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.16	19.77	21.50	20.51	19.47
				1RB Mid	1 Pos 24	0	1	21.50	20.17	19.79	21.50	20.53	19.47
				1RB High	1 Pos 49	0	1	21.50	20.15	19.80	21.50	20.50	19.41
				50% RB Low	25 Pos 0	1	2	21.50	20.25	19.36	21.50	19.49	18.54
				50% RB Mid	25 Pos 12	1	2	21.50	20.17	19.32	21.50	19.46	18.48
				50% RB High	25 Pos 24	1	2	21.50	20.21	19.31	21.50	19.52	18.51
				100% RB	50 Pos 0	1	2	21.50	20.26	19.24	21.50	19.55	18.52
		132622	1775	1RB Low	1 Pos 0	0	1	21.50	20.59	19.80	21.50	20.48	19.58
				1RB Mid	1 Pos 24	0	1	21.50	20.61	19.80	21.50	20.46	19.56
				1RB High	1 Pos 49	0	1	21.50	20.54	19.76	21.50	20.39	19.50
				50% RB Low	25 Pos 0	1	2	21.50	19.64	19.20	21.50	19.48	18.50
				50% RB Mid	25 Pos 12	1	2	21.50	19.61	19.23	21.50	19.47	18.48
				50% RB High	25 Pos 24	1	2	21.50	19.61	19.18	21.50	19.32	18.33
				100% RB	50 Pos 0	1	2	21.50	19.66	19.14	21.50	19.47	18.43
	5.0 MHz	131997	1712.5	1RB Low	1 Pos 0	0	1	21.50	20.79	20.40	21.50	20.28	19.53
				1RB Mid	1 Pos 50	0	1	21.50	20.79	20.40	21.50	20.28	19.47
				1RB High	1 Pos 99	0	1	21.50	20.82	20.45	21.50	20.34	19.57
				50% RB Low	50 Pos 0	1	2	21.50	19.67	19.21	21.50	19.28	18.31
				50% RB Mid	50 Pos 24	1	2	21.50	20.20	18.71	21.50	19.32	18.34
				50% RB High	50 Pos 50	1	2	21.50	19.71	19.26	21.50	19.27	18.26
				100% RB	100 Pos 0	1	2	21.50	19.69	19.25	21.50	19.28	18.27
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.71	20.01	21.50	20.50	19.72
				1RB Mid	1 Pos 50	0	1	21.50	20.75	20.03	21.50	20.48	19.72
				1RB High	1 Pos 99	0	1	21.50	20.71	20.05	21.50	20.49	19.61
				50% RB Low	50 Pos 0	1	2	21.50	20.27	19.22	21.50	19.53	18.57
				50% RB Mid	50 Pos 24	1	2	21.50	20.26	19.31	21.50	19.50	18.51
				50% RB High	50 Pos 50	1	2	21.50	20.25	19.14	21.50	19.46	18.49
				100% RB	100 Pos 0	1	2	21.50	20.22	19.13	21.50	19.40	18.45
		132647	1777.5	1RB Low	1 Pos 0	0	1	21.50	20.59	19.50	21.50	20.48	19.65
				1RB Mid	1 Pos 50	0	1	21.50	20.54	19.50	21.50	20.41	19.61
				1RB High	1 Pos 99	0	1	21.50	20.57	19.50	21.50	20.43	19.61
				50% RB Low	50 Pos 0	1	2	21.50	19.61	19.23	21.50	19.46	18.42
				50% RB Mid	50 Pos 24	1	2	21.50	19.60	19.14	21.50	19.40	18.34
				50% RB High	50 Pos 50	1	2	21.50	19.57	19.17	21.50	19.42	18.36
				100% RB	100 Pos 0	1	2	21.50	19.58	19.19	21.50	19.37	18.30

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	3.0 MHz	131987	1711.5	1RB Low	1 Pos 0	0	1	21.50	20.68	19.39	21.50	20.33	19.60
				1RB Mid	1 Pos 38	0	1	21.50	20.67	19.40	21.50	20.28	19.61
				1RB High	1 Pos 74	0	1	21.50	20.66	19.40	21.50	20.31	19.62
				50% RB Low	38 Pos 0	1	2	21.50	19.68	19.36	21.50	19.28	18.32
				50% RB Mid	38 Pos 19	1	2	21.50	19.70	19.37	21.50	19.28	18.34
				50% RB High	38 Pos 39	1	2	21.50	19.70	19.37	21.50	19.30	18.33
				100% RB	75 Pos 0	1	2	21.50	20.16	19.20	21.50	19.29	18.25
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.75	19.96	21.50	20.54	19.71
				1RB Mid	1 Pos 38	0	1	21.50	20.75	19.93	21.50	20.52	19.72
				1RB High	1 Pos 74	0	1	21.50	20.73	19.90	21.50	20.51	19.68
				50% RB Low	38 Pos 0	1	2	21.50	20.21	19.39	21.50	19.50	18.54
				50% RB Mid	38 Pos 19	1	2	21.50	20.17	19.37	21.50	19.47	18.48
				50% RB High	38 Pos 39	1	2	21.50	20.20	19.34	21.50	19.44	18.46
				100% RB	75 Pos 0	1	2	21.50	20.19	19.24	21.50	19.48	18.44
		132657	1778.5	1RB Low	1 Pos 0	0	1	21.50	20.61	20.30	21.50	20.41	19.72
				1RB Mid	1 Pos 38	0	1	21.50	20.59	20.30	21.50	20.39	19.71
				1RB High	1 Pos 74	0	1	21.50	20.58	20.28	21.50	20.36	19.68
				50% RB Low	38 Pos 0	1	2	21.50	19.63	19.29	21.50	19.38	18.43
				50% RB Mid	38 Pos 19	1	2	21.50	19.57	19.27	21.50	19.40	18.42
				50% RB High	38 Pos 39	1	2	21.50	19.57	19.14	21.50	19.38	18.39
				100% RB	75 Pos 0	1	2	21.50	19.57	19.18	21.50	19.41	18.35
	1.4 MHz	131979	1710	1RB Low	1 Pos 0	0	1	21.50	20.55	20.35	21.50	20.40	19.27
				1RB Mid	1 Pos 24	0	1	21.50	20.66	20.36	21.50	20.42	19.37
				1RB High	1 Pos 49	0	1	21.50	20.64	20.36	21.50	20.40	19.27
				50% RB Low	25 Pos 0	1	2	21.50	20.37	19.42	21.50	19.82	18.47
				50% RB Mid	25 Pos 12	1	2	21.50	20.47	19.42	21.50	19.81	18.44
				50% RB High	25 Pos 24	1	2	21.50	20.38	19.41	21.50	19.83	18.47
				100% RB	50 Pos 0	1	2	21.50	20.45	19.25	21.50	19.29	18.31
		132422	1755	1RB Low	1 Pos 0	0	1	21.50	20.69	19.40	21.50	20.38	19.50
				1RB Mid	1 Pos 24	0	1	21.50	20.70	19.44	21.50	20.44	19.57
				1RB High	1 Pos 49	0	1	21.50	20.70	19.41	21.50	20.33	19.51
				50% RB Low	25 Pos 0	1	2	21.50	19.51	19.47	21.50	19.78	18.96
				50% RB Mid	25 Pos 12	1	2	21.50	19.49	19.42	21.50	19.80	18.93
				50% RB High	25 Pos 24	1	2	21.50	19.49	19.45	21.50	19.77	18.94
				100% RB	50 Pos 0	1	2	21.50	20.46	19.02	21.50	19.46	18.43
		132665	1779.3	1RB Low	1 Pos 0	0	1	21.50	20.56	19.77	21.50	20.26	19.42
				1RB Mid	1 Pos 24	0	1	21.50	20.59	19.84	21.50	20.32	19.45
				1RB High	1 Pos 49	0	1	21.50	20.57	19.79	21.50	20.22	19.39
				50% RB Low	25 Pos 0	1	2	21.50	19.36	19.35	21.50	20.18	18.44
				50% RB Mid	25 Pos 12	1	2	21.50	19.43	19.35	21.50	20.19	18.43
				50% RB High	25 Pos 24	1	2	21.50	19.40	18.88	21.50	20.22	18.45
				100% RB	50 Pos 0	1	2	21.50	19.36	18.99	21.50	19.35	18.38

B.3 Conducted Power Measurements – Tablet mode

B.3.1 WCDMA/ HSPA/ DC-HSPA – Antenna 5

B.3.1.1 WCDMA Band II

Mode	Channel Number	Freq (MHz)	Subset	Average Power Measured (dBm)	Factory Upper Tolerance (dBm)
RMC	9262	1852.4	-	17.00	17.00
	9400	1880	-	17.00	17.00
	9538	1907.6	-	17.00	17.00
HSDPA	9262	1852.4	1	15.93	17.00
			2	16.43	17.00
			3	16.43	17.00
			4	16.23	17.00
	9400	1880	1	15.95	17.00
			2	16.18	17.00
			3	16.49	17.00
			4	16.29	17.00
	9538	1907.6	1	15.94	17.00
			2	16.43	17.00
			3	16.41	17.00
			4	16.27	17.00
HSUPA	9262	1852.4	1	15.96	17.00
			2	16.12	17.00
			3	16.47	17.00
			4	16.19	17.00
			5	15.95	17.00
	9400	1880	1	16.14	17.00
			2	16.44	17.00
			3	16.22	17.00
			4	15.88	17.00
			5	16.18	17.00
	9538	1907.6	1	16.39	17.00
			2	16.21	17.00
			3	16.44	17.00
			4	16.43	17.00
			5	16.11	17.00

B.3.1.2 WCDMA Band IV

Mode	Channel Number	Freq (MHz)	Subset	Average Power Measured (dBm)	Factory Upper Tolerance (dBm)
RMC	1312	1712.4	-	17.60	18.00
	1413	1732.6	-	17.64	18.00
	1513	1752.6	-	17.48	18.00
HSDPA	1312	1712.4	1	17.57	18.00
			2	17.20	18.00
			3	16.72	18.00
			4	16.46	18.00
	1413	1732.6	1	17.57	18.00
			2	17.14	18.00
			3	17.60	18.00
			4	16.37	18.00
	1513	1752.6	1	17.59	18.00
			2	17.17	18.00
			3	16.69	18.00
			4	16.43	18.00
HSUPA	1312	1712.4	1	17.54	18.00
			2	17.19	18.00
			3	16.71	18.00
			4	16.44	18.00
			5	17.64	18.00
	1413	1732.6	1	17.12	18.00
			2	16.61	18.00
			3	16.38	18.00
			4	17.49	18.00
			5	17.15	18.00
	1513	1752.6	1	16.67	18.00
			2	16.42	18.00
			3	16.63	18.00
			4	16.88	18.00
			5	16.67	18.00

B.3.1.3 WCDMA Band V

Mode	Channel Number	Freq (MHz)	Subset	Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
RMC	4132	826.4	-	22.44	22.50
	4183	836.6	-	22.35	22.50
	4233	846.6	-	22.35	22.50
HSDPA	4132	826.4	1	21.70	22.50
			2	22.14	22.50
			3	21.89	22.50
			4	21.62	22.50
	4183	836.6	1	22.32	22.50
			2	22.31	22.50
			3	22.03	22.50
			4	22.40	22.50
	4233	846.6	1	22.05	22.50
			2	22.00	22.50
			3	22.00	22.50
			4	21.84	22.50
HSUPA	4132	826.4	1	22.63	22.50
			2	22.34	22.50
			3	21.92	22.50
			4	21.60	22.50
			5	22.09	22.50
	4183	836.6	1	22.08	22.50
			2	22.80	22.50
			3	22.12	22.50
			4	22.16	22.50
			5	22.16	22.50
	4233	846.6	1	22.05	22.50
			2	21.79	22.50
			3	21.86	22.50
			4	22.14	22.50
			5	21.89	22.50

B.3.2 LTE

B.3.2.1 LTE Band 2 FDD

SAR Measurement for LTE Band 2 FDD FDD (Frequency range: 1850 – 1910MHz) is covered by LTE Band 25 FDD (Frequency range: 1850 – 1915MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.2.2 LTE Band 4 FDD

SAR Measurement for LTE Band 4 FDD (Frequency range: 1710 – 1755MHz) is covered by LTE Band 66 FDD (Frequency range: 1710 – 1780MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.2.3 LTE band 5 FDD

SAR Measurement for LTE Band 5 FDD (Frequency range: 824 – 849MHz) is covered by LTE Band 26 FDD (Frequency range: 814 – 849MHz) due to overlapping frequency range, lower maximum tune-up and similar bandwidth

B.3.2.4 LTE Band 7 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE7	20 MHz	20850	2510	1RB Low	1 Pos 0	0	1	15.00	14.52	13.48	14.00	12.96	12.09
				1RB Mid	1 Pos 50	0	1	15.00	14.59	13.58	14.00	12.99	12.24
				1RB High	1 Pos 99	0	1	15.00	14.50	13.53	14.00	12.86	12.05
				50% RB Low	50 Pos 0	1	2	15.00	13.50	12.49	14.00	12.00	11.01
				50% RB Mid	50 Pos 24	1	2	15.00	13.60	12.58	14.00	12.02	11.04
				50% RB High	50 Pos 50	1	2	15.00	13.60	12.60	14.00	11.98	11.10
				100% RB	100 Pos 0	1	2	15.00	13.54	12.54	14.00	11.97	11.04
		21100	2535	1RB Low	1 Pos 0	0	1	15.00	14.44	13.39	14.00	12.88	12.05
				1RB Mid	1 Pos 50	0	1	15.00	14.59	13.57	14.00	13.01	12.22
				1RB High	1 Pos 99	0	1	15.00	14.56	13.54	14.00	12.87	12.07
				50% RB Low	50 Pos 0	1	2	15.00	13.60	12.56	14.00	12.01	10.96
				50% RB Mid	50 Pos 24	1	2	15.00	13.52	12.51	14.00	11.97	10.94
				50% RB High	50 Pos 50	1	2	15.00	13.61	12.59	14.00	11.91	10.88
				100% RB	100 Pos 0	1	2	15.00	13.60	12.58	14.00	11.99	10.92
		21350	2560	1RB Low	1 Pos 0	0	1	15.00	14.50	13.50	14.00	12.92	12.10
				1RB Mid	1 Pos 50	0	1	15.00	14.71	13.71	14.00	13.08	12.31
				1RB High	1 Pos 99	0	1	15.00	14.76	13.75	14.00	13.01	12.18
				50% RB Low	50 Pos 0	1	2	15.00	13.71	12.68	14.00	12.10	11.04
				50% RB Mid	50 Pos 24	1	2	15.00	13.70	12.72	14.00	12.07	11.06
				50% RB High	50 Pos 50	1	2	15.00	13.75	12.71	14.00	12.09	11.06
				100% RB	100 Pos 0	1	2	15.00	13.73	12.67	14.00	12.06	11.01
	15 MHz	20825	2507.5	1RB Low	1 Pos 0	0	1	15.00	14.44	13.73	14.00	12.96	12.24
				1RB Mid	1 Pos 38	0	1	15.00	14.56	13.77	14.00	12.98	12.29
				1RB High	1 Pos 74	0	1	15.00	14.52	13.73	14.00	12.89	12.16
				50% RB Low	38 Pos 0	1	2	15.00	13.50	12.53	14.00	11.96	11.05
				50% RB Mid	38 Pos 19	1	2	15.00	13.52	12.60	14.00	11.96	11.04
				50% RB High	38 Pos 39	1	2	15.00	13.61	12.65	14.00	11.97	11.05
				100% RB	75 Pos 0	1	2	15.00	13.58	12.58	14.00	12.01	11.08
		21100	2535	1RB Low	1 Pos 0	0	1	15.00	14.40	13.66	14.00	12.92	12.22
				1RB Mid	1 Pos 38	0	1	15.00	14.46	13.75	14.00	12.94	12.28
				1RB High	1 Pos 74	0	1	15.00	14.49	13.70	14.00	12.81	12.13
				50% RB Low	38 Pos 0	1	2	15.00	13.52	12.58	14.00	11.97	11.00
				50% RB Mid	38 Pos 19	1	2	15.00	13.53	12.55	14.00	11.95	11.00
				50% RB High	38 Pos 39	1	2	15.00	13.58	12.60	14.00	11.91	11.00
				100% RB	75 Pos 0	1	2	15.00	13.59	12.53	14.00	11.94	11.00
		21375	2562.5	1RB Low	1 Pos 0	0	1	15.00	14.53	13.79	14.00	12.95	12.24
				1RB Mid	1 Pos 38	0	1	15.00	14.64	13.91	14.00	13.04	12.35
				1RB High	1 Pos 74	0	1	15.00	14.65	13.91	14.00	13.00	12.27
				50% RB Low	38 Pos 0	1	2	15.00	13.66	12.68	14.00	12.07	11.02
				50% RB Mid	38 Pos 19	1	2	15.00	13.70	12.77	14.00	12.06	11.04
				50% RB High	38 Pos 39	1	2	15.00	13.74	12.81	14.00	12.09	11.08
				100% RB	75 Pos 0	1	2	15.00	13.76	12.71	14.00	12.07	11.08

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE7	10 MHz	20800	2505	1RB Low	1 Pos 0	0	1	15.00	14.51	13.74	14.00	13.02	12.28
				1RB Mid	1 Pos 24	0	1	15.00	14.58	13.77	14.00	13.05	12.33
				1RB High	1 Pos 49	0	1	15.00	14.55	13.77	14.00	13.01	12.27
				50% RB Low	25 Pos 0	1	2	15.00	13.55	12.59	14.00	11.98	11.14
				50% RB Mid	25 Pos 12	1	2	15.00	13.57	12.64	14.00	11.99	11.15
				50% RB High	25 Pos 24	1	2	15.00	13.58	12.66	14.00	11.99	11.14
				100% RB	50 Pos 0	1	2	15.00	13.57	12.57	14.00	12.03	11.09
		21100	2535	1RB Low	1 Pos 0	0	1	15.00	14.49	13.73	14.00	12.99	12.24
				1RB Mid	1 Pos 24	0	1	15.00	14.51	13.71	14.00	12.96	12.27
				1RB High	1 Pos 49	0	1	15.00	14.49	13.70	14.00	12.93	12.19
				50% RB Low	25 Pos 0	1	2	15.00	13.57	12.60	14.00	12.01	11.06
				50% RB Mid	25 Pos 12	1	2	15.00	13.51	12.64	14.00	11.95	11.01
				50% RB High	25 Pos 24	1	2	15.00	13.55	12.61	14.00	11.95	11.00
				100% RB	50 Pos 0	1	2	15.00	13.60	12.51	14.00	11.99	11.00
		21400	2565	1RB Low	1 Pos 0	0	1	15.00	14.58	13.82	14.00	13.05	12.33
				1RB Mid	1 Pos 24	0	1	15.00	14.68	13.87	14.00	13.10	12.40
				1RB High	1 Pos 49	0	1	15.00	14.72	13.89	14.00	13.08	12.34
				50% RB Low	25 Pos 0	1	2	15.00	13.71	12.76	14.00	12.07	11.12
				50% RB Mid	25 Pos 12	1	2	15.00	13.67	12.74	14.00	12.06	11.13
				50% RB High	25 Pos 24	1	2	15.00	13.76	12.79	14.00	12.11	11.17
				100% RB	50 Pos 0	1	2	15.00	13.76	12.70	14.00	12.10	11.04
	5 MHz	20775	2502.5	1RB Low	1 Pos 0	0	1	15.00	14.64	13.71	14.00	13.05	12.28
				1RB Mid	1 Pos 12	0	1	15.00	14.69	13.72	14.00	13.06	12.31
				1RB High	1 Pos 24	0	1	15.00	14.68	13.76	14.00	13.08	12.32
				50% RB Low	12 Pos 0	1	2	15.00	13.56	12.56	14.00	11.97	11.06
				50% RB Mid	12 Pos 6	1	2	15.00	13.58	12.57	14.00	12.03	11.12
				50% RB High	12 Pos 11	1	2	15.00	13.58	12.59	14.00	12.00	11.05
				100% RB	25 Pos 0	1	2	15.00	13.59	12.60	14.00	11.99	11.00
		21100	2535	1RB Low	1 Pos 0	0	1	15.00	14.61	13.65	14.00	13.01	12.29
				1RB Mid	1 Pos 12	0	1	15.00	14.61	13.67	14.00	13.03	12.29
				1RB High	1 Pos 24	0	1	15.00	14.58	13.67	14.00	13.01	12.24
				50% RB Low	12 Pos 0	1	2	15.00	13.59	12.58	14.00	11.99	10.94
				50% RB Mid	12 Pos 6	1	2	15.00	13.49	12.51	14.00	11.97	10.94
				50% RB High	12 Pos 11	1	2	15.00	13.51	12.54	14.00	11.96	10.91
				100% RB	25 Pos 0	1	2	15.00	13.51	12.52	14.00	11.91	10.82
		21425	2567.5	1RB Low	1 Pos 0	0	1	15.00	14.76	13.85	14.00	13.15	12.41
				1RB Mid	1 Pos 12	0	1	15.00	14.88	13.91	14.00	13.19	12.43
				1RB High	1 Pos 24	0	1	15.00	14.85	13.91	14.00	13.15	12.38
				50% RB Low	12 Pos 0	1	2	15.00	13.76	12.74	14.00	12.12	11.05
				50% RB Mid	12 Pos 6	1	2	15.00	13.75	12.75	14.00	12.10	11.13
				50% RB High	12 Pos 11	1	2	15.00	13.71	12.79	14.00	12.08	11.05
				100% RB	25 Pos 0	1	2	15.00	13.73	12.78	14.00	12.10	11.02

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B.3.2.5 LTE Band 12 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE12	10 MHz	23095	707.5	1RB Low	1 Pos 0	0	1	21.00	20.48	19.64
				1RB Mid	1 Pos 24	0	1	21.00	20.58	19.69
				1RB High	1 Pos 49	0	1	21.00	20.55	19.72
				50% RB Low	25 Pos 0	1	2	21.00	19.57	18.63
				50% RB Mid	25 Pos 12	1	2	21.00	19.52	18.61
				50% RB High	25 Pos 24	1	2	21.00	19.61	18.65
				100% RB	50 Pos 0	1	2	21.00	19.60	18.56
	5.0 MHz	23035	701.5	1RB Low	1 Pos 0	0	1	21.00	20.60	19.89
				1RB Mid	1 Pos 12	0	1	21.00	20.63	19.94
				1RB High	1 Pos 24	0	1	21.00	20.61	19.90
				50% RB Low	12 Pos 0	1	2	21.00	19.63	18.68
				50% RB Mid	12 Pos 6	1	2	21.00	19.56	18.66
				50% RB High	12 Pos 11	1	2	21.00	19.56	18.62
				100% RB	25 Pos 0	1	2	21.00	19.55	18.58
		23095	707.5	1RB Low	1 Pos 0	0	1	21.00	20.59	19.90
				1RB Mid	1 Pos 12	0	1	21.00	20.56	19.91
				1RB High	1 Pos 24	0	1	21.00	20.55	19.87
				50% RB Low	12 Pos 0	1	2	21.00	19.57	18.72
				50% RB Mid	12 Pos 6	1	2	21.00	19.54	18.58
				50% RB High	12 Pos 11	1	2	21.00	19.61	18.72
				100% RB	25 Pos 0	1	2	21.00	19.53	18.65
		23155	713.5	1RB Low	1 Pos 0	0	1	21.00	20.53	19.91
				1RB Mid	1 Pos 12	0	1	21.00	20.58	19.92
				1RB High	1 Pos 24	0	1	21.00	20.59	19.88
				50% RB Low	12 Pos 0	1	2	21.00	19.63	18.61
				50% RB Mid	12 Pos 6	1	2	21.00	19.57	18.56
				50% RB High	12 Pos 11	1	2	21.00	19.56	18.53
				100% RB	25 Pos 0	1	2	21.00	19.55	18.53
	3.0 MHz	23025	700.5	1RB Low	1 Pos 0	0	1	21.00	20.53	19.69
				1RB Mid	1 Pos 7	0	1	21.00	20.56	19.71
				1RB High	1 Pos 14	0	1	21.00	20.54	19.72
				50% RB Low	8 Pos 0	1	2	21.00	19.54	18.60
				50% RB Mid	8 Pos 4	1	2	21.00	19.59	18.64
				50% RB High	8 Pos 7	1	2	21.00	19.57	18.62
				100% RB	15 Pos 0	1	2	21.00	19.59	18.55
		23095	707.5	1RB Low	1 Pos 0	0	1	21.00	20.55	19.70
				1RB Mid	1 Pos 7	0	1	21.00	20.52	19.67
				1RB High	1 Pos 14	0	1	21.00	20.49	19.65
				50% RB Low	8 Pos 0	1	2	21.00	19.54	18.61
				50% RB Mid	8 Pos 4	1	2	21.00	19.58	18.60
				50% RB High	8 Pos 7	1	2	21.00	19.53	18.61
				100% RB	15 Pos 0	1	2	21.00	19.53	18.53
		23165	714.5	1RB Low	1 Pos 0	0	1	21.00	20.51	19.69
				1RB Mid	1 Pos 7	0	1	21.00	20.53	19.71
				1RB High	1 Pos 14	0	1	21.00	20.50	19.73
				50% RB Low	8 Pos 0	1	2	21.00	19.56	18.60
				50% RB Mid	8 Pos 4	1	2	21.00	19.52	18.57
				50% RB High	8 Pos 7	1	2	21.00	19.52	18.58
				100% RB	15 Pos 0	1	2	21.00	19.51	18.48

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE12	1.4 MHz	23017	699.7	1RB Low	1 Pos 0	0	1	21.00	19.84	19.11
				1RB Mid	1 Pos 24	0	1	21.00	19.88	19.16
				1RB High	1 Pos 49	0	1	21.00	19.88	19.12
				50% RB Low	25 Pos 0	1	2	21.00	19.76	18.99
				50% RB Mid	25 Pos 12	1	2	21.00	19.73	18.95
				50% RB High	25 Pos 24	1	2	21.00	19.78	18.98
				100% RB	50 Pos 0	1	2	21.00	19.49	17.98
		23095	707.5	1RB Low	1 Pos 0	0	1	21.00	19.92	19.12
				1RB Mid	1 Pos 12	0	1	21.00	19.91	19.17
				1RB High	1 Pos 24	0	1	21.00	19.91	19.13
				50% RB Low	12 Pos 0	1	2	21.00	19.77	18.99
				50% RB Mid	12 Pos 6	1	2	21.00	19.79	18.99
				50% RB High	12 Pos 11	1	2	21.00	19.76	18.97
				100% RB	25 Pos 0	1	2	21.00	18.93	18.01
		23173	715.3	1RB Low	1 Pos 0	0	1	21.00	20.46	19.64
				1RB Mid	1 Pos 12	0	1	21.00	20.42	19.71
				1RB High	1 Pos 24	0	1	21.00	20.39	19.68
				50% RB Low	12 Pos 0	1	2	21.00	19.74	18.95
				50% RB Mid	12 Pos 6	1	2	21.00	19.75	18.97
				50% RB High	12 Pos 11	1	2	21.00	19.76	18.95
				100% RB	25 Pos 0	1	2	21.00	18.90	18.01

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B.3.2.6 LTE Band 13 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE13	10 MHz	23230	782	1RB Low	1 Pos 0	0	1	22.00	21.68	20.80
				1RB Mid	1 Pos 24	0	1	22.00	21.70	20.80
				1RB High	1 Pos 49	0	1	22.00	21.63	20.70
				50% RB Low	25 Pos 0	1	2	22.00	20.55	19.62
				50% RB Mid	25 Pos 12	1	2	22.00	20.64	19.71
				50% RB High	25 Pos 24	1	2	22.00	20.69	19.75
				100% RB	50 Pos 0	1	2	22.00	20.70	19.66
	5.0 MHz	23230	782	1RB Low	1 Pos 0	0	1	22.00	21.80	21.00
				1RB Mid	1 Pos 12	0	1	22.00	21.76	21.00
				1RB High	1 Pos 24	0	1	22.00	21.73	21.00
				50% RB Low	12 Pos 0	1	2	22.00	20.70	19.70
				50% RB Mid	12 Pos 6	1	2	22.00	20.67	19.74
				50% RB High	12 Pos 11	1	2	22.00	20.60	19.70
				100% RB	25 Pos 0	1	2	22.00	20.66	19.70

B.3.2.7 LTE Band 14 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE14	10 MHz	23330	793	1RB Low	1 Pos 0	0	1	22.00	21.64	20.76
				1RB Mid	1 Pos 24	0	1	22.00	21.69	20.77
				1RB High	1 Pos 49	0	1	22.00	21.67	20.74
				50% RB Low	25 Pos 0	1	2	22.00	20.64	19.75
				50% RB Mid	25 Pos 12	1	2	22.00	20.63	19.69
				50% RB High	25 Pos 24	1	2	22.00	20.70	19.73
				100% RB	50 Pos 0	1	2	22.00	20.65	19.65
	5.0 MHz	23330	793	1RB Low	1 Pos 0	0	1	22.00	21.77	20.53
				1RB Mid	1 Pos 12	0	1	22.00	21.78	20.61
				1RB High	1 Pos 24	0	1	22.00	21.76	20.57
				50% RB Low	12 Pos 0	1	2	22.00	20.63	19.73
				50% RB Mid	12 Pos 6	1	2	22.00	20.69	19.78
				50% RB High	12 Pos 11	1	2	22.00	20.67	19.73
				100% RB	25 Pos 0	1	2	22.00	20.64	19.70

B.3.2.8 LTE Band 17 FDD

SAR Measurement for LTE Band 17 FDD (Frequency range: 704 – 716MHz) is covered by LTE Band 12 FDD (Frequency range: 699 – 716MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.2.9 LTE Band 25 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	20 MHz	26140	1860.0	1RB Low	1 Pos 0	0	1	18.00	17.34	16.63	16.00	15.52	14.75
				1RB Mid	1 Pos 50	0	1	18.00	17.40	16.75	16.00	15.59	14.75
				1RB High	1 Pos 99	0	1	18.00	17.41	16.68	16.00	15.42	14.60
				50% RB Low	50 Pos 0	1	2	18.00	16.45	15.43	16.00	14.56	13.57
				50% RB Mid	50 Pos 24	1	2	18.00	16.42	15.41	16.00	14.55	13.65
				50% RB High	50 Pos 50	1	2	18.00	16.38	15.33	16.00	14.46	13.57
				100% RB	100 Pos 0	1	2	18.00	16.37	15.34	16.00	14.52	13.57
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.35	16.67	16.00	15.47	14.78
				1RB Mid	1 Pos 50	0	1	18.00	17.37	16.72	16.00	15.56	14.82
				1RB High	1 Pos 99	0	1	18.00	17.32	16.70	16.00	15.42	14.70
				50% RB Low	50 Pos 0	1	2	18.00	16.33	15.33	16.00	14.41	13.56
				50% RB Mid	50 Pos 24	1	2	18.00	16.36	15.35	16.00	14.47	13.57
				50% RB High	50 Pos 50	1	2	18.00	16.32	15.29	16.00	14.39	13.55
				100% RB	100 Pos 0	1	2	18.00	16.36	15.31	16.00	14.37	13.58
		26590	1905.0	1RB Low	1 Pos 0	0	1	18.00	17.44	16.52	16.00	15.46	14.86
				1RB Mid	1 Pos 50	0	1	18.00	17.46	16.60	16.00	15.65	14.88
				1RB High	1 Pos 99	0	1	18.00	17.41	16.53	16.00	15.57	14.85
				50% RB Low	50 Pos 0	1	2	18.00	16.39	15.41	16.00	14.52	13.75
				50% RB Mid	50 Pos 24	1	2	18.00	16.44	15.46	16.00	14.57	13.69
				50% RB High	50 Pos 50	1	2	18.00	16.35	15.38	16.00	14.38	13.67
				100% RB	100 Pos 0	1	2	18.00	16.38	15.32	16.00	14.43	13.62
	15 MHz	26115	1857.5	1RB Low	1 Pos 0	0	1	18.00	17.34	16.63	16.00	15.50	14.64
				1RB Mid	1 Pos 38	0	1	18.00	17.40	16.75	16.00	15.53	14.75
				1RB High	1 Pos 74	0	1	18.00	17.41	16.68	16.00	15.40	14.60
				50% RB Low	38 Pos 0	1	2	18.00	16.45	15.43	16.00	14.49	13.57
				50% RB Mid	38 Pos 19	1	2	18.00	16.42	15.41	16.00	14.49	13.65
				50% RB High	38 Pos 39	1	2	18.00	16.38	15.33	16.00	14.45	13.57
				100% RB	75 Pos 0	1	2	18.00	16.37	15.34	16.00	14.51	13.57
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.35	16.67	16.00	15.47	14.78
				1RB Mid	1 Pos 38	0	1	18.00	17.37	16.72	16.00	15.51	14.82
				1RB High	1 Pos 74	0	1	18.00	17.32	16.70	16.00	15.36	14.70
				50% RB Low	38 Pos 0	1	2	18.00	16.33	15.33	16.00	14.46	13.56
				50% RB Mid	38 Pos 19	1	2	18.00	16.36	15.35	16.00	14.47	13.57
				50% RB High	38 Pos 39	1	2	18.00	16.32	15.29	16.00	14.35	13.55
				100% RB	75 Pos 0	1	2	18.00	16.36	15.31	16.00	14.43	13.58
		26615	1907.5	1RB Low	1 Pos 0	0	1	18.00	17.44	16.52	16.00	15.46	14.86
				1RB Mid	1 Pos 38	0	1	18.00	17.46	16.60	16.00	15.54	14.88
				1RB High	1 Pos 74	0	1	18.00	17.41	16.53	16.00	15.49	14.85
				50% RB Low	38 Pos 0	1	2	18.00	16.39	15.41	16.00	14.49	13.75
				50% RB Mid	38 Pos 19	1	2	18.00	16.44	15.46	16.00	14.54	13.69
				50% RB High	38 Pos 39	1	2	18.00	16.35	15.38	16.00	14.42	13.67
				100% RB	75 Pos 0	1	2	18.00	16.38	15.32	16.00	14.49	13.62

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	10 MHz	26090	1855.0	1RB Low	1 Pos 0	0	1	18.00	17.34	16.63	16.00	15.56	14.64
				1RB Mid	1 Pos 24	0	1	18.00	17.40	16.75	16.00	15.62	14.75
				1RB High	1 Pos 49	0	1	18.00	17.41	16.68	16.00	15.52	14.60
				50% RB Low	25 Pos 0	1	2	18.00	16.45	15.43	16.00	14.48	13.57
				50% RB Mid	25 Pos 12	1	2	18.00	16.42	15.41	16.00	14.57	13.65
				50% RB High	25 Pos 24	1	2	18.00	16.38	15.33	16.00	14.52	13.57
				100% RB	50 Pos 0	1	2	18.00	16.37	15.34	16.00	14.53	13.57
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.35	16.67	16.00	15.55	14.78
				1RB Mid	1 Pos 24	0	1	18.00	17.37	16.72	16.00	15.56	14.82
				1RB High	1 Pos 49	0	1	18.00	17.32	16.70	16.00	15.48	14.70
				50% RB Low	25 Pos 0	1	2	18.00	16.33	15.33	16.00	14.46	13.56
				50% RB Mid	25 Pos 12	1	2	18.00	16.36	15.35	16.00	14.47	13.57
				50% RB High	25 Pos 24	1	2	18.00	16.32	15.29	16.00	14.45	13.55
				100% RB	50 Pos 0	1	2	18.00	16.36	15.31	16.00	14.49	13.58
		26640	1910.0	1RB Low	1 Pos 0	0	1	18.00	17.44	16.52	16.00	15.57	14.86
				1RB Mid	1 Pos 24	0	1	18.00	17.46	16.60	16.00	15.60	14.88
				1RB High	1 Pos 49	0	1	18.00	17.41	16.53	16.00	15.59	14.85
				50% RB Low	25 Pos 0	1	2	18.00	16.39	15.41	16.00	14.63	13.75
				50% RB Mid	25 Pos 12	1	2	18.00	16.44	15.46	16.00	14.55	13.69
				50% RB High	25 Pos 24	1	2	18.00	16.35	15.38	16.00	14.48	13.67
				100% RB	50 Pos 0	1	2	18.00	16.38	15.32	16.00	14.57	13.62
	5 MHz	26065	1852.5	1RB Low	1 Pos 0	0	1	18.00	17.51	16.75	16.00	15.66	14.84
				1RB Mid	1 Pos 50	0	1	18.00	17.51	16.80	16.00	15.68	14.83
				1RB High	1 Pos 99	0	1	18.00	17.51	16.77	16.00	15.67	14.82
				50% RB Low	50 Pos 0	1	2	18.00	16.36	15.40	16.00	14.50	13.57
				50% RB Mid	50 Pos 24	1	2	18.00	16.35	15.42	16.00	14.50	13.61
				50% RB High	50 Pos 50	1	2	18.00	16.43	15.45	16.00	14.55	13.57
				100% RB	100 Pos 0	1	2	18.00	16.41	15.45	16.00	14.53	13.56
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.38	16.58	16.00	15.59	14.72
				1RB Mid	1 Pos 50	0	1	18.00	17.44	16.58	16.00	15.60	14.73
				1RB High	1 Pos 99	0	1	18.00	17.37	16.53	16.00	15.60	14.69
				50% RB Low	50 Pos 0	1	2	18.00	16.32	15.39	16.00	14.48	13.51
				50% RB Mid	50 Pos 24	1	2	18.00	16.37	15.43	16.00	14.46	13.55
				50% RB High	50 Pos 50	1	2	18.00	16.40	15.42	16.00	14.46	13.47
				100% RB	100 Pos 0	1	2	18.00	16.39	15.37	16.00	14.42	13.43
		26665	1912.5	1RB Low	1 Pos 0	0	1	18.00	17.44	16.57	16.00	15.64	14.76
				1RB Mid	1 Pos 50	0	1	18.00	17.50	16.61	16.00	15.68	14.79
				1RB High	1 Pos 99	0	1	18.00	17.48	16.58	16.00	15.64	14.69
				50% RB Low	50 Pos 0	1	2	18.00	16.36	15.43	16.00	14.56	13.60
				50% RB Mid	50 Pos 24	1	2	18.00	16.37	15.41	16.00	14.55	13.64
				50% RB High	50 Pos 50	1	2	18.00	16.40	15.42	16.00	14.53	13.55
				100% RB	100 Pos 0	1	2	18.00	16.38	15.42	16.00	14.47	13.54

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE25	3 MHz	26055	1851.5	1RB Low	1 Pos 0	0	1	18.00	17.51	16.75	16.00	15.55	14.82
				1RB Mid	1 Pos 38	0	1	18.00	17.51	16.80	16.00	15.58	14.86
				1RB High	1 Pos 74	0	1	18.00	17.51	16.77	16.00	15.49	14.82
				50% RB Low	38 Pos 0	1	2	18.00	16.36	15.40	16.00	14.46	13.56
				50% RB Mid	38 Pos 19	1	2	18.00	16.35	15.42	16.00	14.56	13.63
				50% RB High	38 Pos 39	1	2	18.00	16.43	15.45	16.00	14.51	13.61
				100% RB	75 Pos 0	1	2	18.00	16.41	15.45	16.00	14.52	13.55
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.38	16.58	16.00	15.48	14.77
				1RB Mid	1 Pos 38	0	1	18.00	17.44	16.58	16.00	15.52	14.77
				1RB High	1 Pos 74	0	1	18.00	17.37	16.53	16.00	15.45	14.73
				50% RB Low	38 Pos 0	1	2	18.00	16.32	15.39	16.00	14.42	13.51
				50% RB Mid	38 Pos 19	1	2	18.00	16.37	15.43	16.00	14.40	13.49
				50% RB High	38 Pos 39	1	2	18.00	16.40	15.42	16.00	14.40	13.46
				100% RB	75 Pos 0	1	2	18.00	16.39	15.37	16.00	14.43	13.45
		26675	1913.5	1RB Low	1 Pos 0	0	1	18.00	17.44	16.57	16.00	15.53	14.81
				1RB Mid	1 Pos 38	0	1	18.00	17.50	16.61	16.00	15.59	14.87
				1RB High	1 Pos 74	0	1	18.00	17.48	16.58	16.00	15.57	14.81
				50% RB Low	38 Pos 0	1	2	18.00	16.36	15.43	16.00	14.48	13.60
				50% RB Mid	38 Pos 19	1	2	18.00	16.37	15.41	16.00	14.47	13.60
				50% RB High	38 Pos 39	1	2	18.00	16.40	15.42	16.00	14.46	13.55
				100% RB	75 Pos 0	1	2	18.00	16.38	15.42	16.00	14.47	13.54
	1.4 MHz	26047	1850.7	1RB Low	1 Pos 0	0	1	18.00	17.51	16.75	16.00	15.59	14.47
				1RB Mid	1 Pos 24	0	1	18.00	17.51	16.80	16.00	15.60	14.54
				1RB High	1 Pos 49	0	1	18.00	17.51	16.77	16.00	15.58	14.47
				50% RB Low	25 Pos 0	1	2	18.00	16.36	15.40	16.00	15.46	13.64
				50% RB Mid	25 Pos 12	1	2	18.00	16.35	15.42	16.00	15.50	13.65
				50% RB High	25 Pos 24	1	2	18.00	16.43	15.45	16.00	15.47	13.68
				100% RB	50 Pos 0	1	2	18.00	16.41	15.45	16.00	14.50	13.58
		26365	1882.5	1RB Low	1 Pos 0	0	1	18.00	17.38	16.58	16.00	15.43	14.34
				1RB Mid	1 Pos 24	0	1	18.00	17.44	16.58	16.00	15.47	14.38
				1RB High	1 Pos 49	0	1	18.00	17.37	16.53	16.00	15.41	14.30
				50% RB Low	25 Pos 0	1	2	18.00	16.32	15.39	16.00	14.37	13.55
				50% RB Mid	25 Pos 12	1	2	18.00	16.37	15.43	16.00	14.41	13.57
				50% RB High	25 Pos 24	1	2	18.00	16.40	15.42	16.00	14.35	13.56
				100% RB	50 Pos 0	1	2	18.00	16.39	15.37	16.00	14.43	13.54
		26683	1914.3	1RB Low	1 Pos 0	0	1	18.00	17.44	16.57	16.00	15.42	14.36
				1RB Mid	1 Pos 24	0	1	18.00	17.50	16.61	16.00	15.44	14.39
				1RB High	1 Pos 49	0	1	18.00	17.48	16.58	16.00	15.38	14.31
				50% RB Low	25 Pos 0	1	2	18.00	16.36	16.43	16.00	14.41	13.63
				50% RB Mid	25 Pos 12	1	2	18.00	16.37	16.41	16.00	14.43	13.62
				50% RB High	25 Pos 24	1	2	18.00	16.40	16.42	16.00	14.41	13.64
				100% RB	50 Pos 0	1	2	18.00	16.38	15.42	16.00	14.48	13.61

B.3.2.10 LTE Band 26 FDD

Band	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE26	15 MHz	26775	821.5	1RB Low	1 Pos 0	0	1	22.50	22.50	20.69
				1RB Mid	1 Pos 38	0	1	22.50	22.50	20.79
				1RB High	1 Pos 74	0	1	22.50	22.50	20.67
				50% RB Low	38 Pos 0	1	2	22.50	20.67	19.71
				50% RB Mid	38 Pos 19	1	2	22.50	20.72	19.72
				50% RB High	38 Pos 39	1	2	22.50	20.66	19.70
				100% RB	75 Pos 0	1	2	22.50	20.67	19.63
		26865	831.5	1RB Low	1 Pos 0	0	1	22.50	22.50	21.03
				1RB Mid	1 Pos 38	0	1	22.50	22.50	21.05
				1RB High	1 Pos 74	0	1	22.50	22.50	20.78
				50% RB Low	38 Pos 0	1	2	22.50	20.59	19.57
				50% RB Mid	38 Pos 19	1	2	22.50	20.66	19.62
				50% RB High	38 Pos 39	1	2	22.50	20.66	19.63
				100% RB	75 Pos 0	1	2	22.50	20.65	19.66
		26965	841.5	1RB Low	1 Pos 0	0	1	22.50	22.30	20.28
				1RB Mid	1 Pos 38	0	1	22.50	22.50	21.21
				1RB High	1 Pos 74	0	1	22.50	21.97	20.19
				50% RB Low	38 Pos 0	1	2	22.50	20.64	19.66
				50% RB Mid	38 Pos 19	1	2	22.50	20.60	19.62
				50% RB High	38 Pos 39	1	2	22.50	20.54	19.58
				100% RB	75 Pos 0	1	2	22.50	20.59	19.58
	10 MHz	26750	820	1RB Low	1 Pos 0	0	1	22.50	22.34	20.73
				1RB Mid	1 Pos 24	0	1	22.50	22.38	20.77
				1RB High	1 Pos 49	0	1	22.50	22.31	20.75
				50% RB Low	25 Pos 0	1	2	22.50	20.61	19.70
				50% RB Mid	25 Pos 12	1	2	22.50	20.71	19.76
				50% RB High	25 Pos 24	1	2	22.50	20.73	19.77
				100% RB	50 Pos 0	1	2	22.50	20.70	19.64
		26865	831.5	1RB Low	1 Pos 0	0	1	22.50	22.41	20.88
				1RB Mid	1 Pos 24	0	1	22.50	22.45	20.93
				1RB High	1 Pos 49	0	1	22.50	22.35	20.84
				50% RB Low	25 Pos 0	1	2	22.50	20.68	19.65
				50% RB Mid	25 Pos 12	1	2	22.50	20.66	19.64
				50% RB High	25 Pos 24	1	2	22.50	20.65	19.62
				100% RB	50 Pos 0	1	2	22.50	20.69	19.65
		26990	844	1RB Low	1 Pos 0	0	1	22.50	22.30	20.72
				1RB Mid	1 Pos 24	0	1	22.50	22.25	20.73
				1RB High	1 Pos 49	0	1	22.50	21.49	19.70
				50% RB Low	25 Pos 0	1	2	22.50	20.59	19.60
				50% RB Mid	25 Pos 12	1	2	22.50	20.60	19.56
				50% RB High	25 Pos 24	1	2	22.50	20.50	19.48
				100% RB	50 Pos 0	1	2	22.50	20.57	19.58

Band	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE26	5.0 MHz	26715	816.5	1RB Low	1 Pos 0	0	1	22.50	22.33	20.94
				1RB Mid	1 Pos 12	0	1	22.50	22.43	21.06
				1RB High	1 Pos 24	0	1	22.50	22.48	21.12
				50% RB Low	12 Pos 0	1	2	22.50	20.65	19.72
				50% RB Mid	12 Pos 6	1	2	22.50	20.67	19.75
				50% RB High	12 Pos 11	1	2	22.50	20.67	19.73
				100% RB	25 Pos 0	1	2	22.50	20.66	19.71
		26865	831.5	1RB Low	1 Pos 0	0	1	22.50	22.37	21.01
				1RB Mid	1 Pos 12	0	1	22.50	22.34	20.97
				1RB High	1 Pos 24	0	1	22.50	22.32	20.98
				50% RB Low	12 Pos 0	1	2	22.50	20.68	19.81
				50% RB Mid	12 Pos 6	1	2	22.50	20.69	19.70
				50% RB High	12 Pos 11	1	2	22.50	20.61	19.81
				100% RB	25 Pos 0	1	2	22.50	20.60	19.73
		27015	846.5	1RB Low	1 Pos 0	0	1	22.50	22.36	20.95
				1RB Mid	1 Pos 12	0	1	22.50	22.33	20.85
				1RB High	1 Pos 24	0	1	22.50	22.38	20.87
				50% RB Low	12 Pos 0	1	2	22.50	20.60	19.59
				50% RB Mid	12 Pos 6	1	2	22.50	20.55	19.56
				50% RB High	12 Pos 11	1	2	22.50	20.53	19.51
				100% RB	25 Pos 0	1	2	22.50	20.50	19.48
	3.0 MHz	26705	815.5	1RB Low	1 Pos 0	0	1	22.50	22.50	20.80
				1RB Mid	1 Pos 38	0	1	22.50	22.50	20.74
				1RB High	1 Pos 74	0	1	22.50	22.50	20.73
				50% RB Low	38 Pos 0	1	2	22.50	20.62	19.65
				50% RB Mid	38 Pos 19	1	2	22.50	20.63	19.65
				50% RB High	38 Pos 39	1	2	22.50	20.62	19.68
				100% RB	75 Pos 0	1	2	22.50	20.63	19.61
		26865	831.5	1RB Low	1 Pos 0	0	1	22.50	22.50	20.79
				1RB Mid	1 Pos 38	0	1	22.50	22.50	20.75
				1RB High	1 Pos 74	0	1	22.50	22.50	20.70
				50% RB Low	38 Pos 0	1	2	22.50	20.66	19.71
				50% RB Mid	38 Pos 19	1	2	22.50	20.60	19.62
				50% RB High	38 Pos 39	1	2	22.50	20.58	19.69
				100% RB	75 Pos 0	1	2	22.50	20.62	19.55
		27025	847.5	1RB Low	1 Pos 0	0	1	22.50	22.28	20.82
				1RB Mid	1 Pos 38	0	1	22.50	22.29	20.73
				1RB High	1 Pos 74	0	1	22.50	22.26	20.70
				50% RB Low	38 Pos 0	1	2	22.50	20.56	19.64
				50% RB Mid	38 Pos 19	1	2	22.50	20.55	19.61
				50% RB High	38 Pos 39	1	2	22.50	20.52	19.59
				100% RB	75 Pos 0	1	2	22.50	20.55	19.50

Band	BW	Ch#	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Antenna 5	Measured Output Power (dBm)	
						QPSK	16QAM		QPSK	16-QAM
LTE26	1.4 MHz	26697	814.7	1RB Low	1 Pos 0	0	1	22.50	22.50	20.67
				1RB Mid	1 Pos 24	0	1	22.50	22.50	20.67
				1RB High	1 Pos 49	0	1	22.50	22.50	20.64
				50% RB Low	25 Pos 0	1	2	22.50	20.48	19.50
				50% RB Mid	25 Pos 12	1	2	22.50	21.44	20.50
				50% RB High	25 Pos 24	1	2	22.50	21.48	20.48
				100% RB	50 Pos 0	1	2	22.50	20.49	19.53
		26865	831.5	1RB Low	1 Pos 0	0	1	22.50	22.50	20.66
				1RB Mid	1 Pos 24	0	1	22.50	22.50	20.68
				1RB High	1 Pos 49	0	1	22.50	22.50	20.66
				50% RB Low	25 Pos 0	1	2	22.50	21.49	20.50
				50% RB Mid	25 Pos 12	1	2	22.50	21.48	20.50
				50% RB High	25 Pos 24	1	2	22.50	20.47	19.48
				100% RB	50 Pos 0	1	2	22.50	20.51	19.55
		27033	848.3	1RB Low	1 Pos 0	0	1	22.50	22.39	20.44
				1RB Mid	1 Pos 24	0	1	22.50	22.41	20.47
				1RB High	1 Pos 49	0	1	22.50	22.37	20.43
				50% RB Low	25 Pos 0	1	2	22.50	21.35	20.45
				50% RB Mid	25 Pos 12	1	2	22.50	21.35	20.43
				50% RB High	25 Pos 24	1	2	22.50	20.36	19.46
				100% RB	50 Pos 0	1	2	22.50	20.40	19.47

B.3.2.11 LTE Band 30 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE30	10 MHz	27710	2310	1RB Low	1 Pos 0	0	1	16.00	16.00	15.11	16.00	15.15	14.70
				1RB Mid	1 Pos 50	0	1	16.00	16.00	15.09	16.00	15.17	14.69
				1RB High	1 Pos 99	0	1	16.00	16.00	15.00	16.00	15.08	14.63
				50% RB Low	50 Pos 0	1	2	16.00	14.87	13.95	16.00	14.08	13.16
				50% RB Mid	50 Pos 24	1	2	16.00	15.00	13.93	16.00	14.13	13.15
				50% RB High	50 Pos 50	1	2	16.00	14.99	13.83	16.00	14.00	13.03
				100% RB	100 Pos 0	1	2	16.00	14.97	13.78	16.00	14.09	13.04
	5.0 MHz	27710	2310	1RB Low	1 Pos 0	0	1	16.00	16.00	15.42	16.00	15.19	14.02
				1RB Mid	1 Pos 38	0	1	16.00	16.00	15.40	16.00	15.25	14.06
				1RB High	1 Pos 74	0	1	16.00	16.00	14.89	16.00	15.22	14.02
				50% RB Low	38 Pos 0	1	2	16.00	14.87	13.95	16.00	14.14	13.11
				50% RB Mid	38 Pos 19	1	2	16.00	14.87	13.94	16.00	14.08	13.15
				50% RB High	38 Pos 39	1	2	16.00	14.82	13.89	16.00	14.03	13.10
				100% RB	75 Pos 0	1	2	16.00	15.00	13.82	16.00	14.08	13.00

B.3.2.12 LTE Band 38 TDD

SAR Measurement for LTE Band 38 FDD (Frequency range: 2570 – 2620MHz) is covered by LTE Band 41 TDD (Frequency range: 2496 – 2690MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.2.13 LTE Band 41 TDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	20 MHz	39750	2506	1RB Low	1 Pos 0	0	1	18.00	18.00	17.00	15.00	14.85	13.58
				1RB Mid	1 Pos 50	0	1	18.00	18.00	17.00	15.00	14.93	13.66
				1RB High	1 Pos 99	0	1	18.00	17.79	17.00	15.00	14.82	13.60
				50% RB Low	50 Pos 0	1	2	18.00	17.00	16.00	15.00	13.95	12.96
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	15.90	15.00	13.98	12.95
				50% RB High	50 Pos 50	1	2	18.00	16.66	15.66	15.00	13.91	12.98
				100% RB	100 Pos 0	1	2	18.00	16.89	15.83	15.00	13.89	12.86
		40185	2549.5	1RB Low	1 Pos 0	0	1	18.00	16.63	15.46	15.00	14.43	13.68
				1RB Mid	1 Pos 50	0	1	18.00	17.36	15.56	15.00	14.71	13.95
				1RB High	1 Pos 99	0	1	18.00	16.90	15.59	15.00	14.85	14.00
				50% RB Low	50 Pos 0	1	2	18.00	15.83	14.83	15.00	13.62	12.64
				50% RB Mid	50 Pos 24	1	2	18.00	16.84	14.85	15.00	13.70	12.73
				50% RB High	50 Pos 50	1	2	18.00	15.84	14.84	15.00	13.76	12.76
				100% RB	100 Pos 0	1	2	18.00	16.78	14.79	15.00	13.63	12.70
		40620	2593	1RB Low	1 Pos 0	0	1	18.00	17.16	16.39	15.00	14.99	13.75
				1RB Mid	1 Pos 50	0	1	18.00	17.36	16.52	15.00	14.62	13.86
				1RB High	1 Pos 99	0	1	18.00	17.26	16.50	15.00	14.54	13.79
				50% RB Low	50 Pos 0	1	2	18.00	16.26	15.31	15.00	13.64	12.64
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	15.33	15.00	13.59	12.66
				50% RB High	50 Pos 50	1	2	18.00	16.35	15.32	15.00	13.57	12.64
				100% RB	100 Pos 0	1	2	18.00	17.00	15.27	15.00	14.07	12.60
		41055	2636.5	1RB Low	1 Pos 0	0	1	18.00	17.44	16.58	15.00	14.82	14.06
				1RB Mid	1 Pos 38	0	1	18.00	17.35	16.58	15.00	14.73	14.00
				1RB High	1 Pos 74	0	1	18.00	17.13	16.51	15.00	14.55	13.79
				50% RB Low	38 Pos 0	1	2	18.00	16.58	15.58	15.00	13.74	12.81
				50% RB Mid	38 Pos 19	1	2	18.00	17.00	15.63	15.00	13.77	12.79
				50% RB High	38 Pos 39	1	2	18.00	16.56	15.57	15.00	13.72	12.75
				100% RB	75 Pos 0	1	2	18.00	16.57	15.52	15.00	13.74	12.74
		41490	2680	1RB Low	1 Pos 0	0	1	18.00	17.38	16.60	15.00	14.57	13.83
				1RB Mid	1 Pos 38	0	1	18.00	17.40	16.61	15.00	14.67	13.90
				1RB High	1 Pos 74	0	1	18.00	17.07	16.25	15.00	14.39	13.65
				50% RB Low	38 Pos 0	1	2	18.00	16.47	15.47	15.00	13.68	12.74
				50% RB Mid	38 Pos 19	1	2	18.00	17.00	15.44	15.00	13.61	12.70
				50% RB High	38 Pos 39	1	2	18.00	16.29	15.34	15.00	13.53	12.63
				100% RB	75 Pos 0	1	2	18.00	16.42	15.38	15.00	13.65	12.66

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	15 MHz	39750	2506	1RB Low	1 Pos 0	0	1	18.00	18.00	17.00	15.00	14.87	13.98
				1RB Mid	1 Pos 50	0	1	18.00	18.00	17.00	15.00	14.94	14.00
				1RB High	1 Pos 99	0	1	18.00	17.90	17.00	15.00	14.84	13.97
				50% RB Low	50 Pos 0	1	2	18.00	17.00	16.00	15.00	13.90	12.92
				50% RB Mid	50 Pos 24	1	2	18.00	16.89	15.87	15.00	13.88	12.90
				50% RB High	50 Pos 50	1	2	18.00	16.65	15.68	15.00	13.89	12.92
				100% RB	100 Pos 0	1	2	18.00	16.87	15.85	15.00	13.92	12.89
		40185	2549.5	1RB Low	1 Pos 0	0	1	18.00	16.65	15.88	15.00	14.56	13.68
				1RB Mid	1 Pos 50	0	1	18.00	16.71	15.87	15.00	14.62	13.77
				1RB High	1 Pos 99	0	1	18.00	16.82	15.87	15.00	14.70	13.81
				50% RB Low	50 Pos 0	1	2	18.00	15.73	14.73	15.00	13.51	12.58
				50% RB Mid	50 Pos 24	1	2	18.00	15.73	14.73	15.00	13.60	12.67
				50% RB High	50 Pos 50	1	2	18.00	15.79	14.77	15.00	13.65	12.69
				100% RB	100 Pos 0	1	2	18.00	15.77	14.78	15.00	13.64	12.62
		40620	2593	1RB Low	1 Pos 0	0	1	18.00	17.20	16.59	15.00	14.54	13.65
				1RB Mid	1 Pos 50	0	1	18.00	17.26	16.63	15.00	14.57	13.68
				1RB High	1 Pos 99	0	1	18.00	17.22	16.59	15.00	14.48	13.62
				50% RB Low	50 Pos 0	1	2	18.00	16.29	15.29	15.00	13.58	12.58
				50% RB Mid	50 Pos 24	1	2	18.00	16.28	15.30	15.00	13.56	12.57
				50% RB High	50 Pos 50	1	2	18.00	16.32	15.33	15.00	13.55	12.55
				100% RB	100 Pos 0	1	2	18.00	16.31	15.30	15.00	13.60	12.61
		41055	2636.5	1RB Low	1 Pos 0	0	1	18.00	17.57	16.61	15.00	14.80	13.88
				1RB Mid	1 Pos 38	0	1	18.00	17.30	16.62	15.00	14.66	13.81
				1RB High	1 Pos 74	0	1	18.00	17.20	16.62	15.00	14.62	13.76
				50% RB Low	38 Pos 0	1	2	18.00	16.53	15.55	15.00	13.79	12.80
				50% RB Mid	38 Pos 19	1	2	18.00	16.47	15.49	15.00	13.69	12.73
				50% RB High	38 Pos 39	1	2	18.00	16.53	15.50	15.00	13.70	12.72
				100% RB	75 Pos 0	1	2	18.00	16.52	15.53	15.00	13.73	12.76
		41490	2680	1RB Low	1 Pos 0	0	1	18.00	17.45	16.88	15.00	14.62	13.81
				1RB Mid	1 Pos 38	0	1	18.00	17.29	16.74	15.00	14.57	13.71
				1RB High	1 Pos 74	0	1	18.00	17.09	16.52	15.00	14.37	13.55
				50% RB Low	38 Pos 0	1	2	18.00	16.41	15.47	15.00	13.63	12.65
				50% RB Mid	38 Pos 19	1	2	18.00	16.39	15.41	15.00	13.58	12.60
				50% RB High	38 Pos 39	1	2	18.00	16.28	15.32	15.00	13.51	12.63
				100% RB	75 Pos 0	1	2	18.00	16.38	15.38	15.00	13.59	12.56

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	10 MHz	39750	2506	1RB Low	1 Pos 0	0	1	18.00	18.00	17.00	15.00	14.95	13.55
				1RB Mid	1 Pos 50	0	1	18.00	18.00	17.00	15.00	14.99	13.56
				1RB High	1 Pos 99	0	1	18.00	18.00	16.98	15.00	14.90	13.51
				50% RB Low	50 Pos 0	1	2	18.00	16.96	16.00	15.00	13.92	12.99
				50% RB Mid	50 Pos 24	1	2	18.00	16.93	15.98	15.00	13.96	12.99
				50% RB High	50 Pos 50	1	2	18.00	16.80	15.89	15.00	13.92	12.54
				100% RB	100 Pos 0	1	2	18.00	16.92	15.93	15.00	13.94	12.93
		40185	2549.5	1RB Low	1 Pos 0	0	1	18.00	16.70	15.73	15.00	14.58	13.71
				1RB Mid	1 Pos 50	0	1	18.00	16.74	15.64	15.00	14.71	13.80
				1RB High	1 Pos 99	0	1	18.00	16.85	15.76	15.00	14.73	13.87
				50% RB Low	50 Pos 0	1	2	18.00	15.77	14.78	15.00	13.62	12.70
				50% RB Mid	50 Pos 24	1	2	18.00	15.75	14.77	15.00	13.67	12.72
				50% RB High	50 Pos 50	1	2	18.00	15.80	14.77	15.00	13.67	12.75
				100% RB	100 Pos 0	1	2	18.00	15.81	14.78	15.00	13.68	12.64
		40620	2593	1RB Low	1 Pos 0	0	1	18.00	17.28	16.62	15.00	14.58	13.72
				1RB Mid	1 Pos 50	0	1	18.00	17.28	16.64	15.00	14.60	13.73
				1RB High	1 Pos 99	0	1	18.00	17.25	16.64	15.00	14.56	13.67
				50% RB Low	50 Pos 0	1	2	18.00	16.33	15.39	15.00	13.59	12.70
				50% RB Mid	50 Pos 24	1	2	18.00	16.26	15.34	15.00	13.56	12.65
				50% RB High	50 Pos 50	1	2	18.00	16.31	15.40	15.00	13.56	12.69
				100% RB	100 Pos 0	1	2	18.00	16.35	15.33	15.00	13.61	12.63
		41055	2636.5	1RB Low	1 Pos 0	0	1	18.00	17.54	16.44	15.00	14.78	13.90
				1RB Mid	1 Pos 38	0	1	18.00	17.34	16.37	15.00	14.73	13.84
				1RB High	1 Pos 74	0	1	18.00	17.27	16.50	15.00	14.69	13.82
				50% RB Low	38 Pos 0	1	2	18.00	16.55	15.53	15.00	13.75	12.82
				50% RB Mid	38 Pos 19	1	2	18.00	16.51	15.52	15.00	13.71	12.79
				50% RB High	38 Pos 39	1	2	18.00	16.53	15.51	15.00	13.70	12.76
				100% RB	75 Pos 0	1	2	18.00	16.57	15.53	15.00	13.77	12.78
		41490	2680	1RB Low	1 Pos 0	0	1	18.00	17.55	16.58	15.00	14.67	13.79
				1RB Mid	1 Pos 38	0	1	18.00	17.43	16.44	15.00	14.61	13.75
				1RB High	1 Pos 74	0	1	18.00	17.34	16.34	15.00	14.58	13.65
				50% RB Low	38 Pos 0	1	2	18.00	16.41	15.46	15.00	13.60	12.75
				50% RB Mid	38 Pos 19	1	2	18.00	16.38	15.39	15.00	13.63	12.69
				50% RB High	38 Pos 39	1	2	18.00	16.38	15.41	15.00	13.58	12.65
				100% RB	75 Pos 0	1	2	18.00	16.43	15.37	15.00	13.64	12.60

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE41	5 MHz	39750	2506	1RB Low	1 Pos 0	0	1	18.00	18.00	16.94	15.00	14.97	13.90
				1RB Mid	1 Pos 50	0	1	18.00	18.00	16.80	15.00	14.95	13.98
				1RB High	1 Pos 99	0	1	18.00	18.00	16.66	15.00	14.96	13.98
				50% RB Low	50 Pos 0	1	2	18.00	16.96	15.93	15.00	13.88	12.97
				50% RB Mid	50 Pos 24	1	2	18.00	16.92	15.95	15.00	13.93	12.99
				50% RB High	50 Pos 50	1	2	18.00	16.92	15.84	15.00	13.89	12.95
				100% RB	100 Pos 0	1	2	18.00	16.86	15.81	15.00	13.93	12.53
		40185	2549.5	1RB Low	1 Pos 0	0	1	18.00	16.62	15.83	15.00	14.57	13.54
				1RB Mid	1 Pos 50	0	1	18.00	16.69	15.90	15.00	14.68	13.67
				1RB High	1 Pos 99	0	1	18.00	16.65	15.87	15.00	14.70	14.14
				50% RB Low	50 Pos 0	1	2	18.00	15.76	14.75	15.00	13.59	12.67
				50% RB Mid	50 Pos 24	1	2	18.00	15.76	14.78	15.00	13.64	12.73
				50% RB High	50 Pos 50	1	2	18.00	15.76	14.79	15.00	13.62	12.71
				100% RB	100 Pos 0	1	2	18.00	15.75	14.78	15.00	13.60	12.74
		40620	2593	1RB Low	1 Pos 0	0	1	18.00	17.29	16.64	15.00	14.55	13.62
				1RB Mid	1 Pos 50	0	1	18.00	17.31	16.67	15.00	14.58	13.61
				1RB High	1 Pos 99	0	1	18.00	17.30	16.66	15.00	14.53	13.59
				50% RB Low	50 Pos 0	1	2	18.00	16.30	15.24	15.00	13.55	12.67
				50% RB Mid	50 Pos 24	1	2	18.00	16.32	15.34	15.00	13.60	12.74
				50% RB High	50 Pos 50	1	2	18.00	16.27	15.28	15.00	13.55	12.64
				100% RB	100 Pos 0	1	2	18.00	16.30	15.25	15.00	13.53	12.61
		41055	2636.5	1RB Low	1 Pos 0	0	1	18.00	17.45	16.65	15.00	14.72	13.76
				1RB Mid	1 Pos 38	0	1	18.00	17.32	16.63	15.00	14.72	13.73
				1RB High	1 Pos 74	0	1	18.00	17.29	16.59	15.00	14.70	14.24
				50% RB Low	38 Pos 0	1	2	18.00	16.56	15.56	15.00	13.70	12.79
				50% RB Mid	38 Pos 19	1	2	18.00	16.51	15.48	15.00	13.71	12.83
				50% RB High	38 Pos 39	1	2	18.00	16.49	15.55	15.00	13.68	12.78
				100% RB	75 Pos 0	1	2	18.00	16.49	15.51	15.00	13.65	12.71
		41490	2680	1RB Low	1 Pos 0	0	1	18.00	17.42	16.67	15.00	14.60	14.09
				1RB Mid	1 Pos 38	0	1	18.00	17.39	16.63	15.00	14.61	14.09
				1RB High	1 Pos 74	0	1	18.00	17.38	16.57	15.00	14.57	14.09
				50% RB Low	38 Pos 0	1	2	18.00	16.39	15.35	15.00	13.57	12.69
				50% RB Mid	38 Pos 19	1	2	18.00	16.39	15.32	15.00	13.60	12.71
				50% RB High	38 Pos 39	1	2	18.00	16.34	15.32	15.00	13.54	12.67
				100% RB	75 Pos 0	1	2	18.00	16.38	15.31	15.00	13.56	12.65

B.3.2.14 LTE Band 48 TDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5	
						QPSK	16QAM		QPSK	16-QAM
LTE48	20 MHz	55340	3560	1RB Low	1 Pos 0	0	1	13.00	12.93	11.03
				1RB Mid	1 Pos 50	0	1	13.00	13.00	11.85
				1RB High	1 Pos 99	0	1	13.00	13.00	11.25
				50% RB Low	50 Pos 0	1	2	13.00	12.00	10.18
				50% RB Mid	50 Pos 24	1	2	13.00	11.94	10.06
				50% RB High	50 Pos 50	1	2	13.00	12.00	10.22
				100% RB	100 Pos 0	1	2	13.00	12.00	10.11
		55990	3625	1RB Low	1 Pos 0	0	1	13.00	13.00	11.83
				1RB Mid	1 Pos 50	0	1	13.00	13.00	11.85
				1RB High	1 Pos 99	0	1	13.00	13.00	11.26
				50% RB Low	50 Pos 0	1	2	13.00	11.99	10.17
				50% RB Mid	50 Pos 24	1	2	13.00	12.00	10.13
				50% RB High	50 Pos 50	1	2	13.00	11.93	10.14
				100% RB	100 Pos 0	1	2	13.00	12.00	10.11
		56640	3690	1RB Low	1 Pos 0	0	1	13.00	12.90	11.13
				1RB Mid	1 Pos 50	0	1	13.00	13.00	10.96
				1RB High	1 Pos 99	0	1	13.00	12.72	11.02
				50% RB Low	50 Pos 0	1	2	13.00	11.97	10.20
				50% RB Mid	50 Pos 24	1	2	13.00	11.91	10.06
				50% RB High	50 Pos 50	1	2	13.00	11.92	10.10
				100% RB	100 Pos 0	1	2	13.00	12.00	10.19
	15 MHz	55315	3557.5	1RB Low	1 Pos 0	0	1	13.00	12.87	11.50
				1RB Mid	1 Pos 38	0	1	13.00	12.81	11.93
				1RB High	1 Pos 74	0	1	13.00	12.86	11.14
				50% RB Low	38 Pos 0	1	2	13.00	12.00	10.12
				50% RB Mid	38 Pos 19	1	2	13.00	11.92	10.08
				50% RB High	38 Pos 39	1	2	13.00	11.90	9.99
				100% RB	75 Pos 0	1	2	13.00	11.95	10.16
		55990	3625	1RB Low	1 Pos 0	0	1	13.00	12.81	11.78
				1RB Mid	1 Pos 38	0	1	13.00	12.77	11.99
				1RB High	1 Pos 74	0	1	13.00	12.97	11.19
				50% RB Low	38 Pos 0	1	2	13.00	11.89	10.00
				50% RB Mid	38 Pos 19	1	2	13.00	11.85	10.10
				50% RB High	38 Pos 39	1	2	13.00	11.91	10.08
				100% RB	75 Pos 0	1	2	13.00	12.00	10.09
		55665	3692.5	1RB Low	1 Pos 0	0	1	13.00	12.95	11.84
				1RB Mid	1 Pos 38	0	1	13.00	12.87	11.03
				1RB High	1 Pos 74	0	1	13.00	12.96	11.21
				50% RB Low	38 Pos 0	1	2	13.00	11.91	10.07
				50% RB Mid	38 Pos 19	1	2	13.00	11.93	10.10
				50% RB High	38 Pos 39	1	2	13.00	11.95	10.10
				100% RB	75 Pos 0	1	2	13.00	11.98	10.09

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm)	Measured Output Power (dBm) Antenna 5	
						QPSK	16QAM	Ant 5	QPSK	16-QAM
LTE48	10 MHz	55290	3555	1RB Low	1 Pos 0	0	1	13.00	12.95	11.38
				1RB Mid	1 Pos 24	0	1	13.00	12.97	11.41
				1RB High	1 Pos 49	0	1	13.00	12.92	11.40
				50% RB Low	25 Pos 0	1	2	13.00	11.98	10.12
				50% RB Mid	25 Pos 12	1	2	13.00	11.98	10.40
				50% RB High	25 Pos 24	1	2	13.00	11.96	10.36
				100% RB	50 Pos 0	1	2	13.00	12.00	10.16
		55990	3625	1RB Low	1 Pos 0	0	1	13.00	12.74	10.96
				1RB Mid	1 Pos 24	0	1	13.00	12.76	10.99
				1RB High	1 Pos 49	0	1	13.00	12.76	10.97
				50% RB Low	25 Pos 0	1	2	13.00	11.89	10.03
				50% RB Mid	25 Pos 12	1	2	13.00	11.89	10.12
				50% RB High	25 Pos 24	1	2	13.00	11.95	10.12
				100% RB	50 Pos 0	1	2	13.00	12.00	10.01
		56690	3695	1RB Low	1 Pos 0	0	1	13.00	12.81	11.15
				1RB Mid	1 Pos 24	0	1	13.00	12.83	11.16
				1RB High	1 Pos 49	0	1	13.00	12.71	11.33
				50% RB Low	25 Pos 0	1	2	13.00	12.00	10.11
				50% RB Mid	25 Pos 12	1	2	13.00	11.92	10.18
				50% RB High	25 Pos 24	1	2	13.00	12.00	10.16
				100% RB	50 Pos 0	1	2	13.00	11.99	10.08
	5 MHz	55265	3552.5	1RB Low	1 Pos 0	0	1	13.00	12.93	11.21
				1RB Mid	1 Pos 50	0	1	13.00	12.95	11.18
				1RB High	1 Pos 99	0	1	13.00	13.00	11.23
				50% RB Low	50 Pos 0	1	2	13.00	12.00	10.33
				50% RB Mid	50 Pos 24	1	2	13.00	11.97	10.19
				50% RB High	50 Pos 50	1	2	13.00	11.97	10.30
				100% RB	100 Pos 0	1	2	13.00	11.98	10.30
		55990	3625	1RB Low	1 Pos 0	0	1	13.00	12.86	10.77
				1RB Mid	1 Pos 50	0	1	13.00	12.86	10.75
				1RB High	1 Pos 99	0	1	13.00	12.89	11.21
				50% RB Low	50 Pos 0	1	2	13.00	11.91	10.03
				50% RB Mid	50 Pos 24	1	2	13.00	11.91	10.23
				50% RB High	50 Pos 50	1	2	13.00	11.88	10.00
				100% RB	100 Pos 0	1	2	13.00	11.89	10.01
		56715	3697.5	1RB Low	1 Pos 0	0	1	13.00	12.70	11.23
				1RB Mid	1 Pos 50	0	1	13.00	12.65	11.21
				1RB High	1 Pos 99	0	1	13.00	12.67	11.25
				50% RB Low	50 Pos 0	1	2	13.00	11.91	10.16
				50% RB Mid	50 Pos 24	1	2	13.00	11.86	10.10
				50% RB High	50 Pos 50	1	2	13.00	11.89	9.92
				100% RB	100 Pos 0	1	2	13.00	11.88	10.11

B.3.2.15 LTE Band 66 FDD

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	20 MHz	132072	1720	1RB Low	1 Pos 0	0	1	18.00	17.93	16.68	16.00	15.02	14.30
				1RB Mid	1 Pos 50	0	1	18.00	17.65	16.81	16.00	15.16	14.42
				1RB High	1 Pos 99	0	1	18.00	17.91	16.68	16.00	15.15	14.34
				50% RB Low	50 Pos 0	1	2	18.00	16.48	15.48	15.00	13.62	12.68
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	15.54	15.00	13.69	12.77
				50% RB High	50 Pos 50	1	2	18.00	16.51	15.50	15.00	13.71	12.77
				100% RB	100 Pos 0	1	2	18.00	16.47	15.42	15.00	13.65	12.67
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.99	16.38	16.00	15.28	14.46
				1RB Mid	1 Pos 50	0	1	18.00	17.41	16.44	16.00	15.31	14.53
				1RB High	1 Pos 99	0	1	18.00	17.98	16.28	16.00	15.16	14.39
				50% RB Low	50 Pos 0	1	2	18.00	16.60	15.64	15.00	13.91	12.97
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	15.64	15.00	13.85	12.94
				50% RB High	50 Pos 50	1	2	18.00	16.51	15.51	15.00	13.79	12.89
				100% RB	100 Pos 0	1	2	18.00	17.00	15.54	15.00	13.88	12.93
		132572	1770	1RB Low	1 Pos 0	0	1	18.00	17.99	16.42	16.00	15.18	14.40
				1RB Mid	1 Pos 50	0	1	18.00	17.64	16.50	16.00	15.26	14.47
				1RB High	1 Pos 99	0	1	18.00	18.00	16.33	16.00	15.09	14.27
				50% RB Low	50 Pos 0	1	2	18.00	16.53	15.49	15.00	13.69	12.75
				50% RB Mid	50 Pos 24	1	2	18.00	17.00	15.52	15.00	13.79	12.85
				50% RB High	50 Pos 50	1	2	18.00	16.56	15.48	15.00	13.66	12.67
				100% RB	100 Pos 0	1	2	18.00	16.55	15.53	15.00	13.67	12.72
	15 MHz	132047	1717.5	1RB Low	1 Pos 0	0	1	18.00	17.56	16.83	16.00	15.04	14.39
				1RB Mid	1 Pos 38	0	1	18.00	17.62	16.86	16.00	15.11	14.42
				1RB High	1 Pos 74	0	1	18.00	17.52	16.79	16.00	15.08	14.42
				50% RB Low	38 Pos 0	1	2	18.00	16.47	15.48	15.00	13.62	12.65
				50% RB Mid	38 Pos 19	1	2	18.00	16.54	15.51	15.00	13.62	12.69
				50% RB High	38 Pos 39	1	2	18.00	16.51	15.54	15.00	13.67	12.71
				100% RB	75 Pos 0	1	2	18.00	16.52	15.51	15.00	13.65	12.72
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.65	16.59	16.00	15.30	14.57
				1RB Mid	1 Pos 38	0	1	18.00	17.67	16.64	16.00	15.28	14.57
				1RB High	1 Pos 74	0	1	18.00	17.57	16.54	16.00	15.18	14.48
				50% RB Low	38 Pos 0	1	2	18.00	16.58	15.54	15.00	13.82	12.94
				50% RB Mid	38 Pos 19	1	2	18.00	16.57	15.51	15.00	13.82	12.89
				50% RB High	38 Pos 39	1	2	18.00	16.48	15.45	15.00	13.72	12.86
				100% RB	75 Pos 0	1	2	18.00	16.60	15.58	15.00	13.84	12.93
		132597	1772.5	1RB Low	1 Pos 0	0	1	18.00	17.59	16.77	16.00	15.22	14.52
				1RB Mid	1 Pos 38	0	1	18.00	17.61	16.75	16.00	15.23	14.51
				1RB High	1 Pos 74	0	1	18.00	17.44	16.62	16.00	15.04	14.37
				50% RB Low	38 Pos 0	1	2	18.00	16.52	15.48	15.00	13.73	12.82
				50% RB Mid	38 Pos 19	1	2	18.00	16.52	15.56	15.00	13.74	12.82
				50% RB High	38 Pos 39	1	2	18.00	16.50	15.48	15.00	13.60	12.67
				100% RB	75 Pos 0	1	2	18.00	16.53	15.50	15.00	13.69	12.72

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	10 MHz	132022	1715	1RB Low	1 Pos 0	0	1	18.00	17.59	16.86	16.00	15.13	14.46
				1RB Mid	1 Pos 24	0	1	18.00	17.63	16.88	16.00	15.19	14.49
				1RB High	1 Pos 49	0	1	18.00	17.60	16.86	16.00	15.16	14.48
				50% RB Low	25 Pos 0	1	2	18.00	16.49	15.51	15.00	14.19	13.22
				50% RB Mid	25 Pos 12	1	2	18.00	16.55	15.57	15.00	14.22	13.25
				50% RB High	25 Pos 24	1	2	18.00	16.55	15.64	15.00	14.17	13.28
				100% RB	50 Pos 0	1	2	18.00	16.56	15.53	15.00	14.18	13.20
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.67	16.55	16.00	15.35	14.60
				1RB Mid	1 Pos 24	0	1	18.00	17.68	16.56	16.00	15.33	14.64
				1RB High	1 Pos 49	0	1	18.00	17.61	16.48	16.00	15.30	14.59
				50% RB Low	25 Pos 0	1	2	18.00	16.61	15.58	15.00	14.36	13.51
				50% RB Mid	25 Pos 12	1	2	18.00	16.57	15.53	15.00	14.31	13.44
				50% RB High	25 Pos 24	1	2	18.00	16.54	15.51	15.00	14.32	13.46
				100% RB	50 Pos 0	1	2	18.00	16.60	15.57	15.00	14.40	13.42
		132622	1775	1RB Low	1 Pos 0	0	1	18.00	17.63	16.75	16.00	15.28	14.58
				1RB Mid	1 Pos 24	0	1	18.00	17.62	16.74	16.00	15.29	14.56
				1RB High	1 Pos 49	0	1	18.00	17.55	16.67	16.00	15.17	14.48
				50% RB Low	25 Pos 0	1	2	18.00	16.50	15.53	15.00	14.28	13.38
				50% RB Mid	25 Pos 12	1	2	18.00	16.51	15.57	15.00	14.23	13.40
				50% RB High	25 Pos 24	1	2	18.00	16.46	15.52	15.00	14.12	13.27
				100% RB	50 Pos 0	1	2	18.00	16.56	15.48	15.00	14.22	13.30
	5.0 MHz	131997	1712.5	1RB Low	1 Pos 0	0	1	18.00	17.61	16.83	16.00	15.21	14.46
				1RB Mid	1 Pos 50	0	1	18.00	17.60	16.83	16.00	15.26	14.47
				1RB High	1 Pos 99	0	1	18.00	17.64	16.81	16.00	15.24	14.43
				50% RB Low	50 Pos 0	1	2	18.00	16.48	15.47	16.00	14.18	13.14
				50% RB Mid	50 Pos 24	1	2	18.00	16.52	15.54	16.00	14.19	13.19
				50% RB High	50 Pos 50	1	2	18.00	16.52	15.47	16.00	14.20	13.11
				100% RB	100 Pos 0	1	2	18.00	16.54	15.47	16.00	14.20	13.13
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.63	16.85	16.00	15.40	14.64
				1RB Mid	1 Pos 50	0	1	18.00	17.57	16.86	16.00	15.40	14.67
				1RB High	1 Pos 99	0	1	18.00	17.59	16.82	16.00	15.38	14.60
				50% RB Low	50 Pos 0	1	2	18.00	16.61	15.59	16.00	14.32	13.38
				50% RB Mid	50 Pos 24	1	2	18.00	16.55	15.55	16.00	14.34	13.43
				50% RB High	50 Pos 50	1	2	18.00	16.52	15.55	16.00	14.29	13.32
				100% RB	100 Pos 0	1	2	18.00	16.49	15.48	16.00	14.26	13.26
		132647	1777.5	1RB Low	1 Pos 0	0	1	18.00	17.64	16.80	16.00	15.35	14.56
				1RB Mid	1 Pos 50	0	1	18.00	17.59	16.77	16.00	15.30	14.52
				1RB High	1 Pos 99	0	1	18.00	17.59	16.73	16.00	15.27	14.50
				50% RB Low	50 Pos 0	1	2	18.00	16.54	15.48	16.00	14.21	13.25
				50% RB Mid	50 Pos 24	1	2	18.00	16.51	15.44	16.00	14.20	13.29
				50% RB High	50 Pos 50	1	2	18.00	16.49	15.40	16.00	14.17	13.23
				100% RB	100 Pos 0	1	2	18.00	16.46	15.39	16.00	14.15	13.15

Band	BW	Ch #	Freq (MHz)	% RB Allocation	RB Position	MPR		Factory Upper Tolerance (dBm) Ant 5	Measured Output Power (dBm) Antenna 5		Factory Upper Tolerance (dBm) Ant 8	Measured Output Power (dBm) Antenna 8	
						QPSK	16QAM		QPSK	16-QAM		QPSK	16-QAM
LTE66	3.0 MHz	131987	1711.5	1RB Low	1 Pos 0	0	1	18.00	17.63	16.86	16.00	15.08	14.47
				1RB Mid	1 Pos 38	0	1	18.00	17.59	16.89	16.00	15.12	14.49
				1RB High	1 Pos 74	0	1	18.00	17.59	16.87	16.00	15.08	14.39
				50% RB Low	38 Pos 0	1	2	18.00	16.51	15.53	16.00	14.19	13.18
				50% RB Mid	38 Pos 19	1	2	18.00	16.52	15.53	16.00	14.19	13.21
				50% RB High	38 Pos 39	1	2	18.00	16.51	15.51	16.00	14.15	13.19
				100% RB	75 Pos 0	1	2	18.00	16.52	15.46	16.00	14.19	13.13
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.67	16.93	16.00	15.32	14.58
				1RB Mid	1 Pos 38	0	1	18.00	17.65	16.95	16.00	15.32	14.70
				1RB High	1 Pos 74	0	1	18.00	17.62	16.91	16.00	15.24	14.56
				50% RB Low	38 Pos 0	1	2	18.00	16.58	15.58	16.00	14.31	13.41
				50% RB Mid	38 Pos 19	1	2	18.00	16.55	15.56	16.00	14.30	13.37
				50% RB High	38 Pos 39	1	2	18.00	16.52	15.53	16.00	14.28	13.36
				100% RB	75 Pos 0	1	2	18.00	16.53	15.48	16.00	14.28	13.31
		132657	1778.5	1RB Low	1 Pos 0	0	1	18.00	17.56	16.84	16.00	15.19	14.47
				1RB Mid	1 Pos 38	0	1	18.00	17.53	16.83	16.00	15.23	14.50
				1RB High	1 Pos 74	0	1	18.00	17.47	16.82	16.00	15.09	14.43
				50% RB Low	38 Pos 0	1	2	18.00	16.49	15.50	16.00	14.19	13.31
				50% RB Mid	38 Pos 19	1	2	18.00	16.49	15.51	16.00	14.18	13.28
				50% RB High	38 Pos 39	1	2	18.00	16.45	15.49	16.00	14.16	13.25
				100% RB	75 Pos 0	1	2	18.00	16.48	15.40	16.00	14.18	13.22
	1.4 MHz	131979	1710	1RB Low	1 Pos 0	0	1	18.00	17.61	16.57	16.00	15.21	14.18
				1RB Mid	1 Pos 24	0	1	18.00	17.71	16.67	16.00	15.21	14.27
				1RB High	1 Pos 49	0	1	18.00	17.60	16.58	16.00	15.15	14.24
				50% RB Low	25 Pos 0	1	2	18.00	16.57	15.69	16.00	15.12	14.35
				50% RB Mid	25 Pos 12	1	2	18.00	16.59	15.71	16.00	15.12	14.33
				50% RB High	25 Pos 24	1	2	18.00	16.57	15.71	16.00	15.15	14.36
				100% RB	50 Pos 0	1	2	18.00	16.55	15.54	16.00	14.21	13.18
		132422	1755	1RB Low	1 Pos 0	0	1	18.00	17.66	16.62	16.00	15.40	14.35
				1RB Mid	1 Pos 24	0	1	18.00	17.74	16.69	16.00	15.49	14.46
				1RB High	1 Pos 49	0	1	18.00	17.65	16.60	16.00	15.43	14.36
				50% RB Low	25 Pos 0	1	2	18.00	16.64	15.75	16.00	15.36	14.46
				50% RB Mid	25 Pos 12	1	2	18.00	16.57	15.71	16.00	15.34	14.45
				50% RB High	25 Pos 24	1	2	18.00	16.59	15.75	16.00	15.32	14.46
				100% RB	50 Pos 0	1	2	18.00	16.55	15.55	16.00	14.30	13.36
		132665	1779.3	1RB Low	1 Pos 0	0	1	18.00	17.63	16.54	16.00	15.26	14.20
				1RB Mid	1 Pos 24	0	1	18.00	17.64	16.61	16.00	15.32	14.33
				1RB High	1 Pos 49	0	1	18.00	17.60	16.55	16.00	15.26	14.19
				50% RB Low	25 Pos 0	1	2	18.00	16.50	15.66	16.00	15.23	14.31
				50% RB Mid	25 Pos 12	1	2	18.00	16.54	15.66	16.00	15.23	14.35
				50% RB High	25 Pos 24	1	2	18.00	16.52	15.65	16.00	15.22	14.36
				100% RB	50 Pos 0	1	2	18.00	16.49	15.50	16.00	14.16	13.25

B.3.3 LTE UL Carrier Aggregation

B.3.3.1 Inter-Band

For LTE ULCA mode, each carrier transmits on separate antennas. Each exposure has been measured separately. For each, the highest standalone SAR conditions are added to derive the Total SAR. Refer to paragraph B.2.2

B.3.3.2 Intra-Band Contiguous

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result.
The UL CA mode power measurements represent the total power across both carriers.

According to November 2017 TCB workshop, the following needs to be performed: The maximum measured output power, RB allocation, CC offsets, CC channel BWs, MPR, modulation and other relevant information for all UL CA SAR configurations are required in SAR reports to support the test setup and results, including explanations, call box configurations and certain testing restriction

1) When the maximum output for UL CA is ≤ standalone LTE mode

• The primary carrier is configured according to the highest standalone SAR configuration tested

• The secondary carrier and subsequent CCs are configured according to procedures used for power measurement and parameters similar to that used for the PCC

2) When the Reported SAR for UL CA configuration, is > 1.2 W/kg, UL CA SAR is also required for all the other test channels

LTE CA 5B:

Band	Antenna	Mode	Modulation / BW	PCC			SCC			Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
				Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation		
LTE 5	Ant5	Tablet	QPSK / 10MHz	26775	822.5	1RB High	20476	831.6	1RB Low	21.67	22.50

LTE CA 7C:

Band	Antenna	Mode	Modulation / BW	PCC			SCC			Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
				Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation		
LTE 7	Ant5	Laptop	QPSK / 20MHz	20850	2510	1RB High	21100	2535	1RB Low	17.01	18.00
	Ant8			20850	2510	1RB High	21100	2535	1RB Low	21.00	21.00

LTE CA 38C:

SAR Measurement for LTE Band 38 TDD (Frequency range: 2570 – 2620MHz) is covered by LTE Band 41 TDD (Frequency range: 2496 – 2690MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

LTE CA 41C:

Band	Antenna	Mode	Modulation / BW	PCC			SCC			Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
				Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation		
LTE 41	Ant5	Back Face	QPSK / 20MHz	40185	2549.5	1RB High	40620	2593	1RB Low	17.00	18.00
	Ant8	Laptop		41055	2636.5	1RB High	41490	2680	1RB Low	23.00	24.00

LTE CA 66B, 66C:

Band	Antenna	Mode	Modulation / BW	PCC			SCC			Pwr Avg (dBm)	Factory Upper Tolerance (dBm)
				Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation		
LTE 66 66B	Ant5	Laptop	QPSK / 10MHz	132022	1715.0	1RB High	132122	1725	1RB Low	20.50	21.50
	Ant8			132022	1715.0	1RB High	132122	1725	1RB Low	20.50	21.50
LTE 66 66C	Ant5		QPSK / 20MHz	132072	1720.0	1RB High	132322	1745	1RB Low	21.50	21.50
	Ant8			132072	1720.0	1RB High	132322	1745	1RB Low	21.50	21.50

B.3.4 5G NR (FR1) Laptop Mode

B.3.4.1 5G NR (FR1) Band 2 FDD Antenna 5

SAR Measurement for NR Band 2 FDD (Frequency range: 1850 – 1910MHz) is covered by NR Band 25 FDD (Frequency range: 1850 – 1915MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.4.2 5G NR (FR1) Band 2 FDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	*Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8		
							Frequency (MHz) / Channel		
							1860	1880	1900
							372000	376000	396000
NR2	20	DFS-s OFDM	PI/2 BPSK	1RB Low	0	22.50		20.75	
			QPSK	1RB Low	0	22.50		20.84	
				1RB Mid	50	22.50		20.97	
				1RB High	99	22.50		20.87	
				50% RB Low	0	21.50		21.16	
				50% RB Mid	25	22.50		21.37	
				50% RB High	49	21.50		21.39	
				100% RB	0	21.50		21.35	
			16QAM	1RB Low	0	21.50		20.78	
			64QAM	1RB Low	0	20.50		20.05	
			256QAM	1RB Low	0	18.00		17.78	
		CP-OFDM	QPSK	1RB Low	0	21.00		20.84	
							Frequency (MHz) / Channel		
							1857.5	1880	1880
							371500	376000	380500
	15	DFS-s OFDM	QPSK	1RB Low	0	22.50		20.77	
				50% RB Low	0	21.50		20.18	
							Frequency (MHz) / Channel		
							1855	1880	1905
							371000	376000	381000
	10	DFS-s OFDM	QPSK	1RB Low	0	22.50		20.77	
				50% RB Low	0	21.50		20.18	
							Frequency (MHz) / Channel		
							1900	1880	1907.5
							370500	376000	381500
	5	DFS-s OFDM	QPSK	1RB Low	0	22.50		20.74	
				50% RB Low	0	21.50		20.78	

*For all 5G NR testing, the factory upper tolerance includes MPR feature

B.3.4.3 5G NR (FR1) Band 5 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							834	836.5	839
							166800	167300	167800
NR5	20	DFS-s OFDM	PI/2 BPSK	1RB Low	0	25.00		24.38	
			QPSK	1RB Low	0	25.00		24.38	
				1RB Mid	50	25.00		24.74	
				1RB High	99	25.00		24.34	
				50% RB Low	0	24.00		23.48	
				50% RB Mid	25	25.00		24.37	
				50% RB High	49	24.00		23.55	
				100% RB	0	24.00		23.87	
			16QAM	1RB Low	0	24.00		23.11	
			64QAM	1RB Low	0	22.50		21.44	
			256QAM	1RB Low	0	20.50		19.37	
		CP-OFDM	QPSK	1RB Low	0	23.50		23.24	
							Frequency (MHz) / Channel		
							831.5	836.5	841.5
							166300	167300	168300
	15	DFS-s OFDM	QPSK	1RB Low	0	25.00		23.49	
				50% RB Low	0	24.00		22.44	
							Frequency (MHz) / Channel		
							829	836.5	844
							165800	167300	168800
	10	DFS-s OFDM	QPSK	1RB Low	0	25.00		23.47	
				50% RB Low	0	24.00		22.38	
							Frequency (MHz) / Channel		
							826.5	836.5	846.5
							165300	167300	169300
	5	DFS-s OFDM	QPSK	1RB Low	0	25.00		23.41	
				50% RB Low	0	24.00		22.59	

B.3.4.4 5G NR (FR1) Band 7 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							2510	2535	2560
							502000	507000	512000
NR7	20	DFS-s OFDM	Pl/2 BPSK	1RB Low	0	16.00		15.47	
			QPSK	1RB Low	0	16.00		15.35	
				1RB Mid	50	16.00		15.43	
				1RB High	99	16.00		15.38	
				50% RB Low	0	15.00		14.36	
				50% RB Mid	25	16.00		15.43	
				50% RB High	49	15.00		14.41	
				100% RB	0	15.00		15.00	
			16QAM	1RB Low	0	15.00		14.47	
			64QAM	1RB Low	0	13.50		12.56	
			256QAM	1RB Low	0	11.50		10.51	
		CP-OFDM	QPSK	1RB Low	0	14.50		13.93	
							Frequency (MHz) / Channel		
							2507.5	2535	2562.5
							501500	507000	512500
	15	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.32	
				50% RB Low	0	15.00		13.38	
							Frequency (MHz) / Channel		
							2505	2535	2565
							501000	507000	513000
	10	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.33	
				50% RB Low	0	15.00		14.24	
							Frequency (MHz) / Channel		
							2502.5	2535	2567.5
							500500	507000	513500
	5	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.39	
				50% RB Low	0	15.00		14.48	

B.3.4.5 5G NR (FR1) Band 25 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							1860	1882.5	1905
							372000	376500	381000
NR25	20	DFS-s OFDM	PI/2 BPSK	1RB Low	0	18.00		17.69	
			QPSK	1RB Low	0	18.00		17.61	
				1RB Mid	50	18.00		18.00	
				1RB High	99	18.00		17.33	
				50% RB Low	0	17.00		16.35	
				50% RB Mid	25	18.00		18.00	
				50% RB High	49	17.00		16.49	
				100% RB	0	17.00		17.00	
			16QAM	1RB Low	0	17.00		16.59	
			64QAM	1RB Low	0	15.50		15.40	
			256QAM	1RB Low	0	13.50		13.19	
		CP-OFDM	QPSK	1RB Low	0	16.50		16.20	
							Frequency (MHz) / Channel		
							1857.5	1882.5	1907.5
							371500	376500	381500
	15	DFS-s OFDM	QPSK	1RB Low	0	18.00		18.00	
				50% RB Low	0	17.00		17.00	
							Frequency (MHz) / Channel		
							1855	1882.5	1910
							371000	376500	382000
	10	DFS-s OFDM	QPSK	1RB Low	0	18.00		17.29	
				50% RB Low	0	17.00		16.30	
							Frequency (MHz) / Channel		
							1852.5	1882.5	1912.5
							370500	376500	382500
	5	DFS-s OFDM	QPSK	1RB Low	0	18.00		17.48	
				50% RB Low	0	17.00		16.49	

B.3.4.6 5G NR (FR1) Band 30 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
								2310	
								46200	
NR30	10	DFS-s OFDM	PI/2 BPSK	1RB Low	0	17.00		16.78	
			QPSK	1RB Low	0	17.00		16.59	
				1RB Mid	25	17.00		17.00	
				1RB High	49	17.00		16.64	
				50% RB Low	0	16.00		15.69	
				50% RB Mid	12	17.00		17.00	
				50% RB High	25	16.00		15.44	
				100% RB	0	16.00		16.00	
			16QAM	1RB Low	0	16.00		15.23	
			64QAM	1RB Low	0	14.50		14.27	
			256QAM	1RB Low	0	12.50		12.33	
		CP-OFDM	QPSK	1RB Low	0	15.50		15.29	
							Frequency (MHz) / Channel		
								2310	
								46200	
	5	DFS-s OFDM	QPSK	1RB Low	0	17.00		16.43	
				50% RB Low	0	16.00		15.95	

B.3.4.7 5G NR (FR1 Band 38 TDD

SAR Measurement for NR Band 38 TDD (Frequency range: 2570 – 2620MHz) is covered by NR Band 41 TDD (Frequency range: 2496 – 2690MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.4.8 5G NR (FR1) Band 41 TDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5				
							Frequency (MHz) / Channel				
							2546	2569.5	2593	2616.5	2640
							509200	513900	518600	523300	528000
NR41	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	18.50			16.95		
			QPSK	1RB Low	0	18.50			17.00		
				1RB Mid	136	18.50			18.25		
				1RB High	270	18.50			18.50		
				50% RB Low	0	17.50			17.58		
				50% RB Mid	68	18.50			18.12		
				50% RB High	137	17.50			17.50		
				100% RB	0	17.50			17.05		
			16QAM	1RB Low	0	17.50			17.03		
			64QAM	1RB Low	0	16.00			15.55		
			256QAM	1RB Low	0	14.00			13.64		
		CP-OFDM	QPSK	1RB Low	0	17.00			16.04		
							Frequency (MHz) / Channel				
							2541	2567	2593	2619	2645
							508200	513400	518600	523800	529000
	90	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.15		
				50% RB Low	0	17.50			17.32		
							Frequency (MHz) / Channel				
							2536	2564.5	2593	2621.5	2650
							507200	512900	518600	524300	530000
	80	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.16		
				50% RB Low	0	17.50			16.50		
							Frequency (MHz) / Channel				
							2526	2559.5	2593	2626.5	2660
							505200	511900	518600	525300	532000
	60	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.01		
				50% RB Low	0	17.50			16.36		
							Frequency (MHz) / Channel				
							2521	2557	2593	2629	2665
							504200	511400	518600	525800	5330000
	50	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.22		
				50% RB Low	0	17.50			16.37		
							Frequency (MHz) / Channel				
							2516	2554.5	2593	2631.5	2670
							503200	510900	518600	526300	534000
	40	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.25		
				50% RB Low	0	17.50			16.88		
							Frequency (MHz) / Channel				
							2506	2549.5	2593	2636.5	2680
							501200	509900	518600	527300	536000
	20	DFS-s OFDM	QPSK	1RB Low	0	18.50			17.13		
				50% RB Low	0	17.50			17.64		

B.3.4.9 5G NR (FR1) Band 41 TDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8				
							Frequency (MHz) / Channel				
							2546	2569.5	2593	2616.5	2640
							509200	513900	518600	523300	528000
NR41	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	21.00			20.11		
			QPSK	1RB Low	0	21.00			20.05		
				1RB Mid	136	21.00			20.88		
				1RB High	270	21.00			19.50		
				50% RB Low	0	20.00			19.46		
				50% RB Mid	68	21.00			19.79		
				50% RB High	137	20.00			19.71		
				100% RB	0	20.00			19.54		
			16QAM	1RB Low	0	20.00			19.09		
			64QAM	1RB Low	0	18.50			17.34		
			256QAM	1RB Low	0	16.50			15.28		
		CP-OFDM	QPSK	1RB Low	0	18.50			17.21		
							Frequency (MHz) / Channel				
							2541	2567	2593	2619	2645
							508200	513400	518600	523800	529000
	90	DFS-s OFDM	QPSK	1RB Low	0	21.00			19.97		
				50% RB Low	0	20.00			18.85		
							Frequency (MHz) / Channel				
							2536	2564.5	2593	2621.5	2650
							507200	512900	518600	524300	530000
	80	DFS-s OFDM	QPSK	1RB Low	0	21.00			19.91		
				50% RB Low	0	20.00			18.90		
							Frequency (MHz) / Channel				
							2526	2559.5	2593	2626.5	2660
							505200	511900	518600	525300	532000
	60	DFS-s OFDM	QPSK	1RB Low	0	21.00			19.95		
				50% RB Low	0	20.00			18.95		
							Frequency (MHz) / Channel				
							2521	2557	2593	2629	2665
							504200	511400	518600	525800	5330000
	50	DFS-s OFDM	QPSK	1RB Low	0	21.00			20.05		
				50% RB Low	0	20.00			18.55		
							Frequency (MHz) / Channel				
							2516	2554.5	2593	2631.5	2670
							503200	510900	518600	526300	534000
	40	DFS-s OFDM	QPSK	1RB Low	0	21.00			20.04		
				50% RB Low	0	20.00			19.03		
							Frequency (MHz) / Channel				
							2506	2549.5	2593	2636.5	2680
							501200	509900	518600	527300	536000
	20	DFS-s OFDM	QPSK	1RB Low	0	21.00			20.51		
				50% RB Low	0	20.00			19.35		

B.3.4.10 5G NR (FR1) Band 66 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							1730	1745	1760
							346000	349000	352000
NR66	40	DFS-s OFDM	PI/2 BPSK	1RB Low	0	21.50		20.94	
			QPSK	1RB Low	0	21.50		20.89	
				1RB Mid	136	21.50		20.91	
				1RB High	270	21.50		20.79	
				50% RB Low	0	20.50		20.14	
				50% RB Mid	68	21.50		21.36	
				50% RB High	137	20.50		20.11	
				100% RB	0	20.50		20.10	
			16QAM	1RB Low	0	20.50		20.16	
			64QAM	1RB Low	0	19.00		18.16	
			256QAM	1RB Low	0	17.00		16.14	
		CP-OFDM	QPSK	1RB Low	0	20.00		19.22	
							Frequency (MHz) / Channel		
							1725	1745	1765
							345000	349000	353000
	30	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.21	
				50% RB Low	0	20.50		20.03	
							Frequency (MHz) / Channel		
							1720	1745	1770
							344000	349000	354000
	20	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.69	
				50% RB Low	0	20.50		20.13	
							Frequency (MHz) / Channel		
							1717.5	1745	1772.5
							343500	349000	354500
	15	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.69	
				50% RB Low	0	20.50		20.03	
							Frequency (MHz) / Channel		
							1715	1745	1775
							343000	349000	355000
	10	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.71	
				50% RB Low	0	20.50		19.89	
							Frequency (MHz) / Channel		
							1712.5	1745	1745
							342500	349000	355500
	5	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.69	
				50% RB Low	0	20.50		19.88	

B.3.4.11 5G NR (FR1) Band 66 FDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8		
							Frequency (MHz) / Channel		
							1730	1745	1760
							346000	349000	352000
NR66	40	DFS-s OFDM	PI/2 BPSK	1RB Low	0	21.50		21.00	
			QPSK	1RB Low	0	21.50		21.09	
				1RB Mid	136	21.50		21.11	
				1RB High	270	21.50		21.13	
				50% RB Low	0	20.50		19.85	
				50% RB Mid	68	21.50		21.08	
				50% RB High	137	20.50		19.86	
				100% RB	0	20.50		19.87	
			16QAM	1RB Low	0	20.50		19.77	
			64QAM	1RB Low	0	19.00		18.30	
			256QAM	1RB Low	0	17.00		16.23	
		CP-OFDM	QPSK	1RB Low	0	20.00		19.24	
							Frequency (MHz) / Channel		
							1725	1745	1765
							345000	349000	353000
	30	DFS-s OFDM	QPSK	1RB Low	0	21.50		21.06	
				50% RB Low	0	20.50		19.78	
							Frequency (MHz) / Channel		
							1720	1745	1770
							344000	349000	354000
	20	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.89	
				50% RB Low	0	20.50		19.77	
							Frequency (MHz) / Channel		
							1717.5	1745	1772.5
							343500	349000	354500
	15	DFS-s OFDM	QPSK	1RB Low	0	21.50		21.10	
				50% RB Low	0	20.50		19.84	
							Frequency (MHz) / Channel		
							1715	1745	1775
							343000	349000	355000
	10	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.69	
				50% RB Low	0	20.50		19.85	
							Frequency (MHz) / Channel		
							1712.5	1745	1745
							342500	349000	355500
	5	DFS-s OFDM	QPSK	1RB Low	0	21.50		20.73	
				50% RB Low	0	20.50		19.80	

B.3.4.12 5G NR (FR1) Band 77 TDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5				
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
NR77	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	19.00			17.55		
			QPSK	1RB Low	0	19.00			17.14		
				1RB Mid	136	19.00			17.77		
				1RB High	270	19.00			17.83		
				50% RB Low	0	18.00			16.91		
				50% RB Mid	68	19.00			18.11		
				50% RB High	137	18.00			17.16		
				100% RB	0	18.00			17.06		
			16QAM	1RB Low	0	18.00			16.21		
			64QAM	1RB Low	0	16.50			15.12		
			256QAM	1RB Low	0	14.50			12.98		
		CP-OFDM	QPSK	1RB Low	0	17.50			15.88		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	90	DFS-s OFDM	QPSK	1RB Low	0	19.00			17.41		
				50% RB Low	0	18.00			16.99		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	80	DFS-s OFDM	QPSK	1RB Low	0	19.00			18.05		
				50% RB Low	0	18.00			17.68		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	60	DFS-s OFDM	QPSK	1RB Low	0	19.00			18.13		
				50% RB Low	0	18.00			17.09		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	50	DFS-s OFDM	QPSK	1RB Low	0	19.00			18.11		
				50% RB Low	0	18.00			17.03		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	40	DFS-s OFDM	QPSK	1RB Low	0	19.00			17.88		
				50% RB Low	0	18.00			16.81		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	20	DFS-s OFDM	QPSK	1RB Low	0	19.00			17.87		
				50% RB Low	0	18.00			16.91		

B.3.4.13 5G NR (FR1) Band 77 TDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8				
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
NR77	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	15.00			13.90		
			QPSK	1RB Low	0	15.00			13.84		
				1RB Mid	136	15.00			13.83		
				1RB High	270	15.00			13.39		
				50% RB Low	0	14.00			13.55		
				50% RB Mid	68	15.00			14.29		
				50% RB High	137	14.00			13.01		
				100% RB	0	14.00			13.26		
			16QAM	1RB Low	0	14.00			12.85		
			64QAM	1RB Low	0	12.50			11.92		
			256QAM	1RB Low	0	10.50			8.88		
		CP-OFDM	QPSK	1RB Low	0	13.50			11.86		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	90	DFS-s OFDM	QPSK	1RB Low	0	15.00			13.68		
				50% RB Low	0	14.00			13.08		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	80	DFS-s OFDM	QPSK	1RB Low	0	15.00			13.64		
				50% RB Low	0	14.00			13.00		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	60	DFS-s OFDM	QPSK	1RB Low	0	15.00			13.92		
				50% RB Low	0	14.00			12.51		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	50	DFS-s OFDM	QPSK	1RB Low	0	15.00			13.91		
				50% RB Low	0	14.00			13.44		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	40	DFS-s OFDM	QPSK	1RB Low	0	15.00			14.35		
				50% RB Low	0	14.00			13.24		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	20	DFS-s OFDM	QPSK	1RB Low	0	15.00			14.03		
				50% RB Low	0	14.00			12.98		

B.3.4.14 5G NR (FR1) Band 78 TDD

SAR Measurement for NR Band 78 TDD (Frequency range: 3700 – 3800MHz) is covered by NR Band 78 TDD (Frequency range: 3700 – 3980MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.5 5G NR (FR1) Tablet Mode

B.3.5.1 5G NR (FR1) Band 2 FDD Antenna 5

SAR Measurement for NR Band 2 FDD (Frequency range: 1850 – 1910MHz) is covered by NR Band 25 FDD (Frequency range: 1850 – 1915MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.5.2 5G NR (FR1) Band 2 FDD Antenna 8

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	*Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8		
							Frequency (MHz) / Channel		
							1860	1880	1900
							372000	376000	396000
NR2	20	DFS-s OFDM	Pl/2 BPSK	1RB Low	0	16.00		15.05	
			QPSK	1RB Low	0	16.00		15.02	
				1RB Mid	50	16.00		15.16	
				1RB High	99	16.00		15.08	
				50% RB Low	0	15.00		14.91	
				50% RB Mid	25	16.00		15.10	
				50% RB High	49	15.00		14.09	
				100% RB	0	15.00		14.99	
			16QAM	1RB Low	0	15.00		15.00	
			64QAM	1RB Low	0	14.50		13.51	
			256QAM	1RB Low	0	11.50		10.49	
		CP-OFDM	QPSK	1RB Low	0	14.50		13.56	
							Frequency (MHz) / Channel		
							1857.5	1880	1880
							371500	376000	380500
	15	DFS-s OFDM	QPSK	1RB Low	0	16.00		14.97	
				50% RB Low	0	15.00		13.95	
							Frequency (MHz) / Channel		
							1855	1880	1905
							371000	376000	381000
	10	DFS-s OFDM	QPSK	1RB Low	0	16.00		14.88	
				50% RB Low	0	15.00		13.80	
							Frequency (MHz) / Channel		
							1852.5	1880	1907.5
							370500	376000	381500
	5	DFS-s OFDM	QPSK	1RB Low	0	16.00		14.98	
				50% RB Low	0	15.00		14.00	

*For all 5G NR testing, the factory upper tolerance includes MPR feature

B.3.5.3 5G NR (FR1) Band 5 FDD Antenna 5

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							834	836.5	839
							166800	167300	167800
NR5	20	DFS-s OFDM	PI/2 BPSK	1RB Low	0	22.50		21.33	
			QPSK	1RB Low	0	22.50		21.34	
				1RB Mid	50	22.50		21.34	
				1RB High	99	22.50		21.38	
				50% RB Low	0	21.50		20.33	
				50% RB Mid	25	22.50		21.49	
				50% RB High	49	21.50		20.52	
				100% RB	0	21.50		20.48	
			16QAM	1RB Low	0	21.50		20.54	
			64QAM	1RB Low	0	20.50		19.55	
			256QAM	1RB Low	0	18.00		16.48	
		CP-OFDM	QPSK	1RB Low	0	21.00		19.50	
							Frequency (MHz) / Channel		
							831.5	836.5	841.5
							166300	167300	168300
	15	DFS-s OFDM	QPSK	1RB Low	0	22.50		21.32	
				50% RB Low	0	21.50		20.46	
							Frequency (MHz) / Channel		
							829	836.5	844
							165800	167300	168800
	10	DFS-s OFDM	QPSK	1RB Low	0	22.50		21.34	
				50% RB Low	0	21.50		20.3	
							Frequency (MHz) / Channel		
							826.5	836.5	846.5
							165300	167300	169300
	5	DFS-s OFDM	QPSK	1RB Low	0	22.50		21.32	
				50% RB Low	0	21.50		20.47	

B.3.5.4 5G NR (FR1) Band 7 FDD Antenna 5

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							2510	2535	2560
							502000	507000	512000
NR7	20	DFS-s OFDM	Pl/2 BPSK	1RB Low	0	16.00		15.47	
			QPSK	1RB Low	0	16.00		15.35	
				1RB Mid	50	16.00		15.43	
				1RB High	99	16.00		15.38	
				50% RB Low	0	15.00		14.36	
				50% RB Mid	25	16.00		15.43	
				50% RB High	49	15.00		14.41	
				100% RB	0	15.00		14.38	
			16QAM	1RB Low	0	15.00		14.47	
			64QAM	1RB Low	0	13.50		12.56	
			256QAM	1RB Low	0	11.50		10.51	
		CP-OFDM	QPSK	1RB Low	0	14.50		13.93	
							Frequency (MHz) / Channel		
							2507.5	2535	2562.5
							501500	507000	512500
	15	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.32	
				50% RB Low	0	15.00		13.38	
							Frequency (MHz) / Channel		
							2505	2535	2565
							501000	507000	513000
	10	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.33	
				50% RB Low	0	15.00		14.24	
							Frequency (MHz) / Channel		
							2502.5	2535	2567.5
							500500	507000	513500
	5	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.39	
				50% RB Low	0	15.00		14.48	

B.3.5.5 5G NR (FR1) Band 25 FDD Antenna 5

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							1860	1882.5	1905
							372000	376500	381000
NR25	20	DFS-s OFDM	Pl/2 BPSK	1RB Low	0	18.00		17.61	
			QPSK	1RB Low	0	18.00		18.00	
				1RB Mid	50	18.00		18.00	
				1RB High	99	18.00		17.91	
				50% RB Low	0	17.00		16.00	
				50% RB Mid	25	18.00		17.98	
				50% RB High	49	17.00		16.94	
				100% RB	0	17.00		16.58	
			16QAM	1RB Low	0	17.00		16.59	
			64QAM	1RB Low	0	15.50		15.40	
			256QAM	1RB Low	0	13.50		13.19	
		CP-OFDM	QPSK	1RB Low	0	16.50		16.20	
							Frequency (MHz) / Channel		
							1857.5	1882.5	1907.5
							371500	376500	381500
	15	DFS-s OFDM	QPSK	1RB Low	0	18.00		18.00	
				50% RB Low	0	17.00		16.00	
							Frequency (MHz) / Channel		
							1855	1882.5	1910
							371000	376500	382000
	10	DFS-s OFDM	QPSK	1RB Low	0	18.00		17.29	
				50% RB Low	0	17.00		16.30	
							Frequency (MHz) / Channel		
							1852.5	1882.5	1912.5
							370500	376500	382500
	5	DFS-s OFDM	QPSK	1RB Low	0	18.00		17.48	
				50% RB Low	0	17.00		16.49	

B.3.5.6 5G NR (FR1) Band 30 FDD Antenna 5

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
								2310	
								46200	
NR30	10	DFS-s OFDM	Pl/2 BPSK	1RB Low	0	17.00		16.59	
			QPSK	1RB Low	0	17.00		16.65	
				1RB Mid	25	17.00		16.64	
				1RB High	49	17.00		16.69	
				50% RB Low	0	16.00		15.72	
				50% RB Mid	12	17.00		16.44	
				50% RB High	25	16.00		15.58	
				100% RB	0	16.00		15.59	
			16QAM	1RB Low	0	16.00		15.61	
			64QAM	1RB Low	0	14.50		13.61	
			256QAM	1RB Low	0	12.50		11.59	
		CP-OFDM	QPSK	1RB Low	0	15.50		14.57	
							Frequency (MHz) / Channel		
								2310	
								46200	
	5	DFS-s OFDM	QPSK	1RB Low	0	17.00		16.76	
				50% RB Low	0	16.00		15.95	

B.3.5.7 5G NR (FR1) Band 38 TDD

SAR Measurement for NR Band 38 TDD (Frequency range: 2570 – 2620MHz) is covered by NR Band 41 TDD (Frequency range: 2496 – 2690MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.5.8 5G NR (FR1) Band 41 TDD Antenna 5

Band	BW (MHz)	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5				
							Frequency (MHz) / Channel				
							2546	2569.5	2593	2616.5	2640
							509200	513900	518600	523300	528000
NR41	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	16.00			14.48		
			QPSK	1RB Low	0	16.00			15.51		
				1RB Mid	136	16.00			15.78		
				1RB High	270	16.00			15.78		
				50% RB Low	0	15.00			13.97		
				50% RB Mid	68	16.00			15.58		
				50% RB High	137	15.00			14.97		
				100% RB	0	15.00			14.50		
			16QAM	1RB Low	0	15.00			14.52		
			64QAM	1RB Low	0	13.50			12.51		
			256QAM	1RB Low	0	11.50			10.49		
		CP-OFDM	QPSK	1RB Low	0	14.50			14.50		
							Frequency (MHz) / Channel				
							2541	2567	2593	2619	2645
							508200	513400	518600	523800	529000
	90	DFS-s OFDM	QPSK	1RB Low	0	16.00			14.68		
				50% RB Low	0	15.00			13.78		
							Frequency (MHz) / Channel				
							2536	2564.5	2593	2621.5	2650
							507200	512900	518600	524300	530000
	80	DFS-s OFDM	QPSK	1RB Low	0	16.00			15.07		
				50% RB Low	0	15.00			13.38		
							Frequency (MHz) / Channel				
							2526	2559.5	2593	2626.5	2660
							505200	511900	518600	525300	532000
	60	DFS-s OFDM	QPSK	1RB Low	0	16.00			14.97		
				50% RB Low	0	15.00			13.88		
							Frequency (MHz) / Channel				
							2521	2557	2593	2629	2665
							504200	511400	518600	525800	5330000
	50	DFS-s OFDM	QPSK	1RB Low	0	16.00			14.95		
				50% RB Low	0	15.00			14.11		
							Frequency (MHz) / Channel				
							2516	2554.5	2593	2631.5	2670
							503200	510900	518600	526300	534000
	40	DFS-s OFDM	QPSK	1RB Low	0	16.00			14.99		
				50% RB Low	0	15.00			14.02		
							Frequency (MHz) / Channel				
							2506	2549.5	2593	2636.5	2680
							501200	509900	518600	527300	536000
	20	DFS-s OFDM	QPSK	1RB Low	0	16.00			15.19		
				50% RB Low	0	15.00			14.11		

B.3.5.9 5G NR (FR1) Band 41 TDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8				
							Frequency (MHz) / Channel				
							2546	2569.5	2593	2616.5	2640
							509200	513900	518600	523300	528000
NR41	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	13.00			12.11		
			QPSK	1RB Low	0	13.00			12.10		
				1RB Mid	136	13.00			12.82		
				1RB High	270	13.00			12.52		
				50% RB Low	0	12.00			11.40		
				50% RB Mid	68	13.00			12.67		
				50% RB High	137	12.00			11.65		
				100% RB	0	12.00			11.50		
			16QAM	1RB Low	0	12.00			11.12		
			64QAM	1RB Low	0	10.50			9.48		
			256QAM	1RB Low	0	8.50			7.68		
		CP-OFDM	QPSK	1RB Low	0	11.50			10.61		
							Frequency (MHz) / Channel				
							2541	2567	2593	2619	2645
							508200	513400	518600	523800	529000
	90	DFS-s OFDM	QPSK	1RB Low	0	13.00			12.38		
				50% RB Low	0	12.00			11.21		
							Frequency (MHz) / Channel				
							2536	2564.5	2593	2621.5	2650
							507200	512900	518600	524300	530000
	80	DFS-s OFDM	QPSK	1RB Low	0	13.00			11.95		
				50% RB Low	0	12.00			11.45		
							Frequency (MHz) / Channel				
							2526	2559.5	2593	2626.5	2660
							505200	511900	518600	525300	532000
	60	DFS-s OFDM	QPSK	1RB Low	0	13.00			12.55		
				50% RB Low	0	12.00			10.98		
							Frequency (MHz) / Channel				
							2521	2557	2593	2629	2665
							504200	511400	518600	525800	5330000
	50	DFS-s OFDM	QPSK	1RB Low	0	13.00			12.57		
				50% RB Low	0	12.00			11.05		
							Frequency (MHz) / Channel				
							2516	2554.5	2593	2631.5	2670
							503200	510900	518600	526300	534000
	40	DFS-s OFDM	QPSK	1RB Low	0	13.00			12.56		
				50% RB Low	0	12.00			10.87		
							Frequency (MHz) / Channel				
							2506	2549.5	2593	2636.5	2680
							501200	509900	518600	527300	536000
	20	DFS-s OFDM	QPSK	1RB Low	0	13.00			12.48		
				50% RB Low	0	12.00			11.79		

B.3.5.10 5G NR (FR1) Band 66 FDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5		
							Frequency (MHz) / Channel		
							1730	1745	1760
							346000	349000	352000
NR66	40	DFS-s OFDM	PI/2 BPSK	1RB Low	0	19.00		18.90	
			QPSK	1RB Low	0	19.00		18.91	
				1RB Mid	136	19.00		18.94	
				1RB High	270	19.00		18.78	
				50% RB Low	0	18.00		17.61	
				50% RB Mid	68	19.00		18.80	
				50% RB High	137	18.00		17.57	
				100% RB	0	18.00		17.56	
			16QAM	1RB Low	0	18.00		17.34	
			64QAM	1RB Low	0	16.50		16.34	
			256QAM	1RB Low	0	14.50		14.35	
		CP-OFDM	QPSK	1RB Low	0	17.50		17.29	
							Frequency (MHz) / Channel		
							1725	1745	1765
							345000	349000	353000
	30	DFS-s OFDM	QPSK	1RB Low	0	19.00		18.75	
				50% RB Low	0	18.00		17.87	
							Frequency (MHz) / Channel		
							1720	1745	1770
							344000	349000	354000
	20	DFS-s OFDM	QPSK	1RB Low	0	19.00		18.64	18.65
				50% RB Low	0	18.00		17.59	17.71
							Frequency (MHz) / Channel		
							1717.5	1745	1772.5
							343500	349000	354500
	15	DFS-s OFDM	QPSK	1RB Low	0	19.00		18.56	
				50% RB Low	0	18.00		17.41	
							Frequency (MHz) / Channel		
							1715	1745	1775
							343000	349000	355000
	10	DFS-s OFDM	QPSK	1RB Low	0	19.00		18.68	
				50% RB Low	0	18.00		17.22	
							Frequency (MHz) / Channel		
							1712.5	1745	1745
							342500	349000	355500
	5	DFS-s OFDM	QPSK	1RB Low	0	19.00		18.39	
				50% RB Low	0	18.00		17.37	

B.3.5.11 5G NR (FR1) Band 66 FDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8		
							Frequency (MHz) / Channel		
							1730	1745	1760
							346000	349000	352000
NR66	40	DFS-s OFDM	PI/2 BPSK	1RB Low	0	16.00		15.94	
			QPSK	1RB Low	0	16.00		15.88	
				1RB Mid	136	16.00		16.00	
				1RB High	270	16.00		16.00	
				50% RB Low	0	15.00		14.89	
				50% RB Mid	68	16.00		15.94	
				50% RB High	137	15.00		14.78	
				100% RB	0	15.00		14.61	
			16QAM	1RB Low	0	15.00		14.69	
			64QAM	1RB Low	0	13.50		13.21	
			256QAM	1RB Low	0	11.50		11.22	
		CP-OFDM	QPSK	1RB Low	0	14.50		14.00	
							Frequency (MHz) / Channel		
							1725	1745	1765
							345000	349000	353000
	30	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.87	
				50% RB Low	0	15.00		14.69	
							Frequency (MHz) / Channel		
							1720	1745	1770
							344000	349000	354000
	20	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.87	
				50% RB Low	0	15.00		14.74	
							Frequency (MHz) / Channel		
							1717.5	1745	1772.5
							343500	349000	354500
	15	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.62	
				50% RB Low	0	15.00		14.52	
							Frequency (MHz) / Channel		
							1715	1745	1775
							343000	349000	355000
	10	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.66	
				50% RB Low	0	15.00		14.26	
							Frequency (MHz) / Channel		
							1712.5	1745	1745
							342500	349000	355500
	5	DFS-s OFDM	QPSK	1RB Low	0	16.00		15.58	
				50% RB Low	0	15.00		14.56	

B.3.5.12 5G NR (FR1) Band 77 TDD Antenna 5

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 5				
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
NR77	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	14.00			12.28		
			QPSK	1RB Low	0	14.00			12.17		
				1RB Mid	136	14.00			12.67		
				1RB High	270	14.00			12.83		
				50% RB Low	0	13.00			11.93		
				50% RB Mid	68	14.00			13.02		
				50% RB High	137	13.00			12.08		
				100% RB	0	13.00			12.03		
			16QAM	1RB Low	0	13.00			11.24		
			64QAM	1RB Low	0	11.50			9.16		
			256QAM	1RB Low	0	9.50			8.56		
		CP-OFDM	QPSK	1RB Low	0	12.50			11.06		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	90	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.38		
				50% RB Low	0	13.00			11.98		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	80	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.66		
				50% RB Low	0	13.00			12.00		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	60	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.20		
				50% RB Low	0	13.00			12.11		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	50	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.17		
				50% RB Low	0	13.00			12.01		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	40	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.33		
				50% RB Low	0	13.00			11.85		
							Frequency (MHz) / Channel				

							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	20	DFS-s OFDM	QPSK	1RB Low	0	14.00			12.49		
				50% RB Low	0	13.00			11.48		

B.3.5.13 5G NR (FR1) Band 77 TDD Antenna 8

Band	BW	Modulation	Mode	RB Allocation	RB Offset	Factory upper tolerance (dBm)	Measured Output Power (dBm) Antenna 8				
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
NR77	100	DFS-s OFDM	PI/2 BPSK	1RB Low	0	11.00			9.86		
			QPSK	1RB Low	0	11.00			9.95		
				1RB Mid	136	11.00			9.83		
				1RB High	270	11.00			9.55		
				50% RB Low	0	10.00			8.45		
				50% RB Mid	68	11.00			9.18		
				50% RB High	137	10.00			8.92		
				100% RB	0	10.00			9.64		
			16QAM	1RB Low	0	10.00			9.85		
			64QAM	1RB Low	0	8.50			7.55		
			256QAM	1RB Low	0	6.50			5.56		
		CP-OFDM	QPSK	1RB Low	0	9.50			8.51		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	90	DFS-s OFDM	QPSK	1RB Low	0	11.00			9.96		
				50% RB Low	0	10.00			9.58		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	80	DFS-s OFDM	QPSK	1RB Low	0	11.00			10.31		
				50% RB Low	0	10.00			9.52		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	60	DFS-s OFDM	QPSK	1RB Low	0	11.00			10.82		
				50% RB Low	0	10.00			9.45		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	50	DFS-s OFDM	QPSK	1RB Low	0	11.00			9.74		
				50% RB Low	0	10.00			9.33		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	40		QPSK	1RB Low	0	11.00			10.22		

		DFS-s OFDM		50% RB Low	0	10.00			9.12		
							Frequency (MHz) / Channel				
							3840	3795	3750	3885	3930
							656600	653000	650000	659000	662000
	20	DFS-s OFDM	QPSK	1RB Low	0	11.00			9.97		
				50% RB Low	0	10.00			8.91		

B.3.5.14 5G NR (FR1) Band 78 TDD

SAR Measurement for NR Band 78 TDD (Frequency range: 3700 – 3800MHz) is covered by NR Band 78 TDD (Frequency range: 3700 – 3980MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

B.3.5.15 5G NR (FR1) UL Carrier Aggregation

For NR ULCA mode, each carrier transmits on separate antennas. Each exposure has been measured separately. For each, the highest standalone SAR conditions are added to derive the Total SAR. Refer to paragraph B.3.4 and B.3.5.

B.4 Tissue Parameters Measurement

Body TSL

Body TSL	Target TSL		Measured TSL		Deviation %		
Freq (MHz)	ε'(F/m)	σ(S/m)	ε'(F/m)	σ(S/m)	Deviation ε'	Deviation σ	Date
750.0	53.46	0.96	54.32	0.97	-2.18	1.04	2021-05-03
750.0	53.46	0.96	52.41	1.01	-5.62	5.21	2021-05-31
835.0	53.26	0.98	54.07	1.01	-2.03	3.06	2021-05-03
835.0	53.26	0.98	53.74	1.02	-2.63	4.08	2021-05-25
1750.0	53.43	1.49	52.6	1.5	-1.55	0.67	2021-05-03
1750.0	53.43	1.49	52.06	1.48	-2.56	-0.67	2021-05-06
1750.0	53.43	1.49	51.38	1.52	-3.84	2.01	2021-06-28
1900.0	53.30	1.52	52.28	1.6	-1.91	5.26	2021-05-03
1900.0	53.30	1.52	51.38	1.61	-3.6	5.92	2021-05-10
1900.0	53.30	1.52	51.93	1.6	-2.57	5.26	2021-05-25
1900.0	53.30	1.52	50.51	1.59	-5.23	4.61	2021-06-03
2300.0	52.90	1.81	50.95	1.91	-3.69	5.52	2021-05-11
2300.0	52.90	1.81	50.1	1.88	-5.29	3.87	2021-05-31
2600.0	52.51	2.16	51.38	2.21	-2.15	2.31	2021-04-29
2600.0	52.51	2.16	50.47	2.23	-3.88	3.24	2021-05-11
2600.0	52.51	2.16	50.13	2.14	-4.53	-0.93	2021-06-08
2600.0	52.51	2.16	50.68	2.17	-3.49	0.46	2021-06-29
3700.0	51.05	3.55	47.6	3.29	-6.76	-7.32	2021-06-02
3700.0	51.05	3.55	47.81	3.3	-6.35	-7.04	2021-07-05

See *Annex D* below for more details.

B.5 System Check Measurements

Body Measurements

Frequency (MHz)	Average	Target SAR (W/Kg)	Measured SAR (W/Kg)	Deviation to target (%)	Limit (%)	Date
750	1g	8.75	8.29	-6.06	±10	2021-05-03
	10g	5.72	5.46	-5.24		
	1g	8.75	8.25	-2.86		2021-06-01
	10g	5.72	5.40	-1.75		
835	1g	9.65	10.34	7.77		2021-05-03
	10g	6.32	6.72	7.28		
	1g	9.65	10.44	8.19		2021-05-27
	10g	6.32	6.82	7.91		
1750	1g	37.10	35.80	-2.72		2021-05-03
	10g	19.60	18.92	-2.47		
	1g	37.10	36.40	-1.89		2021-05-07
	10g	19.60	19.12	-2.14		
	1g	37.10	35.40	-4.58		2021-06-28
	10g	19.60	18.84	-3.88		
1900	1g	40.30	40.20	-0.25		2021-05-04
	10g	21.00	21.00	0.00		
	1g	40.30	42.00	4.32		2021-05-11
	10g	21.00	21.80	3.81		
	1g	40.30	38.00	-5.71		2021-06-03
	10g	21.00	19.88	-5.33		
2300	1g	47.90	49.80	3.13		2021-05-31
	10g	23.20	23.60	0.86		
2600	1g	54.10	49.80	-7.95		2021-04-28
	10g	24.10	22.40	-7.05		
	1g	54.10	53.40	-1.29		2021-05-12
	10g	24.10	23.60	-2.90		
	1g	54.10	50.80	-6.96		2021-06-08
	10g	24.10	22.60	-6.61		
	1g	54.10	50.60	-6.10		2021-06-30
	10g	24.10	22.60	-6.61		
3700	1g	62.10	61.20	-1.45		2021-06-02
	10g	22.20	22.60	1.80		
	1g	62.10	65.80	5.96		2021-07-07
	10g	22.20	24.40	9.91		

See *Annex C* for more details.

B.6 SAR Test Results

B.6.1 WCDMA – Antenna 5

Rate - BW	Radio Band Name	Channel Number	Freq (MHz)	Test position mode	Position	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
RMC 12.2kbps - 5Mhz	Band 2	9262	1852.4	Tablet	Back Face	0.00	1.00	1.00	
				Notebook	Laptop	0.64	0.80	0.92	
		9400	1880	Tablet	Back Face	0.00	0.95	0.95	
					Right edge	0.00	0.78	0.78	
					Top edge	0.00	0.03	0.03	
				Notebook	Laptop	0.63	0.91	1.05	
		9538	1907.6	Tablet	Back Face	0.00	1.18	1.18	1
				Notebook	Laptop	0.72	0.98	1.16	
	Band 4	1312	1712.4	Tablet	Back Face	0.40	0.92	1.00	
					Right edge	0.40	0.88	0.97	
				Laptop	Laptop	0.89	0.64	0.79	
		1413	1732.6	Tablet	Back Face	0.36	0.95	1.03	2
					Right edge	0.36	0.74	0.81	
				Notebook	Laptop	1.01	0.63	0.80	
		1513	1752.6	Tablet	Back Face	0.52	0.90	1.01	
					Right edge	0.52	0.82	0.92	
					Top edge	0.36	0.05	0.05	
				Notebook	Laptop	1.02	0.59	0.74	
	Band 5	4132	826.4	Tablet	Back Face	0.06	1.13	1.15	3
				Notebook	Laptop	0.56	0.80	0.91	
		4183	836.6	Tablet	Back Face	0.15	1.09	1.13	
					Right edge	0.15	0.40	0.41	
					Top edge	0.15	0.10	0.11	
				Notebook	Laptop	0.65	0.74	0.86	
		4233	846.6	Tablet	Back Face	0.15	1.09	1.13	
				Notebook	Laptop	0.64	0.71	0.82	

B.6.2 LTE

B.6.2.1 LTE Band 5 FDD

SAR Measurement for LTE Band 5 FDD (Frequency range: 824 – 849MHz) is covered by LTE Band 26 FDD (Frequency range: 814 – 849MHz) due to overlapping frequency range, lower maximum tune-up and similar bandwidth

UL CA 5B

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

Standalone testing in LTE Band5 is not required as it is covered by LTE Band26. This latter is used to determine the antenna, position and channels that provide the worst-case SAR. Back Face position with low channel is chosen as the configuration that gives the highest SAR, thus, the same is used for UL CA testing in Band5

Band	Antenna	Modulation / BW	PCC			SCC			Position	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)
			Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation				
LTE 5	Ant5	QPSK / 10MHz	26775	822.5	1RB High	20476	831.6	1RB Low	Back Face	0.83	0.66	0.80

PCC RB allocation settings for UL CA has been adjusted based on the worst-case power

B.6.2.2 **LTE Band 7 FDD**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 7	Ant 5	QPSK / 20MHz	20850	2510.0	Tablet	Back Face	1RB Mid	0.41	1.06	1.16	
							50RB Mid	1.40	0.84	1.16	
						Right edge	1RB Mid	0.41	0.72	0.79	
							50RB Mid	0.41	0.56	0.62	
					Laptop	Laptop	1RB Mid	0.22	1.35	1.42	4
							50RB Mid	0.15	1.34	1.39	
			21100	2535.0	Tablet	Back Face	1RB Mid	0.41	1.15	1.26	
							50RB Mid	1.48	0.91	1.28	
							100RB Mid	1.40	0.92	1.27	
						Right edge	1RB Mid	1.40	0.82	1.14	
							50RB Mid	1.40	0.65	0.90	
							100RB Mid	1.40	0.66	0.90	
						Top edge	1RB Mid	1.40	0.20	0.27	
							50RB Mid	1.40	0.16	0.22	
					Notebook	Laptop	1RB Mid	0.48	1.19	1.33	
							50RB Mid	0.41	1.28	1.41	
							100RB Mid	0.18	1.35	1.41	
			21350	2560.0	Tablet	Back Face	1RB Mid	0.29	1.15	1.23	
							50RB Mid	1.30	0.91	1.22	
						Right edge	1RB Mid	1.48	0.84	1.18	
							50RB Mid	1.48	0.66	0.93	
					Notebook	Laptop	1RB Mid	0.26	1.22	1.30	
							50RB Mid	0.25	1.30	1.38	
	Ant 8	QPSK / 20MHz	20850	2510.0	Notebook	Laptop	1RB Mid	0.90	0.92	1.13	
							50RB Mid	1.79	0.72	1.09	
			21100	2535.0	Tablet	Back Face	1RB Mid	0.78	0.23	0.28	
							50RB Mid	1.81	0.23	0.35	
						Left edge	1RB Mid	0.99	0.55	0.69	
							50RB Mid	2.00	0.43	0.68	
						Top edge	1RB Mid	0.99	0.03	0.04	
							50RB Mid	2.00	0.03	0.05	
					Notebook	Laptop	1RB Mid	0.78	0.96	1.15	
							50RB Mid	1.81	0.78	1.18	
							100RB Mid	1.81	0.78	1.18	
					Notebook	Laptop	1RB Mid	0.70	1.04	1.22	
							50RB Mid	1.72	0.82	1.22	

UL CA 7C

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

From the above table on standalone testing on LTE Band7, Laptop position with low channel is chosen as the configuration that gives the highest SAR, thus, the same is used for UL CA testing

Band	Antenna	Modulation / BW	PCC			SCC			Position	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)
			Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation				
LTE 7	Ant5	QPSK / 20MHz	20850	2510	1RB High	21100	2535	1RB Low	Laptop	0.99	0.78	0.98
	Ant8		20850	2510	1RB High	21100	2535	1RB Low		0.00	0.48	0.48

PCC RB allocation settings for UL CA has been adjusted based on the worst-case power

B.6.2.3 LTE Band 12 FDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 12	Ant5	QPSK / 10MHz	23095	707.5	Tablet	Back Face	1RB Mid	0.42	1.03	1.13	5
							50RB Mid	0.48	0.82	0.91	
							100RB Mid	0.40	0.82	0.90	
						Right edge	1RB Mid	0.42	0.47	0.52	
							50RB Mid	0.48	0.37	0.41	
						Top edge	1RB Mid	0.42	0.19	0.21	
							50RB Mid	0.48	0.15	0.16	
					Notebook	Laptop	1RB Mid	0.44	0.93	1.03	
							50RB Mid	0.44	0.84	0.93	
							100RB Mid	0.44	0.82	0.91	

B.6.2.4 LTE Band 13 FDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 13	Ant5	QPSK / 10MHz	23230	782	Tablet	Back Face	1RB Mid	0.30	1.05	1.13	6
							50RB Mid	0.36	0.80	0.87	
							100RB Mid	0.30	0.82	0.87	
						Right edge	1RB Mid	0.30	0.44	0.48	
							50RB Mid	0.36	0.35	0.38	
						Top edge	1RB Mid	0.30	0.37	0.39	
							50RB Mid	0.36	0.28	0.31	
					Notebook	Laptop	1RB Mid	0.05	1.00	1.01	
							50RB Mid	0.10	0.87	0.89	
							100RB Mid	0.08	0.87	0.89	

B.6.2.5 LTE Band 14 FDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 14	Ant5	QPSK / 10MHz	23330	750	Tablet	Back Face	1RB Mid	0.31	1.09	1.17	7
							50RB Mid	0.37	0.85	0.92	
							100RB Mid	0.35	0.85	0.93	
						Right edge	1RB Mid	0.31	0.47	0.50	
							50RB Mid	0.37	0.36	0.39	
						Top edge	1RB Mid	0.31	0.37	0.40	
							50RB Mid	0.37	0.29	0.31	
					Notebook	Laptop	1RB Mid	0.00	1.01	1.01	
							50RB Mid	0.00	0.89	0.89	
							100RB Mid	0.00	0.88	0.88	

B.6.2.6 **LTE Band 25 FDD**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 25	Ant 5	QPSK / 20MHz	18700	1860.0	Tablet	Back Face	1RB Mid	0.50	1.14	1.28	
							50RB Mid	0.58	0.89	1.02	
						Right edge	1RB Mid	0.50	0.87	0.97	
							50RB Mid	0.58	0.69	0.78	
					Laptop	Laptop	1RB Mid	1.51	0.66	0.93	
							50RB Mid	0.49	0.66	0.74	
			26365	1882.5	Tablet	Back Face	1RB Mid	0.51	1.20	1.35	
							50RB Mid	0.67	0.95	1.11	
							100RB Mid	0.82	0.94	1.13	
						Right edge	1RB Mid	0.51	0.96	1.08	
							50RB Mid	0.67	0.76	0.89	
							100RB Mid	0.82	0.74	0.90	
						Top edge	1RB Mid	0.51	0.02	0.03	
							50RB Mid	0.67	0.03	0.03	
					Notebook	Laptop	1RB Mid	1.70	0.73	1.08	
							50RB Mid	0.61	0.73	0.84	
							100RB Mid	0.62	0.72	0.83	
			19159	1905.0	Tablet	Back Face	1RB Mid	0.50	1.28	1.44	
							50RB Mid	0.55	1.01	1.15	
						Right edge	1RB Mid	0.50	1.06	1.19	
							50RB Mid	0.55	0.84	0.95	
					Notebook	Laptop	1RB Mid	1.64	0.78	1.13	
							50RB Mid	0.58	0.77	0.88	
	Ant 8	QPSK / 20MHz	18700	1860.0	Tablet	Back Face	1RB Mid	0.41	1.08	1.19	
							50RB Mid	0.45	0.88	0.97	
					Notebook	Laptop	1RB Mid	0.82	1.10	1.33	
							50RB Mid	0.74	1.04	1.23	
			26365	1882.5	Tablet	Back Face	1RB Mid	0.44	1.04	1.15	
							50RB Mid	0.53	0.81	0.92	
							100RB Mid	0.60	0.79	0.91	
						Left edge	1RB Mid	0.41	0.20	0.22	
							50RB Mid	0.53	0.16	0.18	
						Top edge	1RB Mid	0.41	0.02	0.02	
							50RB Mid	0.53	0.01	0.01	
					Notebook	Laptop	1RB Mid	0.80	1.20	1.44	8
							50RB Mid	0.80	0.97	1.16	
							100RB Mid	0.86	0.95	1.15	
			19159	1905.0	Tablet	Back Face	1RB Mid	0.35	1.12	1.21	
							50RB Mid	0.43	0.91	1.00	
					Notebook	Laptop	1RB Mid	0.76	1.08	1.29	
							50RB Mid	0.79	0.94	1.13	

B.6.2.7 LTE Band 26 FDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 26	Ant5	QPSK / 15MHz	26775	822.5	Tablet	Back Face	1RB Mid	0.00	1.22	1.22	9
							50RB Mid	0.78	0.62	0.74	
					Notebook	Laptop	1RB Mid	0.74	0.98	1.16	
							50RB Mid	0.28	0.89	0.95	
			26865	831.5	Tablet	Back Face	1RB Mid	0.00	1.19	1.19	
							50RB Mid	0.84	0.93	1.13	
							100RB Mid	0.85	0.93	1.13	
						Right edge	1RB Mid	0.00	0.43	0.43	
							50RB Mid	0.84	0.34	0.41	
						Top edge	1RB Mid	0.00	0.40	0.40	
							50RB Mid	0.84	0.31	0.38	
					Notebook	Laptop	1RB Mid	0.96	0.96	1.19	
							50RB Mid	0.33	0.84	0.90	
							100RB Mid	0.32	0.84	0.90	
			26965	841.5	Tablet	Back Face	1RB Mid	0.38	1.05	1.15	
							50RB Mid	0.90	0.96	1.17	
					Notebook	Laptop	1RB Mid	0.10	0.96	0.99	
							50RB Mid	0.40	0.83	0.91	

B.6.2.8 LTE Band 30 FDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 30	Ant 5	QPSK / 10MHz	27710	2310.0	Tablet	Back Face	1RB Mid	0.00	1.29	1.29	
							50RB Mid	0.00	1.00	1.00	
							100RB Mid	0.03	0.97	0.98	
						Right edge	1RB Mid	0.00	0.78	0.78	
							50RB Mid	0.00	0.60	0.60	
						Top edge	1RB Mid	0.00	0.30	0.30	
							50RB Mid	0.00	0.23	0.23	
					Notebook	Laptop	1RB Mid	1.05	0.86	1.06	
							50RB Mid	0.00	0.67	0.67	
							100RB Mid	0.00	0.65	0.65	
	Ant 8	QPSK / 10MHz	27710	2310.0	Tablet	Back Face	1RB Mid	0.83	1.11	1.34	10
							50RB Mid	0.87	0.85	1.04	
							100RB Mid	0.91	0.85	1.04	
						Left edge	1RB Mid	0.83	0.05	0.06	
							50RB Mid	0.87	0.05	0.06	
						Top edge	1RB Mid	0.83	0.18	0.21	
							50RB Mid	0.83	0.14	0.16	
					Notebook	Laptop	1RB Mid	0.76	0.89	1.06	
							50RB Mid	0.00	0.78	0.78	
							100RB Mid	0.00	0.79	0.79	

B.6.2.9 LTE Band 41 TDD

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 41	Ant 5	QPSK / 20MHz	39750	2506	Tablet	Back Face	1RB Mid	0.00	1.11	1.11	
							50RB Mid	0.00	0.90	0.90	
			40185	2549.5	Tablet	Back Face	1RB Mid	0.64	1.15	1.33	11
							50RB Mid	0.16	0.96	0.99	
			40620	2593	Tablet	Back Face	1RB Mid	0.64	0.83	0.96	
							50RB Mid	0.00	0.98	0.98	
							100RB Mid	0.00	0.98	0.98	
						Right edge	1RB Mid	0.64	0.58	0.67	
							50RB Mid	0.00	0.64	0.64	
						Top edge	1RB Mid	0.64	0.52	0.60	
							50RB Mid	0.00	0.61	0.61	
					Notebook	Laptop	1RB Mid	1.16	0.50	0.65	
							50RB Mid	0.16	0.61	0.63	
			41055	2636.5	Tablet	Back Face	1RB Mid	0.65	0.87	1.01	
							50RB Mid	0.00	1.05	1.05	
			41490	2680	Tablet	Back Face	1RB Mid	0.60	1.06	1.22	
							50RB Mid	0.00	1.27	1.27	
	Ant 8	QPSK / 20MHz	39750	2506	Notebook	Laptop	1RB Mid	0.00	1.04	1.04	
							50RB Mid	0.00	0.81	0.81	
			40185	2549.5	Notebook	Laptop	1RB Mid	0.00	0.76	0.76	
							50RB Mid	0.00	0.80	0.80	
			40620	2593	Tablet	Back Face	1RB Mid	0.00	0.78	0.78	
							50RB Mid	0.00	0.62	0.62	
						Left edge	1RB Mid	0.00	0.02	0.02	
							50RB Mid	0.00	0.01	0.01	
						Top edge	1RB Mid	0.00	0.40	0.40	
							50RB Mid	0.00	0.32	0.32	
					Notebook	Laptop	1RB Mid	0.00	0.91	0.91	
							50RB Mid	0.00	0.77	0.77	
							100RB Mid	0.00	0.76	0.76	
			41055	2636.5	Notebook	Laptop	1RB Mid	0.00	0.84	0.84	
							50RB Mid	0.00	0.85	0.85	
			41490	2680	Notebook	Laptop	1RB Mid	0.00	1.32	1.32	
							50RB Mid	0.68	1.04	1.22	

UL CA 41C

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

From the above table on standalone testing on LTE Band41, Back Face position on antenna5 and Laptop on antenna8 are chosen as the configurations that give the highest SAR, thus, the same is used for UL CA testing

Band	Antenna	Modulation / BW	PCC			SCC			Position	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)
			Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation				
LTE 41	Ant5	QPSK / 20MHz	40185	2549.5	1RB High	40620	2593	1RB Low	Back Face	1.00	0.35	0.44
	Ant8		41055	2636.5	1RB High	41490	2680	1RB Low	Laptop	1.00	0.56	0.71

PCC RB allocation settings for UL CA has been adjusted based on the worst-case power

B.6.2.10 **LTE Band 48 TDD**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 48	Ant8	QPSK / 20MHz	55990	3560	Tablet	Back Face	1RB Mid	0.00	0.74	0.74	
							50RB Mid	0.00	0.56	0.56	
					Notebook	Laptop	1RB Mid	0.60	0.72	0.83	
							50RB Mid	0.70	0.56	0.66	
			26865	3625	Tablet	Back Face	1RB Mid	0.00	0.84	0.84	
							50RB Mid	0.00	0.65	0.65	
							100RB Mid	0.00	0.64	0.64	
						Left edge	1RB Mid	0.00	0.02	0.02	
							50RB Mid	0.00	0.03	0.03	
						Top edge	1RB Mid	0.00	0.30	0.30	
							50RB Mid	0.00	0.28	0.28	
					Notebook	Laptop	1RB Mid	0.60	1.05	1.19	12
							50RB Mid	0.70	0.73	0.85	
							100RB Mid	0.75	0.71	0.84	
			26965	3690	Tablet	Back Face	1RB Mid	0.00	0.89	0.89	
							50RB Mid	0.00	0.70	0.70	
					Notebook	Laptop	1RB Mid	0.60	0.93	1.07	
							50RB Mid	0.70	0.71	0.84	

B.6.2.11 **LTE Band 66 FDD**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
LTE 66	Ant 5	QPSK / 20MHz	132072	1720.0	Tablet	Back Face	1RB Mid	0.35	1.23	1.33	
							50RB Mid	0.00	0.95	0.95	
						Right edge	1RB Mid	0.35	1.11	1.20	
							50RB Mid	0.00	0.86	0.86	
					Notebook	Laptop	1RB Mid	0.67	1.18	1.38	
							50RB Mid	0.67	1.20	1.40	13
							100RB Mid	0.00	0.94	0.94	
			132322	1745.0	Tablet	Back Face	1RB Mid	0.41	1.24	1.36	
							50RB Mid	0.00	1.00	1.00	
							100RB Mid	0.00	0.98	0.98	
						Right edge	1RB Mid	0.36	1.04	1.13	
							50RB Mid	0.00	0.84	0.84	
							100RB Mid	0.00	0.84	0.84	
						Top edge	1RB Mid	0.41	0.13	0.15	
							50RB Mid	0.00	0.11	0.11	
			132422	1755.0	Tablet	Back Face	1RB Mid	0.36	1.16	1.26	
							50RB Mid	0.00	0.92	0.92	
						Right edge	1RB Mid	0.36	1.00	1.08	
							50RB Mid	0.00	0.79	0.79	
					Notebook	Laptop	1RB Mid	0.72	1.16	1.37	
							50RB Mid	0.00	0.93	0.93	
							100RB Mid	0.00	0.93	0.93	
			132572	1770.0	Notebook	Laptop	1RB Mid	0.79	1.10	1.32	
							50RB Mid	0.00	0.88	0.88	
	Ant 8	QPSK / 20MHz	132072	1720.0	Tablet	Back Face	1RB Mid	0.84	1.08	1.31	
							50RB Mid	0.81	0.87	1.04	
					Notebook	Laptop	1RB Mid	1.10	1.06	1.37	
							50RB Mid	1.00	0.84	1.06	
			132322	1745.0	Tablet	Back Face	1RB Mid	0.69	1.12	1.31	
							50RB Mid	0.67	0.88	1.02	
							100RB Mid	0.62	0.88	1.01	
						Left edge	1RB Mid	0.69	0.20	0.24	
							50RB Mid	0.65	0.16	0.18	
						Top edge	1RB Mid	0.69	0.03	0.04	
							50RB Mid	0.65	0.03	0.03	
			132422	1755.0	Tablet	Back Face	1RB Mid	0.74	1.04	1.23	
							50RB Mid	0.71	0.83	0.98	
					Notebook	Laptop	1RB Mid	0.99	1.09	1.37	
							50RB Mid	1.00	0.87	1.10	
							100RB Mid	0.98	0.86	1.08	
			132572	1770.0	Notebook	Laptop	1RB Mid	1.07	1.08	1.38	
							50RB Mid	1.00	0.90	1.13	

UL CA 66B, 66C

UL CA shall be tested based on the worst-case SAR configuration determined from non-CA SAR testing result. The channel BW, channel number, RB allocation, etc. would be selected to allow contiguous CA of PCC and SCC. Uplink output power for UL CA is the total power measured across the PCC and SCC.

From the above table on standalone testing on LTE Band66, Laptop position in the low channel is chosen as the configurations that gives the highest SAR, thus, the same is used for UL CA testing for the 66C mode. Since the 10MHz was not tested in standalone, due to KDB 941225 reduction list, the initial configuration for the 66B mode was taken from the worst-case scenario of the 20MHz

Band	Antenna	Modulation / BW	PCC			SCC			Position	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)
			Ch	Freq (MHz)	RB Allocation	Ch	Freq (MHz)	RB Allocation				
LTE 66 66B	Ant5	QPSK / 10MHz	132022	1715.0	1RB High	132122	1725	1RB Low	Laptop	1.00	0.91	1.14
	Ant8		132022	1715.0	1RB High	132122	1725	1RB Low		1.00	0.81	1.02
LTE 66 66C	Ant5	QPSK / 20MHz	132072	1720.0	1RB High	132322	1745	1RB Low		0.00	0.90	0.90
	Ant8		132072	1720.0	1RB High	132322	1745	1RB Low		0.00	0.74	0.74

PCC RB allocation settings for UL CA has been adjusted based on the worst-case power

B.6.3 5G NR

B.6.3.1 5G NR 2

SAR Measurement for NR Band 2 FDD (Frequency range: 1850 – 1910MHz) on antenna 5 is covered by NR Band 25 FDD (Frequency range: 1850 – 1915MHz) due to overlapping frequency range, same maximum tune-up and same bandwidth.

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR2	Ant8	QPSK / 20MHz	376000	1880.0	Tablet	Back Face	1RB Mid	0.84	0.60	0.73	
							50RB Mid	0.90	0.62	0.76	14
						Left edge	1RB Mid	0.84	0.21	0.25	
							50RB Mid	0.90	0.22	0.27	
						Top edge	1RB Mid	0.84	0.37	0.45	
							50RB Mid	0.90	0.38	0.47	
					Notebook	Laptop	1RB Mid	1.53	0.43	0.60	
							50RB Mid	1.13	0.42	0.55	

B.6.3.2 **5G NR 5**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR5	Ant5	QPSK / 20MHz	167300	836.5	Tablet	Back Face	1RB Mid	0.58	0.94	1.07	
							50RB Mid	1.01	1.06	1.34	
							100RB Mid	0.05	1.05	1.06	
						Right edge	1RB Mid	0.58	0.37	0.42	
							50RB Mid	1.01	0.37	0.46	
						Top edge	1RB Mid	0.58	0.42	0.48	
							50RB Mid	1.01	0.46	0.58	
					Notebook	Laptop	1RB Mid	0.26	1.05	1.11	
							50RB Mid	0.63	1.09	1.26	
							100RB Mid	0.13	1.30	1.34	15

B.6.3.3 **5G NR 7**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR7	Ant5	QPSK / 20MHz	500000	2510.0	Tablet	Back Face	1RB Mid	0.85	0.86	1.04	
							50RB Mid	0.00	0.83	0.83	
					Notebook	Laptop	1RB Mid	0.80	1.17	1.41	16
							50RB Mid	0.52	1.18	1.33	
			507000	2535.0	Tablet	Back Face	1RB Mid	0.57	0.81	0.92	
							50RB Mid	0.00	0.83	0.83	
							100RB Mid	0.00	1.12	1.12	
						Right edge	1RB Mid	0.57	0.47	0.54	
							50RB Mid	0.00	0.48	0.48	
						Top edge	1RB Mid	0.57	0.13	0.14	
							50RB Mid	0.00	0.13	0.13	
					Notebook	Laptop	1RB Mid	0.54	0.64	0.73	
							50RB Mid	0.51	0.65	0.73	
							100RB Mid	0.57	1.07	1.22	
			514000	2560.0	Tablet	Back Face	1RB Mid	0.96	0.66	0.82	
							50RB Mid	0.00	0.70	0.70	
					Notebook	Laptop	1RB Mid	0.92	0.86	1.07	
							50RB Mid	0.95	0.88	1.10	

B.6.3.4 **5G NR 25**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR25	Ant5	QPSK / 20MHz	370000	1860.0	Tablet	Back Face	1RB Mid	0.06	1.05	1.06	
							50RB Mid	0.00	1.06	1.06	
						Right edge	1RB Mid	0.06	0.75	0.76	
							50RB Mid	0.00	0.77	0.77	
					Notebook	Laptop	1RB Mid	0.00	0.73	0.73	
							50RB Mid	0.00	0.84	0.84	
			376500	1882.5	Tablet	Back Face	1RB Mid	0.00	1.18	1.18	
							50RB Mid	0.00	1.20	1.20	
							100RB Mid	0.00	1.16	1.16	
						Right edge	1RB Mid	0.00	0.87	0.87	
							50RB Mid	0.00	0.89	0.89	
							100RB Mid	0.00	0.90	0.90	
						Top edge	1RB Mid	0.00	0.04	0.04	
							50RB Mid	0.00	0.03	0.03	
					Notebook	Laptop	1RB Mid	0.05	0.96	0.97	
							50RB Mid	0.00	0.97	0.97	
							100RB Mid	0.00	1.07	1.07	
			383000	1905.0	Tablet	Back Face	1RB Mid	0.51	1.20	1.35	17
							50RB Mid	0.00	1.23	1.23	
						Right edge	1RB Mid	0.51	0.95	1.07	
							50RB Mid	0.00	0.96	0.96	
					Notebook	Laptop	1RB Mid	0.59	0.88	1.01	
							50RB Mid	0.00	0.97	0.97	

B.6.3.5 **5G NR 30**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR 30	Ant5	QPSK / 10MHz	462000	2310.0	Tablet	Back Face	1RB Mid	0.07	0.93	0.94	18
							50RB Mid	0.00	0.92	0.92	
							100RB Mid	0.00	0.91	0.91	
						Right edge	1RB Mid	0.07	0.42	0.43	
							50RB Mid	0.00	0.42	0.42	
						Top edge	1RB Mid	0.07	0.25	0.25	
							50RB Mid	0.00	0.25	0.25	
					Notebook	Laptop	1RB Mid	0.03	0.93	0.93	
							50RB Mid	0.00	0.93	0.93	
							100RB Mid	0.00	0.92	0.92	

B.6.3.6 **5G NR 41**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR41	Ant 5	QPSK / 100MHz	518601	2593	Tablet	Back Face	1RB Mid	0.30	0.35	0.36	
							50RB Mid	0.00	0.40	0.44	
						Right edge	1RB Mid	0.30	0.33	0.36	
							50RB Mid	0.00	0.36	0.36	
						Top edge	1RB Mid	0.30	0.11	0.12	
							50RB Mid	0.00	0.13	0.13	
					Notebook	Laptop	1RB Mid	0.25	0.42	0.45	
							50RB Mid	0.38	0.47	0.50	19
	Ant 8	QPSK / 100MHz	518601	2593	Tablet	Back Face	1RB Mid	0.18	0.15	0.16	
							50RB Mid	0.33	0.16	0.17	
						Left edge	1RB Mid	0.18	0.03	0.03	
							50RB Mid	0.33	0.03	0.03	
						Top edge	1RB Mid	0.18	0.12	0.13	
							50RB Mid	0.33	0.12	0.13	
					Notebook	Laptop	1RB Mid	0.12	0.28	0.29	
							50RB Mid	0.21	0.29	0.30	

B.6.3.7 **5G NR 66**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR 66	Ant 5	QPSK / 40MHz	349000	1745.0	Tablet	Back Face	1RB Mid	0.20	0.94	0.98	
							50RB Mid	0.00	0.98	0.98	
							100RB Mid	0.00	0.94	0.94	
			349500	1755.0	Tablet	Right edge	1RB Mid	0.20	0.80	0.84	
							50RB Mid	0.00	0.86	0.86	
							100RB Mid	0.00	0.82	0.82	
						Top edge	1RB Mid	0.20	0.11	0.11	
							50RB Mid	0.00	0.11	0.11	
					Notebook	Laptop	1RB Mid	0.17	0.82	0.85	
							50RB Mid	0.00	0.86	0.86	
							100RB Mid	0.00	0.83	0.83	
	Ant 8	QPSK / 40MHz	349000	1745.0	Tablet	Back Face	1RB Mid	0.00	1.24	1.24	20
							50RB Mid	0.00	1.23	1.23	
							100RB Mid	0.00	1.20	1.20	
					Notebook	Laptop	1RB Mid	0.39	0.94	1.03	
							50RB Mid	0.00	1.15	1.15	
							100RB Mid	0.00	1.06	1.06	
			349500	1755.0	Tablet	Left edge	1RB Mid	0.02	0.25	0.26	
							50RB Mid	0.00	0.25	0.25	
						Top edge	1RB Mid	0.02	0.11	0.11	
							50RB Mid	0.00	0.11	0.11	

B.6.3.8 **5G NR 77**

Band	Antenna	Modulation / BW	Channel Number	Freq (MHz)	Test position mode	Position	% RB Allocation	Scaling Factor (dB)	Measured SAR 1g (W/Kg)	Reported SAR 1g (W/Kg)	Plot #
NR77	Ant 5	QPSK / 100MHz	650000	3750.0	Tablet	Back Face	1RB Mid	1.33	0.40	0.55	
							50RB Mid	0.98	0.40	0.49	
						Right edge	1RB Mid	1.33	0.15	0.21	
							50RB Mid	0.98	0.14	0.18	
						Top edge	1RB Mid	1.33	0.03	0.05	
							50RB Mid	0.98	0.03	0.04	
					Notebook	Laptop	1RB Mid	1.23	0.30	0.40	
							50RB Mid	0.89	0.32	0.40	
	Ant 8	QPSK / 100MHz	650000	3750.0	Tablet	Back Face	1RB Mid	1.17	0.46	0.60	
							50RB Mid	0.82	0.47	0.56	
						Left edge	1RB Mid	1.17	0.02	0.02	
							50RB Mid	0.82	0.02	0.02	
						Top edge	1RB Mid	1.17	0.41	0.54	
							50RB Mid	0.82	0.41	0.49	
					Notebook	Laptop	1RB Mid	1.17	0.57	0.75	22
							50RB Mid	0.71	0.58	0.69	

B.6.4 ENDC

For EN-DC mode, the 4G and 5G carriers transmit on separate antennas. Each exposure has been measured separately. For both LTE and 5G-NR, the highest standalone SAR conditions are added to derive the Total SAR. Refer to paragraph B.6.7

B.6.6 SAR Measurement Variability

According to FCC OET KDB 865664, SAR Measurement variability is assessed when the maximum initial measured SAR is ≥0.8 W/kg for a certain band/mode. If the measured SAR value of the initial repeated measurement is <1.45 W/kg with <20% variation, only one repeated measurement is required to confirm that the results are not expected to have substantial variations.
A second repeated measurement is required only if the measured results for the initial repeated measurement are within 10% of the SAR limit or vary by more than 20%.
A third repeated measurement is required only if the original, first or second repeated measurement ≥1.5W/Kg and the ratio of largest to smallest SAR for the original, first and second repeated measurement is > 1.2.

Band / Mode	Position	Ch #	Freq. (MHz)	Measured SAR 1g (W/kg)	1st Repeated SAR 1g (W/Kg)	2nd Repeated SAR 1g (W/Kg)	Highest Ratio
5G NR B5 / QPSK – 20MHz	Back Face	4183	836.6	1.30	1.30		1.00
5G NR B66 / QPSK – 40MHz	Back Face	132322	1745.0	1.24	1.23		1.01
LTE FDD 25 / 20MHz	Back Face	9400	1880.0	1.28	1.10		1.16
LTE FDD 30 / QPSK – 10MHz	Back Face	27710	2310.0	1.29	1.23		1.05
LTE FDD 7 / QPSK – 20MHz	Laptop	20850	2510.0	1.35	1.31		1.03
5G NR B77 / QPSK – 100MHz	Laptop	650000	3750.0	1.05	1.04		1.01

B.6.7 Simultaneous Transmission SAR Evaluation

According to FCC OET KDB 447498 D01, when the sum of 1g SAR for all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit, SAR test exclusion applies to that simultaneous transmission configuration.

This report only evaluates SAR for cellular transmission on the module, nevertheless in order to consider all possible simultaneous transmissions on the device for compliance, WLAN SAR values reported on document [1] are considered.

All the values stated in the table below are the worst case found for standalone measurement with disregard of the transmission mode or channel where the worst case was found

Antenna	Position	Highest Reported SAR (1g) (W/Kg)				
		WWAN	WLAN 2.4GHz	WLAN 5GHz		Bluetooth
Ant.5 WWAN	Top Edge	0.61				
	Back Face	1.44				
	Right Edge	1.20				
	Laptop	1.44				
Ant.8 WWAN	Top Edge	0.47				
	Back Face	1.34				
	Left Edge	0.69				
	Laptop	1.44				
Main WLAN	Bottom Edge		0.61	0.92*	0.45**	
	Back Face		0.19	0.19		
	Laptop		0.12	0.24		
Aux WLAN	Bottom Edge		0.61	0.91*	0.44**	0.15
	Back Face		0.26	0.19		0.05
	Laptop		0.10	0.26		0.01

*The values shown are the highest in standalone mode, to be used for WLAN+WWAN simultaneous considerations in the table below

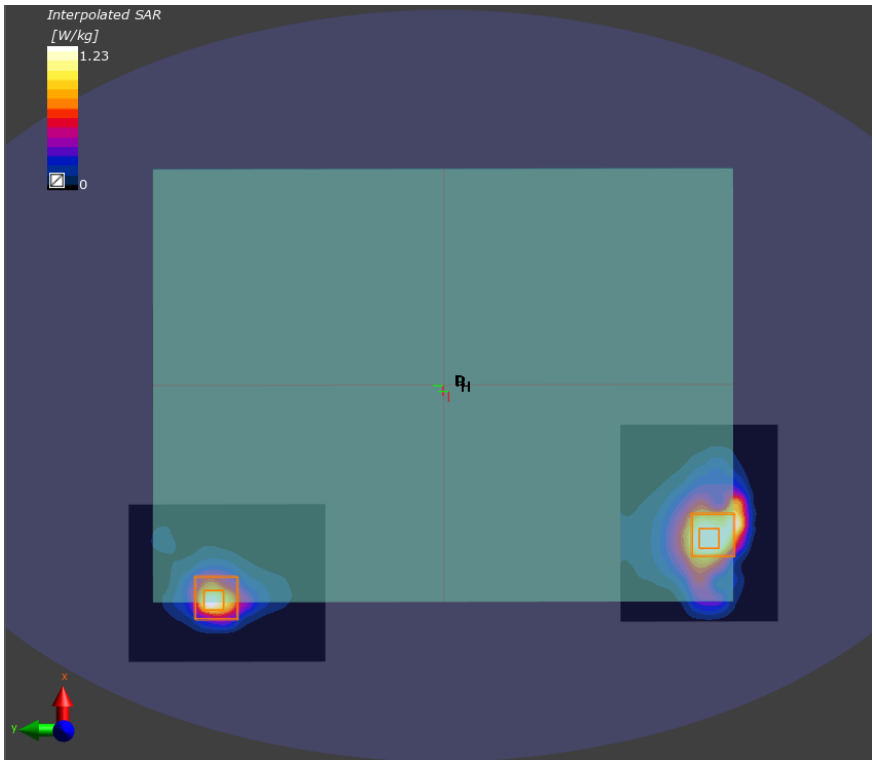
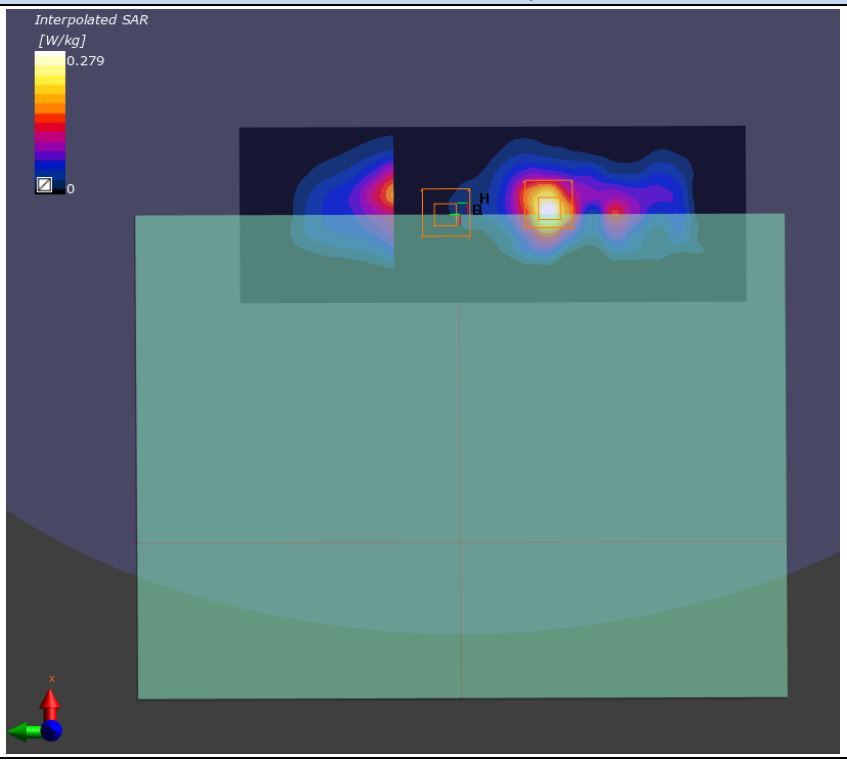
**For simultaneous WLAN Main + WLAN Aux, MIMO power are used for this position/antenna. For more details, refer to [3] specified in section 3

Position	Simultaneous Tx Antenna Combination					Σ SAR 1g (W/Kg)	Limit (W/kg)
	#	Cellular - WWAN		Main WLAN	Aux WLAN		
Top Edge	1	Ant.5	Ant.8	WLAN 5GHz*	WLAN 5GHz+ BT*	1.18	1.6
	2	Ant.5	Ant.8	WLAN 2.4GHz*	WLAN 2.4GHz*	1.18	
	3	Ant.5	Ant.8	WLAN 2.4GHz*	BT*	1.18	
Bottom Edge	1	Ant.5*	Ant.8*	WLAN 5GHz	WLAN 5GHz	0.89	
	2	Ant.5*	Ant.8*	WLAN 5GHz	WLAN 5GHz+ BT	1.04	
	3	Ant.5*	Ant.8*	WLAN 5GHz	BT	1.07	
	4	Ant.5*	Ant.8*	WLAN 2.4GHz	WLAN 2.4GHz	1.22	
	5	Ant.5*	Ant.8*	WLAN 2.4GHz	BT	0.76	
Right Edge	1	Ant.5	Ant.8*	WLAN 5GHz*	WLAN 5GHz+ BT*	1.40	
	2	Ant.5	Ant.8*	WLAN 2.4GHz*	WLAN 2.4GHz*	1.35	
	3	Ant.5	Ant.8*	WLAN 2.4GHz*	BT*	1.35	
Left Edge	1	Ant.5*	Ant.8	WLAN 5GHz*	WLAN 5GHz+ BT*	0.89	
	2	Ant.5*	Ant.8	WLAN 2.4GHz*	WLAN 2.4GHz*	0.84	
	3	Ant.5*	Ant.8	WLAN 2.4GHz*	BT*	0.84	
Back Face	1	Ant.5	Ant.8	WLAN 5GHz	WLAN 5GHz	**3.16**	
	2	Ant.5	Ant.8	WLAN 5GHz	WLAN 5GHz+ BT	**3.21**	
	3	Ant.5	Ant.8	WLAN 5GHz	BT	**3.02**	
	4	Ant.5	Ant.8	WLAN 2.4GHz	WLAN 2.4GHz	**3.23**	
	5	Ant.5	Ant.8	WLAN 2.4GHz	BT	**3.02**	
Laptop	1	Ant.5	Ant.8	WLAN 5GHz	WLAN 5GHz	**3.38**	
	2	Ant.5	Ant.8	WLAN 5GHz	WLAN 5GHz+ BT	**3.39**	
	3	Ant.5	Ant.8	WLAN 5GHz	BT	**3.13**	
	4	Ant.5	Ant.8	WLAN 2.4GHz	WLAN 2.4GHz	**3.10**	
	5	Ant.5	Ant.8	WLAN 2.4GHz	BT	**3.01**	

*According to KDB 447498, relatively to the SAR test exclusion thresholds for 100MHz – 6GHz and >50mm, the above technologies/positions can be excluded from standalone testing. For simultaneous considerations, for distances higher than 50mm the lab can use an estimated SAR value of 0.4W/kg or it can choose to perform standalone SAR measurements. WRF Lab has chosen the latter option, for every position/technology the worst case was tested. All measured values were smaller than 0.05W/kg. In the table above, the 0.05 value has been used as a worst case scenario of the real SAR value

In case the sum of SAR is larger than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio. According to the last table possible simultaneous transmission combinations are identified for each position from 1 to 5, each combination will be analyzed by antenna pairs. Antenna pairs considered in one configuration won't be performed again in case they are repeated on the next simultaneous configuration:

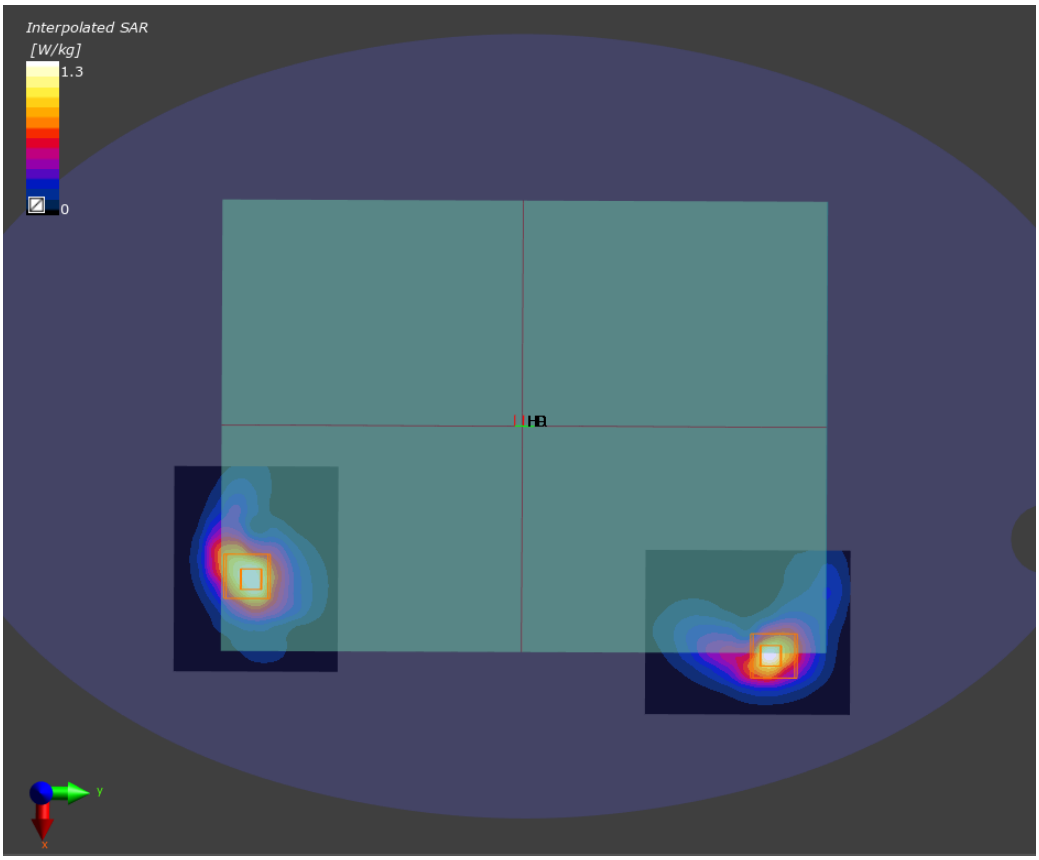
Back Face:

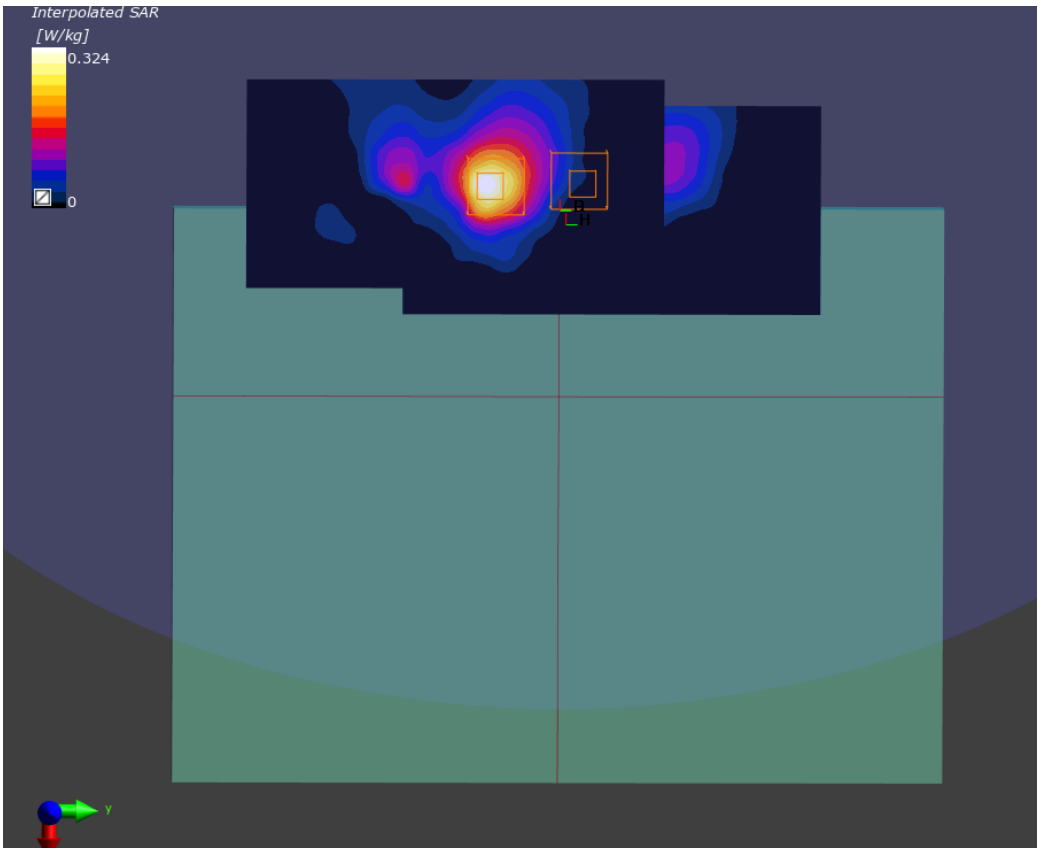
WWAN Ant.5 and Ant.8 hotspot location (Reference coordinates system for both WWAN and WLAN)

WLAN/BT Main and Aux hotspot location


Position	Ant. Pair case	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
Back Face	1a	Ant.5 WWAN	1.44	2.78	(-77.0, -135.0, -177.1)	0.02	0.04
		Ant.8 WWAN	1.34		(-108.0, -118.0, -177.3)		
	1b	Ant.5 WWAN	1.44	1.63	(-77.0, -135.0, -177.1)	0.01	
		Main WLAN 5GHz	0.19		(110.0, 8.0, -176.4)		
	1c	Ant.5 WWAN	1.44	1.63	(-77.0, -135.0, -177.1)	0.01	
		Aux WLAN 5GHz	0.19		(110.0, -51.5, -176.3)		
	1d	Ant.8 WWAN	1.34	1.53			
		Main WLAN 5GHz	0.19				
	1e	Ant.8 WWAN	1.34	1.53			
		Aux WLAN 5GHz	0.19				
	1f	Main WLAN 5GHz	0.19	0.38			
		Aux WLAN 5GHz	0.19				
	2a	Ant.5 WWAN	1.44	1.49			
		Aux BT	0.05				
	2b	Ant.8 WWAN	1.34	1.39			
		Aux BT	0.05				

Position	Ant. Pair case	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
Back Face	4a	Ant.5 WWAN	1.44	1.63	(-77.0, -135.0, -177.1)	0.01	0.04
		Main WLAN 2.4GHz	0.19		(109.0, 5.0, -176.4)		
	4b	Ant.5 WWAN	1.44	1.70	(-77.0, -135.0, -177.1)	0.01	
		Aux WLAN 2.4GHz	0.26		(109.0, -48.5, -176.3)		
	4c	Ant.8 WWAN	1.34	1.53			
		Main WLAN 2.4GHz	0.19				
	4d	Ant.8 WWAN	1.34	1.60			
		Aux WLAN 2.4GHz	0.26				
	4e	Main WLAN 2.4GHz	0.19	0.45			
		Aux WLAN 2.4GHz	0.26				

Laptop:

WWAN Ant.5 and Ant.8 hotspot location (Reference coordinates system for both WWAN and WLAN)


WLAN/BT Main and Aux hotspot location


Position	Ant. Pair case	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
Laptop	1a	Ant.5 WWAN	1.44	2.88	(76.0, -132.0, -176.0)	0.02	0.04
		Ant.8 WWAN	1.44		(110.0, 120.0, -176.1)		
	1b	Ant.5 WWAN	1.44	1.68	(76.0, -132.0, -176.0)	0.01	
		Main WLAN 5GHz	0.24		(-130.0, 5.0, -177.1)		
	1c	Ant.5 WWAN	1.44	1.70	(76.0, -132.0, -176.0)	0.01	
		Aux WLAN 5GHz	0.26		(-125.0, -30.0, -177.1)		
	1d	Ant.8 WWAN	1.44	1.66	(110.0, 120.0, -176.1)	0.01	
		Main WLAN 5GHz	0.24		(-130.0, 5.0, -177.1)		
	1e	Ant.8 WWAN	1.44	1.70	(110.0, 120.0, -176.1)	0.01	
		Aux WLAN 5GHz	0.26		(-125.0, -30.0, -177.1)		
	1f	Main WLAN 5GHz	0.24	0.50			
		Aux WLAN 5GHz	0.26				
	2a	Ant.5 WWAN	1.44	1.45			
		Aux BT	0.01				
	2b	Ant.8 WWAN	1.44	1.45			
		Aux BT	0.01				

Position	Ant. Pair case	Antenna	Reported SAR 1g (W/kg)	Σ SAR 1g (W/Kg)	Peak Location (mm) (x,y,z)	SAR to peak location separation ratio	Limit
Laptop	4a	Ant.5 WWAN	1.44	1.56			0.04
		Main WLAN 2.4GHz	0.12				
	4b	Ant.5 WWAN	1.44	1.54			
		Aux WLAN 2.4GHz	0.10				
	4c	Ant.8 WWAN	1.44	1.56			
		Main WLAN 2.4GHz	0.12				
	4d	Ant.8 WWAN	1.44	1.54			
		Aux WLAN 2.4GHz	0.10				
	4e	Main WLAN 2.4GHz	0.12	0.22			
		Aux WLAN 2.4GHz	0.10				

Considering the results described above and according to the simultaneous transmission evaluation exclusions described in FCC OET KDB 447498 D01, no enlarged zoom scan measurements are required

Annex C. Test System Plots

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1. WCDMA FDD II, 12.2kbps RMC, CH9538 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9HP	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 2, UTRA/FDD	WCDMA, 10011-CAB	1907.6, 9538	8.68	1.6	52.3

Hardware Setup

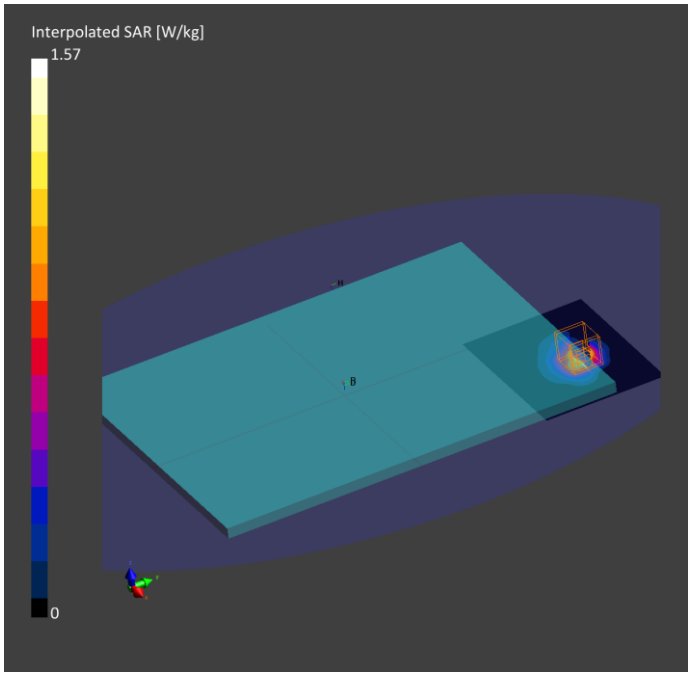
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-04, 17:14	2021-05-04, 17:20
psSAR1g [W/Kg]	1.21	1.18
psSAR10g [W/Kg]	0.608	0.568
Power Drift [dB]	0.00	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		76.0
Dist 3dB Peak [mm]		8.0



2. WCDMA FDD IV, 12.2kbps RMC, CH1762 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 4, UTRA/FDD	WCDMA, 10011-CAB	1732.5, 1762	9.0	1.49	52.6

Hardware Setup

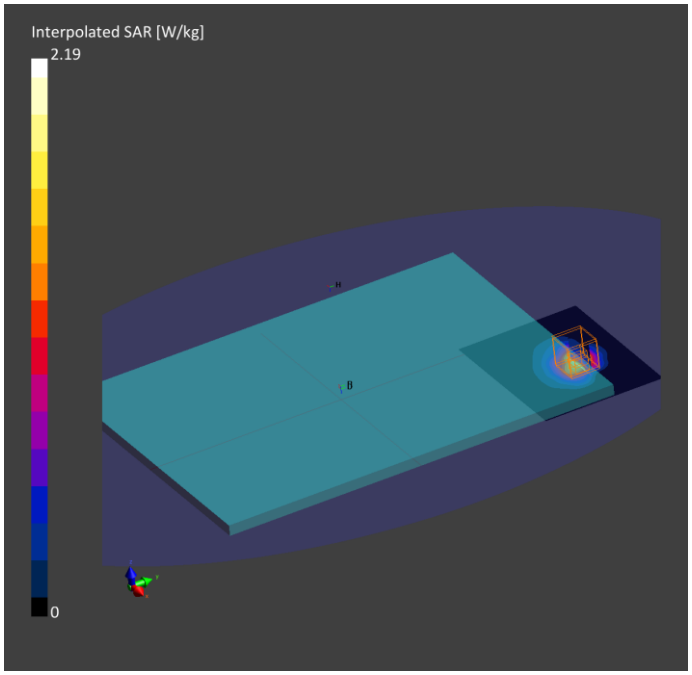
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) -	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 17:28	2021-05-03, 17:33
psSAR1g [W/Kg]	0.966	0.945
psSAR10g [W/Kg]	0.500	0.466
Power Drift [dB]	-0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		72.8
Dist 3dB Peak [mm]		7.6



3. WCDMA FDD V, 12.2kbps RMC, CH4132 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 5, UTRA/FDD	WCDMA, 10011-CAB	826.4, 4132	10.73	1.00	54.1

Hardware Setup

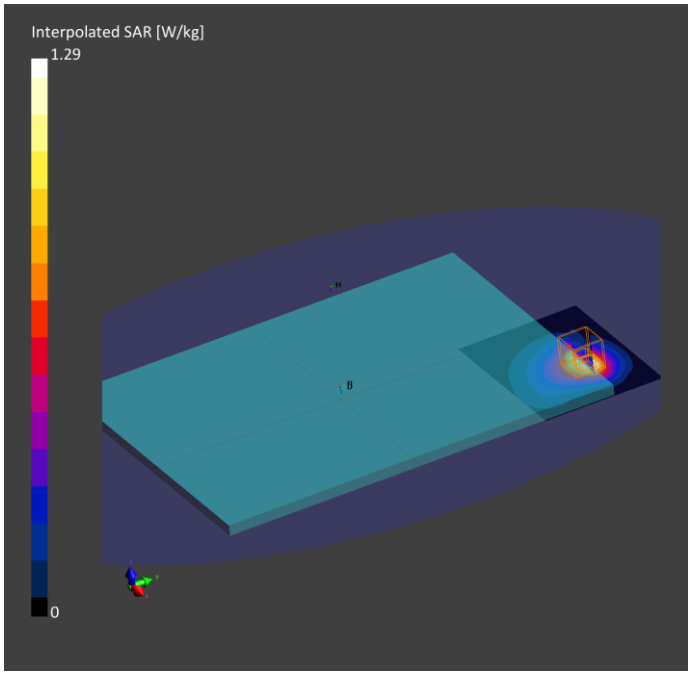
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) -	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 19:07	2021-05-03, 19:12
psSAR1g [W/Kg]	**1.11**	1.13
psSAR10g [W/Kg]	**0.673**	0.600
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		74.0
Dist 3dB Peak [mm]		9.9



4. LTE Band 7, QPSK - 20MHz, CH20850 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band 7, E-UTRA/FDD	LTE-FDD, 10169-CAE	2510.0, 20850	7.19	2.12	51.5

Hardware Setup

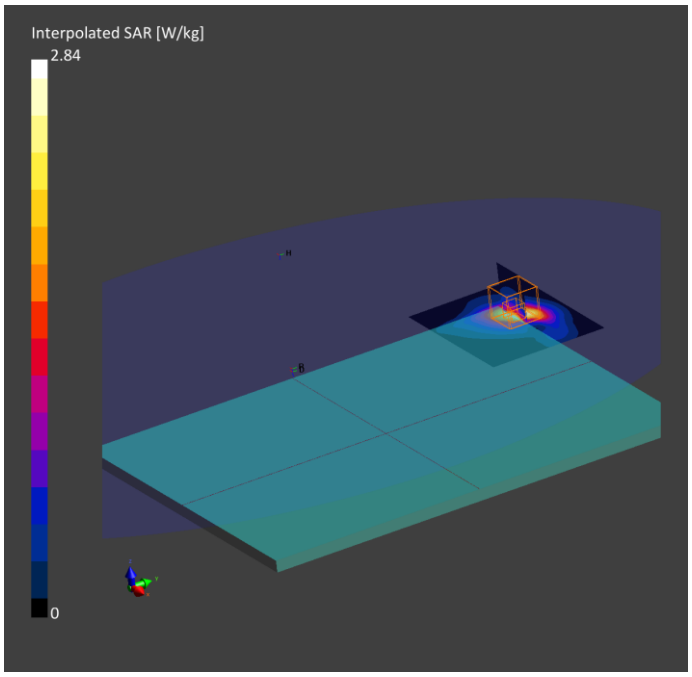
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Apr-29	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-04-29, 21:41	2021-04-29, 21:47
psSAR1g [W/Kg]	1.33	1.35
psSAR10g [W/Kg]	0.657	0.659
Power Drift [dB]	-0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		78.7
Dist 3dB Peak [mm]		10.3



5. LTE Band 12, QPSK - 10MHz, CH23095 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 12, E-UTRA/FDD	LTE-FDD, 10175-CAG	707.5, 23095	11.19	0.95	54.4

Hardware Setup

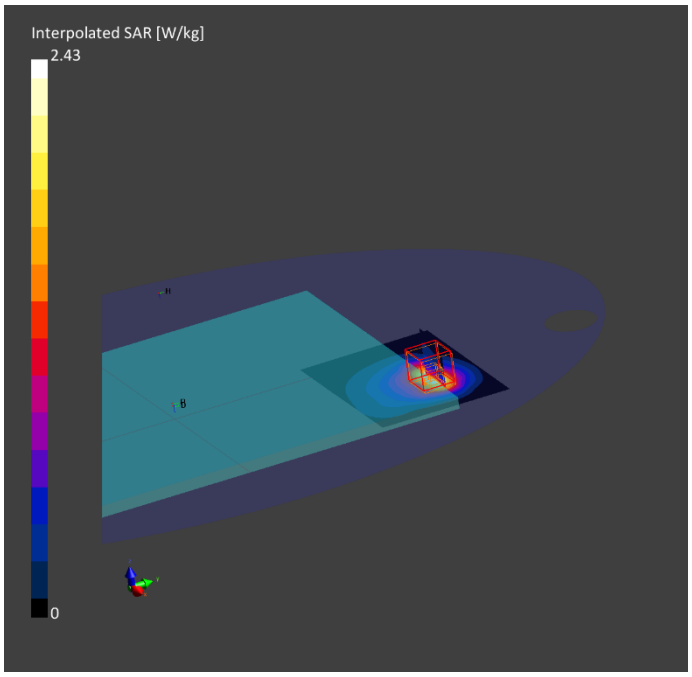
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 22:10	2021-05-03, 22:15
psSAR1g [W/Kg]	1.07	1.03
psSAR10g [W/Kg]	0.651	0.532
Power Drift [dB]	-0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		72.6
Dist 3dB Peak [mm]		9.1



6. LTE Band 13, QPSK - 10MHz, CH23230 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 13, E-UTRA/FDD	LTE-FDD, 10175-CAG	782.0, 23230	11.19	0.98	54.2

Hardware Setup

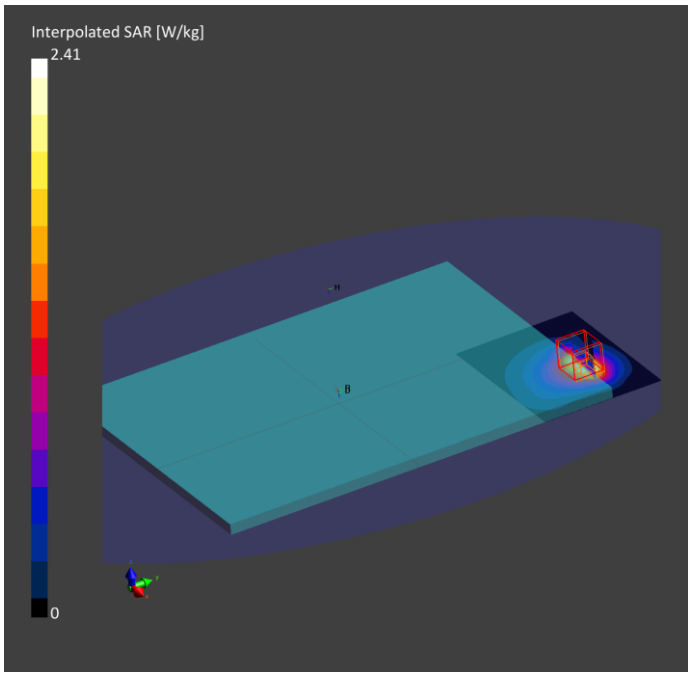
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 22:35	2021-05-03, 22:40
psSAR1g [W/Kg]	1.05	1.05
psSAR10g [W/Kg]	0.642	0.555
Power Drift [dB]	-0.02	-0.01
Power Scaling Factor [dB]	Disabled	Disabled
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		73.7
Dist 3dB Peak [mm]		9.6



7. LTE Band 14, QPSK - 10MHz, CH23330 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 14, E-UTRA/FDD	LTE-FDD, 10175-CAG	793.0, 23330	11.19	0.99	54.2

Hardware Setup

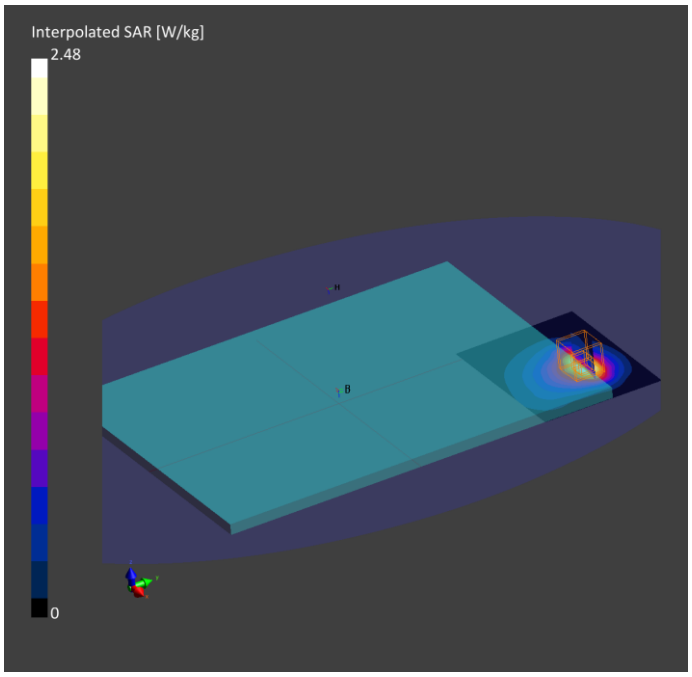
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 13:36	2021-05-03, 13:41
psSAR1g [W/Kg]	1.09	1.09
psSAR10g [W/Kg]	0.663	0.576
Power Drift [dB]	0.01	-0.01
Power Scaling Factor [dB]	Disabled	Disabled
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		74.2
Dist 3dB Peak [mm]		9.7



8. LTE Band 25, QPSK - 20MHz, CH26365 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band 25, E-UTRA/FDD	LTE-FDD, 10169-CAE	1882.5, 26365	8.68	1.60	51.4

Hardware Setup

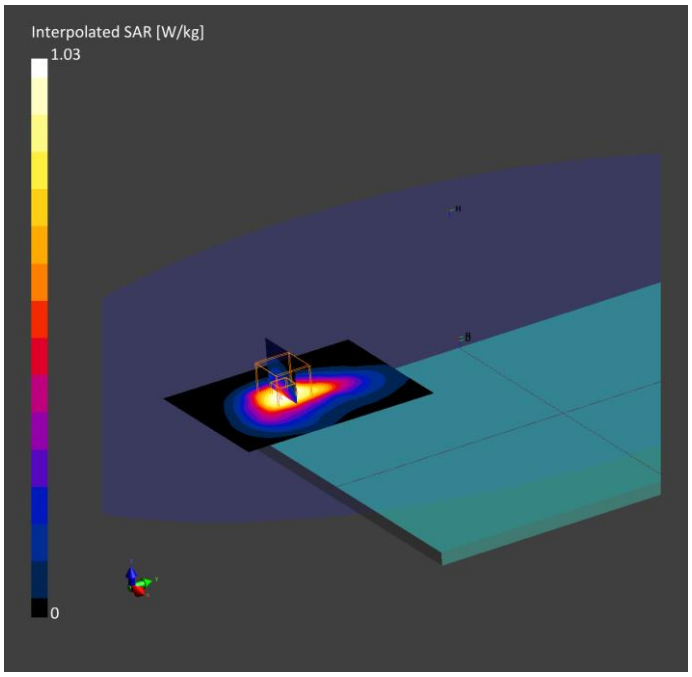
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-11	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-11, 18:21	2021-05-11, 18:27
psSAR1g [W/Kg]	0.881	1.20
psSAR10g [W/Kg]	0.510	0.592
Power Drift [dB]	0.02	0.02
Power Scaling Factor [dB]	Disabled	Disabled
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		81.3
Dist 3dB Peak [mm]		9.6



9. LTE Band 26, QPSK - 15MHz, CH26765 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 26 E-UTRA/FDD	LTE-FDD, 10181-CAE	821.5, 26765	10.73	1.00	54.1

Hardware Setup

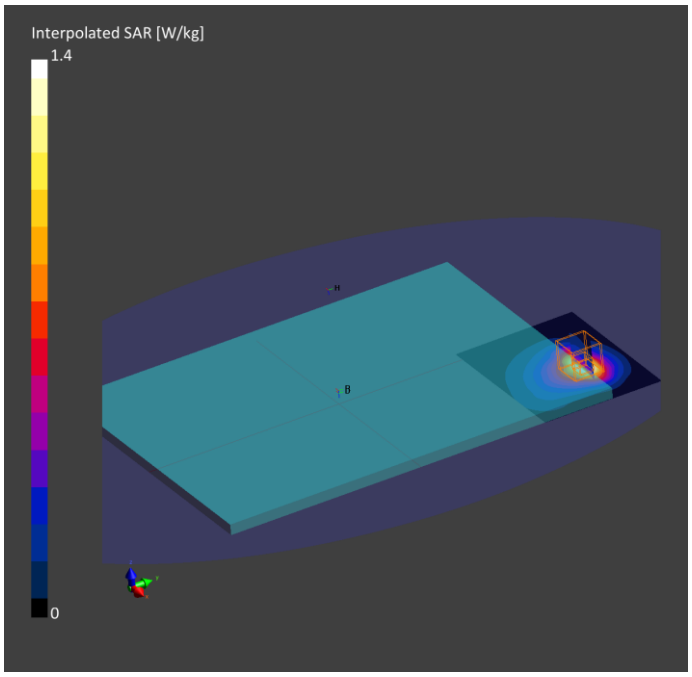
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-04, 13:52	2021-05-04, 13:58
psSAR1g [W/Kg]	1.20	1.22
psSAR10g [W/Kg]	0.733	0.649
Power Drift [dB]	0.02	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		74.2
Dist 3dB Peak [mm]		10.3



10. LTE Band 30, QPSK - 20MHz, CH27710 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 30, E-UTRA/FDD	LTE-FDD, 10175-CAG	2310.0, 27710	8.37	1.92	50.9

Hardware Setup

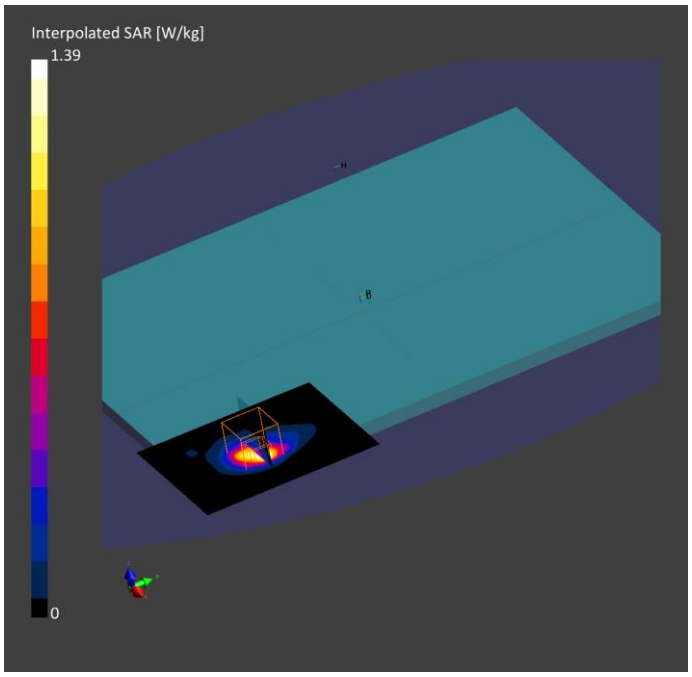
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-31	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 100.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-31, 14:48	2021-05-31, 14:55
psSAR1g [W/Kg]	1.00	1.11
psSAR10g [W/Kg]	0.444	0.419
Power Drift [dB]	-0.02	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		71.9
Dist 3dB Peak [mm]		5.8



11. LTE Band 41, QPSK - 20MHz, CH40185 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
HSN-I32C	200.0 x 300.0 x 15.0	00007502BD	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Back, 0.00	Band41,E-UTRA/TDD	WCDMA, 10154-CAG	2549.5, 40185	8.1	2.17	50.5

Hardware Setup

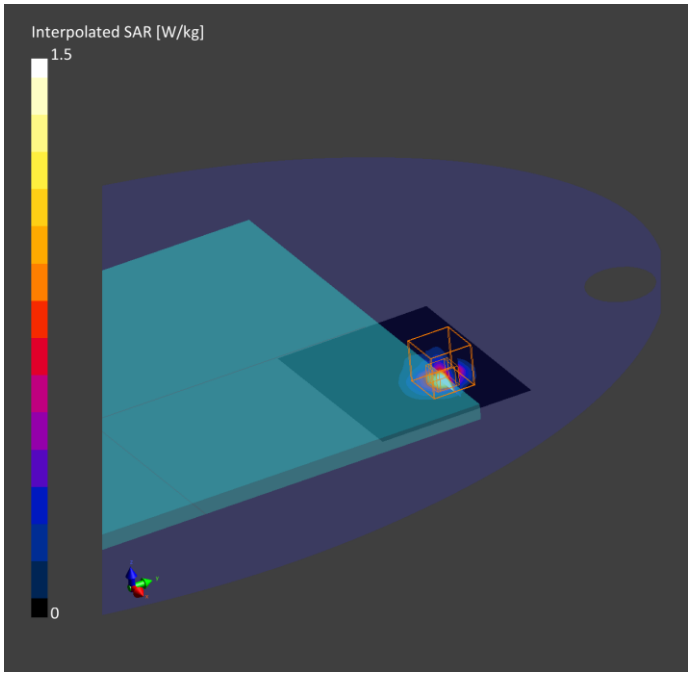
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) -	MBBL-600-6000, 2021-May-11	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	4.6 x 4.6 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	Yes	Yes
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-14, 17:37	2021-05-14, 17:46
SAR1g [W/Kg]	1.03	1.15
SAR10g [W/Kg]	0.416	0.387
Power Drift [dB]	-0.03	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only



12. LTE Band 48, QPSK - 20MHz, CH55990 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band 48, E-UTRA/TDD	LTE-TDD, 10172-CAG	3625.0, 55990	6.07	3.24	48.6

Hardware Setup

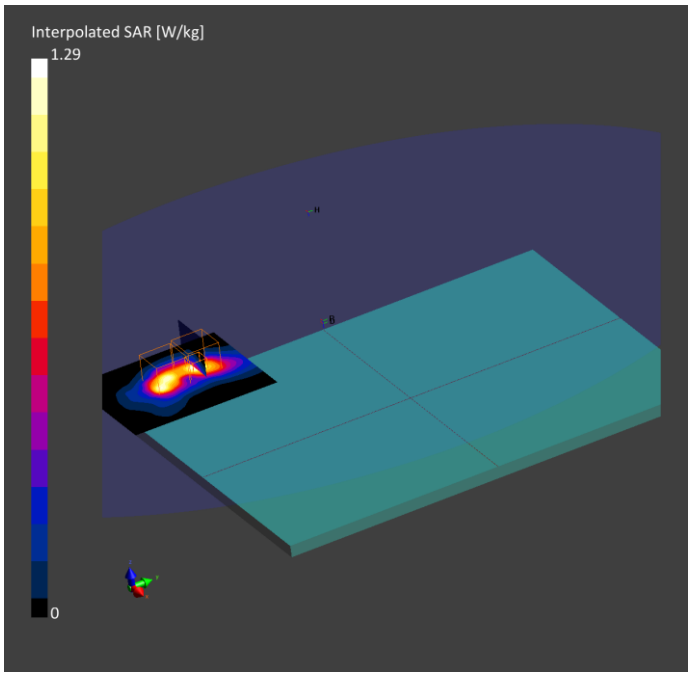
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jul-05	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 100.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-07-07, 11:32	2021-07-07, 11:39
psSAR1g [W/Kg]	0.912	1.05
psSAR10g [W/Kg]	0.360	0.375
Power Drift [dB]	-0.06	-0.05
Power Scaling Factor [dB]	Disabled	Disabled
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		76.4
Dist 3dB Peak [mm]		8.1



13. LTE Band 66, QPSK - 20MHz, CH132072 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band 66, E-UTRA/FDD	LTE-FDD, 10169-CAE	1720.0, 132072	9.0	1.46	52.1

Hardware Setup

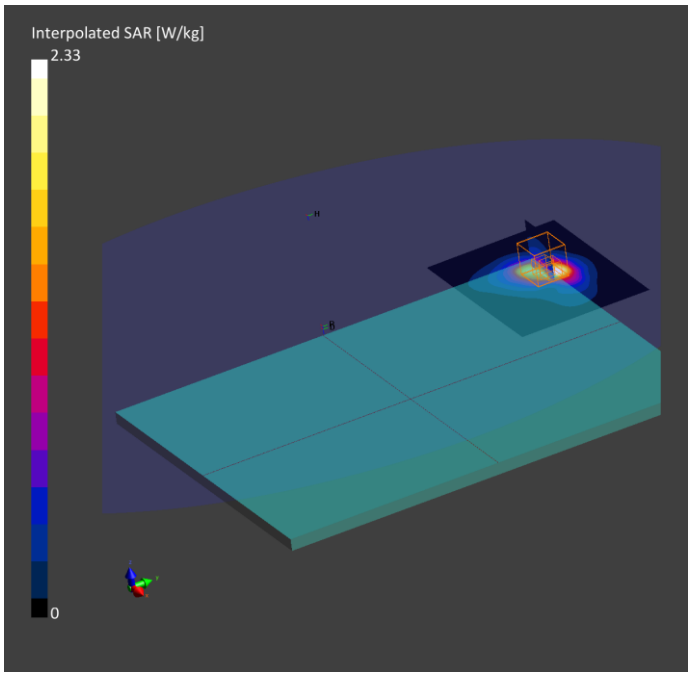
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-06	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-07, 15:03	2021-05-07, 15:09
psSAR1g [W/Kg]	1.10	1.20
psSAR10g [W/Kg]	0.606	0.621
Power Drift [dB]	-0.03	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		80.6
Dist 3dB Peak [mm]		10.2



14. 5G NR FR1 Band 2, QPSK - 20MHz, CH376000 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band n2	5G NR FR1 FDD, 10939-AAB	1880.0, 376000	7.98	1.58	50.5

Hardware Setup

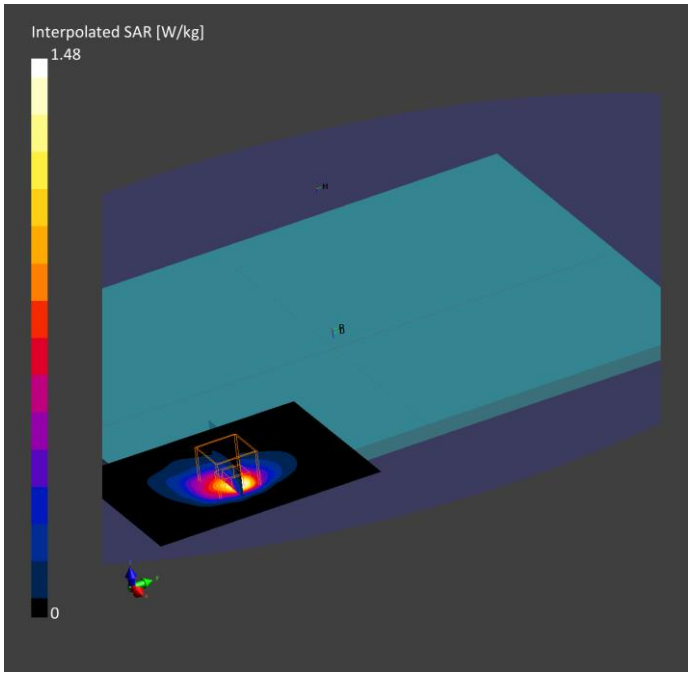
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-03	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-11, 12:34	2021-06-11, 12:39
psSAR1g [W/Kg]	0.558	0.618
psSAR10g [W/Kg]	0.266	0.262
Power Drift [dB]	0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		75.9
Dist 3dB Peak [mm]		8.0



15. 5G NR FR1 Band 5, QPSK - 20MHz, CH167300 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band n5	5G NR FR1 FDD, 10947-AAA	836.5, 167300	10.73	1.02	53.7

Hardware Setup

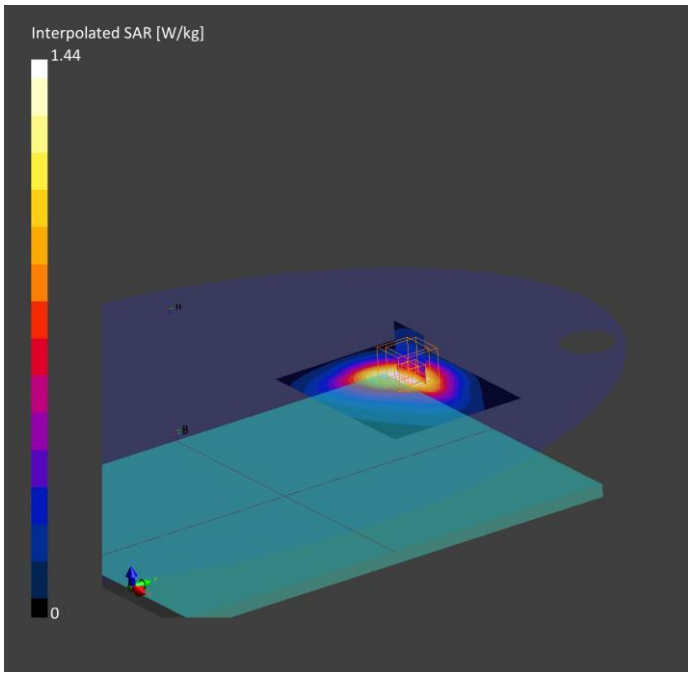
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-25	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-27, 12:06	2021-05-27, 12:12
psSAR1g [W/Kg]	1.25	1.30
psSAR10g [W/Kg]	0.824	0.788
Power Drift [dB]	-0.04	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		82.8
Dist 3dB Peak [mm]		12.9



16. 5G NR FR1 Band 7, QPSK - 20MHz, CH208502 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9HP	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band 7, E-UTRA/	LTE-FDDLTE, 10169-CAE	2510.0, 208502	7.24	2.05	50.3

Hardware Setup

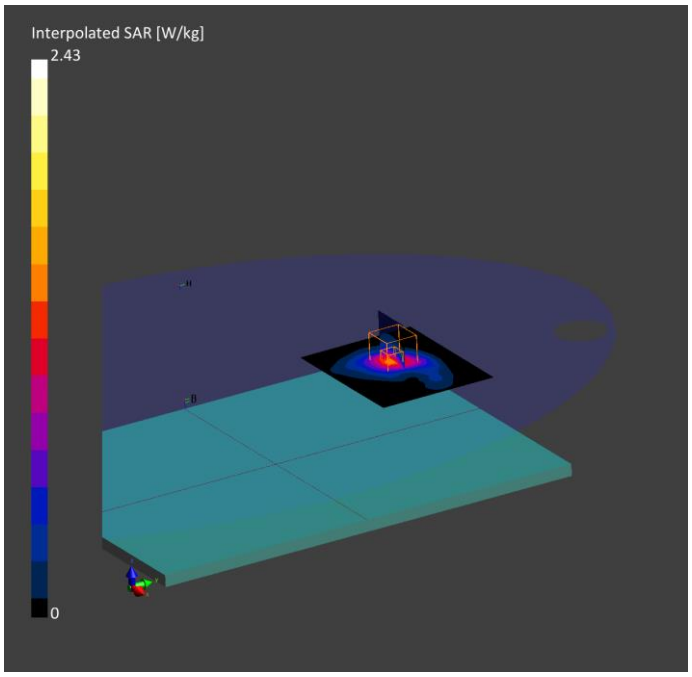
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)ELI	MBBL-600-6000MBBL ,2021-Jun-08	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 80.0	30.0 x 30.0 x 30.0 x
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.03.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-08, 14:13, 14:13	2021-06-08, 14: 14:20
psSAR1g [W/Kg]	1.14	1.17
psSAR10g [W/Kg]	0.565	0.572
Power Drift [dB]	-0.02	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		79.3
Dist 3dB Peak [mm]		11.2



17. 5G NR FR1 Band 25, QPSK - 20MHz, CH383000 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9HP	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band n25	5G NR FR1 FDD, 10931-AAA	1915.0, 383000	7.98	1.60	51.0

Hardware Setup

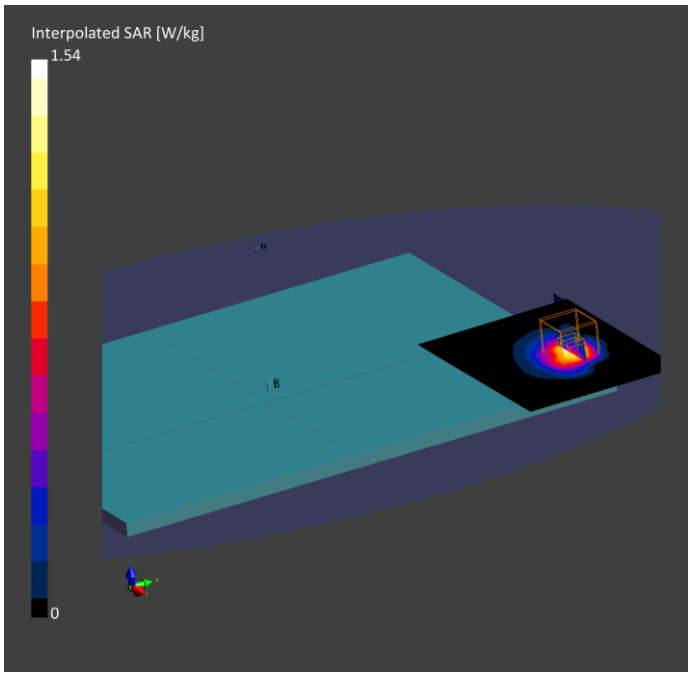
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-03	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-03, 18:44	2021-06-03, 18:50
psSAR1g [W/Kg]	1.18	1.20
psSAR10g [W/Kg]	0.593	0.566
Power Drift [dB]	-0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		75.2
Dist 3dB Peak [mm]		7.7



18. 5G NR FR1 Band 30, QPSK - 10MHz, CH27710 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band 30, E-NR/FDD	5G-FDD, 10175-CAG	2310.0, 27710	8.37	1.89	50.1

Hardware Setup

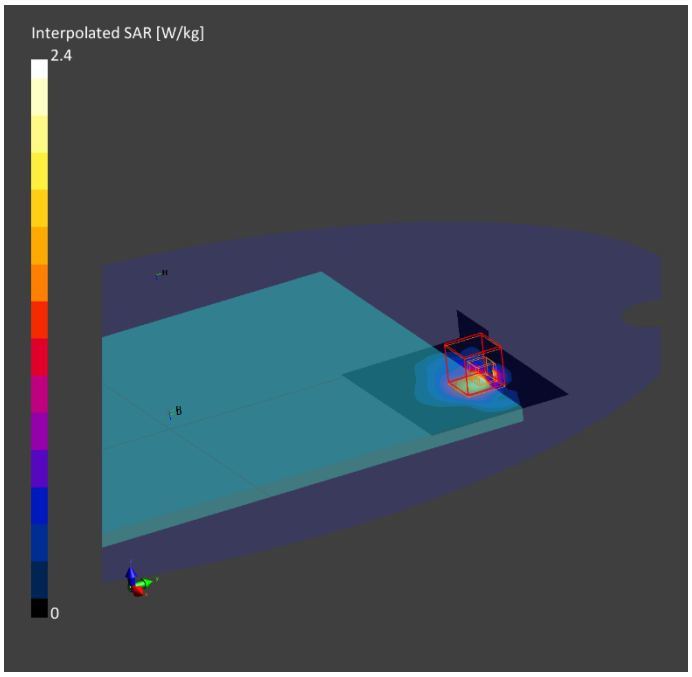
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-31	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	4.9 x 4.9 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-31, 12:36	2021-05-31, 12:45
psSAR1g [W/Kg]	0.788	0.928
psSAR10g [W/Kg]	0.397	0.395
Power Drift [dB]	-0.03	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		75.2
Dist 3dB Peak [mm]		5.7



19. 5G NR FR1 Band 41, QPSK - 100MHz, CH518601 – Laptop

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band n41	5G NR FR1 TDD, 10917-AAB	2593.0, 518601	7.24	2.16	50.7

Hardware Setup

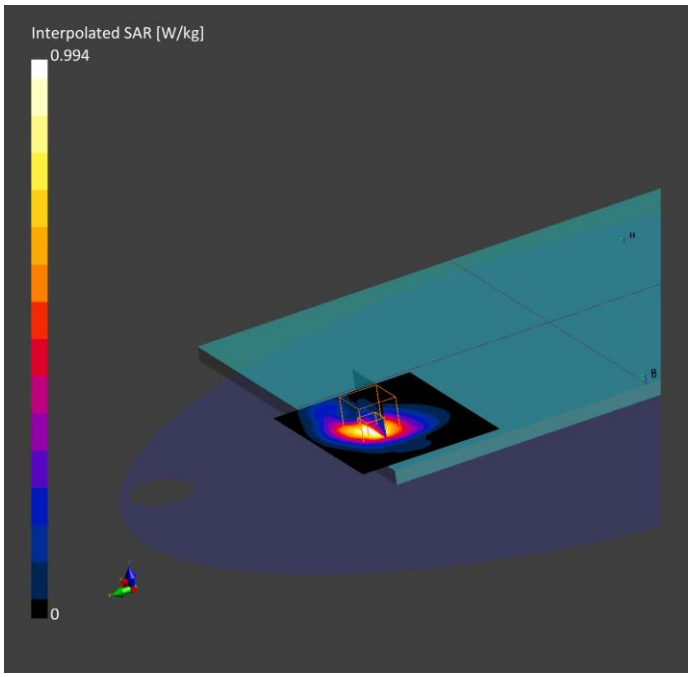
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-29	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-30, 14:54	2021-06-30, 15:01
psSAR1g [W/Kg]	0.473	0.473
psSAR10g [W/Kg]	0.231	0.230
Power Drift [dB]	0.00	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		78.9
Dist 3dB Peak [mm]		10.3



20. 5G NR FR1 Band 66, QPSK - 40MHz, CH349000 – Back Face

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	BACK, 0.00	Band n66	5G NR FR1 FDD, 10934-AAB	1745.0, 349000	8.37	1.51	51.4

Hardware Setup

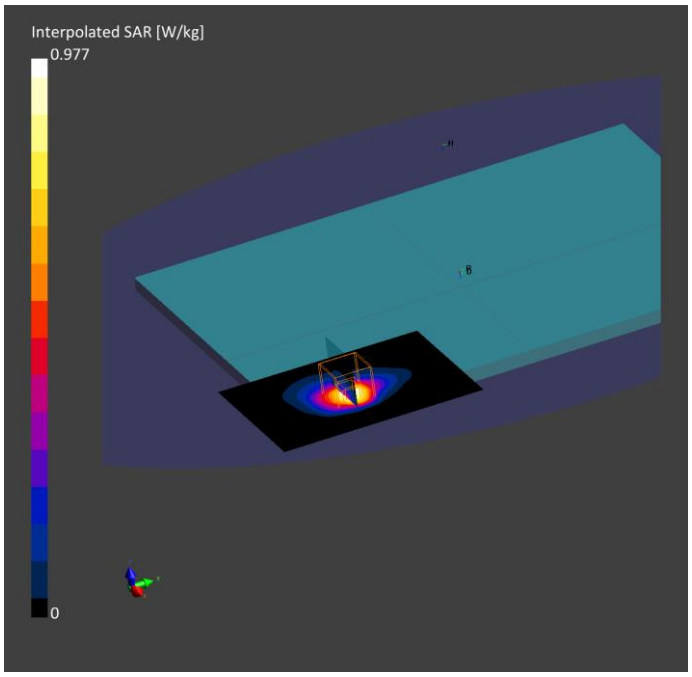
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-28	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 120.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	5.9 x 5.9 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-28, 15:50	2021-06-28, 15:56
psSAR1g [W/Kg]	0.795	1.24
psSAR10g [W/Kg]	0.419	0.504
Power Drift [dB]	0.00	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		70.3
Dist 3dB Peak [mm]		6.9



21. 5G NR FR1 Band 77, QPSK - 100MHz, CH650000 – Notebook

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
TPN-Q250	200.0 x 300.0 x 15.0	5CD109G9H8	Convertible PC

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	Laptop, 0.00	Band n77	5G NR FR1 TDD, 10803-AAD	3750.0, 650000	6.07	3.35	47.7

Hardware Setup

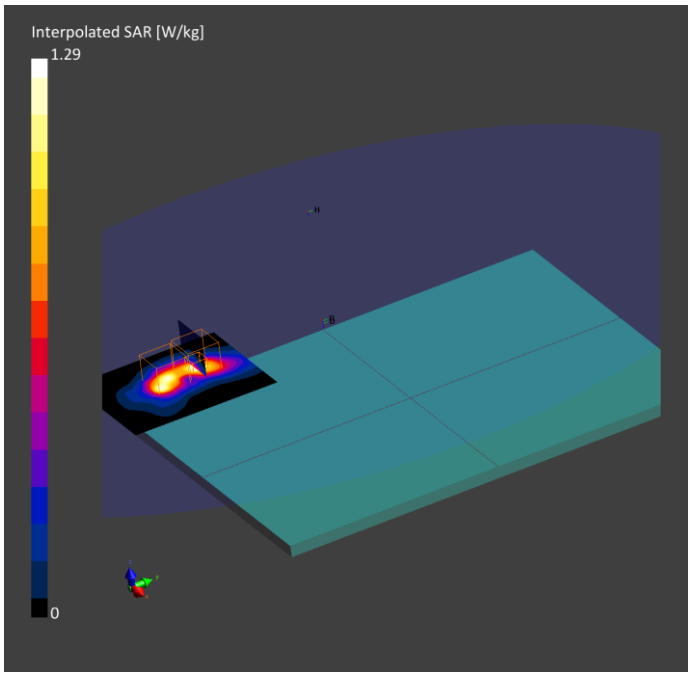
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jul-05	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	80.0 x 100.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	3.6 x 3.6 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.4
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-07-07, 17:24	2021-07-07, 17:31
psSAR1g [W/Kg]	0.511	0.571
psSAR10g [W/Kg]	0.190	0.192
Power Drift [dB]	0.03	0.03
Power Scaling Factor [dB]	Disabled	Disabled
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		70.8
Dist 3dB Peak [mm]		5.2



22. System Check Body Liquid 750MHz - 2021-05-03

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 750MHz, SPEAG	50.0 x 10.0 x 15.0	1136	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	750.0, 0	11.19	0.97	54.3

Hardware Setup

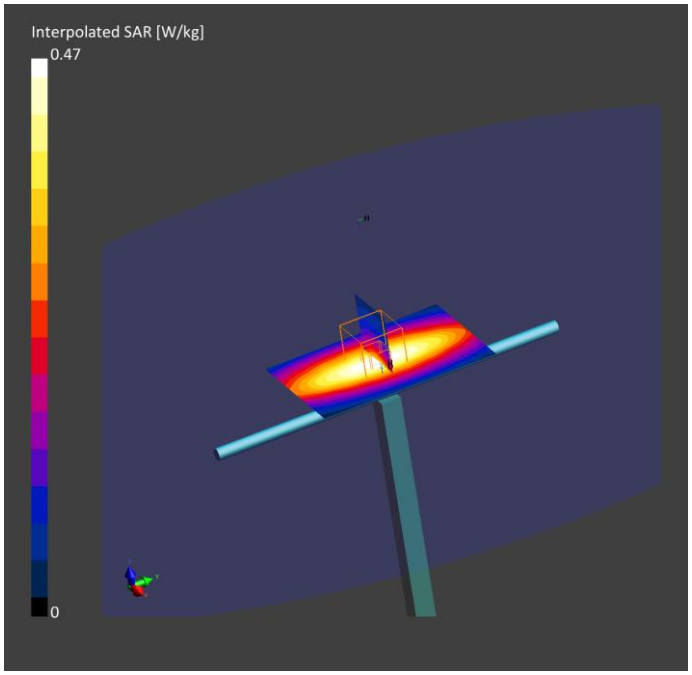
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 10:15	2021-05-03, 10:20
psSAR1g [W/Kg]	0.407	0.411
psSAR10g [W/Kg]	0.269	0.271
Power Drift [dB]	0.04	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		86.5
Dist 3dB Peak [mm]		19.7



23. System Check Body Liquid 750MHz - 2021-06-01

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 750MHz, SPEAG	50.0 x 10.0 x 15.0	1136	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	750.0, 0	11.19	0.98	53.2

Hardware Setup

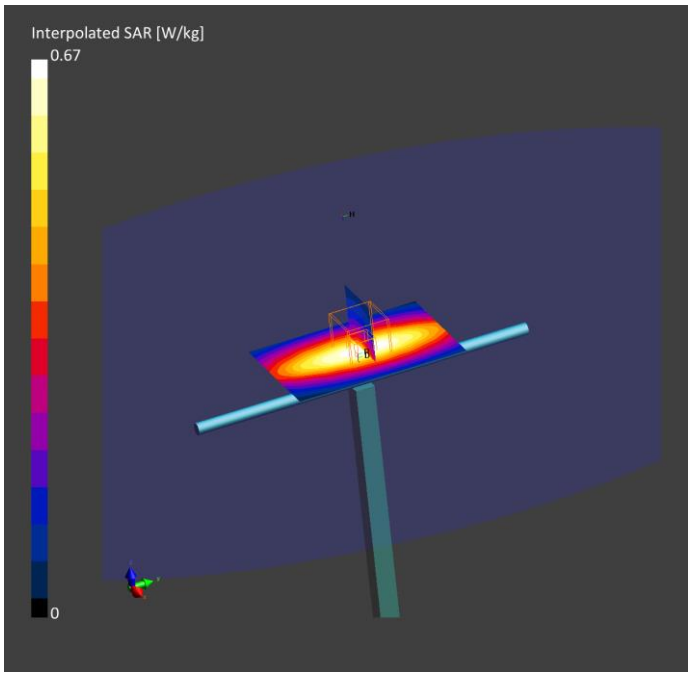
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-01	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-01, 18:29	2021-06-01, 18:33
psSAR1g [W/Kg]	0.429	0.425
psSAR10g [W/Kg]	0.283	0.281
Power Drift [dB]	0.03	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		86.2
Dist 3dB Peak [mm]		19.0



24. System Check Body Liquid 835MHz - 2021-05-03

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	Serial Number	DUT Type
Dipole 835MHz, SPEAG	50.0 x 10.0 x 15.0	4d192	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	835.0, 0	10.73	1.00	54.1

Hardware Setup

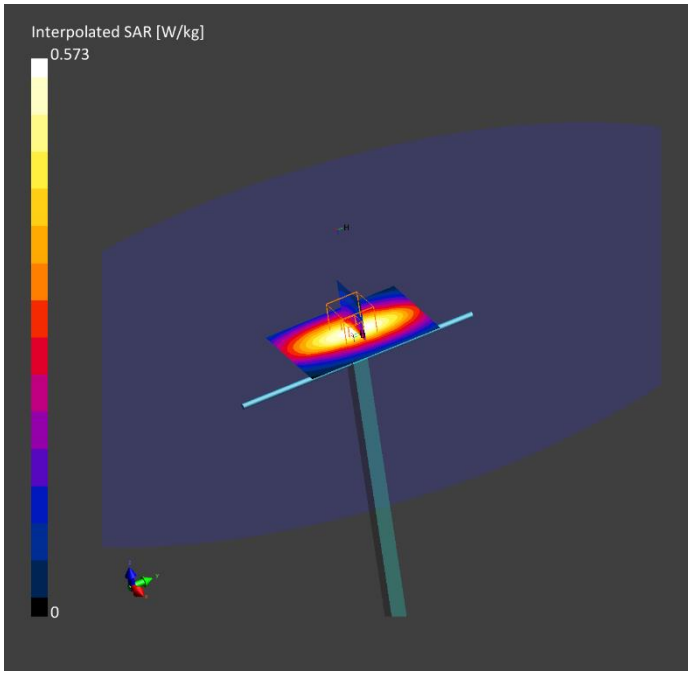
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 10:31	2021-05-03, 10:36
psSAR1g [W/Kg]	0.495	0.520
psSAR10g [W/Kg]	0.324	0.339
Power Drift [dB]	-0.02	0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		86.4
Dist 3dB Peak [mm]		15.6



25. System Check Body Liquid 835MHz - 2021-05-27

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	Serial Number	DUT Type
Dipole 835MHz, SPEAG	50.0 x 10.0 x 15.0	4d192	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	835.0, 0	10.73	1.01	53.0

Hardware Setup

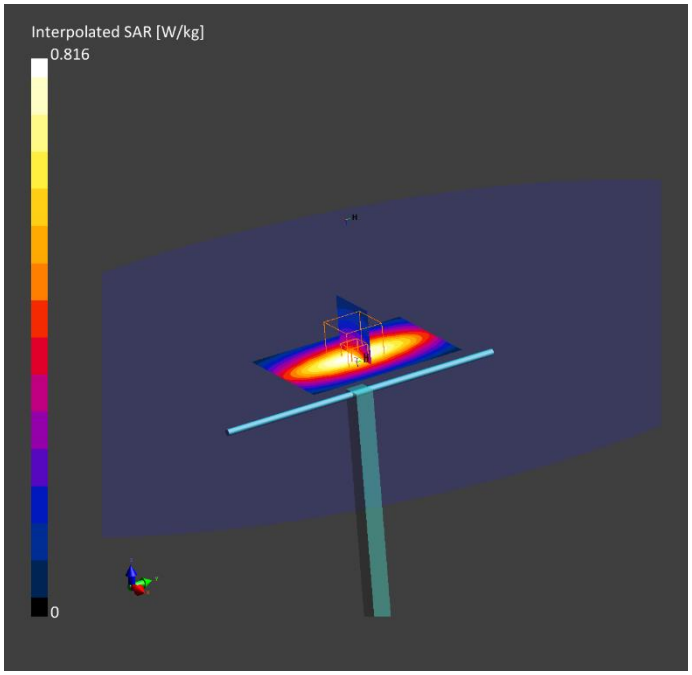
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-26	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-27, 14:07	2021-05-27, 14:12
psSAR1g [W/Kg]	0.519	0.522
psSAR10g [W/Kg]	0.337	0.341
Power Drift [dB]	0.01	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		86.4
Dist 3dB Peak [mm]		17.2



26. System Check Body Liquid 1750MHz - 2021-05-03

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1750MHz, SPEAG	50.0 x 10.0 x 15.0	1133	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1750.0, 0	9.0	1.50	52.6

Hardware Setup

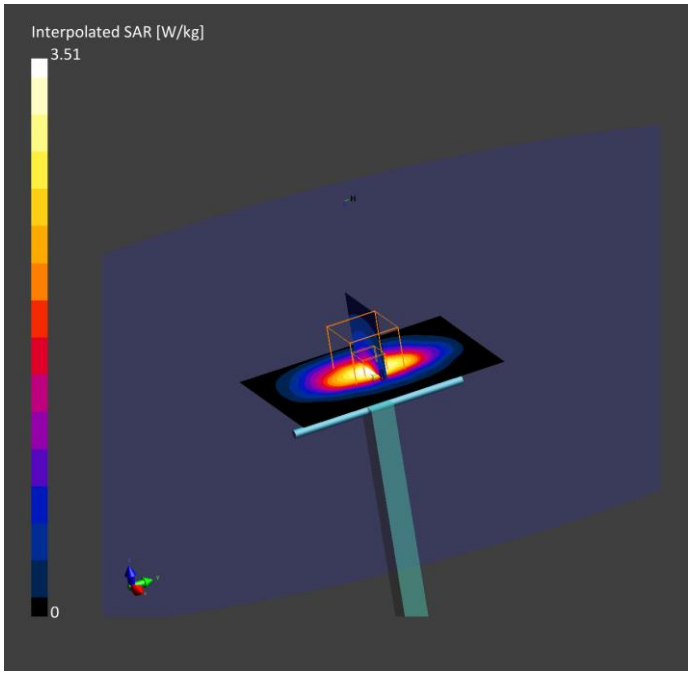
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-03, 16:46	2021-05-03, 16:51
psSAR1g [W/Kg]	1.76	1.89
psSAR10g [W/Kg]	0.941	0.996
Power Drift [dB]	-0.03	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		82.5
Dist 3dB Peak [mm]		9.6



27. System Check Body Liquid 1750MHz – 2021-05-07

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1750MHz, SPEAG	50.0 x 10.0 x 15.0	1133	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1750.0, 0	9.0	1.48	52.1

Hardware Setup

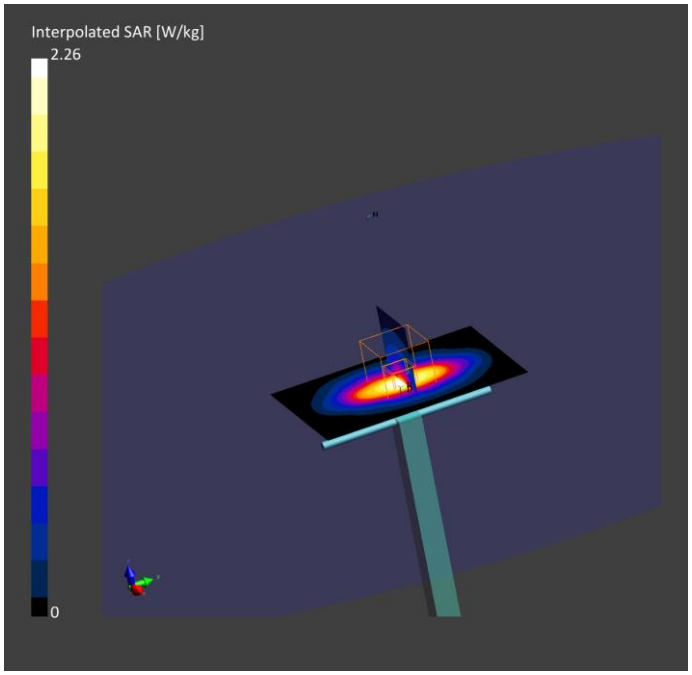
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-06	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-07, 12:53	2021-05-07, 12:58
psSAR1g [W/Kg]	1.80	1.82
psSAR10g [W/Kg]	0.933	0.959
Power Drift [dB]	0.05	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		82.7
Dist 3dB Peak [mm]		9.9



28. System Check Body Liquid 1750MHz – 2021-06-28

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1750MHz, SPEAG	50.0 x 10.0 x 15.0	1133	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1750.0, 0	8.37	1.52	51.4

Hardware Setup

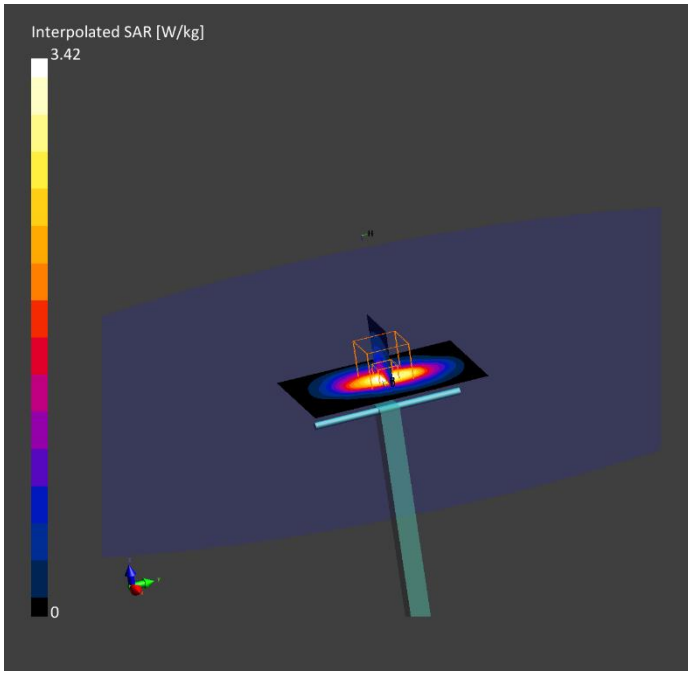
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-24	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-28, 17:54	2021-06-28, 17:59
psSAR1g [W/Kg]	1.85	1.83
psSAR10g [W/Kg]	0.968	0.976
Power Drift [dB]	-0.08	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		81.8
Dist 3dB Peak [mm]		9.7



29. System Check Body Liquid 1900MHz – 2021-05-04

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1900MHz, SPEAG	50.0 x 10.0 x 15.0	5d197	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1900.0, 0	8.68	1.60	52.3

Hardware Setup

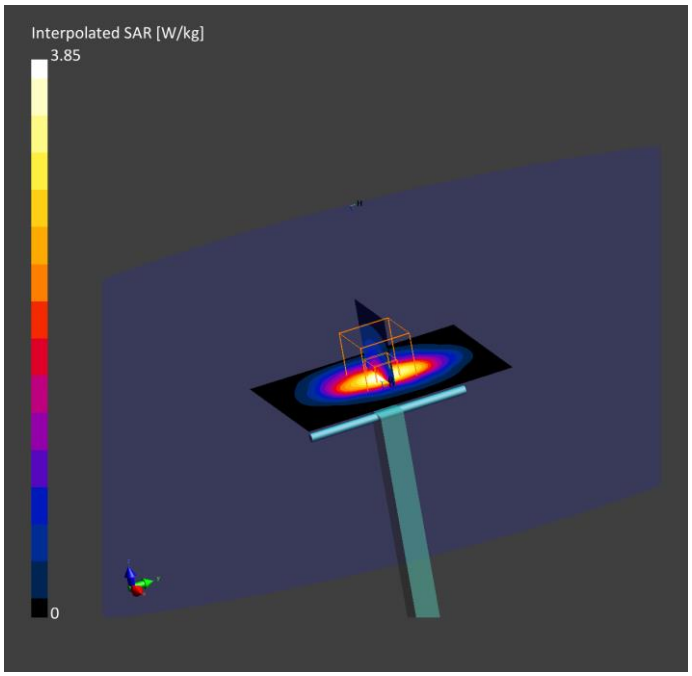
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-03	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-04, 17:31	2021-05-04, 17:36
psSAR1g [W/Kg]	1.95	2.02
psSAR10g [W/Kg]	1.01	1.05
Power Drift [dB]	0.02	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		81.5
Dist 3dB Peak [mm]		9.6



30. System Check Body Liquid 1900MHz– 2021-05-11

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1900MHz, SPEAG	50.0 x 10.0 x 15.0	5d197	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1900.0, 0	8.68	1.61	51.4

Hardware Setup

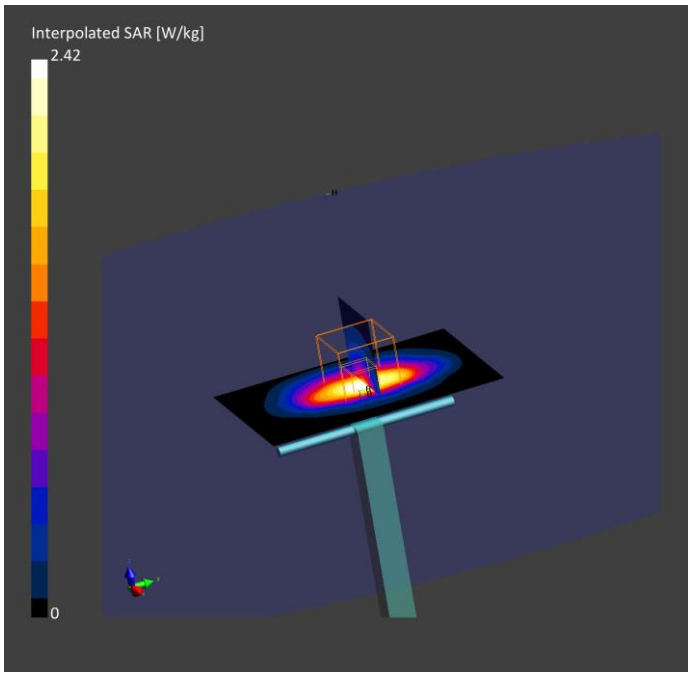
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-11	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-11, 09:43	2021-05-11, 09:48
psSAR1g [W/Kg]	1.94	2.10
psSAR10g [W/Kg]	1.01	1.09
Power Drift [dB]	0.02	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		81.1
Dist 3dB Peak [mm]		9.6



31. System Check Body Liquid 1900MHz – 2021-06-03

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 1900MHz, SPEAG	50.0 x 10.0 x 15.0	5d197	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	1900.0, 0	7.98	1.59	50.5

Hardware Setup

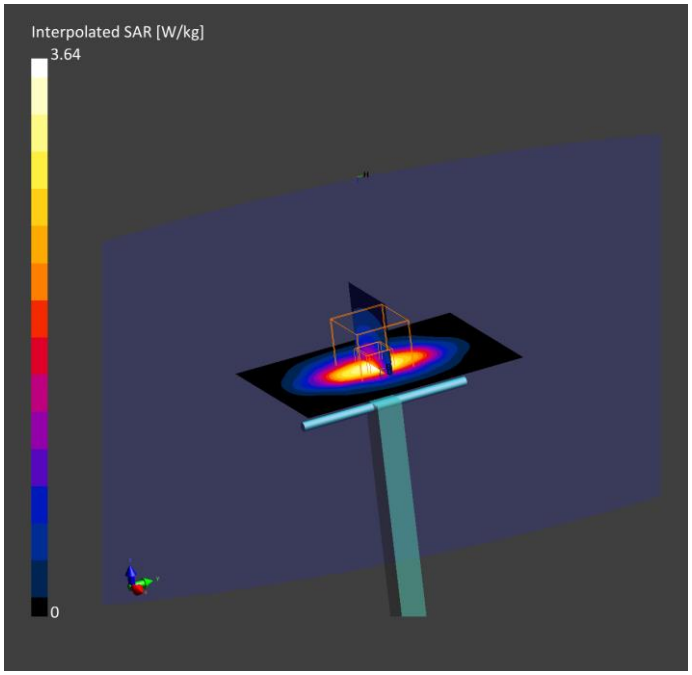
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-03	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	60.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-03, 14:08	2021-06-03, 14:13
psSAR1g [W/Kg]	1.96	1.97
psSAR10g [W/Kg]	0.992	1.02
Power Drift [dB]	0.01	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		82.7
Dist 3dB Peak [mm]		9.6



32. System Check Body Liquid 2300MHz – 2021-05-31

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 2300MHz, SPEAG	50.0 x 10.0 x 8.0	1046	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	2300.0, 0	8.37	1.88	50.1

Hardware Setup

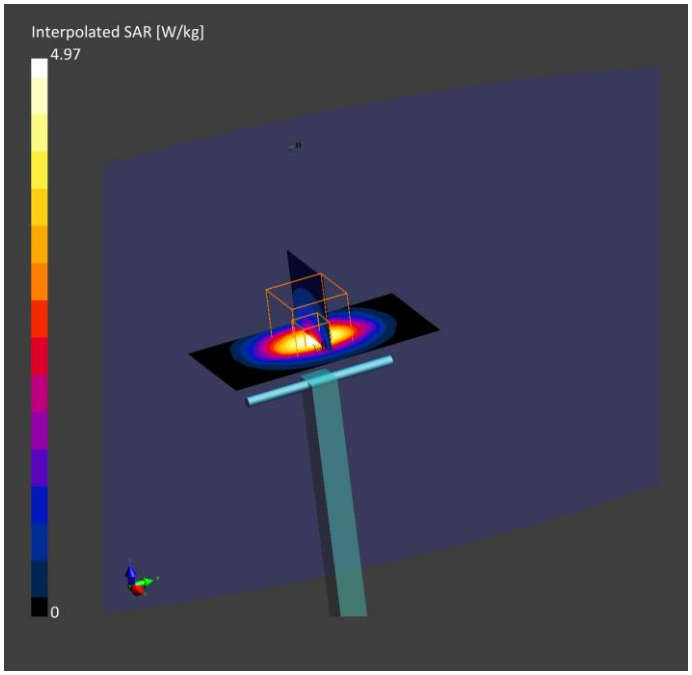
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-31	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-31, 14:22	2021-05-31, 14:28
psSAR1g [W/Kg]	2.40	2.47
psSAR10g [W/Kg]	1.15	1.17
Power Drift [dB]	0.00	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		80.8
Dist 3dB Peak [mm]		8.9



33. System Check Body Liquid 2600MHz – 2021-04-28

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 2600MHz, SPEAG	50.0 x 10.0 x 8.0	1100	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	2600.0, 0	7.19	2.14	49.8

Hardware Setup

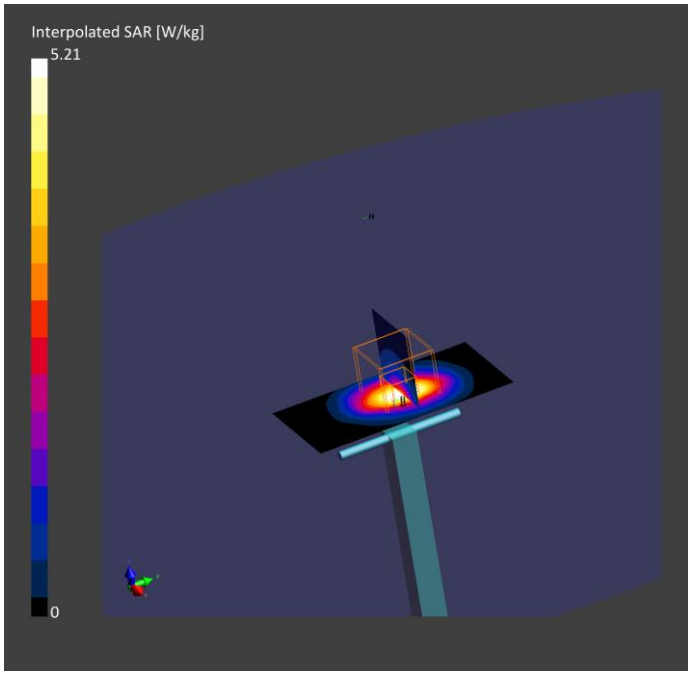
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Apr-28	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-04-28, 11:50	2021-04-28, 11:57
psSAR1g [W/Kg]	2.42	2.49
psSAR10g [W/Kg]	1.08	1.12
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		80.3
Dist 3dB Peak [mm]		8.2



34. System Check Body Liquid 2600MHz – 2021-05-12

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 2600MHz, SPEAG	50.0 x 10.0 x 8.0	1100	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	2600.0, 0	8.1	2.23	50.5

Hardware Setup

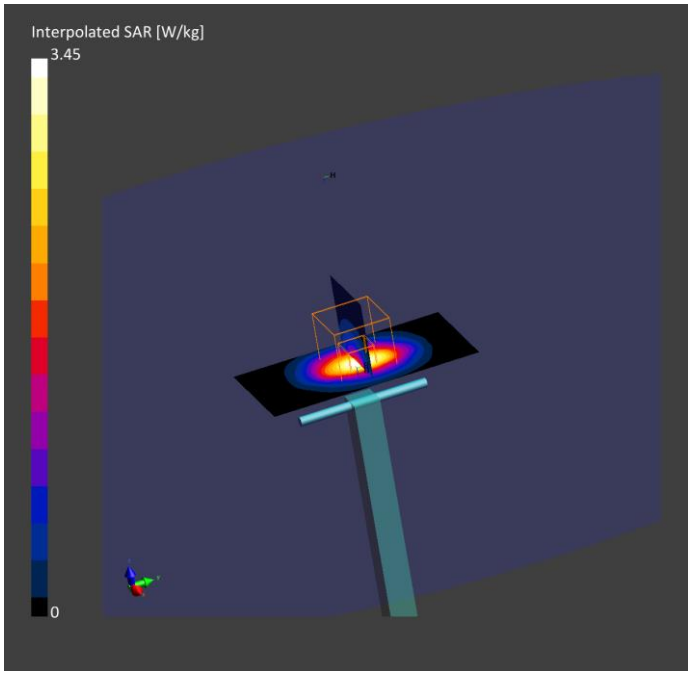
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-May-11	EX3DV4 – SN7455, 2021-03-19	DAE4 Sn1517, 2021-03-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-05-12, 10:04	2021-05-12, 10:10
psSAR1g [W/Kg]	2.58	2.67
psSAR10g [W/Kg]	1.14	1.18
Power Drift [dB]	0.08	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		77.8
Dist 3dB Peak [mm]		8.2



35. System Check Body Liquid 2600MHz – 2021-06-08

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 2600MHz, SPEAG	50.0 x 10.0 x 8.0	1100	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	2600.0, 0	7.24	2.14	50.13

Hardware Setup

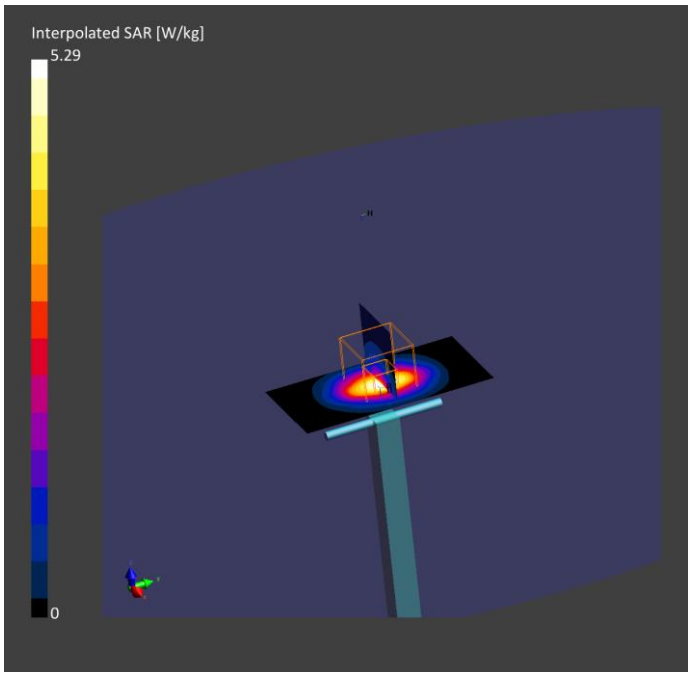
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-06	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-08, 15:30	2021-06-08, 15:36
psSAR1g [W/Kg]	2.51	2.67
psSAR10g [W/Kg]	1.10	1.19
Power Drift [dB]	-0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		80.7
Dist 3dB Peak [mm]		8.9



36. System Check Body Liquid 2600MHz – 2021-06-30

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 2600MHz, SPEAG	50.0 x 10.0 x 8.0	1100	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	2600.0, 0	7.24	2.17	50.7

Hardware Setup

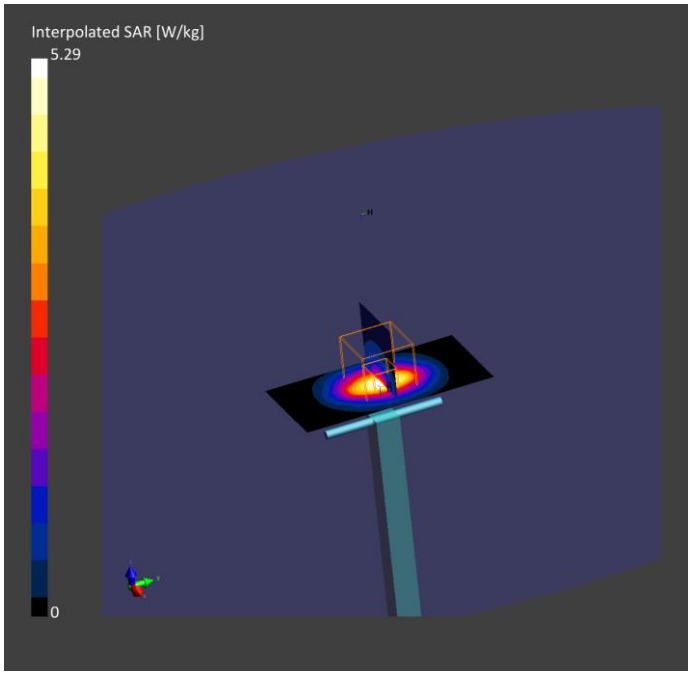
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-29	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-30, 18:30	2021-06-30, 18:36
psSAR1g [W/Kg]	2.51	2.54
psSAR10g [W/Kg]	1.10	1.13
Power Drift [dB]	-0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		80.7
Dist 3dB Peak [mm]		8.9



37. System Check Body Liquid 3700MHz – 2021-06-02

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 3700MHz, SPEAG	50.0 x 10.0 x 8.0	1093	Validation Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	3700.0, 0	6.07	3.29	47.6

Hardware Setup

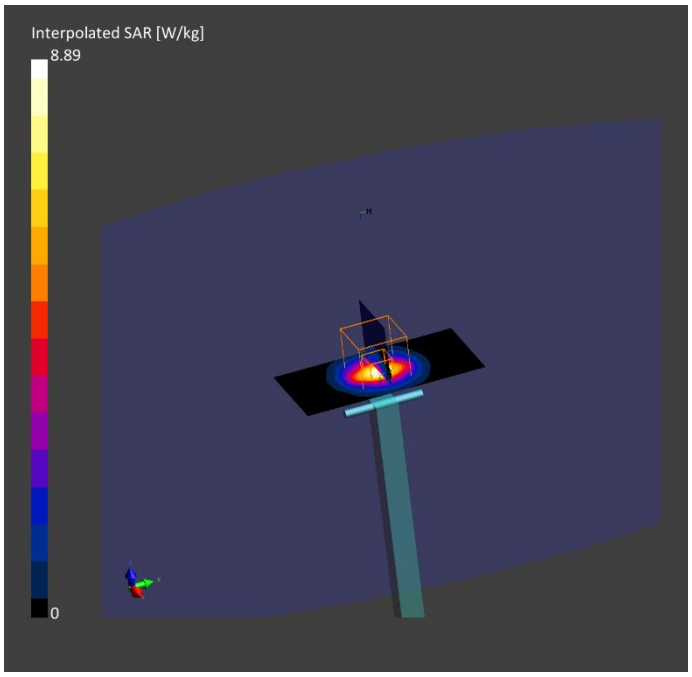
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jun-02	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-02, 10:04	2021-06-02, 10:10
psSAR1g [W/Kg]	3.40	3.06
psSAR10g [W/Kg]	1.24	1.13
Power Drift [dB]	-0.07	-0.12
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		75.3
Dist 3dB Peak [mm]		8.0



38. System Check Body Liquid 3700MHz – 2021-07-07

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	S/N	DUT Type
Dipole 3700MHz, SPEAG	50.0 x 10.0 x 8.0	1093	Validation Dipole

Exposure Conditions

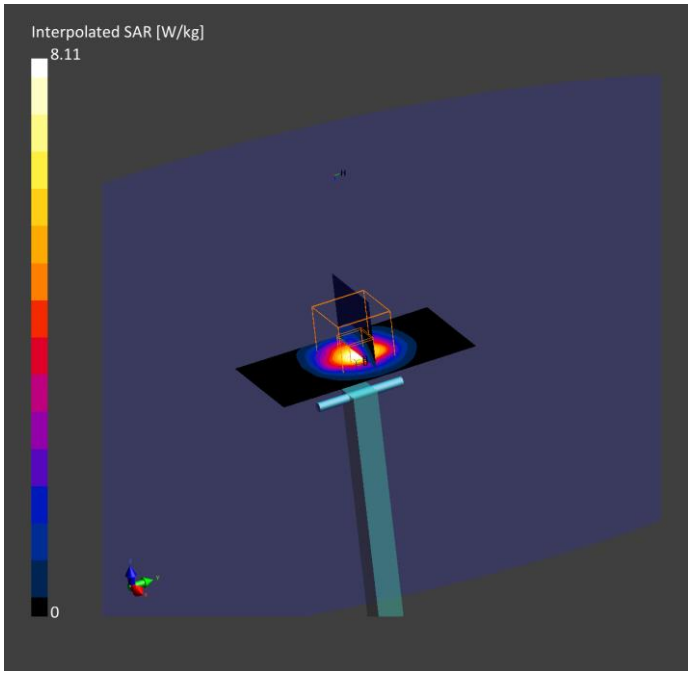
Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, MSL	,		, 0--	3700.0, 0	6.07	3.30	47.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt)	MBBL-600-6000 , 2021-Jul-07	EX3DV4 - SN3978, 2021-05-21	DAE4 Sn1429, 2021-05-11

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	No	Yes
Grading Ratio	n/a	1.5
MAIA	Confirmed by MAIA	Confirmed by MAIA
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2021-07-07, 10:19	2021-07-07, 10:25
psSAR1g [W/Kg]	3.04	3.29
psSAR10g [W/Kg]	1.14	1.22
Power Drift [dB]	0.01	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	Positive Only	Positive Only
M2/M1 [%]		76.7
Dist 3dB Peak [mm]		8.0