

Part-0 SAR Characterization Report

Applicant Name : Getac Technology Corporation
Applicant Address : 5F., Building A, No. 209, Sec. 1 Nangang., Rd., Taipei City, 11568, Taiwan
Product Name : 5G/LTE data card
Brand Name : Telit
Model Number : FN990A28
FCC ID : QYLFN990Z12

Report Number : USSC247308001
Compliant Standards : FCC 47 CFR §2.1093
Sample Received Date : Jul. 19, 2024
Date of Testing : Jul. 30, 2024 ~ Aug. 30, 2024
Report Issue Date : Oct. 25, 2024

The above equipment have been tested by **Eurofins E&E Wireless Taiwan Co., Ltd.**, and found compliance with the requirement of the above standards. The test record, data evaluation & Device Under Test (DUT) configurations represented herein are true and accurate accounts of the measurements of the sample's characteristics under the conditions specified in this report.

Note:

1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
2. This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Approved By :

Roy Wu / SAR Technical Director



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Revision History

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1. Information of Testing Laboratory

Test Facilities

Company Name: Eurofins E&E Wireless Taiwan Co., Ltd.
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Test Site Location

- ☐ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
☒ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan

Laboratory Accreditation

Location	TAF	FCC	ISED
No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan	Accreditation No.: 1330	Designation No.: TW0010	Company No.: 7381A CAB ID: TW1330
No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan	Accreditation No.: 1330	Designation No.: TW0034	Company No.: 28922 CAB ID: TW1330

2. Device Under Test Information

Product Name	5G/LTE data card	
Brand Name	Telit	
Model Name	FN990A28	
FCC ID	QYLFN990Z12	
Host Information	Product Name: Tablet Trade Name: Getac Model Name: ZX10, ZX10-Ex, ZX10G2, ZX10-210 , ZX10-220, ZX10Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_ " or blank for marketing purpose) All models are electrically identical, different model names are for marketing purpose.	
Supported Wireless Technologies	Tx Frequency (MHz)	Operating Mode
	WCDMA Band 2 : 1852.4 ~ 1907.6 Band 4 : 1712.4 ~ 1752.6 Band 5 : 826.4 ~ 846.6	UMTS Rel. 99 (Voice / Data) HSDPA (Rel. 5) HSUPA (Rel. 6) HSPA+ (Rel. 7) DC-HSDPA (Rel. 8)
	LTE Band 2 : 1850.7 ~ 1909.3 Band 4 : 1710.7 ~ 1754.3 Band 5 : 824.7 ~ 848.3 Band 7 : 2502.5 ~ 2567.5 Band 12 : 699.7 ~ 715.3 Band 13 : 779.5 ~ 784.5 Band 14 : 790.5 ~ 795.5 Band 17 : 706.5 ~ 713.5 Band 25 : 1850.7 ~ 1914.3 Band 26 : 814.7 ~ 848.3 Band 30 : 2307.5 ~ 2312.5 Band 38 : 2572.5 ~ 2617.5 Band 41 : 2498.5 ~ 2687.5 Band 42 : 3552.5 ~ 3597.5 Band 43 : 3652.5 ~ 3697.5 Band 48 : 3552.5 ~ 3697.5 Band 66 : 1710.7 ~ 1779.3 Band 71 : 665.5 ~ 695.5	QPSK, 16QAM, 64QAM, 256QAM
	5G NR FR1 n2 : 1852.5 ~ 1907.5 n5 : 826.5 ~ 846.5 n7 : 2502.5 ~ 2567.5 n25 : 1852.5 ~ 1912.5 n30 : 2307.5 ~ 2312.5 n38 : 2575 ~ 2615 n41 : 2501.01 ~ 2685, 2506.02 ~ 2679.99 n48 : 3555 ~ 3694.98 n66 : 1712.5 ~ 1777.5 n71 : 665.5 ~ 695.5 n77 : 3455.01 ~ 3645, 3705 ~ 3975 n78 : 3455.01 ~ 3544.98, 3705 ~ 3795	CP-OFDM $\pi/2$ BPSK, QPSK, 16QAM, 64QAM, 256QAM DFT-s-OFDM QPSK, 16QAM, 64QAM, 256QAM
	WLAN 2.4G : 2412 ~ 2462 5G : 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5700, 5745 ~ 5825 6G : 5935 ~ 6415, 6435 ~ 6515, 6535 ~ 6875, 6895 ~ 7115	2.4G : 802.11b/g/n/ac/ax 5G : 802.11a/n/ac/ax 6G : 802.11a/ax
	Bluetooth 2402 ~ 2480	BR, EDR, LE
	RFID 13.56	PSK

Note:

The above DUT information is declared by manufacturer and for more detailed features description please refers to the manufacturer's specifications or User's Manual.

Time-Averaging for SAR

This device is enabled with Qualcomm Smart Transmit algorithm to control and manage transmitting power in real time and to ensure that the time-averaged RF exposure from 3G/LTE/5G NR WWAN is in compliance with the requirements. This Part-0 report shows SAR characterization of WWAN radios for 3G/LTE/5G NR sub-6. The characterization is achieved by determining P_{limit} for 3G/LTE/5G NR sub-6 that corresponds to the exposure design targets after accounting for all device design related uncertainties. The SAR characterization is denoted as SAR Char in this report.

The compliance test under the static transmission scenario and simultaneous transmission analysis are reported in Part-1 report. The validation of the time-averaging algorithm and compliance under the dynamic (time-varying) transmission scenario for WWAN technologies are reported in Part-2 report.

Nomenclature for Part-0 Report

Technology	Term	Description
3G/LTE/5G NR	P_{limit}	Power level that corresponds to the exposure design target (SAR_{design_target}) after accounting for all device design related uncertainties
	P_{max}	Maximum tune up output power
	SAR_{design_target}	Target SAR level < SAR limit after accounting for all device design related uncertainties
	SAR Char	Table containing P_{limit} for all technologies and bands

3. SAR Measurement System

3.1. Definition of Specific Absorption Rate (SAR)

SAR is related to the rate at which energy is absorbed per unit mass in an object exposed to a radio field. The SAR distribution in a biological body is complicated and is usually carried out by experimental techniques or numerical modeling. The standard recommends limits for two tiers of groups, occupational/controlled and general population/uncontrolled, based on a person's awareness and ability to exercise control over his or her exposure. In general, occupational/controlled exposure limits are higher than the limits for general population/uncontrolled.

The SAR definition is the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dv) of a given density (ρ). The equation description is as below:

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

SAR is expressed in units of Watts per kilogram (W/kg)

SAR measurement can be related to the electrical field in the tissue by

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

Where: σ is the conductivity of the tissue, ρ is the mass density of the tissue and E is the RMS electrical field strength.

3.2. SPEAG DASY8 System

The DASY8 system consists of high precision robot, probe alignment sensor, phantom, robot controller, controlled measurement server and near-field probe. The robot includes six axes that can move to the precision position of the DASY8 software defined. The DASY8 software can define the area that is detected by the probe. The robot is connected to controlled box. Controlled measurement server is connected to the controlled robot box. The DAE includes amplifier, signal multiplexing, AD converter, offset measurement and surface detection. It is connected to the Electro-optical coupler (ECO). The ECO performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC.

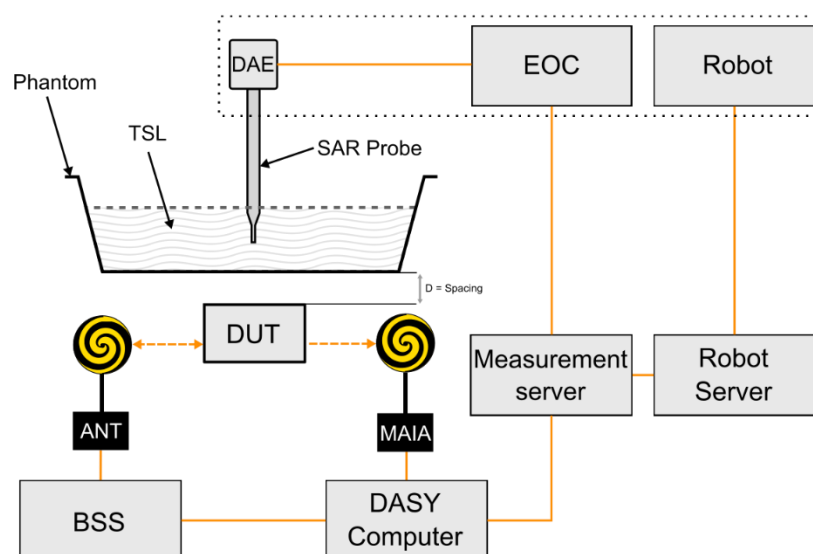


Fig-2.1 SPEAG DASY8 System Setup

3.3. SAR Measurement Procedure

According to the SAR test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:

- (a) Power reference measurement
- (b) Area scan
- (c) Zoom scan
- (d) Power drift measurement

The SAR measurement procedures for each of test conditions are as follows:

- (a) Make DUT to transmit maximum output power
- (b) Measure conducted output power through RF cable
- (c) Place the DUT in the specific position of phantom
- (d) Perform SAR testing steps on the DASY system
- (e) Record the SAR value

3.3.1. Area Scan and Zoom Scan Procedure

First area scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an area scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, zoom scan is required. The zoom scan is performed around the highest E-field value to determine the averaged SAR-distribution.

Measure the local SAR at a test point at 1.4 mm of the inner surface of the phantom recommended by SEPAG. The area scan (two-dimensional SAR distribution) is performed cover at least an area larger than the projection of the DUT or antenna. The measurement resolution and spatial resolution for interpolation shall be chosen to allow identification of the local peak locations to within one-half of the linear dimension of the corresponding side of the zoom scan volume. Following table provides the measurement parameters required for the area scan.

Parameter	$f \leq 3 \text{ GHz}$	$3 \text{ GHz} < f \leq 6 \text{ GHz}$
Maximum distance from closest measurement point to phantom surface	5 ± 1	$\delta \ln(2)/2 \pm 0.5$
Maximum probe angle from probe axis to phantom surface normal at the measurement location	$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: $\Delta x_{\text{Area}}, \Delta y_{\text{Area}}$	$\leq 2 \text{ GHz: } \leq 15 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 12 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 12 \text{ mm}$ $4 - 6 \text{ GHz: } \leq 10 \text{ mm}$

From the scanned SAR distribution, identify the position of the maximum SAR value, in addition identify the positions of any local maxima with SAR values within 2 dB of the maximum value that will not be within the zoom scan of other peaks. Additional peaks shall be measured only when the primary peak is within 2 dB of the SAR compliance limit (e.g. 1 W/kg for 1.6 W/kg, 1 g limit; or 1.26 W/kg for 2 W/kg, 10 g limit).

The zoom scan (three-dimensional SAR distribution) is performed at the local maxima locations identified in previous area scan procedure. The zoom scan volume must be larger than the required minimum dimensions. When graded grids are used, which only applies in the direction normal to the phantom surface, the initial grid separation closest to the phantom surface and subsequent graded grid increment ratios must satisfy the required protocols. The 1-g SAR averaging volume must be fully contained within the zoom scan measurement volume boundaries; otherwise, the measurement must be repeated by shifting or expanding the zoom scan volume. The similar requirements also apply to 10-g SAR measurements. Following table provides the measurement parameters required for the zoom scan.

Parameter		$f \leq 3 \text{ GHz}$	$3 \text{ GHz} < f \leq 6 \text{ GHz}$
Maximum zoom scan spatial resolution: $\Delta x_{\text{Zoom}}, \Delta y_{\text{Zoom}}$		$\leq 2 \text{ GHz: } \leq 8 \text{ mm}$ $2 - 3 \text{ GHz: } \leq 5 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 5 \text{ mm}$ $4 - 6 \text{ GHz: } \leq 4 \text{ mm}$
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{\text{Zoom}}(n)$	$\leq 5 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 4 \text{ mm}$ $4 - 5 \text{ GHz: } \leq 3 \text{ mm}$ $5 - 6 \text{ GHz: } \leq 2 \text{ mm}$
	graded grids: $\Delta z_{\text{Zoom}}(1)$	$\leq 4 \text{ mm}$	$3 - 4 \text{ GHz: } \leq 3.0 \text{ mm}$ $4 - 5 \text{ GHz: } \leq 2.5 \text{ mm}$ $5 - 6 \text{ GHz: } \leq 2.0 \text{ mm}$
	$\Delta z_{\text{Zoom}}(n>1)$	$\leq 1.5 \cdot \Delta z_{\text{Zoom}}(n-1) \text{ mm}$	
Minimum zoom scan volume (x, y, z)		$\geq 30 \text{ mm}$	$3 - 4 \text{ GHz: } \geq 28 \text{ mm}$ $4 - 5 \text{ GHz: } \geq 25 \text{ mm}$ $5 - 6 \text{ GHz: } \geq 22 \text{ mm}$

3.3.2. Power Drift Monitoring

All SAR testing is under the DUT install full charged battery and transmit maximum output power. In DASY measurement software, the power reference measurement and power drift measurement procedures are used for monitoring the power drift of DUT during SAR test. Both these procedures measure the field at a specified reference position before and after the SAR testing. The software will calculate the field difference in dB. If the power drift more than 5%, the SAR will be retested.

3.3.3. Spatial Peak SAR Evaluation

The procedure for spatial peak SAR evaluation has been implemented according to the test standard. It can be conducted for 1g and 10g, as well as for user-specific masses. The DASY software includes all numerical procedures necessary to evaluate the spatial peak SAR value.

The base for the evaluation is a “cube” measurement. The measured volume must include the 1g and 10g cubes with the highest averaged SAR values. For that purpose, the center of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan.

The entire evaluation of the spatial peak values is performed within the post-processing engine (SEMCAD). The system always gives the maximum values for the 1g and 10g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

- (a) Extraction of the measured data (grid and values) from the Zoom Scan
- (b) Calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
- (c) Generation of a high-resolution mesh within the measured volume
- (d) Interpolation of all measured values from the measurement grid to the high-resolution grid
- (e) Extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
- (f) Calculation of the averaged SAR within masses of 1g and 10g

3.3.4. SAR Averaged Methods

In DASY, the interpolation and extrapolation are both based on the modified Quadratic Shepard's method. The interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation.

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5 mm.

4. SAR Characterization

4.1. DSI (Device State Index) and SAR Determination

This device uses different Device State Index (DSI) to configure different time averaged power levels based on certain exposure scenarios. Depending on the detection scheme implemented in the DUT, the worst-case SAR was determined by measurements for the relevant exposure conditions for that DSI. Detailed descriptions of the detection mechanisms are included in the operational description document.

When 10g-SAR exposure comparison is needed, the worst-case was determined from SAR normalized to 10g SAR limit.

The device state index (DSI) conditions used in below represent different exposure scenarios.

Exposure Scenario	Description	SAR Test Cases
Body (DSI = 0)	Device positioned against to body	Body SAR tested with DUT at 0 mm

4.2. SAR Design Target

The SAR_{design_target} is determined by ensuring that it is less than SAR limit after accounting for total device designed related uncertainties specified by the manufacturer. The total uncertainties for this device is 1.0 dB. To account for total uncertainty, SAR_{design_target} is determined as below.

$$SAR_{design_target} < SAR_{regulatory\ limit} \times 10^{\frac{-Total\ Uncertainty}{10}}$$

For 1g-SAR, the $SAR_{regulatory\ limit}$ is 1.6 W/kg, and the SAR_{design_target} is 0.95 W/kg.

4.3. SAR Characterization

SAR test results corresponding to P_{max} for each antenna/technology/band/DSI can be found in section 4.4.

The P_{limit} is calculated by linearly scaling with the measured SAR at the P_{max} to correspond to the SAR_{design_target} .

The P_{limit} determination for each exposure scenario corresponding to SAR_{design_target} are show in below.

SAR Characterizations

DSI		0	Pmax (Maximum Tune-up Power, dBm)
Averaging Volume		1g	
Test Distance (mm)		0	
WWAN Bands	Tx Antenna	P _{limit} (dBm)	
WCDMA Band 2	Main	16.9	23.5
WCDMA Band 4	Main	18.5	23.5
WCDMA Band 5	Main	21	23.5
LTE B2	Main	16.5	23.0
LTE B4	Main	18.1	23.0
LTE B5	Main	20.3	23.0
LTE B7	Main	15.4	23.0
LTE B12	Main	21.9	23.0
LTE B13	Main	20.9	23.0
LTE B14	Main	21	23.0
LTE B17	Main	17.4	23.0
LTE B25	Main	16.5	23.0
LTE B26	Main	20.7	23.0
LTE B38	Main	17.6	23.0
LTE B41 (PC3)	Main	17.6	23.0
LTE B41 (PC2)	Main	21.3	25.5
LTE B42	MIMO2	13	21.5
LTE B43	MIMO2	13.5	21.5
LTE B48	MIMO2	13.5	21.5
LTE B66	Main	18.1	23.0
LTE B71	Main	23	23.0
5G NR n2	Main	17.5	23.5
5G NR n5	Main	21	23.5
5G NR n7	Main	15.6	23.5
5G NR n25	Main	16.8	23.5
5G NR n38	Aux	24.7	24.0
5G NR n41 (PC2)	Aux	23.8	26.5
5G NR n48	MIMO2	17.6	21.5
5G NR n66	Main	19	23.5
5G NR n71	Main	22.2	23.5
5G NR n77 (PC2)	MIMO 2	18.2	26.5
5G NR n78 (PC2)	MIMO 2	18.3	26.5

Note :

1. When $P_{max} < P_{limit}$, the DUT will operate at a power level up to P_{max} .
2. All P_{limit} EFS and maximum tune up output power Pmax levels entered in above Table correspond to average power levels after accounting for duty cycle in the case of TDD modulation schemes (e.g. LTE TDD).
3. Maximum tune-up output power P_{max} is used to configure DUT during RF tune-up procedure. The maximum allowed output power is equal to maximum Tune up output power +1.0 dB device design uncertainty.

4.4. SAR Test Result for P_{limit} Calculations

Band	Modulation	Test Position	Channel	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR1 g (W/kg)	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
WCDMA II	RMC12.2K	Bottom Surface	9262	Ant Main	23.84	24.5	1.000	0.736	0.95	24.9	17.9
WCDMA II	RMC12.2K	Left Side	9262	Ant Main	23.84	24.5	1.000	0.001	0.95	53.6	
WCDMA II	RMC12.2K	Right Side	9262	Ant Main	23.84	24.5	1.000	0.469	0.95	26.9	
WCDMA II	RMC12.2K	Top Side	9262	Ant Main	23.84	24.5	1.000	3.49	0.95	18.2	
WCDMA II	RMC12.2K	Bottom Side	9262	Ant Main	23.84	24.5	1.000	0.001	0.95	53.6	
WCDMA II	RMC12.2K	Top Side	9400	Ant Main	23.59	24.5	1.000	3.51	0.95	17.9	
WCDMA II	RMC12.2K	Top Side	9538	Ant Main	23.8	24.5	1.000	3.37	0.95	18.3	
WCDMA II	RMC12.2K	Top Side	9400	Ant Main	23.59	24.5	1.000	3.37	0.95	18.1	
WCDMA IV	RMC12.2K	Bottom Surface	1312	Ant Main	23.86	24.5	1.000	0.75	0.95	24.9	19.5
WCDMA IV	RMC12.2K	Left Side	1312	Ant Main	23.86	24.5	1.000	0.001	0.95	53.6	
WCDMA IV	RMC12.2K	Right Side	1312	Ant Main	23.86	24.5	1.000	0.381	0.95	27.8	
WCDMA IV	RMC12.2K	Top Side	1312	Ant Main	23.86	24.5	1.000	2.29	0.95	20	
WCDMA IV	RMC12.2K	Bottom Side	1312	Ant Main	23.86	24.5	1.000	0.001	0.95	53.6	
WCDMA IV	RMC12.2K	Top Side	1413	Ant Main	23.58	24.5	1.000	2.4	0.95	19.6	
WCDMA IV	RMC12.2K	Top Side	1513	Ant Main	23.83	24.5	1.000	2.58	0.95	19.5	
WCDMA IV	RMC12.2K	Top Side	1513	Ant Main	23.83	24.5	1.000	2.46	0.95	19.7	
WCDMA V	RMC12.2K	Bottom Surface	4132	Ant Main	23.98	24.5	1.000	0.559	0.95	26.3	22
WCDMA V	RMC12.2K	Left Side	4132	Ant Main	23.98	24.5	1.000	0.001	0.95	53.8	
WCDMA V	RMC12.2K	Right Side	4132	Ant Main	23.98	24.5	1.000	0.273	0.95	29.4	
WCDMA V	RMC12.2K	Top Side	4132	Ant Main	23.98	24.5	1.000	1.49	0.95	22	
WCDMA V	RMC12.2K	Bottom Side	4132	Ant Main	23.98	24.5	1.000	0.001	0.95	53.8	
WCDMA V	RMC12.2K	Top Side	4182	Ant Main	23.88	24.5	1.000	1.44	0.95	22.1	
WCDMA V	RMC12.2K	Top Side	4233	Ant Main	23.54	24.5	1.000	1.33	0.95	22.1	
WCDMA V	RMC12.2K	Top Side	4132	Ant Main	23.98	24.5	1.000	1.47	0.95	22.1	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
LTE 5	QPSK10M	Bottom Surface	20450	1	0	Ant Main	23.69	24	1.000	0.598	0.95	25.7	21.3
LTE 5	QPSK10M	Left Side	20450	1	0	Ant Main	23.69	24	1.000	0.001	0.95	53.5	
LTE 5	QPSK10M	Right Side	20450	1	0	Ant Main	23.69	24	1.000	0.33	0.95	28.3	
LTE 5	QPSK10M	Top Side	20450	1	0	Ant Main	23.69	24	1.000	1.55	0.95	21.6	
LTE 5	QPSK10M	Bottom Side	20450	1	0	Ant Main	23.69	24	1.000	0.001	0.95	53.5	
LTE 5	QPSK10M	Bottom Surface	20450	25	0	Ant Main	22.48	23	1.000	0.591	0.95	24.5	
LTE 5	QPSK10M	Left Side	20450	25	0	Ant Main	22.48	23	1.000	0.001	0.95	52.3	
LTE 5	QPSK10M	Right Side	20450	25	0	Ant Main	22.48	23	1.000	0.306	0.95	27.4	
LTE 5	QPSK10M	Top Side	20450	25	0	Ant Main	22.48	23	1.000	1.49	0.95	20.5	
LTE 5	QPSK10M	Bottom Side	20450	25	0	Ant Main	22.48	23	1.000	0.001	0.95	52.3	
LTE 5	QPSK10M	Top Side	20450	50	0	Ant Main	22.39	23	1.000	1.43	0.95	20.6	
LTE 5	QPSK10M	Top Side	20525	1	0	Ant Main	23.53	24	1.000	1.58	0.95	21.3	
LTE 5	QPSK10M	Top Side	20600	1	0	Ant Main	23.66	24	1.000	1.47	0.95	21.8	
LTE 5	QPSK10M	Top Side	20525	1	0	Ant Main	23.53	24	1.000	1.51	0.95	21.5	
LTE 7	QPSK20M	Bottom Surface	20850	1	0	Ant Main	23.47	24	1.000	0.639	0.95	25.2	16.4
LTE 7	QPSK20M	Left Side	20850	1	0	Ant Main	23.47	24	1.000	0.001	0.95	53.2	
LTE 7	QPSK20M	Right Side	20850	1	0	Ant Main	23.47	24	1.000	0.358	0.95	27.7	
LTE 7	QPSK20M	Top Side	20850	1	0	Ant Main	23.47	24	1.000	4.67	0.95	16.6	
LTE 7	QPSK20M	Bottom Side	20850	1	0	Ant Main	23.47	24	1.000	0.001	0.95	53.2	
LTE 7	QPSK20M	Bottom Surface	20850	50	0	Ant Main	22.35	23	1.000	0.503	0.95	25.1	
LTE 7	QPSK20M	Left Side	20850	50	0	Ant Main	22.35	23	1.000	0.001	0.95	52.1	
LTE 7	QPSK20M	Right Side	20850	50	0	Ant Main	22.35	23	1.000	0.332	0.95	26.9	
LTE 7	QPSK20M	Top Side	20850	50	0	Ant Main	22.35	23	1.000	4.55	0.95	15.5	
LTE 7	QPSK20M	Bottom Side	20850	50	0	Ant Main	22.35	23	1.000	0.001	0.95	52.1	
LTE 7	QPSK20M	Top Side	21100	1	0	Ant Main	23.42	24	1.000	4.77	0.95	16.4	
LTE 7	QPSK20M	Top Side	21350	1	0	Ant Main	23.45	24	1.000	4.48	0.95	16.7	
LTE 7	QPSK20M	Top Side	21100	1	0	Ant Main	23.42	24	1.000	4.71	0.95	16.5	
LTE 12	QPSK10M	Bottom Surface	23060	1	0	Ant Main	23.74	24	1.000	0.465	0.95	26.8	22.9
LTE 12	QPSK10M	Left Side	23060	1	0	Ant Main	23.74	24	1.000	0.001	0.95	53.5	
LTE 12	QPSK10M	Right Side	23060	1	0	Ant Main	23.74	24	1.000	0.286	0.95	29	
LTE 12	QPSK10M	Top Side	23060	1	0	Ant Main	23.74	24	1.000	1.15	0.95	22.9	
LTE 12	QPSK10M	Bottom Side	23060	1	0	Ant Main	23.74	24	1.000	0.001	0.95	53.5	
LTE 12	QPSK10M	Bottom Surface	23060	25	0	Ant Main	22.62	23	1.000	0.454	0.95	25.8	
LTE 12	QPSK10M	Left Side	23060	25	0	Ant Main	22.62	23	1.000	0.001	0.95	52.4	
LTE 12	QPSK10M	Right Side	23060	25	0	Ant Main	22.62	23	1.000	0.281	0.95	27.9	
LTE 12	QPSK10M	Top Side	23060	25	0	Ant Main	22.62	23	1.000	1.08	0.95	22.1	
LTE 12	QPSK10M	Bottom Side	23060	25	0	Ant Main	22.62	23	1.000	0.001	0.95	52.4	
LTE 12	QPSK10M	Top Side	23095	1	0	Ant Main	23.66	24	1.000	1.04	0.95	23.3	
LTE 12	QPSK10M	Top Side	23130	1	0	Ant Main	23.7	24	1.000	1.05	0.95	23.3	
LTE 12	QPSK10M	Top Side	23060	1	0	Ant Main	23.74	24	1.000	1.11	0.95	23.1	
LTE 13	QPSK10M	Bottom Surface	23230	1	0	Ant Main	23.67	24	1.000	0.718	0.95	24.9	21.9
LTE 13	QPSK10M	Left Side	23230	1	0	Ant Main	23.67	24	1.000	0.001	0.95	53.4	
LTE 13	QPSK10M	Right Side	23230	1	0	Ant Main	23.67	24	1.000	0.421	0.95	27.2	
LTE 13	QPSK10M	Top Side	23230	1	0	Ant Main	23.67	24	1.000	1.42	0.95	21.9	
LTE 13	QPSK10M	Bottom Side	23230	1	0	Ant Main	23.67	24	1.000	0.001	0.95	53.4	
LTE 13	QPSK10M	Bottom Surface	23230	25	0	Ant Main	22.6	23	1.000	0.692	0.95	24	
LTE 13	QPSK10M	Left Side	23230	25	0	Ant Main	22.6	23	1.000	0.001	0.95	52.4	
LTE 13	QPSK10M	Right Side	23230	25	0	Ant Main	22.6	23	1.000	0.383	0.95	26.5	
LTE 13	QPSK10M	Top Side	23230	25	0	Ant Main	22.6	23	1.000	1.37	0.95	21	
LTE 13	QPSK10M	Bottom Side	23230	25	0	Ant Main	22.6	23	1.000	0.001	0.95	52.4	
LTE 13	QPSK10M	Top Side	23230	1	0	Ant Main	23.67	24	1.000	1.39	0.95	22	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
LTE 14	QPSK10M	Bottom Surface	23330	1	0	Ant Main	23.44	24	1.000	0.632	0.95	25.2	22
LTE 14	QPSK10M	Left Side	23330	1	0	Ant Main	23.44	24	1.000	0.001	0.95	53.2	
LTE 14	QPSK10M	Right Side	23330	1	0	Ant Main	23.44	24	1.000	0.401	0.95	27.2	
LTE 14	QPSK10M	Top Side	23330	1	0	Ant Main	23.44	24	1.000	1.33	0.95	22	
LTE 14	QPSK10M	Bottom Side	23330	1	0	Ant Main	23.44	24	1.000	0.001	0.95	53.2	
LTE 14	QPSK10M	Bottom Surface	23330	25	0	Ant Main	22.31	23	1.000	0.607	0.95	24.3	
LTE 14	QPSK10M	Left Side	23330	25	0	Ant Main	22.31	23	1.000	0.001	0.95	52.1	
LTE 14	QPSK10M	Right Side	23330	25	0	Ant Main	22.31	23	1.000	0.382	0.95	26.3	
LTE 14	QPSK10M	Top Side	23330	25	0	Ant Main	22.31	23	1.000	1.29	0.95	21	
LTE 14	QPSK10M	Bottom Side	23330	25	0	Ant Main	22.31	23	1.000	0.001	0.95	52.1	
LTE 14	QPSK10M	Top Side	23330	1	0	Ant Main	23.44	24	1.000	1.31	0.95	22	
LTE 25	QPSK20M	Bottom Surface	26140	1	0	Ant Main	23.59	24	1.000	0.612	0.95	25.5	18.4
LTE 25	QPSK20M	Left Side	26140	1	0	Ant Main	23.59	24	1.000	0.001	0.95	53.4	
LTE 25	QPSK20M	Right Side	26140	1	0	Ant Main	23.59	24	1.000	0.406	0.95	27.3	
LTE 25	QPSK20M	Top Side	26140	1	0	Ant Main	23.59	24	1.000	3.1	0.95	18.5	
LTE 25	QPSK20M	Bottom Side	26140	1	0	Ant Main	23.59	24	1.000	0.001	0.95	53.4	
LTE 25	QPSK20M	Bottom Surface	26140	50	0	Ant Main	22.41	23	1.000	0.586	0.95	24.5	
LTE 25	QPSK20M	Left Side	26140	50	0	Ant Main	22.41	23	1.000	0.001	0.95	52.2	
LTE 25	QPSK20M	Right Side	26140	50	0	Ant Main	22.41	23	1.000	0.353	0.95	26.7	
LTE 25	QPSK20M	Top Side	26140	50	0	Ant Main	22.41	23	1.000	2.96	0.95	17.5	
LTE 25	QPSK20M	Bottom Side	26140	50	0	Ant Main	22.41	23	1.000	0.001	0.95	52.2	
LTE 25	QPSK20M	Top Side	26365	1	0	Ant Main	23.3	24	1.000	2.93	0.95	18.4	21.7
LTE 25	QPSK20M	Top Side	26590	1	0	Ant Main	23.44	24	1.000	2.99	0.95	18.5	
LTE 25	QPSK20M	Top Side	26140	1	0	Ant Main	23.59	24	1.000	3.03	0.95	18.6	
LTE 26	QPSK15M	Bottom Surface	26765	1	0	Ant Main	23.42	24	1.000	0.576	0.95	25.6	
LTE 26	QPSK15M	Left Side	26765	1	0	Ant Main	23.42	24	1.000	0.001	0.95	53.2	
LTE 26	QPSK15M	Right Side	26765	1	0	Ant Main	23.42	24	1.000	0.292	0.95	28.5	
LTE 26	QPSK15M	Top Side	26765	1	0	Ant Main	23.42	24	1.000	1.38	0.95	21.8	
LTE 26	QPSK15M	Bottom Side	26765	1	0	Ant Main	23.42	24	1.000	0.001	0.95	53.2	
LTE 26	QPSK15M	Bottom Surface	26765	36	0	Ant Main	22.33	23	1.000	0.549	0.95	24.7	
LTE 26	QPSK15M	Left Side	26765	36	0	Ant Main	22.33	23	1.000	0.001	0.95	52.1	
LTE 26	QPSK15M	Right Side	26765	36	0	Ant Main	22.33	23	1.000	0.278	0.95	27.7	16.6
LTE 26	QPSK15M	Top Side	26765	36	0	Ant Main	22.33	23	1.000	1.35	0.95	20.8	
LTE 26	QPSK15M	Bottom Side	26765	36	0	Ant Main	22.33	23	1.000	0.001	0.95	52.1	
LTE 26	QPSK15M	Top Side	26865	1	0	Ant Main	23.32	24	1.000	1.39	0.95	21.7	
LTE 26	QPSK15M	Top Side	26965	1	0	Ant Main	23.34	24	1.000	1.32	0.95	21.9	
LTE 26	QPSK15M	Top Side	26865	1	0	Ant Main	23.32	24	1.000	1.32	0.95	21.9	
LTE 41	QPSK20M	Bottom Surface	41490	1	0	Ant Main	23.92	24	1.000	0.539	0.95	24.4	
LTE 41	QPSK20M	Left Side	41490	1	0	Ant Main	23.92	24	1.000	0.001	0.95	51.7	
LTE 41	QPSK20M	Right Side	41490	1	0	Ant Main	23.92	24	1.000	0.479	0.95	24.9	
LTE 41	QPSK20M	Top Side	41490	1	0	Ant Main	23.92	24	1.000	3.22	0.95	16.6	
LTE 41	QPSK20M	Bottom Side	41490	1	0	Ant Main	23.92	24	1.000	0.001	0.95	51.7	
LTE 41	QPSK20M	Bottom Surface	41490	50	0	Ant Main	22.74	23	1.000	0.479	0.95	23.7	
LTE 41	QPSK20M	Left Side	41490	50	0	Ant Main	22.74	23	1.000	0.001	0.95	50.5	
LTE 41	QPSK20M	Right Side	41490	50	0	Ant Main	22.74	23	1.000	0.419	0.95	24.3	
LTE 41	QPSK20M	Top Side	41490	50	0	Ant Main	22.74	23	1.000	2.71	0.95	16.2	
LTE 41	QPSK20M	Bottom Side	41490	50	0	Ant Main	22.74	23	1.000	0.001	0.95	50.5	16.6
LTE 41	QPSK20M	Top Side	39750	1	0	Ant Main	23.01	24	1.000	2.62	0.95	16.6	
LTE 41	QPSK20M	Top Side	39790	1	0	Ant Main	22.89	24	1.000	2.56	0.95	16.6	
LTE 41	QPSK20M	Top Side	40185	1	0	Ant Main	23.37	24	1.000	2.57	0.95	17	
LTE 41	QPSK20M	Top Side	40620	1	0	Ant Main	23.56	24	1.000	2.38	0.95	17.6	
LTE 41	QPSK20M	Top Side	41055	1	0	Ant Main	23.4	24	1.000	2.2	0.95	17.8	
LTE 41 PC2	QPSK20M	Top Side	41490	1	0	Ant Main	26.49	26.5	1.000	2.47	0.95	18.7	
LTE 41	QPSK20M	Top Side	41490	1	0	Ant Main	23.92	24	1.000	3.02	0.95	16.9	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
LTE 42	QPSK20M	Bottom Surface	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	0.648	0.95	21.9	12
LTE 42	QPSK20M	Left Side	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	6.36	0.95	12	
LTE 42	QPSK20M	Right Side	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	0.001	0.95	50	
LTE 42	QPSK20M	Top Side	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	0.542	0.95	22.7	
LTE 42	QPSK20M	Bottom Side	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	0.59	0.95	22.3	
LTE 42	QPSK20M	Bottom Surface	43490	50	0	Ant MIMO 2	21.02	21.5	1.000	0.513	0.95	21.7	
LTE 42	QPSK20M	Left Side	43490	50	0	Ant MIMO 2	21.02	21.5	1.000	5.99	0.95	11	
LTE 42	QPSK20M	Right Side	43490	50	0	Ant MIMO 2	21.02	21.5	1.000	0.001	0.95	48.8	
LTE 42	QPSK20M	Top Side	43490	50	0	Ant MIMO 2	21.02	21.5	1.000	0.474	0.95	22	
LTE 42	QPSK20M	Bottom Side	43490	50	0	Ant MIMO 2	21.02	21.5	1.000	0.571	0.95	21.2	
LTE 42	QPSK20M	Left Side	42190	1	0	Ant MIMO 2	22.16	22.5	1.000	6.05	0.95	12.1	
LTE 42	QPSK20M	Left Side	42623	1	0	Ant MIMO 2	22.14	22.5	1.000	5.87	0.95	12.2	
LTE 42	QPSK20M	Left Side	43057	1	0	Ant MIMO 2	22.13	22.5	1.000	5.41	0.95	12.6	
LTE 42	QPSK20M	Left Side	43190	1	0	Ant MIMO 2	22.06	22.5	1.000	5.47	0.95	12.5	
LTE 42	QPSK20M	Left Side	43340	1	0	Ant MIMO 2	22.02	22.5	1.000	5.11	0.95	12.7	
LTE 42	QPSK20M	Left Side	43490	1	0	Ant MIMO 2	22.26	22.5	1.000	5.92	0.95	12.3	
LTE 43	QPSK20M	Bottom Surface	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	0.412	0.95	23.9	12.5
LTE 43	QPSK20M	Left Side	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	5.75	0.95	12.5	
LTE 43	QPSK20M	Right Side	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	0.001	0.95	50.1	
LTE 43	QPSK20M	Top Side	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	0.367	0.95	24.4	
LTE 43	QPSK20M	Bottom Side	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	0.483	0.95	23.2	
LTE 43	QPSK20M	Bottom Surface	44190	50	0	Ant MIMO 2	21.21	21.5	1.000	0.373	0.95	23.3	
LTE 43	QPSK20M	Left Side	44190	50	0	Ant MIMO 2	21.21	21.5	1.000	5.65	0.95	11.5	
LTE 43	QPSK20M	Right Side	44190	50	0	Ant MIMO 2	21.21	21.5	1.000	0.001	0.95	49	
LTE 43	QPSK20M	Top Side	44190	50	0	Ant MIMO 2	21.21	21.5	1.000	0.335	0.95	23.7	
LTE 43	QPSK20M	Bottom Side	44190	50	0	Ant MIMO 2	21.21	21.5	1.000	0.399	0.95	23	
LTE 43	QPSK20M	Left Side	44190	100	0	Ant MIMO 2	21.14	21.5	1.000	5.39	0.95	11.6	
LTE 43	QPSK20M	Left Side	44340	1	0	Ant MIMO 2	22.24	22.5	1.000	5.48	0.95	12.6	
LTE 43	QPSK20M	Left Side	44490	1	0	Ant MIMO 2	22.19	22.5	1.000	5.46	0.95	12.6	
LTE 43	QPSK20M	Left Side	44190	1	0	Ant MIMO 2	22.29	22.5	1.000	5.68	0.95	12.5	
LTE 48	QPSK20M	Bottom Surface	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	0.565	0.95	22.4	12.5
LTE 48	QPSK20M	Left Side	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	5.63	0.95	12.5	
LTE 48	QPSK20M	Right Side	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	0.001	0.95	50	
LTE 48	QPSK20M	Top Side	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	0.486	0.95	23.1	
LTE 48	QPSK20M	Bottom Side	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	0.494	0.95	23	
LTE 48	QPSK20M	Bottom Surface	55340	50	0	Ant MIMO 2	21.03	21.5	1.000	0.415	0.95	22.6	
LTE 48	QPSK20M	Left Side	55340	50	0	Ant MIMO 2	21.03	21.5	1.000	5.37	0.95	11.5	
LTE 48	QPSK20M	Right Side	55340	50	0	Ant MIMO 2	21.03	21.5	1.000	0.001	0.95	48.8	
LTE 48	QPSK20M	Top Side	55340	50	0	Ant MIMO 2	21.03	21.5	1.000	0.388	0.95	22.9	
LTE 48	QPSK20M	Bottom Side	55340	50	0	Ant MIMO 2	21.03	21.5	1.000	0.45	0.95	22.3	
LTE 48	QPSK20M	Left Side	55773	1	0	Ant MIMO 2	22.11	22.5	1.000	5.41	0.95	12.6	
LTE 48	QPSK20M	Left Side	56207	1	0	Ant MIMO 2	21.98	22.5	1.000	5.32	0.95	12.5	
LTE 48	QPSK20M	Left Side	56640	1	0	Ant MIMO 2	22.05	22.5	1.000	5.24	0.95	12.6	
LTE 48	QPSK20M	Left Side	55340	1	0	Ant MIMO 2	22.19	22.5	1.000	5.52	0.95	12.5	
LTE 66	QPSK20M	Bottom Surface	132072	1	0	Ant Main	23.31	24	1.000	0.583	0.95	25.4	19.1
LTE 66	QPSK20M	Left Side	132072	1	0	Ant Main	23.31	24	1.000	0.001	0.95	53.1	
LTE 66	QPSK20M	Right Side	132072	1	0	Ant Main	23.31	24	1.000	0.26	0.95	28.9	
LTE 66	QPSK20M	Top Side	132072	1	0	Ant Main	23.31	24	1.000	2.06	0.95	19.9	
LTE 66	QPSK20M	Bottom Side	132072	1	0	Ant Main	23.31	24	1.000	0.001	0.95	53.1	
LTE 66	QPSK20M	Bottom Surface	132072	50	0	Ant Main	22.13	23	1.000	0.572	0.95	24.3	
LTE 66	QPSK20M	Left Side	132072	50	0	Ant Main	22.13	23	1.000	0.001	0.95	51.9	
LTE 66	QPSK20M	Right Side	132072	50	0	Ant Main	22.13	23	1.000	0.248	0.95	28	
LTE 66	QPSK20M	Top Side	132072	50	0	Ant Main	22.13	23	1.000	1.98	0.95	18.9	
LTE 66	QPSK20M	Bottom Side	132072	50	0	Ant Main	22.13	23	1.000	0.001	0.95	51.9	
LTE 66	QPSK20M	Top Side	132322	1	0	Ant Main	22.8	24	1.000	2.05	0.95	19.5	
LTE 66	QPSK20M	Top Side	132572	1	0	Ant Main	23.25	24	1.000	2.45	0.95	19.1	
LTE 66	QPSK20M	Top Side	132572	1	0	Ant Main	23.25	24	1.000	2.38	0.95	19.3	
LTE 71	QPSK20M	Bottom Surface	133222	1	0	Ant Main	23.99	24	1.000	0.43	0.95	27.4	24
LTE 71	QPSK20M	Left Side	133222	1	0	Ant Main	23.99	24	1.000	0.001	0.95	53.8	
LTE 71	QPSK20M	Right Side	133222	1	0	Ant Main	23.99	24	1.000	0.245	0.95	29.9	
LTE 71	QPSK20M	Top Side	133222	1	0	Ant Main	23.99	24	1.000	0.893	0.95	24.3	
LTE 71	QPSK20M	Bottom Side	133222	1	0	Ant Main	23.99	24	1.000	0.001	0.95	53.8	
LTE 71	QPSK20M	Bottom Surface	133222	50	0	Ant Main	22.96	23	1.000	0.424	0.95	26.5	
LTE 71	QPSK20M	Left Side	133222	50	0	Ant Main	22.96	23	1.000	0.001	0.95	52.7	
LTE 71	QPSK20M	Right Side	133222	50	0	Ant Main	22.96	23	1.000	0.241	0.95	28.9	
LTE 71	QPSK20M	Top Side	133222	50	0	Ant Main	22.96	23	1.000	0.874	0.95	23.3	
LTE 71	QPSK20M	Bottom Side	133222	50	0	Ant Main	22.96	23	1.000	0.001	0.95	52.7	
LTE 71	QPSK20M	Top Side	133322	1	0	Ant Main	23.94	24	1.000	0.932	0.95	24	
LTE 71	QPSK20M	Top Side	133372	1	0	Ant Main	23.95	24	1.000	0.895	0.95	24.2	
LTE 71	QPSK20M	Top Side	133322	1	0	Ant Main	23.94	24	1.000	0.916	0.95	24.1	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
5GNR n2	DFT-S QPSK 20M	Bottom Surface	372000	1	1	Ant Main	23.99	24.5	1.000	0.79	0.95	24.8	18.5
5GNR n2	DFT-S QPSK 20M	Left Side	372000	1	1	Ant Main	23.99	24.5	1.000	0.001	0.95	53.8	
5GNR n2	DFT-S QPSK 20M	Right Side	372000	1	1	Ant Main	23.99	24.5	1.000	0.549	0.95	26.4	
5GNR n2	DFT-S QPSK 20M	Top Side	372000	1	1	Ant Main	23.99	24.5	1.000	3.21	0.95	18.7	
5GNR n2	DFT-S QPSK 20M	Bottom Side	372000	1	1	Ant Main	23.99	24.5	1.000	0.001	0.95	53.8	
5GNR n2	DFT-S QPSK 20M	Bottom Surface	372000	50	28	Ant Main	23.86	24.5	1.000	0.792	0.95	24.6	
5GNR n2	DFT-S QPSK 20M	Left Side	372000	50	28	Ant Main	22.84	24.5	1.000	0.001	0.95	52.6	
5GNR n2	DFT-S QPSK 20M	Right Side	372000	50	28	Ant Main	23.86	24.5	1.000	0.464	0.95	27	
5GNR n2	DFT-S QPSK 20M	Top Side	372000	50	28	Ant Main	23.86	24.5	1.000	3.04	0.95	18.8	
5GNR n2	DFT-S QPSK 20M	Bottom Side	372000	50	28	Ant Main	23.86	24.5	1.000	0.001	0.95	53.6	
5GNR n2	DFT-S QPSK 20M	Top Side	376000	1	1	Ant Main	23.89	24.5	1.000	3.27	0.95	18.5	
5GNR n2	DFT-S QPSK 20M	Top Side	380000	1	1	Ant Main	23.93	24.5	1.000	3.18	0.95	18.7	
5GNR n2	DFT-S QPSK 20M	Top Side	376000	1	1	Ant Main	23.89	24.5	1.000	3.2	0.95	18.6	
5GNR n5	DFT-S QPSK 20M	Bottom Surface	166800	1	1	Ant Main	23.99	24.5	1.000	0.65	0.95	25.6	22
5GNR n5	DFT-S QPSK 20M	Left Side	166800	1	1	Ant Main	23.99	24.5	1.000	0.001	0.95	53.8	
5GNR n5	DFT-S QPSK 20M	Right Side	166800	1	1	Ant Main	23.99	24.5	1.000	0.327	0.95	28.6	
5GNR n5	DFT-S QPSK 20M	Top Side	166800	1	1	Ant Main	23.99	24.5	1.000	1.45	0.95	22.2	
5GNR n5	DFT-S QPSK 20M	Bottom Side	166800	1	1	Ant Main	23.99	24.5	1.000	0.001	0.95	53.8	
5GNR n5	DFT-S QPSK 20M	Bottom Surface	166800	50	28	Ant Main	23.83	24.5	1.000	0.616	0.95	25.7	
5GNR n5	DFT-S QPSK 20M	Left Side	166800	50	28	Ant Main	23.83	24.5	1.000	0.001	0.95	53.6	
5GNR n5	DFT-S QPSK 20M	Right Side	166800	50	28	Ant Main	23.83	24.5	1.000	0.273	0.95	29.2	
5GNR n5	DFT-S QPSK 20M	Top Side	166800	50	28	Ant Main	23.83	24.5	1.000	1.41	0.95	22.1	
5GNR n5	DFT-S QPSK 20M	Bottom Side	166800	50	28	Ant Main	23.83	24.5	1.000	0.001	0.95	53.6	
5GNR n5	DFT-S QPSK 20M	Top Side	166800	100	0	Ant Main	22.73	23.5	1.000	1.4	0.95	21	
5GNR n5	DFT-S QPSK 20M	Top Side	167300	1	1	Ant Main	23.89	24.5	1.000	1.46	0.95	22	
5GNR n5	DFT-S QPSK 20M	Top Side	167800	1	1	Ant Main	23.93	24.5	1.000	1.42	0.95	22.2	
5GNR n5	DFT-S QPSK 20M	Top Side	167300	1	1	Ant Main	23.89	24.5	1.000	1.43	0.95	22.1	
5GNR n7	DFT-S QPSK 20M	Bottom Surface	502000	1	1	Ant Main	23.89	24.5	1.000	0.643	0.95	25.6	16.6
5GNR n7	DFT-S QPSK 20M	Left Side	502000	1	1	Ant Main	23.89	24.5	1.000	0.001	0.95	53.7	
5GNR n7	DFT-S QPSK 20M	Right Side	502000	1	1	Ant Main	23.89	24.5	1.000	0.258	0.95	29.6	
5GNR n7	DFT-S QPSK 20M	Top Side	502000	1	1	Ant Main	23.89	24.5	1.000	5.11	0.95	16.6	
5GNR n7	DFT-S QPSK 20M	Bottom Side	502000	1	1	Ant Main	23.89	24.5	1.000	0.001	0.95	53.7	
5GNR n7	DFT-S QPSK 20M	Bottom Surface	502000	50	28	Ant Main	23.69	24.5	1.000	0.615	0.95	25.6	
5GNR n7	DFT-S QPSK 20M	Left Side	502000	50	28	Ant Main	23.69	24.5	1.000	0.001	0.95	53.5	
5GNR n7	DFT-S QPSK 20M	Right Side	502000	50	28	Ant Main	23.69	24.5	1.000	0.241	0.95	29.6	
5GNR n7	DFT-S QPSK 20M	Top Side	502000	50	28	Ant Main	23.69	24.5	1.000	4.83	0.95	16.6	
5GNR n7	DFT-S QPSK 20M	Bottom Side	502000	50	28	Ant Main	23.69	24.5	1.000	0.001	0.95	53.5	
5GNR n7	DFT-S QPSK 20M	Top Side	507000	1	1	Ant Main	23.87	24.5	1.000	4.88	0.95	16.8	
5GNR n7	DFT-S QPSK 20M	Top Side	512000	1	1	Ant Main	23.88	24.5	1.000	4.63	0.95	17	
5GNR n7	DFT-S QPSK 20M	Top Side	502000	1	1	Ant Main	23.89	24.5	1.000	4.85	0.95	16.8	
5GNR n25	DFT-S QPSK 20M	Bottom Surface	372000	1	1	Ant Main	23.31	24.5	1.000	0.728	0.95	24.5	17.8
5GNR n25	DFT-S QPSK 20M	Left Side	372000	1	1	Ant Main	23.31	24.5	1.000	0.001	0.95	53.1	
5GNR n25	DFT-S QPSK 20M	Right Side	372000	1	1	Ant Main	23.31	24.5	1.000	0.385	0.95	27.2	
5GNR n25	DFT-S QPSK 20M	Top Side	372000	1	1	Ant Main	23.31	24.5	1.000	3.08	0.95	18.2	
5GNR n25	DFT-S QPSK 20M	Bottom Side	372000	1	1	Ant Main	23.31	24.5	1.000	0.001	0.95	53.1	
5GNR n25	DFT-S QPSK 20M	Bottom Surface	372000	50	28	Ant Main	23.09	24.5	1.000	0.702	0.95	24.4	
5GNR n25	DFT-S QPSK 20M	Left Side	372000	50	28	Ant Main	23.09	24.5	1.000	0.001	0.95	52.9	
5GNR n25	DFT-S QPSK 20M	Right Side	372000	50	28	Ant Main	23.09	24.5	1.000	0.338	0.95	27.6	
5GNR n25	DFT-S QPSK 20M	Top Side	372000	50	28	Ant Main	23.09	24.5	1.000	2.99	0.95	18.1	
5GNR n25	DFT-S QPSK 20M	Bottom Side	372000	50	28	Ant Main	23.09	24.5	1.000	0.001	0.95	52.9	
5GNR n25	DFT-S QPSK 20M	Top Side	376500	1	1	Ant Main	23.23	24.5	1.000	3.04	0.95	18.2	
5GNR n25	DFT-S QPSK 20M	Top Side	381000	1	1	Ant Main	23.19	24.5	1.000	3.28	0.95	17.8	
5GNR n25	DFT-S QPSK 20M	Top Side	381000	1	1	Ant Main	23.19	24.5	1.000	3.19	0.95	17.9	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
5GNR n66	DFT-S QPSK 20M	Bottom Surface	344000	1	1	Ant Main	23.77	24.5	1.000	0.772	0.95	24.7	20
5GNR n66	DFT-S QPSK 20M	Left Side	344000	1	1	Ant Main	23.77	24.5	1.000	0.001	0.95	53.5	
5GNR n66	DFT-S QPSK 20M	Right Side	344000	1	1	Ant Main	23.77	24.5	1.000	0.338	0.95	28.3	
5GNR n66	DFT-S QPSK 20M	Top Side	344000	1	1	Ant Main	23.77	24.5	1.000	2.03	0.95	20.5	
5GNR n66	DFT-S QPSK 20M	Bottom Side	344000	1	1	Ant Main	23.77	24.5	1.000	0.001	0.95	53.5	
5GNR n66	DFT-S QPSK 20M	Bottom Surface	344000	50	28	Ant Main	23.61	24.5	1.000	0.753	0.95	24.6	
5GNR n66	DFT-S QPSK 20M	Left Side	344000	50	28	Ant Main	22.81	24.5	1.000	0.001	0.95	52.6	
5GNR n66	DFT-S QPSK 20M	Right Side	344000	50	28	Ant Main	23.61	24.5	1.000	0.28	0.95	28.9	
5GNR n66	DFT-S QPSK 20M	Top Side	344000	50	28	Ant Main	23.61	24.5	1.000	1.95	0.95	20.5	
5GNR n66	DFT-S QPSK 20M	Bottom Side	344000	50	28	Ant Main	23.61	24.5	1.000	0.001	0.95	53.4	
5GNR n66	DFT-S QPSK 20M	Top Side	349000	1	1	Ant Main	23.47	24.5	1.000	2.1	0.95	20	
5GNR n66	DFT-S QPSK 20M	Top Side	354000	1	1	Ant Main	23.71	24.5	1.000	2.01	0.95	20.5	
5GNR n66	DFT-S QPSK 20M	Top Side	349000	1	1	Ant Main	23.47	24.5	1.000	1.98	0.95	20.3	
5GNR n71	DFT-S QPSK 20M	Bottom Surface	134600	1	1	Ant Main	23.78	24.5	1.000	0.494	0.95	26.6	23.2
5GNR n71	DFT-S QPSK 20M	Left Side	134600	1	1	Ant Main	23.78	24.5	1.000	0.001	0.95	53.6	
5GNR n71	DFT-S QPSK 20M	Right Side	134600	1	1	Ant Main	23.78	24.5	1.000	0.25	0.95	29.6	
5GNR n71	DFT-S QPSK 20M	Top Side	134600	1	1	Ant Main	23.78	24.5	1.000	1.01	0.95	23.5	
5GNR n71	DFT-S QPSK 20M	Bottom Side	134600	1	1	Ant Main	23.78	24.5	1.000	0.001	0.95	53.6	
5GNR n71	DFT-S QPSK 20M	Bottom Surface	134600	50	28	Ant Main	23.62	24.5	1.000	0.479	0.95	26.6	
5GNR n71	DFT-S QPSK 20M	Left Side	134600	50	28	Ant Main	23.62	24.5	1.000	0.001	0.95	53.4	
5GNR n71	DFT-S QPSK 20M	Right Side	134600	50	28	Ant Main	23.62	24.5	1.000	0.226	0.95	29.9	
5GNR n71	DFT-S QPSK 20M	Top Side	134600	50	28	Ant Main	23.62	24.5	1.000	0.978	0.95	23.5	
5GNR n71	DFT-S QPSK 20M	Bottom Side	134600	50	28	Ant Main	23.62	24.5	1.000	0.001	0.95	53.4	
5GNR n71	DFT-S QPSK 20M	Top Side	134600	100	0	Ant Main	22.71	23.5	1.000	0.964	0.95	22.6	
5GNR n71	DFT-S QPSK 20M	Top Side	136100	1	1	Ant Main	23.68	24.5	1.000	0.981	0.95	23.5	
5GNR n71	DFT-S QPSK 20M	Top Side	137600	1	1	Ant Main	23.6	24.5	1.000	1.04	0.95	23.2	
5GNR n71	DFT-S QPSK 20M	Top Side	137600	1	1	Ant Main	23.6	24.5	1.000	1.01	0.95	23.3	
5GNR n38	DFT-S QPSK 20M	Bottom Surface	516000	1	1	Ant Aux	23.3	25	1.000	0.223	0.95	29.6	25.7
5GNR n38	DFT-S QPSK 20M	Left Side	516000	1	1	Ant Aux	23.3	25	1.000	0.549	0.95	25.7	
5GNR n38	DFT-S QPSK 20M	Right Side	516000	1	1	Ant Aux	23.3	25	1.000	0.001	0.95	53.1	
5GNR n38	DFT-S QPSK 20M	Top Side	516000	1	1	Ant Aux	23.3	25	1.000	0.103	0.95	32.9	
5GNR n38	DFT-S QPSK 20M	Bottom Side	516000	1	1	Ant Aux	23.3	25	1.000	0.058	0.95	35.4	
5GNR n38	DFT-S QPSK 20M	Bottom Surface	516000	25	13	Ant Aux	23.19	25	1.000	0.217	0.95	29.6	
5GNR n38	DFT-S QPSK 20M	Left Side	516000	25	13	Ant Aux	23.19	25	1.000	0.528	0.95	25.7	
5GNR n38	DFT-S QPSK 20M	Right Side	516000	25	13	Ant Aux	23.19	25	1.000	0.001	0.95	53	
5GNR n38	DFT-S QPSK 20M	Top Side	516000	25	13	Ant Aux	23.19	25	1.000	0.099	0.95	33	
5GNR n38	DFT-S QPSK 20M	Bottom Side	516000	25	13	Ant Aux	23.19	25	1.000	0.055	0.95	35.6	
5GNR n38	DFT-S QPSK 20M	Left Side	516000	50	0	Ant Aux	22.23	24	1.000	0.509	0.95	24.9	
5GNR n38	DFT-S QPSK 20M	Left Side	519000	1	1	Ant Aux	23.28	25	1.000	0.502	0.95	26.1	
5GNR n38	DFT-S QPSK 20M	Left Side	522000	1	1	Ant Aux	23.27	25	1.000	0.51	0.95	26	
5GNR n38	DFT-S QPSK 20M	Left Side	516000	1	1	Ant Aux	23.3	25	1.000	0.536	0.95	25.8	
5GNR n41	DFT-S QPSK 100M	Bottom Surface	528000	1	1	Ant Aux	26.93	27.5	1.000	0.436	0.95	30.3	24.8
5GNR n41	DFT-S QPSK 100M	Left Side	528000	1	1	Ant Aux	26.93	27.5	1.000	1.36	0.95	25.4	
5GNR n41	DFT-S QPSK 100M	Right Side	528000	1	1	Ant Aux	26.93	27.5	1.000	0.001	0.95	56.7	
5GNR n41	DFT-S QPSK 100M	Top Side	528000	1	1	Ant Aux	26.93	27.5	1.000	0.206	0.95	33.6	
5GNR n41	DFT-S QPSK 100M	Bottom Side	528000	1	1	Ant Aux	26.93	27.5	1.000	0.134	0.95	35.4	
5GNR n41	DFT-S QPSK 100M	Bottom Surface	528000	135	69	Ant Aux	26.81	27.5	1.000	0.426	0.95	30.3	
5GNR n41	DFT-S QPSK 100M	Left Side	528000	135	69	Ant Aux	26.81	27.5	1.000	1.2	0.95	25.8	
5GNR n41	DFT-S QPSK 100M	Right Side	528000	135	69	Ant Aux	26.81	27.5	1.000	0.001	0.95	56.6	
5GNR n41	DFT-S QPSK 100M	Top Side	528000	135	69	Ant Aux	26.81	27.5	1.000	0.2	0.95	33.6	
5GNR n41	DFT-S QPSK 100M	Bottom Side	528000	135	69	Ant Aux	26.81	27.5	1.000	0.159	0.95	34.6	
5GNR n41	DFT-S QPSK 100M	Left Side	528000	270	0	Ant Aux	25.95	26.5	1.000	1.08	0.95	25.4	
5GNR n41	DFT-S QPSK 100M	Left Side	509200	1	1	Ant Aux	26.28	27.5	1.000	1.26	0.95	25.1	
5GNR n41	DFT-S QPSK 100M	Left Side	510000	1	1	Ant Aux	26.24	27.5	1.000	1.3	0.95	24.9	
5GNR n41	DFT-S QPSK 100M	Left Side	513900	1	1	Ant Aux	26.43	27.5	1.000	1.39	0.95	24.8	
5GNR n41	DFT-S QPSK 100M	Left Side	518598	1	1	Ant Aux	26.1	27.5	1.000	1.15	0.95	25.3	
5GNR n41	DFT-S QPSK 100M	Left Side	523302	1	1	Ant Aux	26.29	27.5	1.000	1.07	0.95	25.8	
5GNR n41	DFT-S QPSK 100M	Left Side	513900	1	1	Ant Aux	26.43	27.5	1.000	1.24	0.95	25.3	

Band	Modulation	Test Position	Channel	RB Size	RB Offset	Antenna	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR _{1g} (W/kg)	SAR Design Target	Plimit(With Duty Factor)	Minimum
5GNR n48	DFT-S QPSK 40M	Bottom Surface	638000	1	1	Ant MIMO 2	21.98	22.5	1.000	0.08	0.95	32.7	18.6
5GNR n48	DFT-S QPSK 40M	Left Side	638000	1	1	Ant MIMO 2	21.98	22.5	1.000	1.93	0.95	18.9	
5GNR n48	DFT-S QPSK 40M	Right Side	638000	1	1	Ant MIMO 2	21.98	22.5	1.000	0.001	0.95	51.8	
5GNR n48	DFT-S QPSK 40M	Top Side	638000	1	1	Ant MIMO 2	21.98	22.5	1.000	0.045	0.95	35.2	
5GNR n48	DFT-S QPSK 40M	Bottom Side	638000	1	1	Ant MIMO 2	21.98	22.5	1.000	0.1	0.95	31.8	
5GNR n48	DFT-S QPSK 40M	Bottom Surface	638000	50	28	Ant MIMO 2	21.85	22.5	1.000	0.073	0.95	33	
5GNR n48	DFT-S QPSK 40M	Left Side	638000	50	28	Ant MIMO 2	21.85	22.5	1.000	1.87	0.95	18.9	
5GNR n48	DFT-S QPSK 40M	Right Side	638000	50	28	Ant MIMO 2	21.85	22.5	1.000	0.001	0.95	51.6	
5GNR n48	DFT-S QPSK 40M	Top Side	638000	50	28	Ant MIMO 2	21.85	22.5	1.000	0.037	0.95	35.9	
5GNR n48	DFT-S QPSK 40M	Bottom Side	638000	50	28	Ant MIMO 2	21.85	22.5	1.000	0.098	0.95	31.7	
5GNR n48	DFT-S QPSK 40M	Left Side	640444	1	1	Ant MIMO 2	21.93	22.5	1.000	1.89	0.95	18.9	
5GNR n48	DFT-S QPSK 40M	Left Side	642888	1	1	Ant MIMO 2	21.97	22.5	1.000	1.92	0.95	18.9	
5GNR n48	DFT-S QPSK 40M	Left Side	645332	1	1	Ant MIMO 2	21.75	22.5	1.000	1.98	0.95	18.6	19.2
5GNR n48	DFT-S QPSK 40M	Left Side	645332	1	1	Ant MIMO 2	21.75	22.5	1.000	1.88	0.95	18.8	
5GNR n77	DFT-S QPSK 100M	Bottom Surface	650000	1	1	Ant MIMO 2	26.76	27.5	1.000	0.274	0.95	32.2	
5GNR n77	DFT-S QPSK 100M	Left Side	650000	1	1	Ant MIMO 2	26.76	27.5	1.000	4.97	0.95	19.6	
5GNR n77	DFT-S QPSK 100M	Right Side	650000	1	1	Ant MIMO 2	26.76	27.5	1.000	0.001	0.95	56.5	
5GNR n77	DFT-S QPSK 100M	Top Side	650000	1	1	Ant MIMO 2	26.76	27.5	1.000	0.122	0.95	35.7	
5GNR n77	DFT-S QPSK 100M	Bottom Side	650000	1	1	Ant MIMO 2	26.76	27.5	1.000	0.06	0.95	38.8	
5GNR n77	DFT-S QPSK 100M	Bottom Surface	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.289	0.95	31.9	
5GNR n77	DFT-S QPSK 100M	Left Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	4.95	0.95	19.6	
5GNR n77	DFT-S QPSK 100M	Right Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.001	0.95	56.5	
5GNR n77	DFT-S QPSK 100M	Top Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.117	0.95	35.8	
5GNR n77	DFT-S QPSK 100M	Bottom Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.054	0.95	39.2	
5GNR n77	DFT-S QPSK 100M	Left Side	650000	270	0	Ant MIMO 2	25.64	26.5	1.000	4.87	0.95	18.5	19.3
5GNR n77	DFT-S QPSK 100M	Left Side	652400	1	1	Ant MIMO 2	26.42	27.5	1.000	4.99	0.95	19.2	
5GNR n77	DFT-S QPSK 100M	Left Side	654800	1	1	Ant MIMO 2	26.46	27.5	1.000	4.71	0.95	19.5	
5GNR n77	DFT-S QPSK 100M	Left Side	657200	1	1	Ant MIMO 2	26.74	27.5	1.000	4.92	0.95	19.6	
5GNR n77	DFT-S QPSK 100M	Left Side	659600	1	1	Ant MIMO 2	26.71	27.5	1.000	4.95	0.95	19.5	
5GNR n77	DFT-S QPSK 100M	Left Side	662000	1	1	Ant MIMO 2	26.75	27.5	1.000	4.96	0.95	19.6	
5GNR n77	DFT-S QPSK 100M	Left Side	652400	1	1	Ant MIMO 2	26.42	27.5	1.000	3.78	0.95	20.4	
5GNR n78	DFT-S QPSK 100M	Bottom Surface	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	0.249	0.95	32.7	
5GNR n78	DFT-S QPSK 100M	Left Side	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	5.37	0.95	19.3	
5GNR n78	DFT-S QPSK 100M	Right Side	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	0.001	0.95	56.6	
5GNR n78	DFT-S QPSK 100M	Top Side	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	0.118	0.95	35.9	
5GNR n78	DFT-S QPSK 100M	Bottom Side	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	0.278	0.95	32.2	
5GNR n78	DFT-S QPSK 100M	Bottom Surface	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.243	0.95	32.6	19.3
5GNR n78	DFT-S QPSK 100M	Left Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	5.07	0.95	19.4	
5GNR n78	DFT-S QPSK 100M	Right Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.001	0.95	56.5	
5GNR n78	DFT-S QPSK 100M	Top Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.113	0.95	36	
5GNR n78	DFT-S QPSK 100M	Bottom Side	650000	135	69	Ant MIMO 2	26.72	27.5	1.000	0.262	0.95	32.3	
5GNR n78	DFT-S QPSK 100M	Left Side	650000	270	0	Ant MIMO 2	25.57	26.5	1.000	4.92	0.95	18.4	
5GNR n78	DFT-S QPSK 100M	Left Side	650000	1	1	Ant MIMO 2	26.87	27.5	1.000	5.32	0.95	19.4	

5. Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Cal. Date	Cal.Period
SPEAG	750 MHz System Validation Kit	D750V3	1222	Jun. 19, 2024	1 year
SPEAG	835 MHz System Validation Kit	D835V2	4d291	Jun. 11, 2024	1 year
SPEAG	1800 MHz System Validation Kit	D1800V2	2d167	Jun. 18, 2024	1 year
SPEAG	1900 MHz System Validation Kit	D1900V2	5d111	Jun. 13, 2024	1 year
SPEAG	2450 MHz System Validation Kit	D2450V2	1087	Jun. 14, 2024	1 year
SPEAG	2600 MHz System Validation Kit	D2600V2	1197	Jun. 14, 2024	1 year
SPEAG	3500 MHz System Validation Kit	D3500V2	1013	Sep. 20, 2023	1 year
SPEAG	3700 MHz System Validation Kit	D3700V2	1034	Sep. 20, 2023	1 year
SPEAG	3900 MHz System Validation Kit	D3900V2	1014	Sep. 20, 2023	1 year
SPEAG	Dosimetric E-Field Probe	EUmmWV3	9403	Dec. 05, 2023	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	7650	Jun. 04, 2024	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	7737	Jul. 31, 2024	1 year
SPEAG	Dosimetric E-Field Probe	EX3DV4	7757	Aug. 22, 2023	1 year
SPEAG	Data Acquisition Electronics	DAE4	541	Mar. 11, 2024	1 year
SPEAG	Data Acquisition Electronics	DAE4	1669	May. 16, 2024	1 year
SPEAG	Data Acquisition Electronics	DAE4	1742	Aug. 15, 2024	1 year
R&S	Spectrum Analyzer	FSV3044	101255	Nov. 30, 2023	1 year
Anritsu	Radio Communication Analyzer	MT8821C	6272459653	Aug. 15, 2024	1 year
Anritsu	Radio Communication Analyzer	MT8000A	6272466193	Aug. 19, 2024	1 year
Anritsu	Radio Communication Analyzer	MT8870A	6272488631	Jan. 10, 2024	1 year
Keysight	Network Analyzer	E5080B	MY59202161	Feb. 20, 2024	1 year
SPEAG	Dielectric Probe Kit	DAK-3.5	1219	Mar. 18, 2024	1 year
SPEAG	Dielectric Probe Kit	DAKS VNA R140	0010318	May. 22, 2024	1 year
SPEAG	POWERSOURCE1	SE UMS 160 CA	4244	May. 14, 2024	1 year
HILA	Digital Thermometer	TM-906A	1500033	Oct. 25, 2023	1 year
Keysight	Spectrum Analyzer	N9010B	MY59071418	Mar. 15, 2024	1 year
Agilent	Signal Generator	E8257D	MY44320425	Jan. 26, 2024	1 year
Testo	Thermometer	608-H1	83837935	Dec. 08, 2023	1 year

6. Measurement Uncertainty

SAR Uncertainty Budget for Frequency Range of 300 MHz to 3 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Divisor	C_i (1g)	C_i (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
Measurement System Errors								
CF	Probe Calibration	12.0	N	2	1	1	6.0	6.0
CF _{drift}	Probe Calibration Drift	1.7	R	$\sqrt{3}$	1	1	1.0	1.0
LIN	Probe Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
BBS	Broadband Signal	2.8	R	$\sqrt{3}$	1	1	1.6	1.6
ISO	Probe Isotropy	7.6	R	$\sqrt{3}$	1	1	4.4	4.4
DAE	Other Probe+Electronic	0.8	N	1	1	1	0.8	0.8
AMB	RF Ambient	0.7	N	1	1	1	0.7	0.7
Δ_{sys}	Probe Positioning	0.006	N	1	0.14	0.14	0.0	0.0
DAT	Data Processing	1.2	N	1	1	1	1.2	1.2
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	3.3	R	$\sqrt{3}$	0.78	0.71	1.5	1.4
EPS	Phantom Permittivity	14.0	R	$\sqrt{3}$	0	0	0.0	0.0
DIS	Distance DUT-TSL	2.0	N	1	2	2	4.0	4.0
D _{xyz}	Device Positioning	1.0	N	1	1	1	1.0	1.0
H	Device Holder	2.5	N	1	1	1	2.5	2.5
MOD	DUT Modulation	2.4	R	$\sqrt{3}$	1	1	1.4	1.4
TAS	Time-average SAR	1.7	R	$\sqrt{3}$	1	1	1.0	1.0
RF _{drift}	DUT drift	2.5	N	1	1	1	2.5	2.5
Correction to the SAR Results								
C(ε , σ)	Deviation to Target	1.9	N	1	1	0.84	1.9	1.6
C(R)	SAR Scaling	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
u(Δ SAR)	Combined Uncertainty					RSS	10.5	10.4
U	Expanded Uncertainty					k=2	21.0	20.8

SAR Uncertainty Budget for Frequency Range of 3 GHz to 6 GHz

Symbol	Error Description	Uncertainty (± %)	Probability Distribution	Divisor	C_i (1g)	C_i (10g)	Standard Uncertainty (± %, 1g)	Standard Uncertainty (± %, 10g)
Measurement System Errors								
CF	Probe Calibration	13.1	N	2	1	1	6.55	6.55
CF _{drift}	Probe Calibration Drift	1.7	R	$\sqrt{3}$	1	1	1.0	1.0
LIN	Probe Linearity	4.7	R	$\sqrt{3}$	1	1	2.7	2.7
BBS	Broadband Signal	2.6	R	$\sqrt{3}$	1	1	1.5	1.5
ISO	Probe Isotropy	7.6	R	$\sqrt{3}$	1	1	4.4	4.4
DAE	Other Probe+Electronic	1.2	N	1	1	1	1.2	1.2
AMB	RF Ambient	0.7	N	1	1	1	0.7	0.7
Δ_{sys}	Probe Positioning	0.005	N	1	0.29	0.29	0.0	0.0
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	$\sqrt{3}$	0.78	0.71	1.5	1.4
EPS	Phantom Permittivity	14.0	R	$\sqrt{3}$	0.25	0.25	2.0	2.0
DIS	Distance DUT-TSL	2.0	N	1	2	2	4.0	4.0
D _{xyz}	Device Positioning	1.0	N	1	1	1	1.0	1.0
H	Device Holder	2.5	N	1	1	1	2.5	2.5
MOD	DUT Modulation	2.4	R	$\sqrt{3}$	1	1	1.4	1.4
TAS	Time-average SAR	1.7	R	$\sqrt{3}$	1	1	1.0	1.0
RF _{drift}	DUT drift	2.5	N	1	1	1	2.5	2.5
Correction to the SAR Results								
C(ϵ , σ)	Deviation to Target	1.9	N	1	1	0.84	1.9	1.6
C(R)	SAR Scaling	0.0	R	$\sqrt{3}$	1	1	0.0	0.0
u(Δ SAR)	Combined Uncertainty					RSS	11.2	11.1
U	Expanded Uncertainty					k=2	22.4	22.2

***** End of Report *****