Part 0: SAR Characterization Evaluation Report

Applicant Name	:	**Getac Technology Corporation**
Applicant Address	:	**5F.,Building A,No.209,Sec.1 Nangang.,Rd., Taipei City, 11568, Taiwan**
Product Name	:	**Wireless Module**
Brand Name	:	**Getac**
Model Number	:	**WLAN: AX211NGW** **WWAN: EM9190U**
FCC ID	:	**QYLEM9190U**
Report Number	:	**USSC235211001**
Compliant Standards	:	**FCC 47 CFR §2.1093**
Sample Received Date	:	**May 22, 2023**
Date of Testing	:	**Jun. 09 ~ Jul. 14, 2023**
Report Issue Date	:	**Aug. 16, 2023**

*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 :

Ted Fu / Assistant Manager

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Revision History

Rev.	Issue Date	Revisions	Revised by
00	Aug. 16, 2023	Initial release	Rowan Hsieh

1. Information of Testing Laboratory

Test Facilities

Company Name: Eurofins E&E Wireless Taiwan Co., Ltd.
Address: No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
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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	Wireless Module	
Brand Name	Getac	
Model Name	WLAN: AX211NGW WWAN: EM9190U	
FCC ID	WLAN: QYLAX211NG WWAN: QYLEM9190U	
Host Information	Product Name: Tablet Trade Name: Getac Model Name: UX10, UX10G3, UX10-301, UX10-321, UX10-Ex, UX10Y(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 (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 38 : 2572.5 ~ 2617.5 Band 41 : 2498.5 ~ 2687.5 Band 42 : 3552.5 ~ 3597.5 Band 48 : 3550 ~ 3700 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 n48 : 3555 ~ 3694.98 n66 : 1712.5 ~ 1777.5 n71 : 665.5 ~ 695.5 n77 : 3450 ~ 3980	***CP-OFDM*** π/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM ***DFT-s-OFDM*** QPSK, 16QAM, 64QAM, 256QAM
	WLAN 2.4G : 2412 ~ 2472 5G : 5180 ~ 5240, 5260 ~ 5320, 5500 ~ 5720, 5745 ~ 5825	2.4G : 802.11b/g/n/ax 5G : 802.11a/n/ac/ax 6G : 802.11ax
	Bluetooth 2402 ~ 2480	BR, EDR, LE

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 FCC 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.

DUT contains embedded file system (EFS) version 15 configured for the first generation (GEN1). Additionally, this device supports WLAN and Bluetooth technologies, but the output power of these modems is not controlled by the Smart Transmit algorithm.

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:

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

SAR is expressed in units of Watts per kilogram (W/kg)
SAR measurement can be related to the electrical field in the tissue by

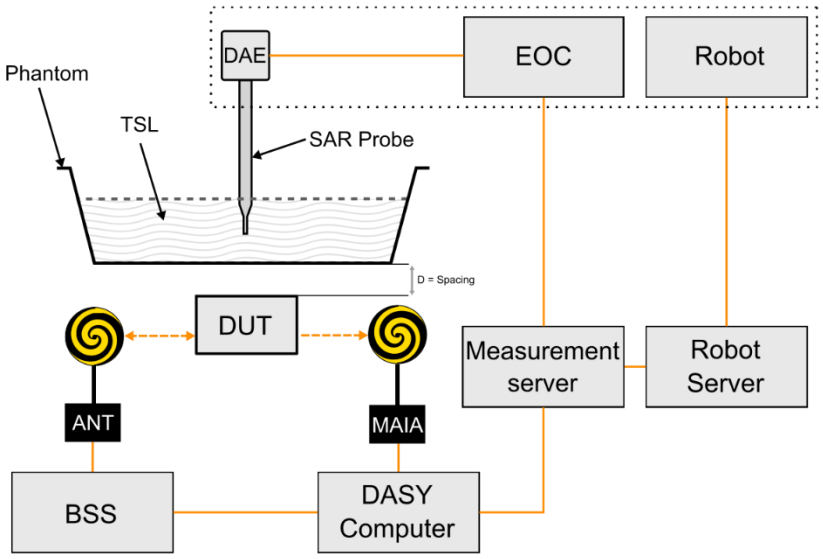
$$\mathbf{SAR} = \frac{\boldsymbol{\sigma}|\mathbf{E}|^2}{\boldsymbol{\rho}}$$

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 form the optical into digital electric signal of the DAE and transfers data to the PC.

Figure 3-1: 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	$f \leqq$ 3 GHz	3 GHz < $f \leqq$ 6 GHz
Maximum distance from closest measurement point to phantom surface	5 ± 1	$\delta \ln(2)/2$ ±0.5
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ±1°	20° ±1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≦2 GHz: ≦15 mm 2 – 3 GHz: ≦12 mm	3 – 4 GHz: ≦12 mm 4 – 6 GHz: ≦10 mm

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		$f \leqq 3$ GHz	3 GHz < $f \leqq$ 6 GHz
Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}		≦2 GHz: ≦8 mm 2 – 3 GHz: ≦5 mm	3 – 4 GHz: ≦5 mm 4 – 6 GHz: ≦4 mm
Maximum zoom scan spatial resolution, normal to phantom surface	*uniform grid: $\Delta z_{Zoom}(n)$*	≦5 mm	3 – 4 GHz: ≦4 mm 4 – 5 GHz: ≦3 mm 5 – 6 GHz: ≦2 mm
	graded grids: $\Delta z_{Zoom}(1)$	≦4 mm	3 – 4 GHz: ≦3.0 mm 4 – 5 GHz: ≦2.5 mm 5 – 6 GHz: ≦2.0 mm
	$\Delta z_{Zoom}(n>1)$	≦1.5·Δz_{Zoom}(n-1) mm	
Minimum zoom scan volume (x, y, z)		≥30 mm	3 – 4 GHz: ≥28 mm 4 – 5 GHz: ≥25 mm 5 – 6 GHz: ≥22 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 form 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 SAR_{1g} and SAR_{10g} exposure comparison is needed, the worst-case was determined from SAR normalized to 1g or 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	P_{max} (Maximum Tune-up Power, dBm)
Design Target value 1g SAR		0.95 (W/kg)	
Test Distance (mm)		0	
WWAN Bands	Tx Antenna	P_{limit}	
WCDMA Band 2	0	18.5	23.5
WCDMA Band 4	0	21.9	23.5
WCDMA Band 5	0	20.5	23.5
LTE B2	0	18.8	23.0
LTE B4	0	21.5	23.0
LTE B5	0	20.2	23.0
LTE B7	0	15.6	23.0
LTE B12	0	22.4	23.0
LTE B13	0	20.7	23.0
LTE B14	0	20.8	23.0
LTE B17	0	22.4	23.0
LTE B25	0	18.6	23.0
LTE B26	0	20.3	23.0
LTE B38	0	12.9	23.8
LTE B41 (PC3)	0	13.3	23.8
LTE B41 (PC2)	0	11.9	25.0
LTE B42	0	17.3	23.0
LTE B48	0	17.2	23.0
LTE B66	0	21.6	23.0
LTE B71	0	23.2	23.0
5G NR n2	0	18.5	23.5
5G NR n5	0	20.2	23.5
5G NR n48	0	18.9	22.0
5G NR n66	0	21.4	23.5
5G NR n71	0	22.9	23.5
5G NR n77	0	18.8	23.5

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 P_{max} 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	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
WCDMA Band 2	RMC12.2Kbps	9400	Bottom Face	0.717	23.69	24.5	1.000	0.95	24.9	
WCDMA Band 2	RMC12.2Kbps	9400	Side 1	1.86	23.69	24.5	1.000	0.95	20.8	
WCDMA Band 2	RMC12.2Kbps	9262	Side 1	1.61	23.65	24.5	1.000	0.95	21.4	
WCDMA Band 2	RMC12.2Kbps	9538	Side 1	2.39	23.51	24.5	1.000	0.95	19.5	
WCDMA Band 2	RMC12.2Kbps	9538	Side 1	2.31	23.51	24.5	1.000	0.95	19.7	**19.5**
WCDMA Band 2	RMC12.2Kbps	9400	Side 2	0.165	23.69	24.5	1.000	0.95	31.3	
WCDMA Band 2	RMC12.2Kbps	9400	Side 3	0.001	23.69	24.5	1.000	0.95	53.5	
WCDMA Band 2	RMC12.2Kbps	9400	Side 4	0.001	23.69	24.5	1.000	0.95	53.5	
WCDMA Band 4	RMC12.2Kbps	1413	Bottom Face	0.761	23.71	24.5	1.000	0.95	24.7	
WCDMA Band 4	RMC12.2Kbps	1413	Side 1	1.15	23.71	24.5	1.000	0.95	22.9	
WCDMA Band 4	RMC12.2Kbps	1413	Side 1	1.09	23.71	24.5	1.000	0.95	23.1	
WCDMA Band 4	RMC12.2Kbps	1312	Side 1	0.971	23.35	24.5	1.000	0.95	23.3	
WCDMA Band 4	RMC12.2Kbps	1513	Side 1	1.05	23.64	24.5	1.000	0.95	23.2	**22.9**
WCDMA Band 4	RMC12.2Kbps	1413	Side 2	0.21	23.71	24.5	1.000	0.95	30.3	
WCDMA Band 4	RMC12.2Kbps	1413	Side 3	0.001	23.71	24.5	1.000	0.95	53.5	
WCDMA Band 4	RMC12.2Kbps	1413	Side 4	0.001	23.71	24.5	1.000	0.95	53.5	
WCDMA Band 5	RMC12.2Kbps	4182	Bottom Face	0.791	23.62	24.5	1.000	0.95	24.4	
WCDMA Band 5	RMC12.2Kbps	4182	Side 1	1.49	23.62	24.5	1.000	0.95	21.7	
WCDMA Band 5	RMC12.2Kbps	4132	Side 1	1.53	23.57	24.5	1.000	0.95	21.5	
WCDMA Band 5	RMC12.2Kbps	4132	Side 1	1.46	23.57	24.5	1.000	0.95	21.7	
WCDMA Band 5	RMC12.2Kbps	4233	Side 1	1.49	23.51	24.5	1.000	0.95	21.6	**21.5**
WCDMA Band 5	RMC12.2Kbps	4182	Side 2	0.44	23.62	24.5	1.000	0.95	27.0	
WCDMA Band 5	RMC12.2Kbps	4182	Side 3	0.001	23.62	24.5	1.000	0.95	53.4	
WCDMA Band 5	RMC12.2Kbps	4182	Side 4	0.001	23.62	24.5	1.000	0.95	53.4	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 2	QPSK	18900	Bottom Face	0.545	22.72	24.0	1.000	0.95	25.1	
LTE Band 2	QPSK	18900	Bottom Face	0.443	21.72	23.0	1.000	0.95	25.0	
LTE Band 2	QPSK	18900	Side 1	1.43	22.72	24.0	1.000	0.95	20.9	
LTE Band 2	QPSK	18700	Side 1	1.36	22.68	24.0	1.000	0.95	21.1	
LTE Band 2	QPSK	19100	Side 1	1.79	22.53	24.0	1.000	0.95	19.8	
LTE Band 2	QPSK	19100	Side 1	1.74	22.53	24.0	1.000	0.95	19.9	
LTE Band 2	QPSK	18900	Side 1	1.29	21.72	23.0	1.000	0.95	20.4	
LTE Band 2	QPSK	18900	Side 1	1.32	21.87	23.0	1.000	0.95	20.4	**19.8**
LTE Band 2	QPSK	18900	Side 2	0.136	22.72	24.0	1.000	0.95	31.2	
LTE Band 2	QPSK	18900	Side 2	0.113	21.72	23.0	1.000	0.95	31.0	
LTE Band 2	QPSK	18900	Side 3	0.001	22.72	24.0	1.000	0.95	52.5	
LTE Band 2	QPSK	18900	Side 3	0.001	21.72	23.0	1.000	0.95	51.5	
LTE Band 2	QPSK	18900	Side 4	0.001	22.72	24.0	1.000	0.95	52.5	
LTE Band 2	QPSK	18900	Side 4	0.001	21.72	23.0	1.000	0.95	51.5	
LTE Band 4	QPSK	20175	Bottom Face	0.648	22.89	24.0	1.000	0.95	24.6	
LTE Band 4	QPSK	20175	Bottom Face	0.494	21.91	23.0	1.000	0.95	24.7	
LTE Band 4	QPSK	20175	Side 1	1.01	22.89	24.0	1.000	0.95	22.6	
LTE Band 4	QPSK	20050	Side 1	0.972	22.65	24.0	1.000	0.95	22.6	
LTE Band 4	QPSK	20300	Side 1	1.02	22.85	24.0	1.000	0.95	22.5	
LTE Band 4	QPSK	20300	Side 1	0.964	22.85	24.0	1.000	0.95	22.8	
LTE Band 4	QPSK	20175	Side 1	0.828	21.91	23.0	1.000	0.95	22.5	
LTE Band 4	QPSK	20175	Side 1	0.804	21.85	23.0	1.000	0.95	22.6	**22.5**
LTE Band 4	QPSK	20175	Side 2	0.219	22.89	24.0	1.000	0.95	29.3	
LTE Band 4	QPSK	20175	Side 2	0.181	21.91	23.0	1.000	0.95	29.1	
LTE Band 4	QPSK	20175	Side 3	0.001	22.89	24.0	1.000	0.95	52.7	
LTE Band 4	QPSK	20175	Side 3	0.001	21.91	23.0	1.000	0.95	51.7	
LTE Band 4	QPSK	20175	Side 4	0.001	22.89	24.0	1.000	0.95	52.7	
LTE Band 4	QPSK	20175	Side 4	0.001	21.91	23.0	1.000	0.95	51.7	
LTE Band 5	QPSK	20525	Bottom Face	0.757	22.74	24.0	1.000	0.95	23.7	
LTE Band 5	QPSK	20525	Bottom Face	0.604	21.74	23.0	1.000	0.95	23.7	
LTE Band 5	QPSK	20525	Side 1	1.25	22.74	24.0	1.000	0.95	21.5	
LTE Band 5	QPSK	20450	Side 1	1.26	22.70	24.0	1.000	0.95	21.5	
LTE Band 5	QPSK	20600	Side 1	1.32	22.62	24.0	1.000	0.95	21.2	
LTE Band 5	QPSK	20600	Side 1	1.27	22.62	24.0	1.000	0.95	21.4	
LTE Band 5	QPSK	20525	Side 1	1.04	21.74	23.0	1.000	0.95	21.3	
LTE Band 5	QPSK	20525	Side 1	1.01	21.70	23.0	1.000	0.95	21.4	**21.2**
LTE Band 5	QPSK	20525	Side 2	0.306	22.74	24.0	1.000	0.95	27.7	
LTE Band 5	QPSK	20525	Side 2	0.239	21.74	23.0	1.000	0.95	27.7	
LTE Band 5	QPSK	20525	Side 3	0.001	22.74	24.0	1.000	0.95	52.5	
LTE Band 5	QPSK	20525	Side 3	0.001	21.74	23.0	1.000	0.95	51.5	
LTE Band 5	QPSK	20525	Side 4	0.001	22.74	24.0	1.000	0.95	52.5	
LTE Band 5	QPSK	20525	Side 4	0.001	21.74	23.0	1.000	0.95	51.5	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 7	QPSK	21100	Bottom Face	1.79	22.59	24.0	1.000	0.95	19.8	
LTE Band 7	QPSK	21100	Bottom Face	1.71	21.63	23.0	1.000	0.95	19.1	
LTE Band 7	QPSK	21100	Side 1	2.77	22.59	24.0	1.000	0.95	17.9	
LTE Band 7	QPSK	20850	Side 1	1.97	22.51	24.0	1.000	0.95	19.3	
LTE Band 7	QPSK	21350	Side 1	3.70	22.49	24.0	1.000	0.95	16.6	
LTE Band 7	QPSK	21350	Side 1	3.61	22.49	24.0	1.000	0.95	16.7	
LTE Band 7	QPSK	21100	Side 1	2.44	21.63	23.0	1.000	0.95	17.5	
LTE Band 7	QPSK	21100	Side 1	2.52	21.87	23.0	1.000	0.95	17.6	**16.6**
LTE Band 7	QPSK	21100	Side 2	0.42	22.59	24.0	1.000	0.95	26.1	
LTE Band 7	QPSK	21100	Side 2	0.346	21.63	23.0	1.000	0.95	26.0	
LTE Band 7	QPSK	21100	Side 3	0.001	22.59	24.0	1.000	0.95	52.4	
LTE Band 7	QPSK	21100	Side 3	0.001	21.63	23.0	1.000	0.95	51.4	
LTE Band 7	QPSK	21100	Side 4	0.001	22.59	24.0	1.000	0.95	52.4	
LTE Band 7	QPSK	21100	Side 4	0.001	21.63	23.0	1.000	0.95	51.4	
LTE Band 12	QPSK	23095	Bottom Face	0.291	23.08	24.0	1.000	0.95	28.2	
LTE Band 12	QPSK	23095	Bottom Face	0.257	22.22	23.0	1.000	0.95	27.9	
LTE Band 12	QPSK	23095	Side 1	0.805	23.08	24.0	1.000	0.95	23.8	
LTE Band 12	QPSK	23060	Side 1	0.793	23.02	24.0	1.000	0.95	23.8	
LTE Band 12	QPSK	23130	Side 1	0.869	23.06	24.0	1.000	0.95	23.4	
LTE Band 12	QPSK	23130	Side 1	0.85	23.06	24.0	1.000	0.95	23.5	
LTE Band 12	QPSK	23095	Side 1	0.692	22.22	23.0	1.000	0.95	23.6	
LTE Band 12	QPSK	23095	Side 1	0.704	22.27	23.0	1.000	0.95	23.6	**23.4**
LTE Band 12	QPSK	23095	Side 2	0.112	23.08	24.0	1.000	0.95	32.4	
LTE Band 12	QPSK	23095	Side 2	0.094	22.22	23.0	1.000	0.95	32.3	
LTE Band 12	QPSK	23095	Side 3	0.001	23.08	24.0	1.000	0.95	52.9	
LTE Band 12	QPSK	23095	Side 3	0.001	22.22	23.0	1.000	0.95	52.0	
LTE Band 12	QPSK	23095	Side 4	0.001	23.08	24.0	1.000	0.95	52.9	
LTE Band 12	QPSK	23095	Side 4	0.001	22.22	23.0	1.000	0.95	52.0	
LTE Band 13	QPSK	23230	Bottom Face	0.573	22.54	24.0	1.000	0.95	24.7	
LTE Band 13	QPSK	23230	Bottom Face	0.465	21.66	23.0	1.000	0.95	24.8	
LTE Band 13	QPSK	23230	Side 1	1.11	22.54	24.0	1.000	0.95	21.9	
LTE Band 13	QPSK	23230	Side 1	1.06	22.54	24.0	1.000	0.95	22.1	
LTE Band 13	QPSK	23230	Side 1	0.922	21.66	23.0	1.000	0.95	21.8	
LTE Band 13	QPSK	23230	Side 1	0.94	21.63	23.0	1.000	0.95	21.7	
LTE Band 13	QPSK	23230	Side 2	0.335	22.54	24.0	1.000	0.95	27.1	**21.7**
LTE Band 13	QPSK	23230	Side 2	0.268	21.66	23.0	1.000	0.95	27.2	
LTE Band 13	QPSK	23230	Side 3	0.001	22.54	24.0	1.000	0.95	52.3	
LTE Band 13	QPSK	23230	Side 3	0.001	21.66	23.0	1.000	0.95	51.4	
LTE Band 13	QPSK	23230	Side 4	0.001	22.54	24.0	1.000	0.95	52.3	
LTE Band 13	QPSK	23230	Side 4	0.001	21.66	23.0	1.000	0.95	51.4	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 14	QPSK	23330	Bottom Face	0.614	22.73	24.0	1.000	0.95	24.6	
LTE Band 14	QPSK	23330	Bottom Face	0.492	21.67	23.0	1.000	0.95	24.5	
LTE Band 14	QPSK	23330	Side 1	1.19	22.73	24.0	1.000	0.95	21.8	
LTE Band 14	QPSK	23330	Side 1	1.14	22.73	24.0	1.000	0.95	21.9	
LTE Band 14	QPSK	23330	Side 1	0.931	21.67	23.0	1.000	0.95	21.8	
LTE Band 14	QPSK	23330	Side 1	0.896	21.74	23.0	1.000	0.95	22.0	
LTE Band 14	QPSK	23330	Side 2	0.274	22.73	24.0	1.000	0.95	28.1	**21.8**
LTE Band 14	QPSK	23330	Side 2	0.236	21.67	23.0	1.000	0.95	27.7	
LTE Band 14	QPSK	23330	Side 3	0.001	22.73	24.0	1.000	0.95	52.5	
LTE Band 14	QPSK	23330	Side 3	0.001	21.67	23.0	1.000	0.95	51.4	
LTE Band 14	QPSK	23330	Side 4	0.001	22.73	24.0	1.000	0.95	52.5	
LTE Band 14	QPSK	23330	Side 4	0.001	21.67	23.0	1.000	0.95	51.4	
LTE Band 17	QPSK	23790	Bottom Face	0.293	23.19	24.0	1.000	0.95	28.3	
LTE Band 17	QPSK	23790	Bottom Face	0.259	22.31	23.0	1.000	0.95	28.0	
LTE Band 17	QPSK	23790	Side 1	0.874	23.19	24.0	1.000	0.95	23.6	
LTE Band 17	QPSK	23780	Side 1	0.868	23.11	24.0	1.000	0.95	23.5	
LTE Band 17	QPSK	23800	Side 1	0.88	23.14	24.0	1.000	0.95	23.5	
LTE Band 17	QPSK	23800	Side 1	0.867	23.14	24.0	1.000	0.95	23.5	
LTE Band 17	QPSK	23790	Side 1	0.712	22.31	23.0	1.000	0.95	23.6	
LTE Band 17	QPSK	23790	Side 1	0.727	22.19	23.0	1.000	0.95	23.4	**23.4**
LTE Band 17	QPSK	23790	Side 2	0.13	23.19	24.0	1.000	0.95	31.8	
LTE Band 17	QPSK	23790	Side 2	0.108	22.31	23.0	1.000	0.95	31.8	
LTE Band 17	QPSK	23790	Side 3	0.001	23.19	24.0	1.000	0.95	53.0	
LTE Band 17	QPSK	23790	Side 3	0.001	22.31	23.0	1.000	0.95	52.1	
LTE Band 17	QPSK	23790	Side 4	0.001	23.19	24.0	1.000	0.95	53.0	
LTE Band 17	QPSK	23790	Side 4	0.001	22.31	23.0	1.000	0.95	52.1	
LTE Band 25	QPSK	26365	Bottom Face	0.611	22.81	24.0	1.000	0.95	24.7	
LTE Band 25	QPSK	26365	Bottom Face	0.486	21.78	23.0	1.000	0.95	24.7	
LTE Band 25	QPSK	26365	Side 1	1.63	22.81	24.0	1.000	0.95	20.5	
LTE Band 25	QPSK	26140	Side 1	1.42	22.75	24.0	1.000	0.95	21.0	
LTE Band 25	QPSK	26590	Side 1	1.87	22.54	24.0	1.000	0.95	19.6	
LTE Band 25	QPSK	26590	Side 1	1.79	22.54	24.0	1.000	0.95	19.8	
LTE Band 25	QPSK	26365	Side 1	1.35	21.78	23.0	1.000	0.95	20.3	
LTE Band 25	QPSK	26365	Side 1	1.37	21.69	23.0	1.000	0.95	20.1	**19.6**
LTE Band 25	QPSK	26365	Side 2	0.147	22.81	24.0	1.000	0.95	30.9	
LTE Band 25	QPSK	26365	Side 2	0.12	21.78	23.0	1.000	0.95	30.8	
LTE Band 25	QPSK	26365	Side 3	0.001	22.81	24.0	1.000	0.95	52.6	
LTE Band 25	QPSK	26365	Side 3	0.001	21.78	23.0	1.000	0.95	51.6	
LTE Band 25	QPSK	26365	Side 4	0.001	22.81	24.0	1.000	0.95	52.6	
LTE Band 25	QPSK	26365	Side 4	0.001	21.78	23.0	1.000	0.95	51.6	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 26	QPSK	26865	Bottom Face	0.639	22.81	24.0	1.000	0.95	24.5	
LTE Band 26	QPSK	26865	Bottom Face	0.566	21.78	23.0	1.000	0.95	24.0	
LTE Band 26	QPSK	26865	Side 1	1.25	22.81	24.0	1.000	0.95	21.6	
LTE Band 26	QPSK	26765	Side 1	1.28	22.77	24.0	1.000	0.95	21.5	
LTE Band 26	QPSK	26965	Side 1	1.33	22.73	24.0	1.000	0.95	21.3	
LTE Band 26	QPSK	26965	Side 1	1.26	22.73	24.0	1.000	0.95	21.5	
LTE Band 26	QPSK	26865	Side 1	1.03	21.78	23.0	1.000	0.95	21.4	
LTE Band 26	QPSK	26865	Side 1	1.01	21.85	23.0	1.000	0.95	21.6	**21.3**
LTE Band 26	QPSK	26865	Side 2	0.351	22.81	24.0	1.000	0.95	27.1	
LTE Band 26	QPSK	26865	Side 2	0.277	21.78	23.0	1.000	0.95	27.1	
LTE Band 26	QPSK	26865	Side 3	0.001	22.81	24.0	1.000	0.95	52.6	
LTE Band 26	QPSK	26865	Side 3	0.001	21.78	23.0	1.000	0.95	51.6	
LTE Band 26	QPSK	26865	Side 4	0.001	22.81	24.0	1.000	0.95	52.6	
LTE Band 26	QPSK	26865	Side 4	0.001	21.78	23.0	1.000	0.95	51.6	
LTE Band 38	QPSK	38000	Bottom Face	1.55	23.25	24.8	1.580	0.95	17.1	
LTE Band 38	QPSK	38000	Bottom Face	1.23	22.17	23.8	1.580	0.95	17.1	
LTE Band 38	QPSK	38000	Side 1	2.94	23.25	24.8	1.580	0.95	14.4	
LTE Band 38	QPSK	37850	Side 1	2.71	23.21	24.8	1.580	0.95	14.7	
LTE Band 38	QPSK	38150	Side 1	3.05	23.12	24.8	1.580	0.95	14.1	
LTE Band 38	QPSK	38150	Side 1	2.97	23.12	24.8	1.580	0.95	14.2	
LTE Band 38	QPSK	38000	Side 1	2.46	22.17	23.8	1.580	0.95	14.1	
LTE Band 38	QPSK	38000	Side 1	2.5	22.12	23.8	1.580	0.95	13.9	**13.9**
LTE Band 38	QPSK	38000	Side 2	0.169	23.25	24.8	1.580	0.95	26.8	
LTE Band 38	QPSK	38000	Side 2	0.154	22.17	23.8	1.580	0.95	26.1	
LTE Band 38	QPSK	38000	Side 3	0.001	23.25	24.8	1.580	0.95	49.0	
LTE Band 38	QPSK	38000	Side 3	0.001	22.17	23.8	1.580	0.95	48.0	
LTE Band 38	QPSK	38000	Side 4	0.001	23.25	24.8	1.580	0.95	49.0	
LTE Band 38	QPSK	38000	Side 4	0.001	22.17	23.8	1.580	0.95	48.0	
LTE Band 41	QPSK	41055	Bottom Face	1.22	23.31	24.8	1.580	0.95	18.2	
LTE Band 41	QPSK	41055	Bottom Face	1.03	22.35	23.8	1.580	0.95	18.0	
LTE Band 41	QPSK	41055	Side 1	2.87	23.31	24.8	1.580	0.95	14.5	
LTE Band 41	QPSK	39750	Side 1	1.03	22.87	24.8	1.580	0.95	18.5	
LTE Band 41	QPSK	39790	Side 1	1.08	22.88	24.8	1.580	0.95	18.3	
LTE Band 41	QPSK	40185	Side 1	1.89	23.05	24.8	1.580	0.95	16.1	
LTE Band 41	QPSK	40620	Side 1	2.93	23.14	24.8	1.580	0.95	14.3	
LTE Band 41	QPSK	40620	Side 1	3.01	25.13	26.0	2.310	0.95	12.9	
LTE Band 41	QPSK	40620	Side 1	2.82	23.14	24.8	1.580	0.95	14.4	**PC3: 14.3**
LTE Band 41	QPSK	41490	Side 1	2.47	23.19	24.8	1.580	0.95	15.1	**PC2: 12.9**
LTE Band 41	QPSK	41055	Side 1	2.36	22.35	23.8	1.580	0.95	14.4	
LTE Band 41	QPSK	41055	Side 1	2.32	22.32	23.8	1.580	0.95	14.5	
LTE Band 41	QPSK	41055	Side 2	0.185	23.31	24.8	1.580	0.95	26.4	
LTE Band 41	QPSK	41055	Side 2	0.171	22.35	23.8	1.580	0.95	25.8	
LTE Band 41	QPSK	41055	Side 3	0.001	23.31	24.8	1.580	0.95	49.1	
LTE Band 41	QPSK	41055	Side 3	0.001	22.35	23.8	1.580	0.95	48.1	
LTE Band 41	QPSK	41055	Side 4	0.001	23.31	24.8	1.580	0.95	49.1	
LTE Band 41	QPSK	41055	Side 4	0.001	22.35	23.8	1.580	0.95	48.1	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 42	QPSK	43340	Bottom Face	0.891	22.49	24.0	1.580	0.95	18.8	
LTE Band 42	QPSK	43340	Bottom Face	0.746	21.51	23.0	1.580	0.95	18.6	
LTE Band 42	QPSK	43340	Side 1	0.974	22.49	24.0	1.580	0.95	18.4	
LTE Band 42	QPSK	43340	Side 1	0.962	22.49	24.0	1.580	0.95	18.4	
LTE Band 42	QPSK	43190	Side 1	0.958	22.44	24.0	1.580	0.95	18.4	
LTE Band 42	QPSK	43490	Side 1	0.952	22.47	24.0	1.580	0.95	18.5	
LTE Band 42	QPSK	43340	Side 1	0.792	21.51	23.0	1.580	0.95	18.3	
LTE Band 42	QPSK	43340	Side 1	0.789	21.52	23.0	1.580	0.95	18.3	**18.3**
LTE Band 42	QPSK	43340	Side 2	0.096	22.49	24.0	1.580	0.95	28.5	
LTE Band 42	QPSK	43340	Side 2	0.074	21.51	23.0	1.580	0.95	28.6	
LTE Band 42	QPSK	43340	Side 3	0.001	22.49	24.0	1.580	0.95	48.3	
LTE Band 42	QPSK	43340	Side 3	0.001	21.51	23.0	1.580	0.95	47.3	
LTE Band 42	QPSK	43340	Side 4	0.001	22.49	24.0	1.580	0.95	48.3	
LTE Band 42	QPSK	43340	Side 4	0.001	21.51	23.0	1.580	0.95	47.3	
LTE Band 48	QPSK	55773	Bottom Face	0.915	22.55	24.0	1.580	0.95	18.7	
LTE Band 48	QPSK	55773	Bottom Face	0.744	21.63	23.0	1.580	0.95	18.7	
LTE Band 48	QPSK	55773	Side 1	0.992	22.55	24.0	1.580	0.95	18.4	
LTE Band 48	QPSK	55340	Side 1	0.966	22.45	24.0	1.580	0.95	18.4	
LTE Band 48	QPSK	56207	Side 1	1.01	22.50	24.0	1.580	0.95	18.2	
LTE Band 48	QPSK	56207	Side 1	0.966	22.50	24.0	1.580	0.95	18.4	
LTE Band 48	QPSK	56640	Side 1	0.975	22.37	24.0	1.580	0.95	18.3	
LTE Band 48	QPSK	55773	Side 1	0.81	21.63	23.0	1.580	0.95	18.3	**18.2**
LTE Band 48	QPSK	55773	Side 1	0.813	21.62	23.0	1.580	0.95	18.3	
LTE Band 48	QPSK	55773	Side 2	0.082	22.55	24.0	1.580	0.95	29.2	
LTE Band 48	QPSK	55773	Side 2	0.057	21.63	23.0	1.580	0.95	29.9	
LTE Band 48	QPSK	55773	Side 3	0.001	22.55	24.0	1.580	0.95	48.3	
LTE Band 48	QPSK	55773	Side 3	0.001	21.63	23.0	1.580	0.95	47.4	
LTE Band 48	QPSK	55773	Side 4	0.001	22.55	24.0	1.580	0.95	48.3	
LTE Band 48	QPSK	55773	Side 4	0.001	21.63	23.0	1.580	0.95	47.4	
LTE Band 66	QPSK	132322	Bottom Face	0.622	22.98	24.0	1.000	0.95	24.8	
LTE Band 66	QPSK	132322	Bottom Face	0.518	22.11	23.0	1.000	0.95	24.7	
LTE Band 66	QPSK	132322	Side 1	1.02	22.98	24.0	1.000	0.95	22.7	
LTE Band 66	QPSK	132322	Side 1	0.971	22.98	24.0	1.000	0.95	22.9	
LTE Band 66	QPSK	132072	Side 1	0.987	22.77	24.0	1.000	0.95	22.6	
LTE Band 66	QPSK	132572	Side 1	1.01	22.95	24.0	1.000	0.95	22.7	
LTE Band 66	QPSK	132322	Side 1	0.824	22.11	23.0	1.000	0.95	22.7	
LTE Band 66	QPSK	132322	Side 1	0.814	22.08	23.0	1.000	0.95	22.8	**22.6**
LTE Band 66	QPSK	132322	Side 2	0.208	22.98	24.0	1.000	0.95	29.6	
LTE Band 66	QPSK	132322	Side 2	0.167	22.11	23.0	1.000	0.95	29.7	
LTE Band 66	QPSK	132322	Side 3	0.001	22.98	24.0	1.000	0.95	52.8	
LTE Band 66	QPSK	132322	Side 3	0.001	22.11	23.0	1.000	0.95	51.9	
LTE Band 66	QPSK	132322	Side 4	0.001	22.98	24.0	1.000	0.95	52.8	
LTE Band 66	QPSK	132322	Side 4	0.001	22.11	23.0	1.000	0.95	51.9	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
LTE Band 71	QPSK	133322	Bottom Face	0.208	22.96	24.0	1.000	0.95	29.6	
LTE Band 71	QPSK	133322	Bottom Face	0.162	21.85	23.0	1.000	0.95	29.5	
LTE Band 71	QPSK	133322	Side 1	0.641	22.96	24.0	1.000	0.95	24.7	
LTE Band 71	QPSK	133222	Side 1	0.61	22.91	24.0	1.000	0.95	24.8	
LTE Band 71	QPSK	133372	Side 1	0.656	22.82	24.0	1.000	0.95	24.4	
LTE Band 71	QPSK	133372	Side 1	0.641	22.82	24.0	1.000	0.95	24.5	
LTE Band 71	QPSK	133322	Side 1	0.524	21.85	23.0	1.000	0.95	24.4	
LTE Band 71	QPSK	133322	Side 1	0.544	21.82	23.0	1.000	0.95	24.2	**24.2**
LTE Band 71	QPSK	133322	Side 2	0.077	22.96	24.0	1.000	0.95	33.9	
LTE Band 71	QPSK	133322	Side 2	0.066	21.85	23.0	1.000	0.95	33.4	
LTE Band 71	QPSK	133322	Side 3	0.001	22.96	24.0	1.000	0.95	52.7	
LTE Band 71	QPSK	133322	Side 3	0.001	21.85	23.0	1.000	0.95	51.6	
LTE Band 71	QPSK	133322	Side 4	0.001	22.96	24.0	1.000	0.95	52.7	
LTE Band 71	QPSK	133322	Side 4	0.001	21.85	23.0	1.000	0.95	51.6	
NR Band n2	DFT-S QPSK	376000	Bottom Face	0.602	23.14	24.5	1.000	0.95	25.1	
NR Band n2	DFT-S QPSK	376000	Bottom Face	0.562	22.89	24.5	1.000	0.95	25.2	
NR Band n2	DFT-S QPSK	376000	Side 1	1.95	23.14	24.5	1.000	0.95	20.0	
NR Band n2	DFT-S QPSK	372000	Side 1	1.39	22.81	24.5	1.000	0.95	21.2	
NR Band n2	DFT-S QPSK	380000	Side 1	2.21	23.12	24.5	1.000	0.95	19.5	
NR Band n2	DFT-S QPSK	380000	Side 1	2.17	23.12	24.5	1.000	0.95	19.5	
NR Band n2	DFT-S QPSK	376000	Side 1	1.82	22.89	24.5	1.000	0.95	20.1	
NR Band n2	DFT-S QPSK	376000	Side 1	1.3	21.88	23.5	1.000	0.95	20.5	**19.5**
NR Band n2	DFT-S QPSK	376000	Side 2	0.182	23.14	24.5	1.000	0.95	30.3	
NR Band n2	DFT-S QPSK	376000	Side 2	0.165	22.89	24.5	1.000	0.95	30.5	
NR Band n2	DFT-S QPSK	376000	Side 3	0.001	23.14	24.5	1.000	0.95	52.9	
NR Band n2	DFT-S QPSK	376000	Side 3	0.001	22.89	24.5	1.000	0.95	52.7	
NR Band n2	DFT-S QPSK	376000	Side 4	0.001	23.14	24.5	1.000	0.95	52.9	
NR Band n2	DFT-S QPSK	376000	Side 4	0.001	22.89	24.5	1.000	0.95	52.7	
NR Band n5	DFT-S QPSK	167300	Bottom Face	0.912	23.68	24.5	1.000	0.95	23.9	
NR Band n5	DFT-S QPSK	167300	Bottom Face	0.879	23.61	24.5	1.000	0.95	23.9	
NR Band n5	DFT-S QPSK	167300	Side 1	1.61	23.68	24.5	1.000	0.95	21.4	
NR Band n5	DFT-S QPSK	166800	Side 1	1.65	23.62	24.5	1.000	0.95	21.2	
NR Band n5	DFT-S QPSK	166800	Side 1	1.6	23.62	24.5	1.000	0.95	21.4	
NR Band n5	DFT-S QPSK	167800	Side 1	1.59	23.58	24.5	1.000	0.95	21.3	
NR Band n5	DFT-S QPSK	167300	Side 1	1.58	23.61	24.5	1.000	0.95	21.4	
NR Band n5	DFT-S QPSK	167300	Side 1	1.24	22.69	23.5	1.000	0.95	21.5	**21.2**
NR Band n5	DFT-S QPSK	167300	Side 2	0.398	23.68	24.5	1.000	0.95	27.5	
NR Band n5	DFT-S QPSK	167300	Side 2	0.395	23.61	24.5	1.000	0.95	27.4	
NR Band n5	DFT-S QPSK	167300	Side 3	0.001	23.68	24.5	1.000	0.95	53.5	
NR Band n5	DFT-S QPSK	167300	Side 3	0.001	23.61	24.5	1.000	0.95	53.4	
NR Band n5	DFT-S QPSK	167300	Side 4	0.001	23.68	24.5	1.000	0.95	53.5	
NR Band n5	DFT-S QPSK	167300	Side 4	0.001	23.61	24.5	1.000	0.95	53.4	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
NR Band n66	DFT-S QPSK	349000	Bottom Face	0.813	23.73	24.5	1.000	0.95	24.4	
NR Band n66	DFT-S QPSK	349000	Bottom Face	0.756	23.66	24.5	1.000	0.95	24.7	
NR Band n66	DFT-S QPSK	349000	Side 1	1.3	23.73	24.5	1.000	0.95	22.4	
NR Band n66	DFT-S QPSK	349000	Side 1	1.26	23.73	24.5	1.000	0.95	22.5	
NR Band n66	DFT-S QPSK	346000	Side 1	1.19	23.67	24.5	1.000	0.95	22.7	
NR Band n66	DFT-S QPSK	352000	Side 1	1.22	23.47	24.5	1.000	0.95	22.4	
NR Band n66	DFT-S QPSK	349000	Side 1	1.2	23.66	24.5	1.000	0.95	22.6	
NR Band n66	DFT-S QPSK	349000	Side 1	0.885	22.63	23.5	1.000	0.95	22.9	**22.4**
NR Band n66	DFT-S QPSK	349000	Side 2	0.296	23.73	24.5	1.000	0.95	28.8	
NR Band n66	DFT-S QPSK	349000	Side 2	0.224	23.66	24.5	1.000	0.95	29.9	
NR Band n66	DFT-S QPSK	349000	Side 3	0.001	23.73	24.5	1.000	0.95	53.5	
NR Band n66	DFT-S QPSK	349000	Side 3	0.001	23.66	24.5	1.000	0.95	53.4	
NR Band n66	DFT-S QPSK	349000	Side 4	0.001	23.73	24.5	1.000	0.95	53.5	
NR Band n66	DFT-S QPSK	349000	Side 4	0.001	23.66	24.5	1.000	0.95	53.4	
NR Band n71	DFT-S QPSK	136100	Bottom Face	0.251	23.20	24.5	1.000	0.95	29.0	
NR Band n71	DFT-S QPSK	136100	Bottom Face	0.228	22.96	24.5	1.000	0.95	29.2	
NR Band n71	DFT-S QPSK	136100	Side 1	0.682	23.20	24.5	1.000	0.95	24.6	
NR Band n71	DFT-S QPSK	136100	Side 1	0.671	23.20	24.5	1.000	0.95	24.7	
NR Band n71	DFT-S QPSK	134600	Side 1	0.647	23.11	24.5	1.000	0.95	24.8	
NR Band n71	DFT-S QPSK	137600	Side 1	0.666	23.09	24.5	1.000	0.95	24.6	
NR Band n71	DFT-S QPSK	136100	Side 1	0.643	22.96	24.5	1.000	0.95	24.7	
NR Band n71	DFT-S QPSK	136100	Side 1	0.628	22.12	23.5	1.000	0.95	23.9	**23.9**
NR Band n71	DFT-S QPSK	136100	Side 2	0.084	23.20	24.5	1.000	0.95	33.7	
NR Band n71	DFT-S QPSK	136100	Side 2	0.069	22.96	24.5	1.000	0.95	34.3	
NR Band n71	DFT-S QPSK	136100	Side 3	0.001	23.20	24.5	1.000	0.95	53.0	
NR Band n71	DFT-S QPSK	136100	Side 3	0.001	22.96	24.5	1.000	0.95	52.7	
NR Band n71	DFT-S QPSK	136100	Side 4	0.001	23.20	24.5	1.000	0.95	53.0	
NR Band n71	DFT-S QPSK	136100	Side 4	0.001	22.96	24.5	1.000	0.95	52.7	
NR Band n48	DFT-S QPSK	642888	Bottom Face	1.82	22.97	23.0	1.000	0.95	20.1	
NR Band n48	DFT-S QPSK	642888	Bottom Face	1.77	22.86	23.0	1.000	0.95	20.2	
NR Band n48	DFT-S QPSK	642888	Side 1	1.93	22.97	23.0	1.000	0.95	19.9	
NR Band n48	DFT-S QPSK	642888	Side 1	1.83	22.97	23.0	1.000	0.95	20.1	
NR Band n48	DFT-S QPSK	638000	Side 1	1.77	22.74	23.0	1.000	0.95	20.0	
NR Band n48	DFT-S QPSK	640444	Side 1	1.83	22.83	23.0	1.000	0.95	20.0	
NR Band n48	DFT-S QPSK	645332	Side 1	1.84	22.91	23.0	1.000	0.95	20.0	
NR Band n48	DFT-S QPSK	642888	Side 1	1.87	22.86	23.0	1.000	0.95	19.9	**19.9**
NR Band n48	DFT-S QPSK	642888	Side 1	1.51	21.89	22.0	1.000	0.95	19.9	
NR Band n48	DFT-S QPSK	642888	Side 2	0.117	22.97	23.0	1.000	0.95	32.1	
NR Band n48	DFT-S QPSK	642888	Side 2	0.103	22.86	23.0	1.000	0.95	32.5	
NR Band n48	DFT-S QPSK	642888	Side 3	0.001	22.97	23.0	1.000	0.95	52.7	
NR Band n48	DFT-S QPSK	642888	Side 3	0.001	22.86	23.0	1.000	0.95	52.6	
NR Band n48	DFT-S QPSK	642888	Side 4	0.001	22.97	23.0	1.000	0.95	52.7	
NR Band n48	DFT-S QPSK	642888	Side 4	0.001	22.86	23.0	1.000	0.95	52.6	

Band	Modulation	Channel	Test Position	SAR_{1g} (W/kg)	Meas. Conducted Power (dBm)	Tune-up (dBm)	Duty Cycle Scaling Factor	SAR Design Target	P_{limit} (With Duty Factor)	Minimum
NR Band n77	DFT-S QPSK	654800	Bottom Face	2.14	23.71	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	654800	Bottom Face	1.92	23.35	24.5	1.000	0.95	20.3	
NR Band n77	DFT-S QPSK	654800	Side 1	2.15	23.71	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	650000	Side 1	2.3	23.60	24.5	1.000	0.95	19.8	
NR Band n77	DFT-S QPSK	650000	Side 1	2.23	23.60	24.5	1.000	0.95	19.9	
NR Band n77	DFT-S QPSK	652400	Side 1	2.13	23.68	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	657200	Side 1	2.18	23.67	24.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	659600	Side 1	2.12	23.68	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	662000	Side 1	2.12	23.59	24.5	1.000	0.95	20.1	**19.8**
NR Band n77	DFT-S QPSK	654800	Side 1	2.11	23.35	24.5	1.000	0.95	19.9	
NR Band n77	DFT-S QPSK	654800	Side 1	1.87	22.84	23.5	1.000	0.95	19.9	
NR Band n77	DFT-S QPSK	654800	Side 2	0.074	23.71	24.5	1.000	0.95	34.8	
NR Band n77	DFT-S QPSK	654800	Side 2	0.068	23.35	24.5	1.000	0.95	34.8	
NR Band n77	DFT-S QPSK	654800	Side 3	0.001	23.71	24.5	1.000	0.95	53.5	
NR Band n77	DFT-S QPSK	654800	Side 3	0.001	23.35	24.5	1.000	0.95	53.1	
NR Band n77	DFT-S QPSK	654800	Side 4	0.001	23.71	24.5	1.000	0.95	53.5	
NR Band n77	DFT-S QPSK	654800	Side 4	0.001	23.35	24.5	1.000	0.95	53.1	
NR Band n77	DFT-S QPSK	640000	Bottom Face	2.18	23.79	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	640000	Bottom Face	2.02	23.52	24.5	1.000	0.95	20.2	
NR Band n77	DFT-S QPSK	640000	Side 1	2.24	23.79	24.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	633334	Side 1	2.14	23.58	24.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	635000	Side 1	2.16	23.63	24.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	636666	Side 1	2.18	23.69	24.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	638334	Side 1	2.27	23.66	24.5	1.000	0.95	19.9	
NR Band n77	DFT-S QPSK	638334	Side 1	2.21	23.66	24.5	1.000	0.95	20.0	
NR Band n77	DFT-S QPSK	640000	Side 1	2.11	23.52	24.5	1.000	0.95	20.1	**19.9**
NR Band n77	DFT-S QPSK	640000	Side 1	1.74	22.77	23.5	1.000	0.95	20.1	
NR Band n77	DFT-S QPSK	640000	Side 2	0.108	23.79	24.5	1.000	0.95	33.2	
NR Band n77	DFT-S QPSK	640000	Side 2	0.102	23.52	24.5	1.000	0.95	33.2	
NR Band n77	DFT-S QPSK	640000	Side 3	0.001	23.79	24.5	1.000	0.95	53.6	
NR Band n77	DFT-S QPSK	640000	Side 3	0.001	23.52	24.5	1.000	0.95	53.3	
NR Band n77	DFT-S QPSK	640000	Side 4	0.001	23.79	24.5	1.000	0.95	53.6	
NR Band n77	DFT-S QPSK	640000	Side 4	0.001	23.52	24.5	1.000	0.95	53.3	

5. Equipment List

Manufacturer	Equipment	Model	Serial No.	Cal. Date	Cal. Interval
SPEAG	750 MHz System Validation Kit	D750V3	1222	Aug. 05, 2022	1 year
SPEAG	835 MHz System Validation Kit	D835V3	4d291	Aug. 04, 2022	1 year
SPEAG	1450 MHz System Validation Kit	D1450V2	1094	Aug. 05, 2022	1 year
SPEAG	1900 MHz System Validation Kit	D1900V2	5d111	Sep. 23, 2022	1 year
SPEAG	2450 MHz System Validation Kit	D2450V2	1087	Aug. 05, 2022	1 year
SPEAG	2600 MHz System Validation Kit	D2600V2	1197	Aug. 05, 2022	1 year
SPEAG	3300 MHz System Validation Kit	D3300V2	1004	Aug. 17, 2022	1 year
SPEAG	3500 MHz System Validation Kit	D3500V2	1013	Aug. 18, 2022	1 year
SPEAG	3700 MHz System Validation Kit	D3700V2	1034	Aug. 19, 2022	1 year
SPEAG	3900 MHz System Validation Kit	D3900V2	1014	Aug. 18, 2022	1 year
SPEAG	4900 MHz System Validation Kit	D4900V2	1005	Aug. 18, 2022	1 year
SPEAG	5 GHz System Validation Kit	D5GHzV2	1358	Aug. 09, 2022	1 year
SPEAG	6.5 GHz System Validation Kit	D6.5GHzV2	1081	Aug. 12, 2022	1 year
SPEAG	Data Acquisition Electronics	DAE4	1742	Aug. 31, 2022	1 year
SPEAG	Data Acquisition Electronics	DAE4	1743	Aug. 25, 2022	1 year
Anritsu	Radio Communication Analyzer	MT8821C	6272374573	Jan. 05, 2023	1 year
Anritsu	Radio Communication Analyzer	MT8000	6272368745	Jan. 06, 2023	1 year
SPEAG	Dielectric Probe Kit	DAK-3.5	1219	Jan. 19, 2023	1 year
SPEAG	Dielectric Probe Kit	DAKS-3.5	1101	May 23, 2023	1 year
SPEAG	POWERSOURCE1	SE UMS 160 CA	4244	May 16, 2023	1 year
HILA	Digital Thermometer	TM-906A	1500033	Nov. 03, 2022	1 year
Agilent	Power Meter	E4418B	GB40206143	May 25, 2023	1 year
R&S	Power Sensor	NRP8S	111511	Nov. 29, 2022	1 year
Agilent	Signal Generator	E8257D	MY44320425	Feb. 24, 2023	1 year
Agilent	Spectrum Analyzer	E4446A	MY46180578	Sep. 28, 2022	1 year

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