RF Exposure Lab

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CERTIFICATE OF COMPLIANCE
SAR EVALUATION

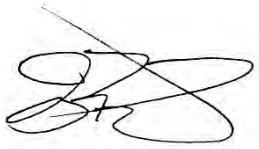
Inseego		Dates of Test:	August 4-16 & October 14, 2022
9645 Scranton Road, Suite 205		Test Report Number:	SAR.20220810
San Diego, CA 92121			Revision F

FCC ID:	PKRISGM3000B
HVIN/Model(s):	M3000B
Product Market Number (PMN):	M3000
Test Sample:	Engineering Unit Same as Production
Serial Number:	BI160522F00365
Equipment Type:	Portable Router (Hotspot)
Classification:	Portable Transmitter Next to Body
TX Frequency Range:	663 – 698 MHz, 814 – 849 MHz, 1710 – 1780 MHz, 1850 – 1915 MHz, 2496 – 2690 MHz, 3300 – 4200 MHz, 3550 – 3700 MHz
Frequency Tolerance:	± 2.5 ppm
Maximum RF Output:	600 MHz (FR1) – 24.0 dBm, 850 MHz (FR1) – 24.0 dBm, 1750 MHz (FR1) – 24.0 dBm, 1900 MHz (FR1) – 24.0 dBm, 2550 MHz (FR1) – 27.0 dBm, 3600 MHz (FR1) – 26.0 dBm Conducted
Signal Modulation:	DFT-s-OFDM/CP-OFDM, Pi2 BPSK
Antenna Type:	Internal
Application Type:	Certification
FCC Rule Parts:	Part 2, 22, 24, 27, 90, 96
KDB Test Methodology:	KDB 447498 D01 v06, KDB 248227 v02r02, KDB 941225 D01 v03r01, D02 v02r01, D05 v02r05 & D06 v02r01
Max. Stand Alone SAR Value:	1.21 W/kg Reported
Max. Simultaneous Value:	1.21 W/kg Reported
Separation Distance:	10 mm

This wireless mobile and/or portable device has been shown to be compliant for localized specific absorption rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in IEEE 1528-2013 and IEC 62209-1528:2020 (See test report).

I attest to the accuracy of the data. All measurements were performed by myself or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RF Exposure Lab, LLC certifies that no party to this application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 853(a).



Jay M. Moulton
Vice President

ACCREDITED
Testing Cert. # 2387.01

Table of Contents

Comment/Revision	Date
Original Release	September 7, 2022
Revision A – Change the KDB44798 version to v06, correct the tune up values in the NSA table on page 5 and change the format for the simultaneous UL CA and ENDC	September 12, 2022
Revision B – Change MIMO on band n41 to Antenna 3 from Antenna 0	September 21, 2022
Revision C – Remove Band 7 Ant 8 data, added Band 25 Ant 8 additional data, added Band 41 Ant 8 data, added Band 48 2x2 UL data, added Band 48 Ant 6 data, added band 48 2x2 UL data and corrected table in section 8 for Ant 6 and included Ant 3	October 5, 2022
Revision D – Correct simultaneous table in section 10	October 6, 2022
Revision E – Evaluate simultaneous for Band 71	October 8, 2022
Revision F – Add Volume scan for Band 71 and WiFi	October 16, 2022

Note: The latest version supersedes all previous versions listed in the above table. The latest version shall be used.

1. Introduction

This measurement report shows compliance of the Inseego Model M3000B FCC ID: PKRISGM3000B with FCC Part 2, 1093, ET Docket 93-62 Rules for mobile and portable devices. The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation to protect the public and workers from the potential hazards of RF emissions due to FCC regulated portable devices. [1], [6]

The test results recorded herein are based on a single type test of Inseego Model M3000B and therefore apply only to the tested sample.

The test procedures and limits, as described in ANSI C95.1 – 1999 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz [2], ANSI C95.3 – 2002 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields [3], IEEE Std.1528 – 2013 Recommended Practice [4], and Industry Canada Safety Code 6 Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz were employed.

The following table indicates all the wireless technologies operating in the M3000B Portable Router (Hotspot). The table also shows the tolerance for the power level for each mode.

Band	Technology	Power	3GPP Nominal Power dBm	Calibrated Nominal Power dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
Band n71 – 600 MHz	FR1	Full	23.0	23.0	+1.0/-2.0	21.0	24.0
Band n5 & n26 – 835 MHz	FR1	Full	23.0	23.0	+1.0/-2.0	21.0	24.0
Band n66 – 1750 MHz	FR1	Full	23.0	23.0	+1.0/-2.0	21.0	24.0
Band n66 – 1750 MHz	FR1	Backoff	18.5	18.5	+1.0/-2.0	16.5	19.5
Band n2 & n25 – 1900 MHz	FR1	Full	23.0	23.0	+1.0/-2.0	21.0	24.0
Band n2 & n25 – 1900 MHz	FR1	Backoff	16.5	16.5	+1.0/-2.0	14.5	17.5
Band n7 – 2550 MHz	FR1	Full	23.0	23.0	+1.0/-2.0	21.0	24.0
Band n7 – 2550 MHz	FR1	Backoff	18.5	18.5	+1.0/-2.0	16.5	19.5
Band n41 – 2550 MHz PC3	FR1	Full	23.5	23.5	+1.0/-3.0	20.5	24.5
Band n41 – 2550 MHz PC3	FR1	Backoff	18.5	18.5	+1.0/-3.0	15.5	19.5
Band n41 – 2550 MHz PC2	FR1	Full	26.5	26.5	+0.5/-3.0	23.5	27.0
Band n41 – 2550 MHz PC2	FR1	Backoff	19.0	19.0	+0.5/-3.0	16.0	19.5
Band n48 – 3600 MHz	FR1	Full	20.5	20.5	+1.0/-2.5	18.0	21.5
Band n77 – 3700 MHz PC3	FR1	Full	23.0	23.0	+1.5/-3.5	19.5	24.5
Band n77 – 3700 MHz PC3	FR1	Backoff	20.0	20.0	+1.5/-3.5	16.5	21.5
Band n77 – 3700 MHz PC2	FR1	Full	25.0	25.0	+1.0/-3.5	21.5	26.0
Band n77 – 3700 MHz PC2	FR1	Backoff	20.5	20.5	+1.0/-3.5	17.0	21.5

FR1 SA 2X2 UL Combinations (Aggregate Power)

FR1 SA 2x2 UL	Technology	Class	Nominal dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
n41	FR1	3	23.0	+1.5/-3.0	20.0	24.5
n48	FR1	3	15.5	+1.5/-3.0	12.5	17.0
n77	FR1	3	23.0	+1.5/-3.0	20.0	24.5

FR1 NSA UL ENDC Combinations (Aggregate Power)

Band UL ENDC Combination	Technology	Class	Nominal dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
12A-n2A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
7A-n5A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
66A-n7A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
48A-n25A	LTE+FR1	3	20.0	+1.5/-3.0	17.0	21.5
66A-n25A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
2A-n41A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
66A-n41A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
2A-n66A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
7A-n66A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
12A-n66A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
48A-n66A	LTE+FR1	3	20.0	+1.5/-3.0	17.0	21.5
2A-n71A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0
66A-n71A	LTE+FR1	3	23.0	+1.0/-3.0	20.0	24.0

SAR Definition [5]

Specific Absorption Rate is defined as 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).

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

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

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

where:

σ = conductivity of the tissue (S/m)

ρ = mass density of the tissue (kg/m^3)

E = rms electric field strength (V/m)

2. SAR Measurement Setup

Robotic System

These measurements are performed using the DASY52 automated dosimetric assessment system. The DASY52 is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland and consists of high precision robotics system (Staubli), robot controller, Intel Core2 computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Fig. 2.1).

System Hardware

A cell controller system contains the power supply, robot controller teach pendant (Joystick), and a remote control used to drive the robot motors. The PC consists of the HP Intel Core2 computer with Windows XP system and SAR Measurement Software DASY52, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit that performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

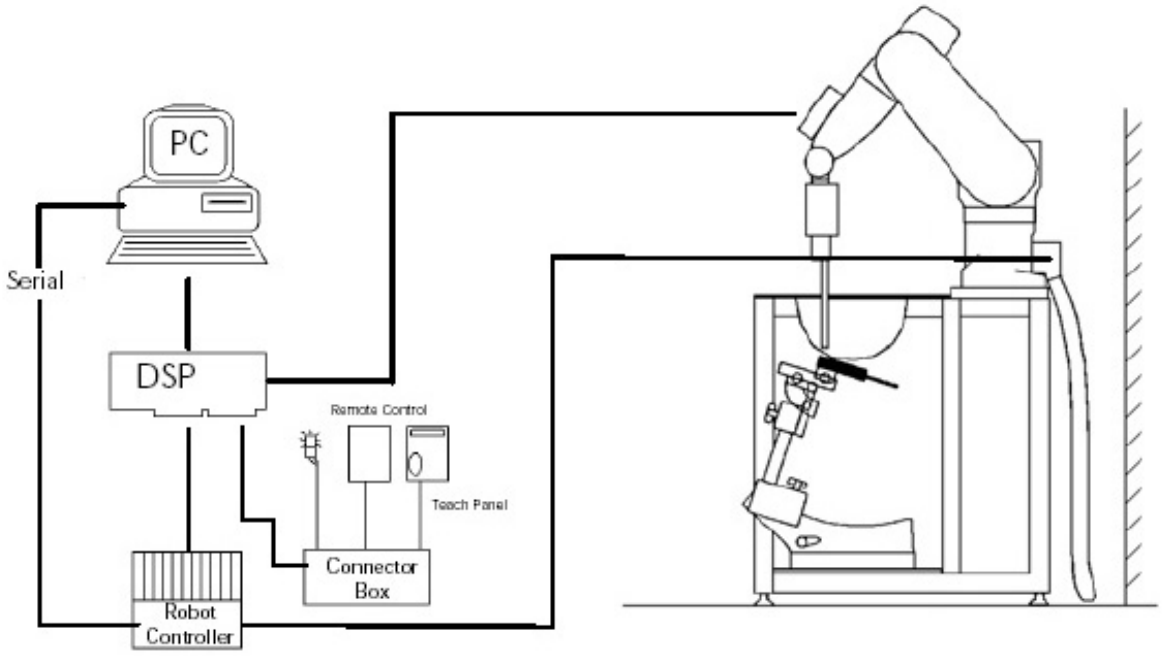


Figure 2.1 SAR Measurement System Setup

System Electronics

The DAE4 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer. The system is described in detail in.

Probe Measurement System

The SAR measurements were conducted with the dosimetric probe EX3DV4, designed in the classical triangular configuration (see Fig. 2.2) and optimized for dosimetric evaluation. The probe is constructed using the thick film technique; with printed resistive lines on ceramic substrates. The probe is equipped with an optical multi fiber line ending at the front of the probe tip. (see Fig. 2.3) It is connected to the EOC box on the robot arm and provides an automatic detection of the phantom surface. Half of the fibers are connected to a pulsed infrared transmitter, the other half to a synchronized receiver. As the probe approaches the surface, the reflection from the surface produces a coupling from the transmitting to the receiving fibers. This reflection increases first during the approach, reaches maximum and then decreases. If the probe is flatly touching the surface, the coupling is zero. The distance of the coupling maximum to the surface is independent of the surface reflectivity and largely independent of the surface to probe angle. The DASY52 software reads the reflection during a software approach and looks for the maximum using a 2nd order fitting. The approach is stopped at reaching the maximum.

DAE System

Probe Specifications

Calibration: In air from 10 MHz to 6.0 GHz
In brain and muscle simulating tissue at Frequencies of 450 MHz, 835 MHz, 1750 MHz, 1900 MHz, 2450 MHz, 2600 MHz, 3500 MHz, 5200 MHz, 5300 MHz, 5600 MHz, 5800 MHz

Frequency: 10 MHz to 6 GHz

Linearity: ±0.2dB (30 MHz to 6 GHz)

Dynamic: 10 mW/kg to 100 W/kg

Range: Linearity: ±0.2dB

Dimensions: Overall length: 330 mm

Tip length: 20 mm

Body diameter: 12 mm

Tip diameter: 2.5 mm

Distance from probe tip to sensor center: 1 mm

Application: SAR Dosimetry Testing
Compliance tests of wireless device

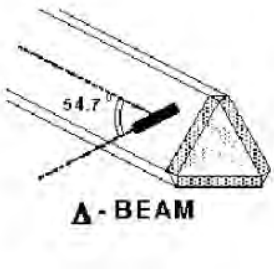


Figure 2.2 Triangular Probe Configurations

Figure 2.3 Probe Thick-Film Technique

Probe Calibration Process

Dosimetric Assessment Procedure

Each probe is calibrated according to a dosimetric assessment procedure described in with accuracy better than +/- 10%. The spherical isotropy was evaluated with the procedure described in and found to be better than +/-0.25dB. The sensitivity parameters (Norm X, Norm Y, Norm Z), the diode compression parameter (DCP) and the conversion factor (Conv F) of the probe is tested.

Free Space Assessment

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies below 1 GHz, and in a waveguide above 1GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity at the proper orientation with the field. The probe is then rotated 360 degrees until the three channels show the maximum reading. The power density readings equates to 1 mW/cm^2.

Temperature Assessment *

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium, correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor based temperature probe is used in conjunction with the E-field probe

$$SAR = C\frac{\Delta T}{\Delta t} \qquad SAR = \frac{|E|^2 \cdot \sigma}{\rho}$$

where:

Δt = exposure time (30 seconds),

C = heat capacity of tissue (brain or muscle),

ΔT = temperature increase due to RF exposure.

where:

σ = simulated tissue conductivity,

ρ = Tissue density (1.25 g/cm^3 for brain tissue)

SAR is proportional to ΔT / Δt , the initial rate of tissue heating, before thermal diffusion takes place.
Now it's possible to quantify the electric field in the simulated tissue by equating the thermally derived SAR to the E- field;

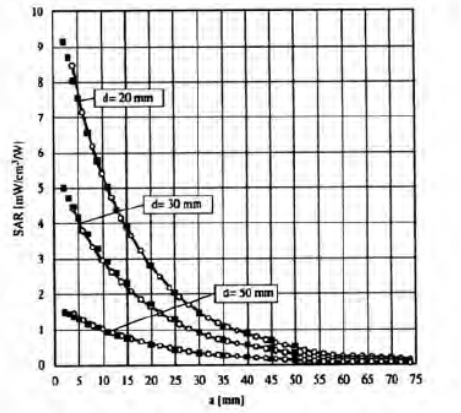


Figure 2.4 E-Field and Temperature Measurements at 900MHz

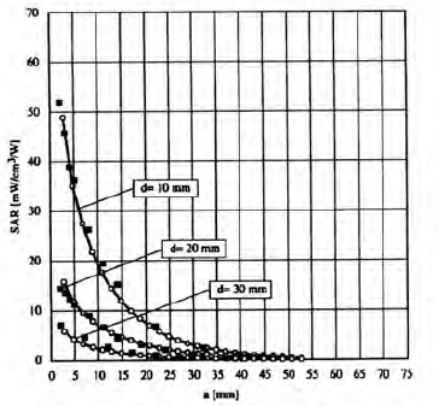


Figure 2.5 E-Field and Temperature Measurements at 1800MHz

Data Extrapolation

The DASY52 software automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given like below;

$$V_i = U_i + U_i^2 \cdot \frac{cf}{dcp_i}$$

with
V_i = compensated signal of channel i (i=x,y,z)
U_i = input signal of channel i (i=x,y,z)
cf = crest factor of exciting field (DASY parameter)
dcp_i = diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

with
V_i = compensated signal of channel i (i = x,y,z)
$Norm_i$ = sensor sensitivity of channel i (i = x,y,z)
$\mu V/(V/m)^2$ for E-field probes
ConvF = sensitivity of enhancement in solution
E_i = electric field strength of channel i in V/m

The RSS value of the field components gives the total field strength (Hermetian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with
SAR = local specific absorption rate in W/g
E_{tot} = total field strength in V/m
σ = conductivity in [mho/m] or [Siemens/m]
ρ = equivalent tissue density in g/cm^3

The power flow density is calculated assuming the excitation field to be a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770}$$

with
P_{pwe} = equivalent power density of a plane wave in W/cm^2
E_{tot} = total electric field strength in V/m

Scanning procedure

- The DASY installation includes predefined files with recommended procedures for measurements and system check. They are read-only document files and destined as fully defined but unmeasured masks. All test positions (head or body-worn) are tested with the same configuration of test steps differing only in the grid definition for the different test positions.

- The „reference“ and „drift“ measurements are located at the beginning and end of the batch process. They measure the field drift at one single point in the liquid over the complete procedure. The indicated drift is mainly the variation of the DUT’s output power and should vary max. +/- 5 %.

- The highest integrated SAR value is the main concern in compliance test applications. These values can mostly be found at the inner surface of the phantom and cannot be measured directly due to the sensor offset in the probe. To extrapolate the surface values, the measurement distances to the surface must be known accurately. A distance error of 0.5mm could produce SAR errors of 6% at 1800 MHz. Using predefined locations for measurements is not accurate enough. Any shift of the phantom (e.g., slight deformations after filling it with liquid) would produce high uncertainties. For an automatic and accurate detection of the phantom surface, the DASY5 system uses the mechanical surface detection. The detection is always at touch, but the probe will move backward from the surface the indicated distance before starting the measurement.

- The „area scan“ measures the SAR above the DUT or verification dipole on a parallel plane to the surface. It is used to locate the approximate location of the peak SAR with 2D spline interpolation. The robot performs a stepped movement along one grid axis while the local electrical field strength is measured by the probe. The probe is touching the surface of the SAM during acquisition of measurement values. The scan uses different grid spacings for different frequency measurements. Standard grid spacing for head measurements in frequency ranges≤ 2GHz is 15 mm in x - and y- dimension. For higher frequencies a finer resolution is needed, thus for the grid spacing is reduced according the following table:

Area scan grid spacing for different frequency ranges	
Frequency range	Grid spacing
≤ 2 GHz	≤ 15 mm
2 – 4 GHz	≤ 12 mm
4 – 6 GHz	≤ 10 mm

Grid spacing and orientation have no influence on the SAR result. For special applications where the standard scan method does not find the peak SAR within the grid, e.g. mobile phones with flip cover, the grid can be adapted in orientation. Results of this coarse scan are shown in annex B.

- A „zoom scan” measures the field in a volume around the 2D peak SAR value acquired in the previous „coarse“ scan. It uses a fine meshed grid where the robot moves the probe in steps along all the 3 axis (x,y and z-axis) starting at the bottom of the Phantom. The grid spacing for the cube measurement is varied according to the measured frequency range, the dimensions are given in the following table:

Zoom scan grid spacing and volume for different frequency ranges			
Frequency range	Grid spacing for x, y axis	Grid spacing for z axis	Minimum zoom scan volume
≤ 2 GHz	≤ 8 mm	≤ 5 mm	≥ 30 mm
2 – 3 GHz	≤ 5 mm	≤ 5 mm	≥ 28 mm
3 – 4 GHz	≤ 5 mm	≤ 4 mm	≥ 28 mm
4 – 5 GHz	≤ 4 mm	≤ 3 mm	≥ 25 mm
5 – 6 GHz	≤ 4 mm	≤ 2 mm	≥ 22 mm

DASY is also able to perform repeated zoom scans if more than 1 peak is found during area scan. In this document, the evaluated peak 1g and 10g averaged SAR values are shown in the 2D-graphics in annex B. Test results relevant for the specified standard (see section 3) are shown in table form in section 7.

Spatial Peak SAR Evaluation

The spatial peak SAR - value for 1 and 10 g is evaluated after the Cube measurements have been done. The basis of the evaluation are the SAR values measured at the points of the fine cube grid consisting of all points in the three directions x, y and z. The algorithm that finds the maximal averaged volume is separated into three different stages.

- The data between the dipole center of the probe and the surface of the phantom are extrapolated. This data cannot be measured since the center of the dipole is 1 to 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is about 1 mm (see probe calibration sheet). The extrapolated data from a cube measurement can be visualized by selecting 'Graph Evaluated'.

- The maximum interpolated value is searched with a straight-forward algorithm. Around this maximum the SAR - values averaged over the spatial volumes (1g or 10 g) are computed using the 3d-spline interpolation algorithm. If the volume cannot be evaluated (i.e., if a part of the grid was cut off by the boundary of the measurement area) the evaluation will be started on the corners of the bottom plane of the cube.

- All neighbouring volumes are evaluated until no neighbouring volume with a higher average value is found.

Extrapolation

The extrapolation is based on a least square algorithm [W. Gander, Computermathematik, p.168-180]. Through the points in the first 3 cm along the z-axis, polynomials of order four are calculated. These polynomials are then used to evaluate the points between the surface and the probe tip. The points, calculated from the surface, have a distance of 1 mm from each other.

Interpolation

The interpolation of the points is done with a 3d-Spline. The 3d-Spline is composed of three one-dimensional splines with the "Not a knot"-condition [W. Gander, Computermathematik, p.141-150] (x, y and z -direction) [Numerical Recipes in C, Second Edition, p.123ff].

Volume Averaging

At First the size of the cube is calculated. Then the volume is integrated with the trapezoidal algorithm. 8000 points (20x20x20) are interpolated to calculate the average.

Advanced Extrapolation

DASY uses the advanced extrapolation option which is able to compensate boundary effects on E-field probes.

SAM PHANTOM

The SAM Twin Phantom V4.0 is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot. (see Fig. 2.6)

Phantom Specification

Phantom: SAM Twin Phantom (V4.0)
Shell Material: Vivac Composite
Thickness: 2.0 ± 0.2 mm

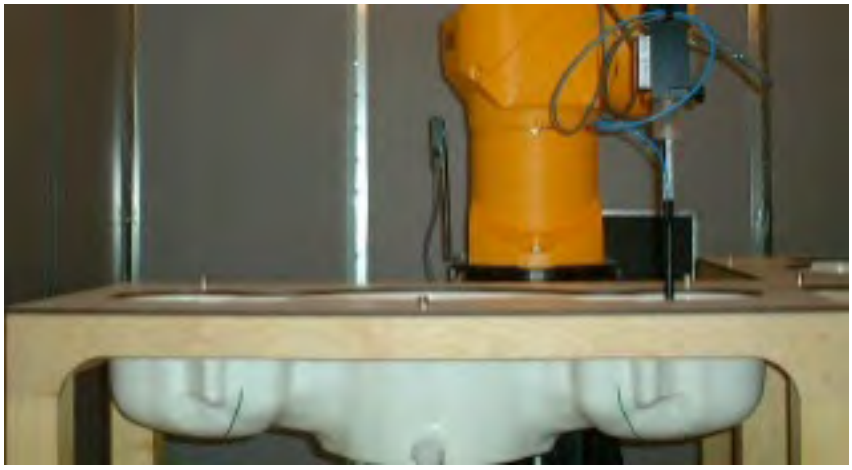


Figure 2.6 SAM Twin Phantom

Device Holder for Transmitters

In combination with the SAM Twin Phantom V4.0 the Mounting Device (see Fig. 2.7), enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation point is the ear opening. The devices can be easily, accurately, and repeat ably be positioned according to the FCC, CENELEC, IEC and IEEE specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Figure 2.7 Mounting Device

Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produce infinite number of configurations. To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

3. Probe and Dipole Calibration

See Appendix D and E.

4. Phantom & Simulating Tissue Specifications

Head & Body Simulating Mixture Characterization

The head and body mixtures consist of the material based on the table listed below. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. Body tissue parameters that have not been specified in IEEE1528 – 2013 are derived from the issue dielectric parameters computed from the 4-Cole-Cole equations.

Table 4.1 Typical Composition of Ingredients for Tissue

Ingredients		Simulating Tissue			
		600 MHz Head	900 MHz Head	1750 MHz Head	1900 MHz Head
Mixing Percentage					
Water		Proprietary Purchased From Speag			
Sugar					
Salt					
HEC					
Bactericide					
DGBE					
Dielectric Constant	Target	42.72	41.50	40.08	40.00
Conductivity (S/m)	Target	0.88	0.97	1.37	1.40

Ingredients		Simulating Tissue				
		2550 MHz Head	3500 MHz Head	3700 MHz Head	3900 MHz Head	4200 MHz Head
Mixing Percentage						
Water		Proprietary Purchased From Speag				
Sugar						
Salt						
HEC						
Bactericide						
DGBE						
Dielectric Constant	Target	39.07	37.93	37.70	37.47	36.55
Conductivity (S/m)	Target	1.91	2.91	3.12	3.34	3.68

5. ANSI/IEEE C95.1 – 1992 RF Exposure Limits [2]

Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Table 5.1 Human Exposure Limits

	UNCONTROLLED ENVIRONMENT General Population (W/kg) or (mW/g)	CONTROLLED ENVIROMENT Professional Population (W/kg) or (mW/g)
SPATIAL PEAK SAR[1] Head	1.60	8.00
SPATIAL AVERAGE SAR[2] Whole Body	0.08	0.40
SPATIAL PEAK SAR[3] Hands, Feet, Ankles, Wrists	4.00	20.00

[1] The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
[2] The Spatial Average value of the SAR averaged over the whole body.
[3] The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

6. Measurement Uncertainty

Measurement uncertainty table is not required per KDB 865664 D01 v01 section 2.8.2 page 12. SAR measurement uncertainty analysis is required in the SAR report only when the highest measured SAR in a frequency band is ≥ 1.5 W/kg for 1-g SAR. The equivalent ratio (1.5/1.6) should be applied to extremity and occupational exposure conditions. The highest reported value is less than 1.5 W/kg. Therefore, the measurement uncertainty table is not required.

7. System Validation

Tissue Verification

Table 7.1 Measured Tissue Parameters

		600 MHz Head		900 MHz Head		1750 MHz Head	
Date(s)		Aug. 4, 2022		Aug. 5, 2022		Aug. 11, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		42.72	41.35	41.50	40.61	40.08	39.44
Conductivity: σ		0.88	0.88	0.97	1.00	1.37	1.41
		1900 MHz Head		2550 MHz Head		3300 MHz Head	
Date(s)		Aug. 12, 2022		Aug. 15, 2022		Aug. 8, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		40.00	39.09	39.07	38.36	38.16	37.48
Conductivity: σ		1.40	1.46	1.91	1.94	2.70	2.71
		3500 MHz Head		3700 MHz Head		3900 MHz Head	
Date(s)		Aug. 8, 2022		Aug. 8, 2022		Aug. 8, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		37.93	37.25	37.70	37.02	37.47	36.79
Conductivity: σ		2.91	2.92	3.12	3.13	3.34	3.35
		4200 MHz Head		2550 MHz Head		750 MHz Head	
Date(s)		Aug. 8, 2022		Sep. 19, 2022		Oct. 14, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		37.12	36.44	39.07	38.75	41.94	40.97
Conductivity: σ		3.65	3.66	1.91	1.97	0.89	0.93

See Appendix A for data printout.

Test System Verification

Prior to assessment, the system is verified to the ±10% of the specifications at the test frequency by using the system kit. Power is normalized to 1 watt. (Graphic Plots Attached)

Table 7.2 System Dipole Validation Target & Measured

	Test Frequency	Targeted SAR_{1g} (W/kg)	Measure SAR_{1g} (W/kg)	Tissue Used for Verification	Deviation (%)	Plot Number
04-Aug-2022	750 MHz	8.57	8.65	Head	+ 0.93	1
05-Aug-2022	900 MHz	11.20	11.50	Head	+ 2.68	2
11-Aug-2022	1750 MHz	37.70	37.90	Head	+ 0.53	3
12-Aug-2022	1900 MHz	40.40	41.10	Head	+ 1.73	4
15-Aug-2022	2550 MHz	55.30	56.70	Head	+ 2.53	5
08-Aug-2022	3300 MHz	64.90	66.20	Head	+ 2.00	6
08-Aug-2022	3500 MHz	67.00	68.80	Head	+ 2.69	7
08-Aug-2022	3700 MHz	68.30	69.50	Head	+ 1.76	8
08-Aug-2022	3900 MHz	69.90	71.20	Head	+ 1.86	9
08-Aug-2022	4200 MHz	66.30	67.20	Head	+ 1.36	10
19-Sep-2022	2550 MHz	55.30	56.20	Head	+ 1.63	11
14-Oct-2022	750 MHz	8.57	8.66	Head	+ 1.05	12

See Appendix A for data plots.

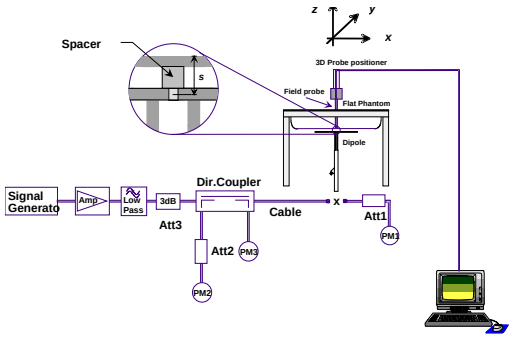


Figure 7.1 Dipole Validation Test Setup

8. SAR Test Data Summary

See Measurement Result Data Pages

See Appendix B for SAR Test Data Plots.
See Appendix C for SAR Test Setup Photos.

Procedures Used To Establish Test Signal

The device was either placed into simulated transmit mode using the manufacturer's test codes or the actual transmission is activated through a base station simulator or similar equipment. See data pages for actual procedure used in measurement.

Device Test Condition

In order to verify that the device was tested at full power, conducted output power measurements were performed before and after each SAR measurement to confirm the output power unless otherwise noted. If a conducted power deviation of more than 5% occurred, the test was repeated. The power drift of each test is measured at the start of the test and again at the end of the test. The drift percentage is calculated by the formula ((end/start)-1)*100 and rounded to three decimal places. The drift percentage is calculated into the resultant SAR value on the data sheet for each test.

Required Test Positions						
Antenna	Side A	Side B	Side C	Side D	Side E	Side F
Ant 0	Yes	Yes	Yes	Yes	No	Yes
Ant 1	Yes	Yes	Yes	Yes	Yes	No
Ant 3	Yes	No	Yes	Yes	No	No
Ant 4	Yes	Yes	Yes	No	No	Yes
Ant 6	Yes	No	Yes	Yes	No	Yes
Ant 8	Yes	No	Yes	Yes	No	No

This device supports SRS capability in bands n41, n48 and n77. The SRS maximum uplink duty cycle is 1.43%. Per 47 CFR 1.1307, the average power for the maximum upper end of the tolerance for the bands are all excluded from SAR testing. The following table shows the peak transmit power, average transmit power and exclusion limit for each of the bands.

Band	Peak Transmit Power (dBm)	Duty Cycle	Average Power (mW)	Exclusion Limit
n41	27.0	1.43%	7	10
n48	21.5	1.43%	2	8
n77	26.0	1.43%	6	7

This device uses a power reduction mechanism to reduce output powers in certain use conditions when the device is used close the user's body.

When the device's antenna is within a certain distance of the user, the sensor activates and reduces the maximum allowed output power. However, the sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, additional evaluation is needed in the vicinity of the triggering distance to ensure SAR is compliant when the device is allowed to operate at a non-reduced output power level. FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device at these additional test positions. Sensor triggering distance summary data is included below.

The sensor is designed to support sufficient detection range and sensitivity to cover regions of the sensors in all applicable directions since the sensor entirely covers the antennas. The device form

factor will not allow the device to be sitting at an angle. Therefore, tilt measurements were not conducted on this device.

Per the May 2017 TCBC Workshop Notes, demonstration of proper functioning of the power reduction mechanisms is required to support the corresponding SAR configurations. The verification process was divided into two parts: (1) evaluation of the output power levels for individual or multiple triggering mechanisms and (2) evaluation of the triggering distances for proximity-based sensors.

9.1 Power Verification Procedure

The power verification was performed according to the following procedure.

- A base station simulator was used to establish a conducted RF connection and the output power was monitored. The power measurements were confirmed to be within the expected tolerances for all states before and after a power reduction mechanism was triggered.
- Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.
- Steps 1 and 2 were repeated for all individual power reduction mechanisms and combinations thereof. For the combination cases, one mechanism was switched to a “triggered” state at a time; powers were confirmed to be within the tolerances after each additional mechanism was activated.

9.2 Distance Verification Procedure

The distance verification procedure was performed according to the following procedure.

- A base station simulator was used to establish an RF connection and to monitor the power levels. The device being tested was placed below the relevant section of the phantom with the relevant side or edge of the device facing toward the phantom.
- The device was moved toward and away from the phantom to determine the distance at which the mechanism triggers and the output power is reduced, per KDB Publication 616217 D04v01r02 and FCC Guidance. Each applicable test position was evaluated. The distances were confirmed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
- Steps 1 and 2 were repeated for low, mid and high bands, as appropriate.
- Steps 1 through 3 were repeated for all distance-based power reduction mechanisms.

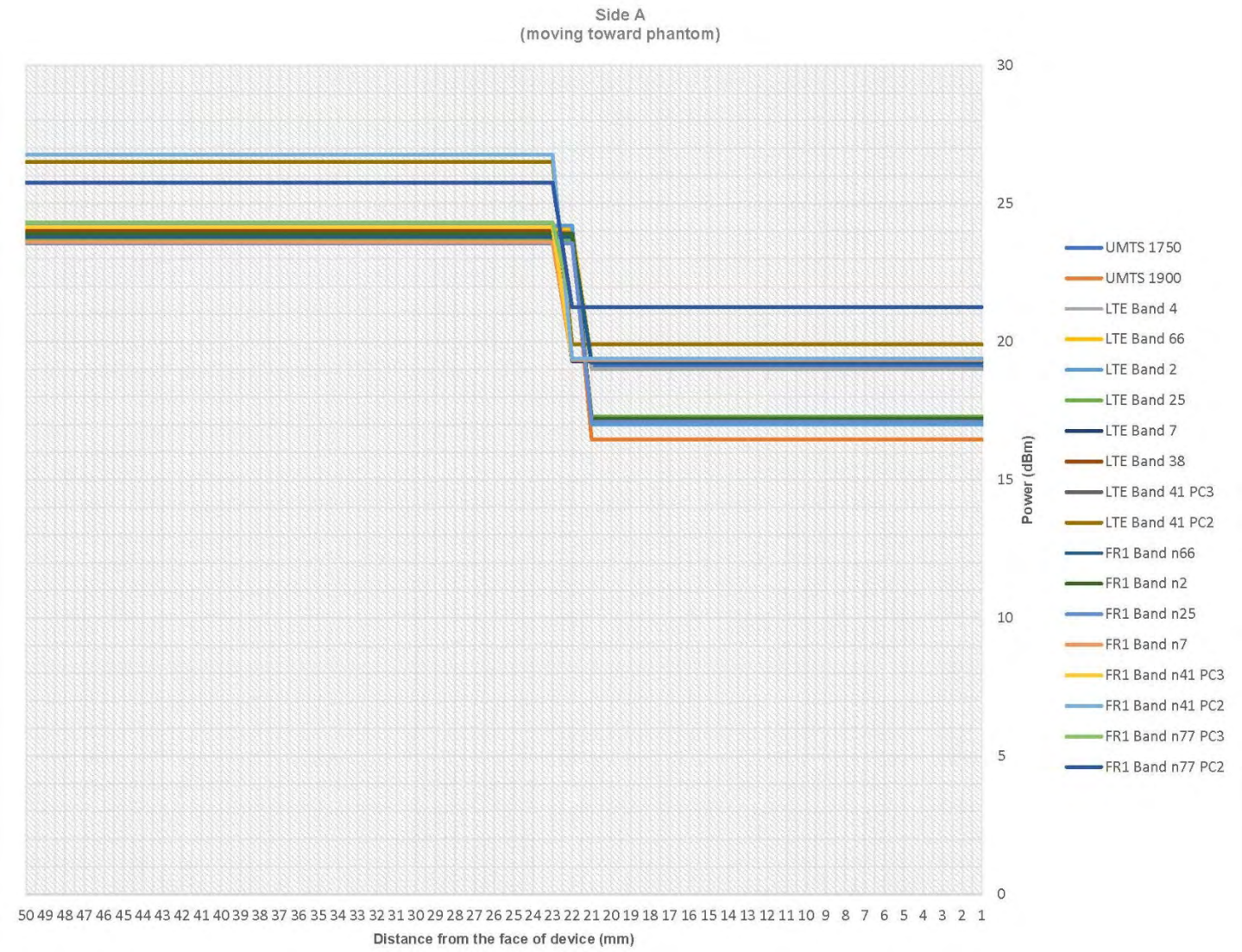
9.3 WWAN Antenna Verification Summary

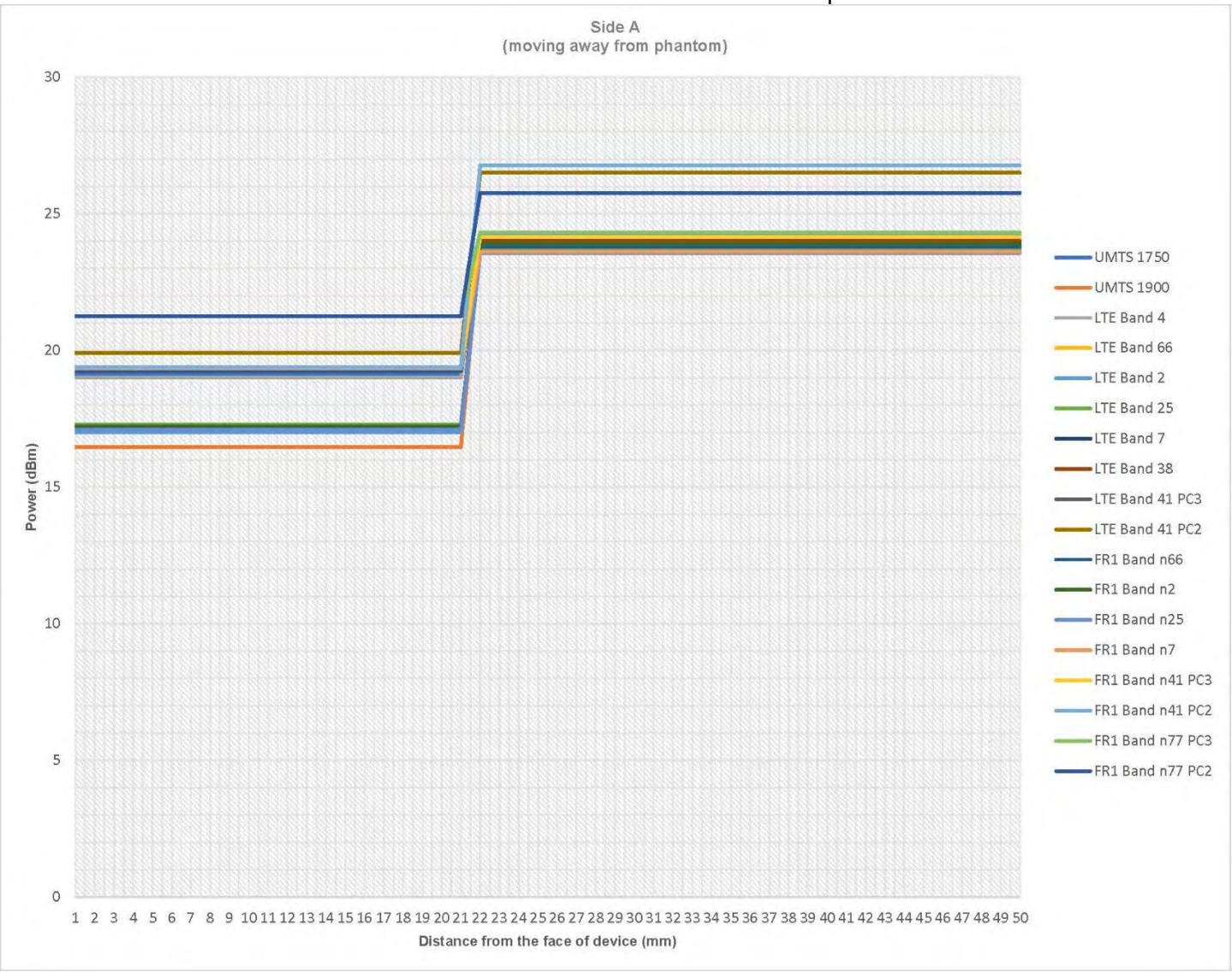
Table 9.1
Power Measurement Verification for WWAN Antenna

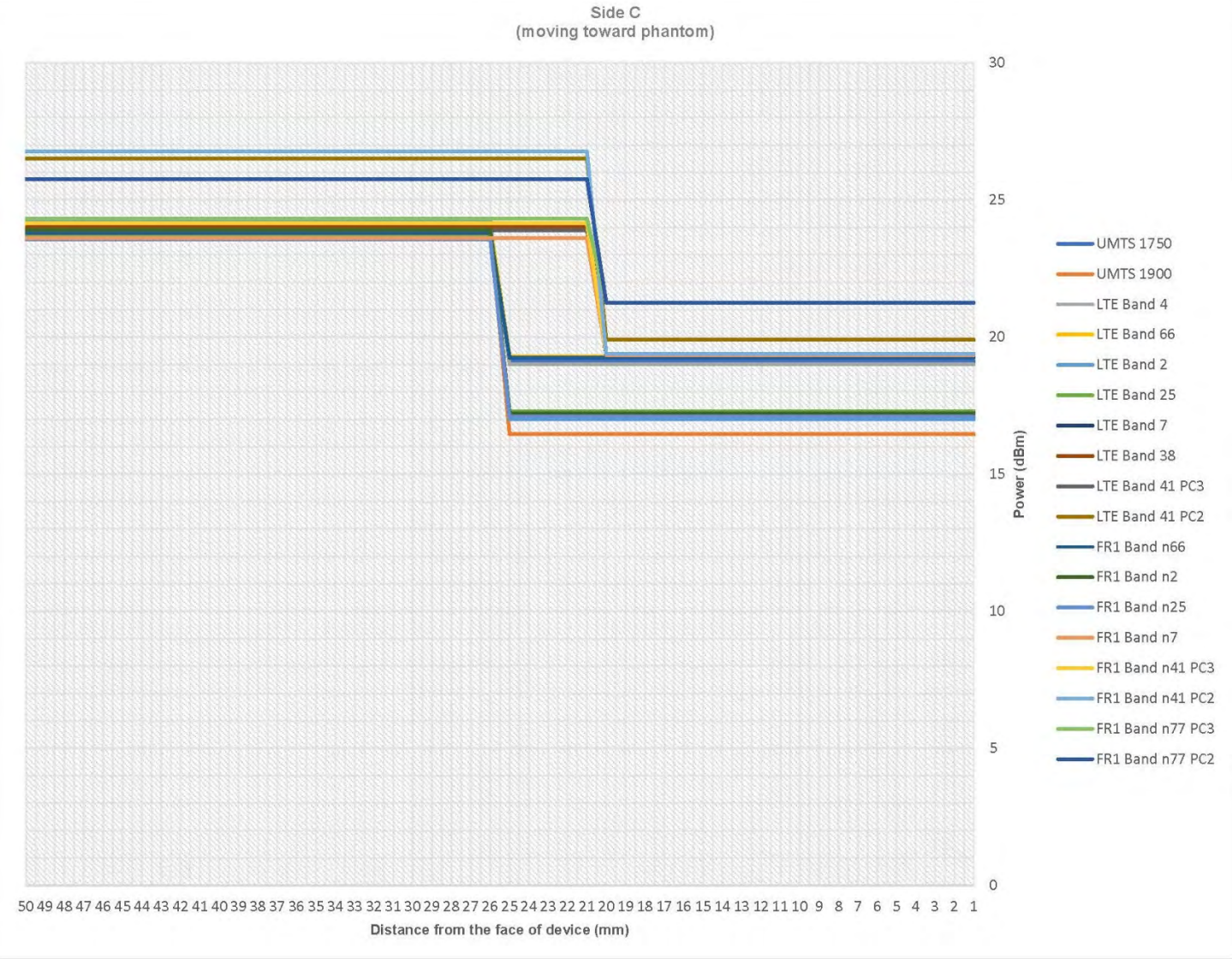
Mechanism	Mode/Band	Conducted Power (dBm)	
1st		Un-triggered (Max)	Mechanism #1 (Reduced)
Capacitive	UMTS 1750	23.65	19.12
	UMTS 1900	23.98	16.46
	LTE FDD Band 4	24.10	19.00
	LTE FDD Band 66	24.10	19.30
	LTE FDD Band 2	24.20	17.00
	LTE FDD Band 25	23.70	17.30
	LTE FDD Band 7	23.90	19.30
	LTE TDD Band 38	24.00	19.90
	LTE TDD Band 41 (PC3)	23.90	19.90
	LTE TDD Band 41 (PC2)	26.50	19.90
	FR1 FDD Band n66	23.80	19.25
	FR1 FDD Band n2	23.91	17.22
	FR1 FDD Band n25	23.57	17.11
	FR1 FDD Band n7	23..60	19.34
	FR1 TDD Band n41 (PC3)	24.16	19.39
	FR1 TDD Band n41 (PC2)	26.77	19.39
	FR1 TDD Band n77 (PC3)	24.32	21.25
	FR1 TDD Band n77 (PC2)	25.76	21.25

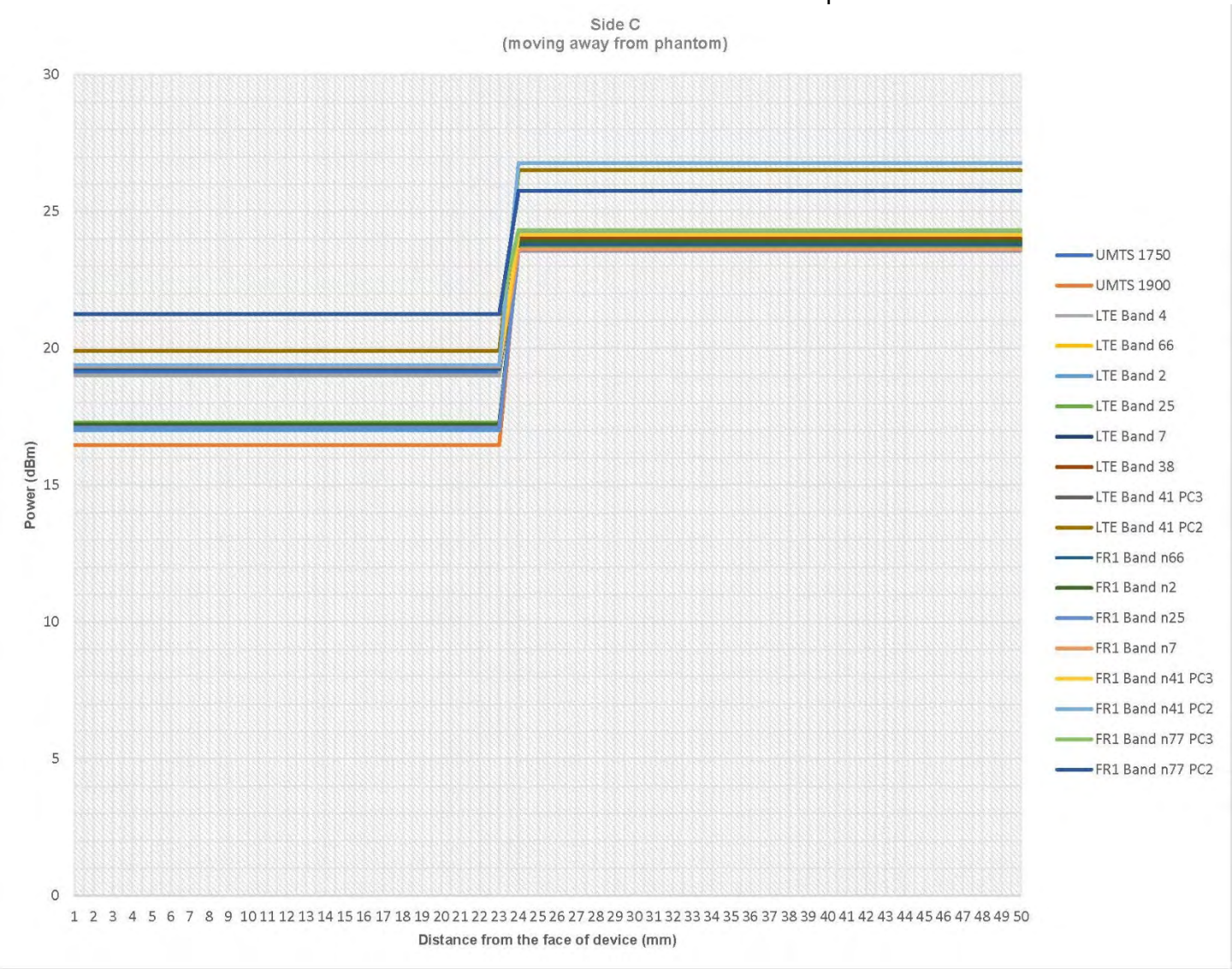
Table 9.2
Distance Measurement Verification for WWAN Antenna

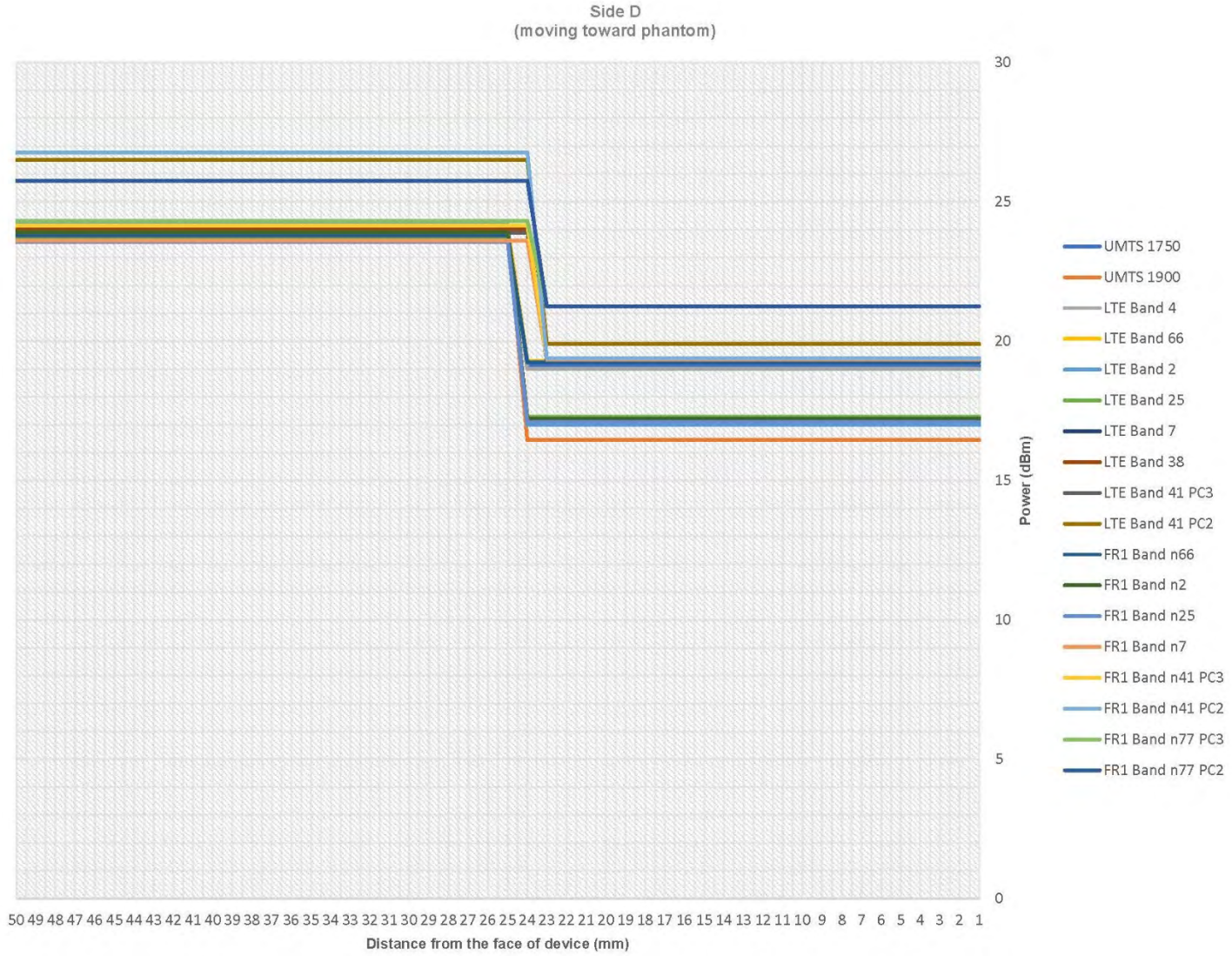
Mechanism	Test Condition	Band	Distance Measurements (mm)		Minimum Distance per Manufacturer (mm)
			Moving Toward	Moving Away	
Capacitive	Side A	Mid	22	22	20
	Side C	Mid	26	24	20
	Side D	Mid	25	21	20
	Side F	Mid	22	23	20
	Side A	High	23	22	20
	Side C	High	21	24	20
	Side D	High	24	23	20
	Side F	High	26	24	20

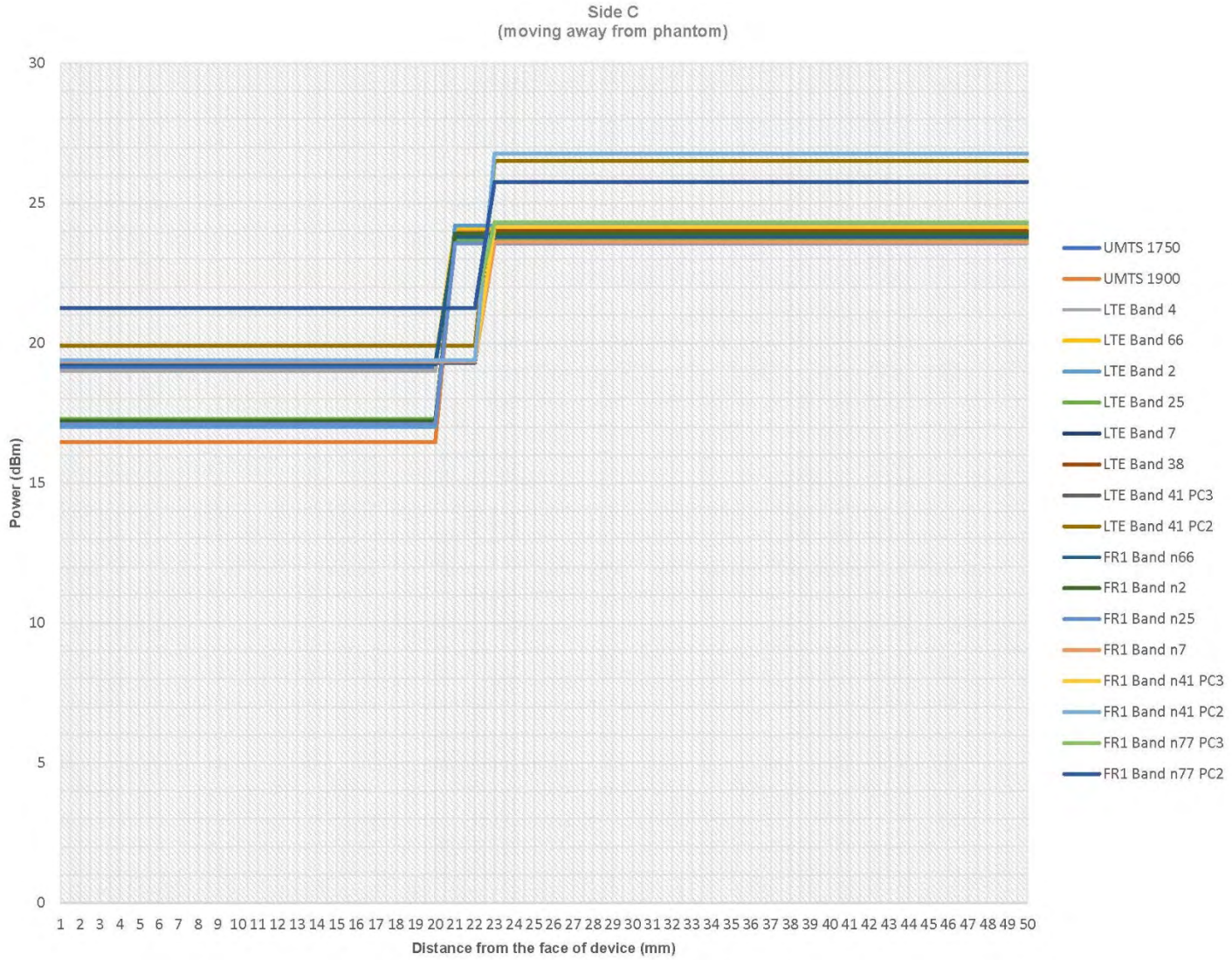


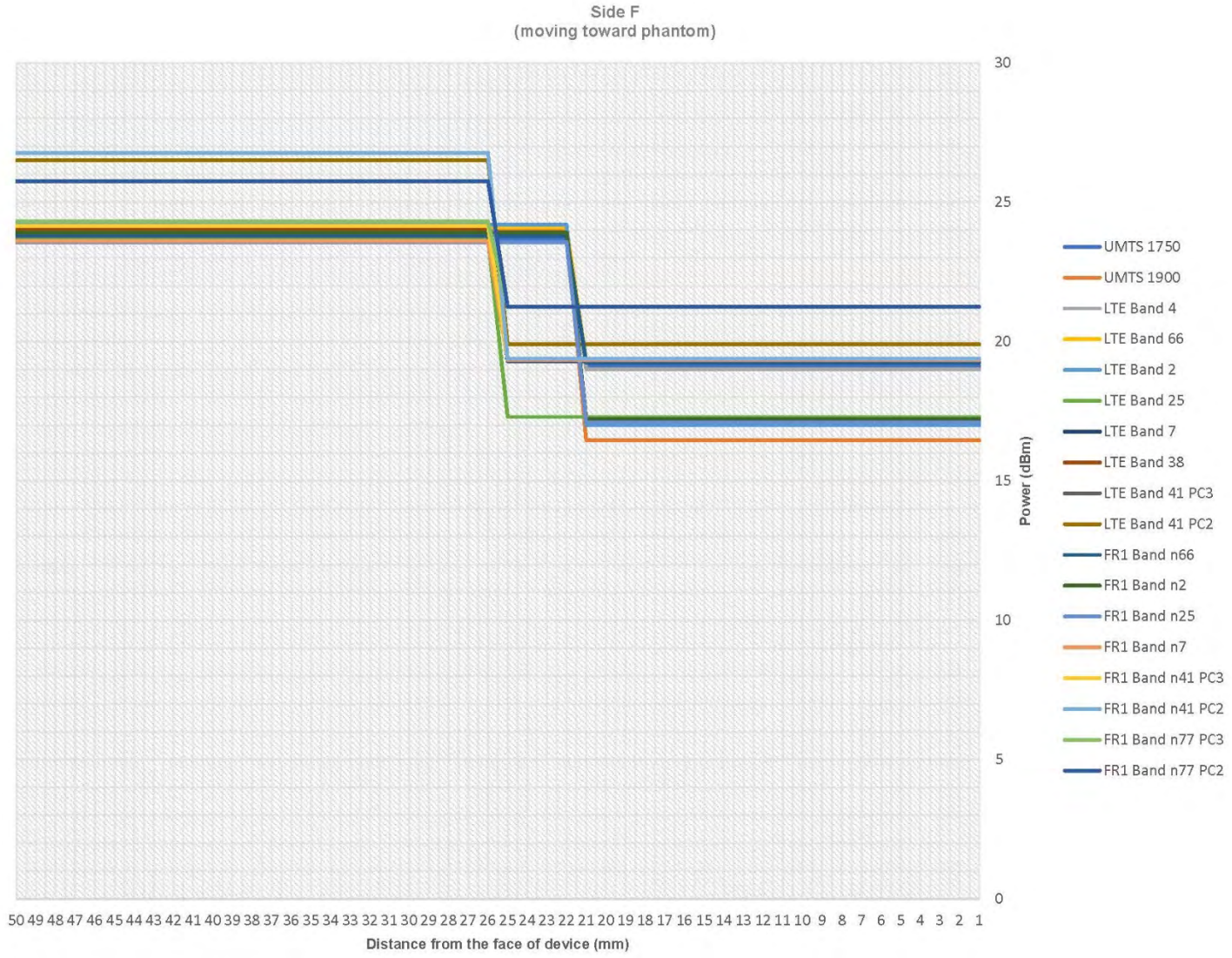


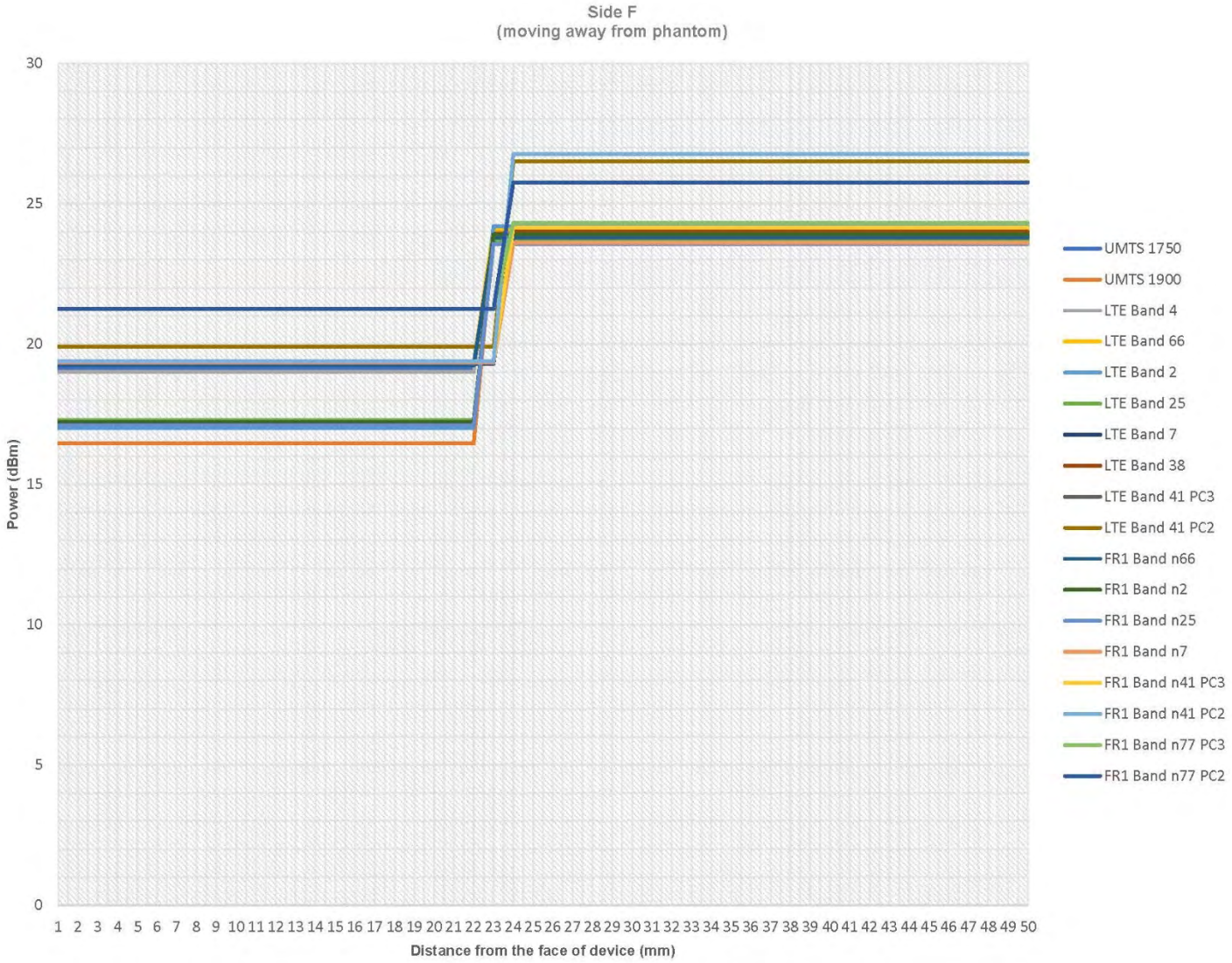












FR1 Conducted Power

GENERAL NOTE:

1. NR implementation of n2, n5, n7, n25, n41, n66 and n71 is limited to EN-DC operations only (NSA), with LTE Bands 2/7/12/66/48 acting as anchor bands, SAR tests for NR Bands and LTE Anchors Bands were performed separately due to limitations in SAR probe calibration factors. the detail EN-DC combination include in section3.3
2. 5G NR support SCS 15KHz / 30KHz, DFT-s/CP-OFDM, PI/2 BPSK/QPSK/16QAM/64QAM/256QAM and support Bandwidth include in section3.3
3. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. For DFT-s-OFDM and CP-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 2 and 3, the CP-OFDM mode will not higher than DFT-s-OFDM mode, therefore, similar FCC KDB 941225 D05 procedure for other modulation output power for each RB allocation configuration is > not ½ dB higher than the same configuration in DFT-s-Pi/2 BPSK and the reported SAR for the DFT-s-Pi/2 BPSK configuration is ≤ 1.45 W/kg; CP-OFDM measurement is unnecessary.
   b. For DFT-s-OFDM output power measurement reduction, according to 38.101 maximum power reduction for power class 3, full measurement on Pi/2 BPSK/QPSK/16QAM/64QMA/256QAM with larger bandwidth, for smaller bandwidth output power also spot check 1RB 1offset configuration at Pi/2 BPSK to ensure output power will not ½ dB higher than largest supported bandwidth.
   c. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   d. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
   e. PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   f. QPSK/16QAM/64QAM/256QAM output powers are not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   g. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device.
4. FR1 band 2/5 SAR test was covered by Band 25/26; according to April 2015 TCB workshop, SAR test for overlapping FR1 bands can be reduced if
   a. the maximum output power, including tolerance, for the smaller band is ≤ the larger band to qualify for the SAR test exclusion
   b. the channel bandwidth and other operating parameters for the smaller band are fully supported by the larger band
5. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% duty cycle. The Qualcomm QRCT program was used to establish the connection.

3GPP 38.101 MPR FOR EN-DC

Table 6.2.2-1 Maximum power reduction (MPR) for power class 3

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

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

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

Table 6.2.2-2 Maximum power reduction (MPR) for power class 2

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

Table 9.1 FR1 Full Power Measurements

<n2 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376000	380000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1880	1900		
20	PI/2 BPSK	1	1	23.57	23.74	23.85	24.0	0.0
20	PI/2 BPSK	1	53	23.95	23.91	23.90		
20	PI/2 BPSK	1	104	23.53	23.66	23.69		
20	PI/2 BPSK	50	0	22.83	22.95	22.81	23.0	1.0
20	PI/2 BPSK	50	28	22.56	22.89	22.95		
20	PI/2 BPSK	50	56	22.98	22.94	22.59		
20	PI/2 BPSK	100	0	22.92	22.78	22.60	23.0	1.0
20	QPSK	1	1	23.70	23.79	23.86	24.0	0.0
20	QPSK	1	53	23.96	23.61	23.73		
20	QPSK	1	104	23.69	23.75	23.51		
20	QPSK	50	0	22.80	22.71	22.63	23.0	1.0
20	QPSK	50	28	22.99	22.64	22.75		
20	QPSK	50	56	22.65	22.74	22.59		
20	QPSK	100	0	22.91	22.53	22.75	23.0	1.0
20	16QAM	1	1	23.88	23.88	23.84	24.0	0.0
20	16QAM	1	53	23.55	23.96	23.58		
20	16QAM	1	104	23.85	23.91	23.84		
20	16QAM	50	0	22.92	22.53	22.83	23.0	1.0
20	16QAM	50	28	22.86	22.88	22.93		
20	16QAM	50	56	22.92	22.80	22.60		
20	16QAM	100	0	22.99	22.52	22.78	23.0	1.0
20	64QAM	1	1	23.99	23.72	23.61	24.0	0.0
20	64QAM	1	53	23.51	23.91	23.56		
20	64QAM	1	104	23.59	23.93	23.80		
20	64QAM	50	0	22.89	22.66	22.93	23.0	1.0
20	64QAM	50	28	22.53	22.90	22.96		
20	64QAM	50	56	22.65	22.56	22.57		
20	64QAM	100	0	22.95	22.57	22.77	23.0	1.0
20	256QAM	1	1	23.81	23.66	23.81	24.0	0.0
20	256QAM	1	53	23.95	23.59	23.66		
20	256QAM	1	104	23.94	24.00	23.90		
20	256QAM	50	0	22.55	22.76	22.96	23.0	1.0
20	256QAM	50	28	22.80	22.68	22.91		
20	256QAM	50	56	22.66	22.94	22.79		
20	256QAM	100	0	22.53	22.95	22.81	23.0	1.0
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	PI/2 BPSK	1	1	23.92	23.98	23.90	24.0	0.0
Channel				371000	376000	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	PI/2 BPSK	1	1	23.66	23.58	23.92	24.0	0.0
Channel				370500	376000	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	PI/2 BPSK	1	1	23.64	23.79	23.59	24.0	0.0

<n2 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376000	380000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1880	1900		
20	PI/2 BPSK	1	1	20.60	21.00	20.68	21.0	0.0
20	PI/2 BPSK	1	53	20.53	20.68	20.86		
20	PI/2 BPSK	1	104	20.83	20.78	20.57		
20	PI/2 BPSK	50	0	19.99	19.55	19.70	20.0	1.0
20	PI/2 BPSK	50	28	19.72	19.52	19.73		
20	PI/2 BPSK	50	56	19.80	19.74	19.65		
20	PI/2 BPSK	100	0	19.78	19.88	19.79	20.0	1.0
20	QPSK	1	1	20.58	20.80	20.86	21.0	0.0
20	QPSK	1	53	20.60	20.65	20.96		
20	QPSK	1	104	20.76	20.58	20.88		
20	QPSK	50	0	19.84	19.99	19.83	20.0	1.0
20	QPSK	50	28	19.98	19.82	19.61		
20	QPSK	50	56	19.73	19.64	19.73		
20	QPSK	100	0	19.76	19.51	19.74	20.0	1.0
20	16QAM	1	1	20.76	20.57	20.78	21.0	0.0
20	16QAM	1	53	20.51	20.93	20.63		
20	16QAM	1	104	20.56	20.50	20.90		
20	16QAM	50	0	19.80	19.63	19.78	20.0	1.0
20	16QAM	50	28	19.54	19.83	19.86		
20	16QAM	50	56	19.52	19.73	19.97		
20	16QAM	100	0	19.67	19.86	19.86	20.0	1.0
20	64QAM	1	1	20.93	20.90	20.86	21.0	0.0
20	64QAM	1	53	20.75	20.85	20.63		
20	64QAM	1	104	20.73	20.98	20.77		
20	64QAM	50	0	19.98	19.66	19.71	20.0	1.0
20	64QAM	50	28	19.92	19.62	19.99		
20	64QAM	50	56	19.97	19.62	19.54		
20	64QAM	100	0	19.83	19.84	19.57	20.0	1.0
20	256QAM	1	1	20.64	21.00	20.72	21.0	0.0
20	256QAM	1	53	20.77	20.65	20.67		
20	256QAM	1	104	20.61	20.83	20.69		
20	256QAM	50	0	19.51	19.98	19.72	20.0	1.0
20	256QAM	50	28	19.70	19.56	19.98		
20	256QAM	50	56	19.92	19.96	19.75		
20	256QAM	100	0	19.80	19.73	19.70	20.0	1.0
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	PI/2 BPSK	1	1	20.56	20.82	20.52	21.0	0.0
Channel				371000	376000	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	PI/2 BPSK	1	1	20.58	20.53	20.73	21.0	0.0
Channel				370500	376000	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	PI/2 BPSK	1	1	20.73	20.95	20.76	21.0	0.0

<n5 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				166800	167300	167300	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				834	836.5	839		
20	PI/2 BPSK	1	1	23.85	23.76	23.99	24.0	0.0
20	PI/2 BPSK	1	53	23.58	23.88	23.54		
20	PI/2 BPSK	1	104	23.67	23.99	23.94		
20	PI/2 BPSK	50	0	22.83	22.94	22.59	23.0	1.0
20	PI/2 BPSK	50	28	22.85	22.57	22.56		
20	PI/2 BPSK	50	56	22.69	22.78	22.58		
20	PI/2 BPSK	100	0	22.65	22.54	22.66	23.0	1.0
20	QPSK	1	1	23.83	23.89	23.73	24.0	0.0
20	QPSK	1	53	23.65	23.62	23.92		
20	QPSK	1	104	23.73	23.59	23.83		
20	QPSK	50	0	22.92	22.65	22.50	23.0	1.0
20	QPSK	50	28	22.83	22.81	22.79		
20	QPSK	50	56	22.92	22.92	22.63		
20	QPSK	100	0	22.58	22.82	22.89	23.0	1.0
20	16QAM	1	1	23.51	23.54	23.78	24.0	0.0
20	16QAM	1	53	23.81	23.65	23.93		
20	16QAM	1	104	23.90	23.59	23.67		
20	16QAM	50	0	22.78	22.78	22.58	23.0	1.0
20	16QAM	50	28	22.70	22.71	22.68		
20	16QAM	50	56	22.73	22.84	22.70		
20	16QAM	100	0	22.80	22.81	22.63	23.0	1.0
20	64QAM	1	1	23.97	23.92	23.68	24.0	0.0
20	64QAM	1	53	23.79	23.80	23.93		
20	64QAM	1	104	23.56	23.57	23.96		
20	64QAM	50	0	22.78	22.51	22.56	23.0	1.0
20	64QAM	50	28	22.83	22.97	22.92		
20	64QAM	50	56	22.76	22.58	22.59		
20	64QAM	100	0	22.64	22.99	22.90	23.0	1.0
20	256QAM	1	1	23.97	23.88	23.52	24.0	0.0
20	256QAM	1	53	23.56	23.81	23.63		
20	256QAM	1	104	23.80	23.70	23.62		
20	256QAM	50	0	22.85	22.72	22.93	23.0	1.0
20	256QAM	50	28	22.75	22.66	22.95		
20	256QAM	50	56	22.83	22.87	22.85		
20	256QAM	100	0	22.68	22.74	22.66	23.0	1.0
Channel				166300	167300	167800	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				831.5	836.5	841.5		
15	PI/2 BPSK	1	1	23.79	23.51	23.53	24.0	0.0
Channel				165800	167300	168200	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				829	836.5	844		
10	PI/2 BPSK	1	1	23.63	23.61	23.74	24.0	0.0
Channel				165300	167300	168700	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				826.5	836.5	846.5		
5	PI/2 BPSK	1	1	23.69	23.83	23.98	24.0	0.0

<n7 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				502000	507000	512000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2510	2535	2560		
20	PI/2 BPSK	1	1	23.76	23.73	23.60	24.0	0.0
20	PI/2 BPSK	1	53	23.98	23.60	23.72		
20	PI/2 BPSK	1	104	23.71	23.84	23.75		
20	PI/2 BPSK	50	0	22.91	22.63	23.00	23.0	1.0
20	PI/2 BPSK	50	28	22.66	22.65	22.65		
20	PI/2 BPSK	50	56	22.81	22.98	22.95		
20	PI/2 BPSK	100	0	22.92	22.70	22.99	23.0	1.0
20	QPSK	1	1	23.90	23.56	23.80	24.0	0.0
20	QPSK	1	53	23.94	23.92	23.63		
20	QPSK	1	104	23.58	23.63	23.68		
20	QPSK	50	0	22.97	22.93	22.85	23.0	1.0
20	QPSK	50	28	22.62	22.70	22.70		
20	QPSK	50	56	22.60	22.56	22.51		
20	QPSK	100	0	22.81	22.51	22.90	23.0	1.0
20	16QAM	1	1	23.55	23.68	23.59	24.0	0.0
20	16QAM	1	53	23.52	23.74	23.72		
20	16QAM	1	104	23.66	23.82	23.62		
20	16QAM	50	0	22.62	22.54	22.84	23.0	1.0
20	16QAM	50	28	22.97	22.51	22.59		
20	16QAM	50	56	22.50	22.93	22.99		
20	16QAM	100	0	22.57	22.80	22.97	23.0	1.0
20	64QAM	1	1	23.71	23.89	23.76	24.0	0.0
20	64QAM	1	53	23.79	23.54	23.99		
20	64QAM	1	104	23.89	23.76	23.67		
20	64QAM	50	0	22.78	23.00	22.82	23.0	1.0
20	64QAM	50	28	22.96	22.60	22.96		
20	64QAM	50	56	22.57	22.63	22.97		
20	64QAM	100	0	22.51	22.83	22.69	23.0	1.0
20	256QAM	1	1	23.55	23.87	23.99	24.0	0.0
20	256QAM	1	53	23.51	23.81	23.79		
20	256QAM	1	104	23.70	23.82	23.77		
20	256QAM	50	0	22.65	22.52	23.00	23.0	1.0
20	256QAM	50	28	22.87	22.92	22.94		
20	256QAM	50	56	22.76	22.83	22.62		
20	256QAM	100	0	22.98	22.79	22.83	23.0	1.0
Channel				501500	507000	511500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	PI/2 BPSK	1	1	23.72	23.85	23.58	24.0	0.0
Channel				501000	507000	511000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	PI/2 BPSK	1	1	23.94	23.94	23.85	24.0	0.0
Channel				500500	507000	510500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	PI/2 BPSK	1	1	23.77	23.90	23.76	24.0	0.0

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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376500	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1882.5	1905		
20	PI/2 BPSK	1	1	23.94	23.90	23.97	24.0	0.0
20	PI/2 BPSK	1	53	23.86	23.57	23.86		
20	PI/2 BPSK	1	104	23.93	23.94	23.88		
20	PI/2 BPSK	50	0	22.99	22.54	22.96	23.0	1.0
20	PI/2 BPSK	50	28	22.73	22.79	22.74		
20	PI/2 BPSK	50	56	22.51	22.69	22.80		
20	PI/2 BPSK	100	0	22.96	22.75	22.61	23.0	1.0
20	QPSK	1	1	23.60	23.51	23.69	24.0	0.0
20	QPSK	1	53	23.94	23.94	23.96		
20	QPSK	1	104	23.83	23.60	23.77		
20	QPSK	50	0	22.78	22.67	22.85	23.0	1.0
20	QPSK	50	28	22.69	22.57	22.70		
20	QPSK	50	56	22.63	22.92	22.65		
20	QPSK	100	0	22.79	22.77	22.95	23.0	1.0
20	16QAM	1	1	23.70	23.95	23.59	24.0	0.0
20	16QAM	1	53	23.90	23.69	23.96		
20	16QAM	1	104	23.55	23.73	23.79		
20	16QAM	50	0	22.57	22.65	22.67	23.0	1.0
20	16QAM	50	28	22.96	22.61	22.71		
20	16QAM	50	56	22.59	22.99	22.89		
20	16QAM	100	0	23.00	22.69	22.96	23.0	1.0
20	64QAM	1	1	23.76	23.60	23.87	24.0	0.0
20	64QAM	1	53	23.62	23.84	23.78		
20	64QAM	1	104	23.92	23.99	23.70		
20	64QAM	50	0	22.71	22.98	22.50	23.0	1.0
20	64QAM	50	28	22.96	22.66	22.95		
20	64QAM	50	56	22.95	22.94	22.95		
20	64QAM	100	0	22.56	22.69	22.77	23.0	1.0
20	256QAM	1	1	23.95	23.83	23.57	24.0	0.0
20	256QAM	1	53	23.95	23.62	23.63		
20	256QAM	1	104	23.77	23.55	23.90		
20	256QAM	50	0	22.65	22.99	22.73	23.0	1.0
20	256QAM	50	28	22.69	22.52	22.84		
20	256QAM	50	56	22.55	22.83	22.98		
20	256QAM	100	0	22.80	22.75	22.69	23.0	1.0
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1882.5	1907.5		
15	PI/2 BPSK	1	1	23.96	23.96	23.81	24.0	0.0
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1882.5	1910		
10	PI/2 BPSK	1	1	23.83	23.60	23.63	24.0	0.0
Channel				370500	376500	382500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1882.5	1912.5		
5	PI/2 BPSK	1	1	23.87	23.83	23.80	24.0	0.0

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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376500	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1882.5	1905		
20	PI/2 BPSK	1	1	20.92	20.82	20.57	21.0	0.0
20	PI/2 BPSK	1	53	20.78	20.87	20.74		
20	PI/2 BPSK	1	104	20.87	20.95	20.93		
20	PI/2 BPSK	50	0	19.53	19.91	19.78	20.0	1.0
20	PI/2 BPSK	50	28	19.72	19.66	19.80		
20	PI/2 BPSK	50	56	19.91	19.99	19.51		
20	PI/2 BPSK	100	0	19.88	19.83	19.79	20.0	1.0
20	QPSK	1	1	20.61	20.55	20.88	21.0	0.0
20	QPSK	1	53	20.66	20.82	20.70		
20	QPSK	1	104	20.57	20.63	20.86		
20	QPSK	50	0	20.00	19.57	19.66	20.0	1.0
20	QPSK	50	28	19.99	19.92	19.53		
20	QPSK	50	56	19.63	19.73	19.66		
20	QPSK	100	0	19.90	19.97	19.61	20.0	1.0
20	16QAM	1	1	20.63	20.51	20.52	21.0	0.0
20	16QAM	1	53	20.98	20.84	20.92		
20	16QAM	1	104	20.87	20.87	21.00		
20	16QAM	50	0	19.54	19.50	19.59	20.0	1.0
20	16QAM	50	28	19.65	19.75	19.54		
20	16QAM	50	56	19.70	19.62	19.63		
20	16QAM	100	0	19.58	19.92	19.90	20.0	1.0
20	64QAM	1	1	20.88	20.64	20.68	21.0	0.0
20	64QAM	1	53	20.97	20.95	20.69		
20	64QAM	1	104	20.88	20.81	20.66		
20	64QAM	50	0	19.55	19.63	19.94	20.0	1.0
20	64QAM	50	28	19.91	19.68	19.98		
20	64QAM	50	56	19.65	19.63	19.82		
20	64QAM	100	0	19.92	19.88	19.82	20.0	1.0
20	256QAM	1	1	20.64	20.99	20.59	21.0	0.0
20	256QAM	1	53	20.84	20.66	20.78		
20	256QAM	1	104	20.82	20.55	20.68		
20	256QAM	50	0	19.82	19.58	19.96	20.0	1.0
20	256QAM	50	28	19.95	19.77	19.68		
20	256QAM	50	56	19.94	19.66	19.92		
20	256QAM	100	0	19.99	19.98	19.65	20.0	1.0
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1882.5	1907.5		
15	PI/2 BPSK	1	1	20.53	20.60	20.83	21.0	0.0
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1882.5	1910		
10	PI/2 BPSK	1	1	20.81	20.71	20.66	21.0	0.0
Channel				370500	376500	382500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1882.5	1912.5		
5	PI/2 BPSK	1	1	20.51	20.71	20.57	21.0	0.0

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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				164800	166300	167800	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				824	831.5	839		
20	PI/2 BPSK	1	1	23.53	23.59	23.72	24.0	0.0
20	PI/2 BPSK	1	53	23.70	23.87	23.95		
20	PI/2 BPSK	1	104	23.83	23.87	23.80		
20	PI/2 BPSK	50	0	22.75	23.00	22.56	23.0	1.0
20	PI/2 BPSK	50	28	22.81	22.56	22.80		
20	PI/2 BPSK	50	56	22.73	22.77	22.97		
20	PI/2 BPSK	100	0	22.93	22.72	22.69	23.0	1.0
20	QPSK	1	1	23.82	23.53	23.77	24.0	0.0
20	QPSK	1	53	23.60	23.73	23.64		
20	QPSK	1	104	23.90	23.71	23.71		
20	QPSK	50	0	22.97	22.56	22.94	23.0	1.0
20	QPSK	50	28	22.97	22.79	22.77		
20	QPSK	50	56	22.80	22.61	22.71		
20	QPSK	100	0	22.70	22.78	22.93	23.0	1.0
20	16QAM	1	1	23.86	24.00	23.58	24.0	0.0
20	16QAM	1	53	23.86	23.75	23.76		
20	16QAM	1	104	23.98	23.69	23.65		
20	16QAM	50	0	22.78	22.83	22.73	23.0	1.0
20	16QAM	50	28	22.81	22.98	22.55		
20	16QAM	50	56	22.57	22.62	22.75		
20	16QAM	100	0	22.81	22.58	22.62	23.0	1.0
20	64QAM	1	1	23.56	23.51	23.94	24.0	0.0
20	64QAM	1	53	23.56	23.64	23.52		
20	64QAM	1	104	23.66	23.67	23.70		
20	64QAM	50	0	22.68	22.77	22.82	23.0	1.0
20	64QAM	50	28	22.78	22.92	22.80		
20	64QAM	50	56	22.62	22.71	22.81		
20	64QAM	100	0	22.50	22.75	22.61	23.0	1.0
20	256QAM	1	1	23.61	23.93	23.60	24.0	0.0
20	256QAM	1	53	23.59	23.72	23.64		
20	256QAM	1	104	23.97	23.86	23.79		
20	256QAM	50	0	22.95	22.64	22.85	23.0	1.0
20	256QAM	50	28	22.73	22.90	22.94		
20	256QAM	50	56	22.87	22.65	22.50		
20	256QAM	100	0	22.81	22.82	22.54	23.0	1.0
Channel				164300	166300	168300	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				821.5	831.5	841.5		
15	PI/2 BPSK	1	1	23.91	23.70	23.87	24.0	0.0
Channel				163800	166300	168800	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				819	831.5	844		
10	PI/2 BPSK	1	1	23.92	23.96	23.53	24.0	0.0
Channel				163300	166300	169300	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				816.5	831.5	846.5		
5	PI/2 BPSK	1	1	23.99	23.73	23.71	24.0	0.0

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BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	24.47	24.40	24.30	24.5	0.0
20	PI/2 BPSK	1	53	24.24	24.16	24.04		
20	PI/2 BPSK	1	104	24.14	24.29	24.11		
20	PI/2 BPSK	50	0	23.18	23.33	23.47	23.5	1.0
20	PI/2 BPSK	50	28	23.15	23.43	23.16		
20	PI/2 BPSK	50	56	23.25	23.31	23.33		
20	PI/2 BPSK	100	0	23.38	23.22	23.25	23.5	1.0
20	QPSK	1	1	24.49	24.13	24.27	24.5	0.0
20	QPSK	1	53	24.18	24.20	24.47		
20	QPSK	1	104	24.26	24.44	24.26		
20	QPSK	50	0	23.40	23.12	23.07	23.5	1.0
20	QPSK	50	28	23.04	23.49	23.14		
20	QPSK	50	56	23.46	23.48	23.05		
20	QPSK	100	0	23.19	23.15	23.49	23.5	1.0
20	16QAM	1	1	24.08	24.44	24.10	24.5	0.0
20	16QAM	1	53	24.15	24.20	24.32		
20	16QAM	1	104	24.04	24.16	24.23		
20	16QAM	50	0	23.10	23.08	23.09	23.5	1.0
20	16QAM	50	28	23.33	23.11	23.12		
20	16QAM	50	56	23.07	23.18	23.49		
20	16QAM	100	0	23.03	23.25	23.42	23.5	1.0
20	64QAM	1	1	24.39	24.48	24.28	24.5	0.0
20	64QAM	1	53	24.13	24.15	24.25		
20	64QAM	1	104	24.09	24.27	24.20		
20	64QAM	50	0	23.34	23.43	23.00	23.5	1.0
20	64QAM	50	28	23.24	23.37	23.30		
20	64QAM	50	56	23.28	23.26	23.30		
20	64QAM	100	0	23.16	23.25	23.23	23.5	1.0
20	256QAM	1	1	24.04	24.16	24.19	24.5	0.0
20	256QAM	1	53	24.07	24.07	24.33		
20	256QAM	1	104	24.32	24.27	24.43		
20	256QAM	50	0	23.34	23.35	23.30	23.5	1.0
20	256QAM	50	28	23.12	23.39	23.30		
20	256QAM	50	56	23.39	23.28	23.31		
20	256QAM	100	0	23.13	23.50	23.18	23.5	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	24.44	24.16	24.07	24.5	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	24.23	24.18	24.12	24.5	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	24.11	24.27	24.04	24.5	0.0

<n41 PC3 Ant3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	21.36	21.36	21.35	21.5	0.0
20	PI/2 BPSK	1	53	21.04	21.18	21.28		
20	PI/2 BPSK	1	104	21.32	21.08	21.32		
20	PI/2 BPSK	50	0	20.26	20.46	20.19	20.5	1.0
20	PI/2 BPSK	50	28	20.30	20.25	20.39		
20	PI/2 BPSK	50	56	20.07	20.14	20.31		
20	PI/2 BPSK	100	0	20.01	20.01	20.42	20.5	1.0
20	QPSK	1	1	21.47	21.46	21.10	21.5	0.0
20	QPSK	1	53	21.47	21.33	21.10		
20	QPSK	1	104	21.42	21.50	21.22		
20	QPSK	50	0	20.43	20.06	20.29	20.5	1.0
20	QPSK	50	28	20.28	20.37	20.04		
20	QPSK	50	56	20.42	20.42	20.24		
20	QPSK	100	0	20.36	20.10	20.07	20.5	1.0
20	16QAM	1	1	21.06	21.44	21.02	21.5	0.0
20	16QAM	1	53	21.49	21.26	21.48		
20	16QAM	1	104	21.06	21.01	21.13		
20	16QAM	50	0	20.23	20.06	20.25	20.5	1.0
20	16QAM	50	28	20.18	20.36	20.12		
20	16QAM	50	56	20.02	20.12	20.38		
20	16QAM	100	0	20.42	20.23	20.23	20.5	1.0
20	64QAM	1	1	21.01	21.50	21.07	21.5	0.0
20	64QAM	1	53	21.42	21.40	21.25		
20	64QAM	1	104	21.39	21.20	21.45		
20	64QAM	50	0	20.04	20.40	20.49	20.5	1.0
20	64QAM	50	28	20.01	20.25	20.14		
20	64QAM	50	56	20.38	20.40	20.29		
20	64QAM	100	0	20.08	20.46	20.43	20.5	1.0
20	256QAM	1	1	21.38	21.02	21.49	21.5	0.0
20	256QAM	1	53	21.34	21.18	21.02		
20	256QAM	1	104	21.09	21.09	21.37		
20	256QAM	50	0	20.50	20.44	20.45	20.5	1.0
20	256QAM	50	28	20.33	20.00	20.08		
20	256QAM	50	56	20.27	20.07	20.47		
20	256QAM	100	0	20.47	20.05	20.09	20.5	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	21.31	21.29	21.45	21.5	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	21.09	21.46	21.30	21.5	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	21.09	21.29	21.10	21.5	0.0

<n41 PC2 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	26.87	26.87	26.88	27.0	0.0
20	PI/2 BPSK	1	53	26.93	26.77	26.53		
20	PI/2 BPSK	1	104	26.89	26.84	26.69		
20	PI/2 BPSK	50	0	25.86	25.61	25.82	26.0	1.0
20	PI/2 BPSK	50	28	25.85	26.00	25.79		
20	PI/2 BPSK	50	56	25.57	25.59	25.79		
20	PI/2 BPSK	100	0	25.61	25.81	25.50	26.0	1.0
20	QPSK	1	1	26.61	26.95	26.63	27.0	0.0
20	QPSK	1	53	26.53	26.70	26.61		
20	QPSK	1	104	26.88	26.73	26.69		
20	QPSK	50	0	25.84	25.77	25.58	26.0	1.0
20	QPSK	50	28	25.69	25.81	25.65		
20	QPSK	50	56	25.98	25.98	25.79		
20	QPSK	100	0	25.75	25.87	25.61	26.0	1.0
20	16QAM	1	1	26.89	26.65	26.56	27.0	0.0
20	16QAM	1	53	26.94	26.60	26.68		
20	16QAM	1	104	26.74	26.83	26.55		
20	16QAM	50	0	25.91	25.88	25.90	26.0	1.0
20	16QAM	50	28	25.97	25.75	25.71		
20	16QAM	50	56	25.74	25.79	25.81		
20	16QAM	100	0	25.63	25.63	25.69	26.0	1.0
20	64QAM	1	1	26.82	26.64	26.80	27.0	0.0
20	64QAM	1	53	26.77	26.98	26.72		
20	64QAM	1	104	26.59	26.97	26.77		
20	64QAM	50	0	25.63	25.60	25.82	26.0	1.0
20	64QAM	50	28	25.54	25.82	25.51		
20	64QAM	50	56	25.88	25.89	25.84		
20	64QAM	100	0	25.52	25.87	25.85	26.0	1.0
20	256QAM	1	1	26.96	26.93	26.65	27.0	0.0
20	256QAM	1	53	26.55	26.73	26.72		
20	256QAM	1	104	26.77	26.79	26.59		
20	256QAM	50	0	25.57	25.60	25.83	26.0	1.0
20	256QAM	50	28	25.80	25.65	25.59		
20	256QAM	50	56	25.90	25.93	25.82		
20	256QAM	100	0	25.70	25.86	25.65	26.0	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	26.52	26.88	26.52	27.0	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	26.85	26.76	26.85	27.0	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	26.70	26.89	26.61	27.0	0.0

<n41 PC2 Ant3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	23.53	23.55	23.89	24.0	0.0
20	PI/2 BPSK	1	53	23.79	23.91	23.83		
20	PI/2 BPSK	1	104	23.60	23.80	23.57		
20	PI/2 BPSK	50	0	22.76	22.66	22.69	23.0	1.0
20	PI/2 BPSK	50	28	22.86	22.63	22.88		
20	PI/2 BPSK	50	56	22.86	22.80	22.83		
20	PI/2 BPSK	100	0	22.87	22.97	22.52	23.0	1.0
20	QPSK	1	1	23.56	23.66	23.62	24.0	0.0
20	QPSK	1	53	23.89	23.73	23.51		
20	QPSK	1	104	23.75	23.87	23.68		
20	QPSK	50	0	22.57	22.88	22.64	23.0	1.0
20	QPSK	50	28	22.54	22.56	22.52		
20	QPSK	50	56	22.73	22.55	22.72		
20	QPSK	100	0	22.64	22.86	22.77	23.0	1.0
20	16QAM	1	1	23.72	23.57	23.81	24.0	0.0
20	16QAM	1	53	23.93	23.61	23.87		
20	16QAM	1	104	23.95	23.93	23.67		
20	16QAM	50	0	22.71	22.57	22.72	23.0	1.0
20	16QAM	50	28	22.52	22.69	22.96		
20	16QAM	50	56	22.79	22.99	22.72		
20	16QAM	100	0	22.78	22.84	22.51	23.0	1.0
20	64QAM	1	1	23.55	23.65	23.58	24.0	0.0
20	64QAM	1	53	23.55	23.79	23.61		
20	64QAM	1	104	23.99	23.71	23.67		
20	64QAM	50	0	22.91	22.86	22.69	23.0	1.0
20	64QAM	50	28	22.56	22.87	22.67		
20	64QAM	50	56	22.89	22.74	22.81		
20	64QAM	100	0	22.99	22.53	22.93	23.0	1.0
20	256QAM	1	1	23.61	23.77	23.82	24.0	0.0
20	256QAM	1	53	23.96	23.77	23.52		
20	256QAM	1	104	23.71	23.99	23.70		
20	256QAM	50	0	22.61	22.75	22.91	23.0	1.0
20	256QAM	50	28	22.57	22.61	22.69		
20	256QAM	50	56	22.97	22.64	22.84		
20	256QAM	100	0	22.61	22.53	22.58	23.0	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	23.75	23.50	23.76	24.0	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	23.62	23.61	23.61	24.0	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	23.78	23.58	23.90	24.0	0.0

<n48 Ant4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				637333	643113	646000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3560	3625	3690		
20	PI/2 BPSK	1	1	21.39	21.35	21.30	21.5	0.0
20	PI/2 BPSK	1	53	21.43	21.36	21.02		
20	PI/2 BPSK	1	104	21.39	21.41	21.45		
20	PI/2 BPSK	50	0	20.12	20.22	20.29	20.5	1.0
20	PI/2 BPSK	50	28	20.22	20.49	20.25		
20	PI/2 BPSK	50	56	20.16	20.48	20.26		
20	PI/2 BPSK	100	0	20.14	20.23	20.19	20.5	1.0
20	QPSK	1	1	21.49	21.36	21.45	21.5	0.0
20	QPSK	1	53	21.24	21.12	21.44		
20	QPSK	1	104	21.04	21.39	21.22		
20	QPSK	50	0	20.30	20.10	20.29	20.5	1.0
20	QPSK	50	28	20.29	20.00	20.20		
20	QPSK	50	56	20.45	20.29	20.09		
20	QPSK	100	0	20.00	20.04	20.34	20.5	1.0
20	16QAM	1	1	21.09	21.13	21.08	21.5	0.0
20	16QAM	1	53	21.12	21.01	21.14		
20	16QAM	1	104	21.00	21.40	21.14		
20	16QAM	50	0	20.28	20.38	20.17	20.5	1.0
20	16QAM	50	28	20.36	20.02	20.05		
20	16QAM	50	56	20.21	20.27	20.37		
20	16QAM	100	0	20.29	20.19	20.26	20.5	1.0
20	64QAM	1	1	21.07	21.23	21.35	21.5	0.0
20	64QAM	1	53	21.06	21.26	21.43		
20	64QAM	1	104	21.09	21.27	21.26		
20	64QAM	50	0	20.32	20.33	20.41	20.5	1.0
20	64QAM	50	28	20.41	20.40	20.41		
20	64QAM	50	56	20.24	20.35	20.30		
20	64QAM	100	0	20.10	20.02	20.30	20.5	1.0
20	256QAM	1	1	21.03	21.14	21.01	21.5	0.0
20	256QAM	1	53	21.11	21.07	21.47		
20	256QAM	1	104	21.21	21.46	21.36		
20	256QAM	50	0	20.48	20.24	20.02	20.5	1.0
20	256QAM	50	28	20.13	20.32	20.36		
20	256QAM	50	56	20.27	20.21	20.03		
20	256QAM	100	0	20.03	20.32	20.33	20.5	1.0
Channel				636833	643113	646500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3557.5	3625	3692.5		
15	PI/2 BPSK	1	1	21.35	21.06	21.40	21.5	0.0
Channel				636333	643113	647000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3555	3625	3695		
10	PI/2 BPSK	1	1	21.26	21.33	21.13	21.5	0.0
Channel				635833	643113	647000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3552.5	3625	3697.5		
5	PI/2 BPSK	1	1	21.44	21.44	21.49	21.5	0.0

<n48 Ant6>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				637333	643113	646000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3560	3625	3690		
20	PI/2 BPSK	1	1	18.29	18.15	18.36	18.5	0.0
20	PI/2 BPSK	1	53	18.04	18.24	18.24		
20	PI/2 BPSK	1	104	18.48	18.10	18.38		
20	PI/2 BPSK	50	0	17.22	17.40	17.00	17.5	1.0
20	PI/2 BPSK	50	28	17.20	17.45	17.31		
20	PI/2 BPSK	50	56	17.23	17.12	17.39		
20	PI/2 BPSK	100	0	17.05	17.18	17.43	17.5	1.0
20	QPSK	1	1	18.32	18.35	18.18	18.5	0.0
20	QPSK	1	53	18.18	18.45	18.34		
20	QPSK	1	104	18.49	18.42	18.03		
20	QPSK	50	0	17.35	17.19	17.17	17.5	1.0
20	QPSK	50	28	17.32	17.16	17.31		
20	QPSK	50	56	17.12	17.16	17.10		
20	QPSK	100	0	17.22	17.07	17.10	17.5	1.0
20	16QAM	1	1	18.20	18.41	18.07	18.5	0.0
20	16QAM	1	53	18.49	18.41	18.15		
20	16QAM	1	104	18.00	18.26	18.37		
20	16QAM	50	0	17.32	17.41	17.01	17.5	1.0
20	16QAM	50	28	17.06	17.14	17.43		
20	16QAM	50	56	17.23	17.15	17.20		
20	16QAM	100	0	17.30	17.16	17.10	17.5	1.0
20	64QAM	1	1	18.29	18.30	18.34	18.5	0.0
20	64QAM	1	53	18.07	18.04	18.40		
20	64QAM	1	104	18.18	18.34	18.10		
20	64QAM	50	0	17.48	17.32	17.41	17.5	1.0
20	64QAM	50	28	17.28	17.05	17.11		
20	64QAM	50	56	17.46	17.08	17.06		
20	64QAM	100	0	17.17	17.36	17.32	17.5	1.0
20	256QAM	1	1	18.36	18.18	18.28	18.5	0.0
20	256QAM	1	53	18.14	18.46	18.42		
20	256QAM	1	104	18.18	18.24	18.22		
20	256QAM	50	0	17.29	17.40	17.48	17.5	1.0
20	256QAM	50	28	17.33	17.04	17.40		
20	256QAM	50	56	17.33	17.05	17.13		
20	256QAM	100	0	17.29	17.12	17.17	17.5	1.0
Channel				636833	643113	646500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3557.5	3625	3692.5		
15	PI/2 BPSK	1	1	18.23	18.45	18.03	18.5	0.0
Channel				636333	643113	647000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3555	3625	3695		
10	PI/2 BPSK	1	1	18.06	18.04	18.41	18.5	0.0
Channel				635833	643113	647000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3552.5	3625	3697.5		
5	PI/2 BPSK	1	1	18.03	18.19	18.35	18.5	0.0

<n66 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				344000	349000	354000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1720	1745	1770		
20	PI/2 BPSK	1	1	23.58	23.67	23.86	24.0	0.0
20	PI/2 BPSK	1	53	23.58	23.80	23.80		
20	PI/2 BPSK	1	104	23.73	23.80	23.50		
20	PI/2 BPSK	50	0	22.64	22.63	22.68	23.0	1.0
20	PI/2 BPSK	50	28	22.86	22.62	22.86		
20	PI/2 BPSK	50	56	22.98	22.79	22.72		
20	PI/2 BPSK	100	0	22.88	22.85	22.69	23.0	1.0
20	QPSK	1	1	23.77	23.67	23.77	24.0	0.0
20	QPSK	1	53	23.90	23.82	23.73		
20	QPSK	1	104	23.86	23.97	23.81		
20	QPSK	50	0	22.75	22.54	22.79	23.0	1.0
20	QPSK	50	28	22.68	22.59	22.75		
20	QPSK	50	56	22.58	22.73	22.96		
20	QPSK	100	0	22.74	22.99	22.95	23.0	1.0
20	16QAM	1	1	23.59	23.63	23.79	24.0	0.0
20	16QAM	1	53	23.54	23.91	23.73		
20	16QAM	1	104	23.93	23.88	23.79		
20	16QAM	50	0	22.55	22.90	22.73	23.0	1.0
20	16QAM	50	28	22.50	22.64	22.52		
20	16QAM	50	56	22.70	22.50	22.75		
20	16QAM	100	0	22.89	22.70	22.87	23.0	1.0
20	64QAM	1	1	23.65	23.88	23.62	24.0	0.0
20	64QAM	1	53	23.51	23.92	23.83		
20	64QAM	1	104	23.70	23.85	24.00		
20	64QAM	50	0	22.59	22.53	22.64	23.0	1.0
20	64QAM	50	28	22.85	22.84	22.94		
20	64QAM	50	56	22.72	22.79	22.80		
20	64QAM	100	0	22.75	22.75	22.67	23.0	1.0
20	256QAM	1	1	23.76	23.78	24.00	24.0	0.0
20	256QAM	1	53	23.86	23.83	23.98		
20	256QAM	1	104	23.67	23.74	23.79		
20	256QAM	50	0	22.85	22.65	22.63	23.0	1.0
20	256QAM	50	28	22.87	22.98	22.62		
20	256QAM	50	56	22.93	22.78	22.62		
20	256QAM	100	0	22.91	22.54	22.51	23.0	1.0
Channel				343500	349000	354500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	PI/2 BPSK	1	1	23.67	23.53	23.68	24.0	0.0
Channel				343000	349000	355000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	PI/2 BPSK	1	1	23.67	23.53	23.73	24.0	0.0
Channel				342500	349000	355500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	PI/2 BPSK	1	1	23.82	23.93	23.87	24.0	0.0

<n66 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				344000	349000	354000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1720	1745	1770		
20	PI/2 BPSK	1	1	20.85	20.97	20.74	21.0	0.0
20	PI/2 BPSK	1	53	20.82	20.65	20.61		
20	PI/2 BPSK	1	104	20.56	20.60	20.59		
20	PI/2 BPSK	50	0	19.75	19.78	19.70	20.0	1.0
20	PI/2 BPSK	50	28	20.00	19.63	19.88		
20	PI/2 BPSK	50	56	19.92	19.58	19.87		
20	PI/2 BPSK	100	0	19.65	19.74	19.67	20.0	1.0
20	QPSK	1	1	20.88	20.80	20.94	21.0	0.0
20	QPSK	1	53	20.72	20.78	20.87		
20	QPSK	1	104	20.85	20.79	20.66		
20	QPSK	50	0	19.52	19.72	19.58	20.0	1.0
20	QPSK	50	28	19.92	19.54	19.75		
20	QPSK	50	56	19.89	19.70	19.63		
20	QPSK	100	0	19.53	19.50	19.51	20.0	1.0
20	16QAM	1	1	20.78	20.63	20.75	21.0	0.0
20	16QAM	1	53	20.78	20.74	20.65		
20	16QAM	1	104	20.60	20.65	20.77		
20	16QAM	50	0	19.98	19.54	19.76	20.0	1.0
20	16QAM	50	28	19.63	19.52	19.70		
20	16QAM	50	56	19.63	19.58	19.79		
20	16QAM	100	0	19.71	19.96	19.82	20.0	1.0
20	64QAM	1	1	20.63	20.63	20.60	21.0	0.0
20	64QAM	1	53	20.97	20.80	20.63		
20	64QAM	1	104	20.59	20.63	20.90		
20	64QAM	50	0	19.87	19.53	19.70	20.0	1.0
20	64QAM	50	28	19.93	20.00	19.66		
20	64QAM	50	56	19.58	19.51	19.77		
20	64QAM	100	0	19.98	20.00	20.00	20.0	1.0
20	256QAM	1	1	20.85	20.67	20.72	21.0	0.0
20	256QAM	1	53	20.75	20.88	20.72		
20	256QAM	1	104	20.63	20.68	20.98		
20	256QAM	50	0	19.73	19.91	19.85	20.0	1.0
20	256QAM	50	28	19.79	19.95	19.71		
20	256QAM	50	56	19.90	19.54	19.96		
20	256QAM	100	0	19.66	19.97	19.70	20.0	1.0
Channel				343500	349000	354500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	PI/2 BPSK	1	1	20.60	20.71	20.69	21.0	0.0
Channel				343000	349000	355000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	PI/2 BPSK	1	1	20.77	20.82	20.52	21.0	0.0
Channel				342500	349000	355500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	PI/2 BPSK	1	1	20.72	20.55	20.52	21.0	0.0

<n71 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				134600	136100	137600	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				673	680.5	688		
20	PI/2 BPSK	1	1	23.98	23.69	23.67	24.0	0.0
20	PI/2 BPSK	1	53	23.51	23.51	23.95		
20	PI/2 BPSK	1	104	23.66	23.95	23.81		
20	PI/2 BPSK	50	0	22.53	22.83	22.52	23.0	1.0
20	PI/2 BPSK	50	28	22.92	22.52	22.95		
20	PI/2 BPSK	50	56	22.82	22.72	22.88		
20	PI/2 BPSK	100	0	22.86	22.69	22.92	23.0	1.0
20	QPSK	1	1	23.58	23.79	23.61	24.0	0.0
20	QPSK	1	53	23.64	23.98	23.60		
20	QPSK	1	104	23.66	23.70	23.90		
20	QPSK	50	0	22.51	22.81	22.79	23.0	1.0
20	QPSK	50	28	22.60	22.85	22.70		
20	QPSK	50	56	22.71	22.86	22.58		
20	QPSK	100	0	22.72	22.71	22.51	23.0	1.0
20	16QAM	1	1	23.93	23.66	23.72	24.0	0.0
20	16QAM	1	53	23.80	23.71	23.72		
20	16QAM	1	104	23.93	23.60	23.93		
20	16QAM	50	0	22.86	22.87	22.86	23.0	1.0
20	16QAM	50	28	22.88	22.80	22.81		
20	16QAM	50	56	22.58	22.54	22.51		
20	16QAM	100	0	22.63	22.57	22.93	23.0	1.0
20	64QAM	1	1	23.97	23.72	23.57	24.0	0.0
20	64QAM	1	53	23.65	23.63	23.74		
20	64QAM	1	104	23.50	23.86	23.88		
20	64QAM	50	0	22.58	22.73	22.53	23.0	1.0
20	64QAM	50	28	22.66	22.63	22.87		
20	64QAM	50	56	22.84	22.97	22.63		
20	64QAM	100	0	22.97	22.61	22.60	23.0	1.0
20	256QAM	1	1	23.75	23.64	23.62	24.0	0.0
20	256QAM	1	53	23.67	23.73	23.87		
20	256QAM	1	104	23.86	23.67	23.71		
20	256QAM	50	0	22.78	22.86	22.99	23.0	1.0
20	256QAM	50	28	22.61	22.64	22.90		
20	256QAM	50	56	22.56	22.71	22.85		
20	256QAM	100	0	22.53	22.79	23.00	23.0	1.0
Channel				134100	136100	138100	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				670.5	680.5	690.5		
15	PI/2 BPSK	1	1	23.56	23.97	23.60	24.0	0.0
Channel				133600	136100	138600	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				668	680.5	693		
10	PI/2 BPSK	1	1	23.99	23.92	23.87	24.0	0.0
Channel				133100	136100	139100	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				665.5	680.5	685.5		
5	PI/2 BPSK	1	1	23.70	23.70	23.92	24.0	0.0

<n77 PC3 Ant4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	24.25	24.30	24.37	24.5	0.0
20	PI/2 BPSK	1	53	24.07	24.32	24.10		
20	PI/2 BPSK	1	104	24.10	24.16	24.14		
20	PI/2 BPSK	50	0	23.33	23.32	23.14	23.5	1.0
20	PI/2 BPSK	50	28	23.34	23.07	23.23		
20	PI/2 BPSK	50	56	23.01	23.48	23.02		
20	PI/2 BPSK	100	0	23.24	23.10	23.15	23.5	1.0
20	QPSK	1	1	24.01	24.36	24.43	24.5	0.0
20	QPSK	1	53	24.10	24.23	24.21		
20	QPSK	1	104	24.03	24.16	24.33		
20	QPSK	50	0	23.38	23.14	23.47	23.5	1.0
20	QPSK	50	28	23.03	23.01	23.16		
20	QPSK	50	56	23.30	23.30	23.35		
20	QPSK	100	0	23.31	23.28	23.19	23.5	1.0
20	16QAM	1	1	24.36	24.20	24.41	24.5	0.0
20	16QAM	1	53	24.47	24.39	24.27		
20	16QAM	1	104	24.42	24.10	24.34		
20	16QAM	50	0	23.18	23.03	23.07	23.5	1.0
20	16QAM	50	28	23.18	23.13	23.22		
20	16QAM	50	56	23.21	23.49	23.23		
20	16QAM	100	0	23.09	23.38	23.50	23.5	1.0
20	64QAM	1	1	24.45	24.12	24.27	24.5	0.0
20	64QAM	1	53	24.45	24.29	24.47		
20	64QAM	1	104	24.03	24.47	24.38		
20	64QAM	50	0	23.47	23.34	23.38	23.5	1.0
20	64QAM	50	28	23.16	23.21	23.49		
20	64QAM	50	56	23.20	23.37	23.25		
20	64QAM	100	0	23.26	23.49	23.45	23.5	1.0
20	256QAM	1	1	24.24	24.47	24.12	24.5	0.0
20	256QAM	1	53	24.33	24.38	24.40		
20	256QAM	1	104	24.25	24.09	24.17		
20	256QAM	50	0	23.34	23.28	23.19	23.5	1.0
20	256QAM	50	28	23.29	23.04	23.17		
20	256QAM	50	56	23.26	23.17	23.21		
20	256QAM	100	0	23.31	23.25	23.09	23.5	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	24.08	24.25	24.50	24.5	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	24.31	24.46	24.17	24.5	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	24.25	24.19	24.26	24.5	0.0

<n77 PC3 Ant6>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	21.36	21.11	21.25	21.5	0.0
20	PI/2 BPSK	1	53	21.08	21.19	21.19		
20	PI/2 BPSK	1	104	21.05	21.13	21.48		
20	PI/2 BPSK	50	0	20.25	20.08	20.23	20.5	1.0
20	PI/2 BPSK	50	28	20.20	20.26	20.32		
20	PI/2 BPSK	50	56	20.39	20.07	20.00		
20	PI/2 BPSK	100	0	20.29	20.34	20.06	20.5	1.0
20	QPSK	1	1	21.10	21.33	21.35	21.5	0.0
20	QPSK	1	53	21.41	21.13	21.12		
20	QPSK	1	104	21.12	21.24	21.34		
20	QPSK	50	0	20.47	20.21	20.25	20.5	1.0
20	QPSK	50	28	20.31	20.19	20.14		
20	QPSK	50	56	20.17	20.26	20.21		
20	QPSK	100	0	20.19	20.07	20.47	20.5	1.0
20	16QAM	1	1	21.47	21.44	21.47	21.5	0.0
20	16QAM	1	53	21.31	21.39	21.10		
20	16QAM	1	104	21.28	21.05	21.09		
20	16QAM	50	0	20.00	20.30	20.32	20.5	1.0
20	16QAM	50	28	20.15	20.21	20.42		
20	16QAM	50	56	20.10	20.09	20.06		
20	16QAM	100	0	20.14	20.23	20.15	20.5	1.0
20	64QAM	1	1	21.33	21.36	21.25	21.5	0.0
20	64QAM	1	53	21.19	21.45	21.23		
20	64QAM	1	104	21.39	21.19	21.39		
20	64QAM	50	0	20.33	20.29	20.38	20.5	1.0
20	64QAM	50	28	20.23	20.40	20.35		
20	64QAM	50	56	20.25	20.31	20.30		
20	64QAM	100	0	20.18	20.31	20.43	20.5	1.0
20	256QAM	1	1	21.13	21.15	21.01	21.5	0.0
20	256QAM	1	53	21.50	21.42	21.39		
20	256QAM	1	104	21.29	21.02	21.46		
20	256QAM	50	0	20.34	20.01	20.08	20.5	1.0
20	256QAM	50	28	20.18	20.31	20.41		
20	256QAM	50	56	20.34	20.04	20.02		
20	256QAM	100	0	20.35	20.15	20.20	20.5	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	21.02	21.32	21.05	21.5	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	21.19	21.06	21.33	21.5	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	21.07	21.30	21.13	21.5	0.0

<n77 PC2 Ant4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	25.73	25.90	25.90	26.0	0.0
20	PI/2 BPSK	1	53	25.64	25.76	25.93		
20	PI/2 BPSK	1	104	25.66	25.81	25.72		
20	PI/2 BPSK	50	0	24.63	24.82	24.64	25.0	1.0
20	PI/2 BPSK	50	28	24.91	24.53	24.75		
20	PI/2 BPSK	50	56	24.72	24.78	24.92		
20	PI/2 BPSK	100	0	24.80	24.88	24.91	25.0	1.0
20	QPSK	1	1	25.73	25.71	25.82	26.0	0.0
20	QPSK	1	53	25.76	25.87	25.62		
20	QPSK	1	104	25.81	25.90	25.54		
20	QPSK	50	0	25.00	24.86	24.76	25.0	1.0
20	QPSK	50	28	24.79	24.78	24.85		
20	QPSK	50	56	24.83	24.91	24.92		
20	QPSK	100	0	24.52	24.99	24.78	25.0	1.0
20	16QAM	1	1	25.79	25.91	25.86	26.0	0.0
20	16QAM	1	53	25.95	25.72	25.99		
20	16QAM	1	104	25.68	25.69	25.82		
20	16QAM	50	0	24.98	24.78	24.86	25.0	1.0
20	16QAM	50	28	24.86	24.94	24.99		
20	16QAM	50	56	24.75	24.64	24.65		
20	16QAM	100	0	24.75	24.63	24.99	25.0	1.0
20	64QAM	1	1	25.92	25.68	25.57	26.0	0.0
20	64QAM	1	53	25.50	25.52	25.94		
20	64QAM	1	104	25.79	25.51	25.50		
20	64QAM	50	0	24.85	24.70	24.63	25.0	1.0
20	64QAM	50	28	24.58	24.58	24.60		
20	64QAM	50	56	24.51	24.78	24.57		
20	64QAM	100	0	24.52	24.91	24.68	25.0	1.0
20	256QAM	1	1	25.63	25.89	25.56	26.0	0.0
20	256QAM	1	53	25.74	25.99	25.99		
20	256QAM	1	104	25.76	25.79	25.63		
20	256QAM	50	0	24.88	24.93	24.82	25.0	1.0
20	256QAM	50	28	24.73	24.95	24.82		
20	256QAM	50	56	24.52	24.84	24.75		
20	256QAM	100	0	24.58	24.96	24.86	25.0	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	25.60	25.77	25.83	26.0	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	25.81	25.68	25.72	26.0	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	25.71	25.60	25.70	26.0	0.0

<n77 PC2 Ant6>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	22.74	22.97	22.97	23.0	0.0
20	PI/2 BPSK	1	53	22.54	22.74	22.90		
20	PI/2 BPSK	1	104	22.89	22.53	22.67		
20	PI/2 BPSK	50	0	21.65	21.60	21.78	22.0	1.0
20	PI/2 BPSK	50	28	21.57	21.97	21.84		
20	PI/2 BPSK	50	56	21.80	21.60	21.53		
20	PI/2 BPSK	100	0	21.63	21.98	21.55	22.0	1.0
20	QPSK	1	1	22.83	22.79	22.54	23.0	0.0
20	QPSK	1	53	22.99	22.89	22.51		
20	QPSK	1	104	22.58	22.73	22.78		
20	QPSK	50	0	21.58	21.79	21.86	22.0	1.0
20	QPSK	50	28	21.62	21.91	21.73		
20	QPSK	50	56	21.73	21.87	21.87		
20	QPSK	100	0	21.53	21.73	21.62	22.0	1.0
20	16QAM	1	1	22.99	22.85	22.97	23.0	0.0
20	16QAM	1	53	22.63	22.86	22.54		
20	16QAM	1	104	22.67	22.79	22.83		
20	16QAM	50	0	21.53	21.78	21.93	22.0	1.0
20	16QAM	50	28	21.79	21.87	21.57		
20	16QAM	50	56	21.77	21.95	21.57		
20	16QAM	100	0	21.89	21.61	21.96	22.0	1.0
20	64QAM	1	1	22.53	22.56	22.96	23.0	0.0
20	64QAM	1	53	22.75	22.94	22.55		
20	64QAM	1	104	22.76	22.67	22.71		
20	64QAM	50	0	21.76	21.61	21.66	22.0	1.0
20	64QAM	50	28	21.94	21.98	22.00		
20	64QAM	50	56	21.70	21.63	21.53		
20	64QAM	100	0	21.74	21.52	21.93	22.0	1.0
20	256QAM	1	1	22.95	22.73	22.79	23.0	0.0
20	256QAM	1	53	22.94	22.58	22.54		
20	256QAM	1	104	22.80	22.58	22.53		
20	256QAM	50	0	21.90	21.52	21.97	22.0	1.0
20	256QAM	50	28	21.52	21.62	21.98		
20	256QAM	50	56	21.94	21.95	21.67		
20	256QAM	100	0	21.71	21.77	21.66	22.0	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	22.74	22.76	22.68	23.0	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	22.93	22.99	22.99	23.0	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	22.52	22.92	22.56	23.0	0.0

Table 9.2 FR1 Backoff Power Measurements

<n2 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376000	380000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1880	1900		
20	PI/2 BPSK	1	1	17.45	17.01	17.25	17.5	0.0
20	PI/2 BPSK	1	53	17.04	17.22	17.26		
20	PI/2 BPSK	1	104	17.11	17.29	17.15		
20	PI/2 BPSK	50	0	16.34	16.14	16.49	16.5	1.0
20	PI/2 BPSK	50	28	16.42	16.28	16.49		
20	PI/2 BPSK	50	56	16.35	16.10	16.13		
20	PI/2 BPSK	100	0	16.22	16.34	16.12	16.5	1.0
20	QPSK	1	1	17.27	17.30	17.47	17.5	0.0
20	QPSK	1	53	17.13	17.01	17.46		
20	QPSK	1	104	17.26	17.37	17.23		
20	QPSK	50	0	16.16	16.33	16.17	16.5	1.0
20	QPSK	50	28	16.16	16.04	16.13		
20	QPSK	50	56	16.07	16.27	16.28		
20	QPSK	100	0	16.39	16.39	16.15	16.5	1.0
20	16QAM	1	1	17.18	17.26	17.23	17.5	0.0
20	16QAM	1	53	17.40	17.33	17.18		
20	16QAM	1	104	17.08	17.33	17.05		
20	16QAM	50	0	16.48	16.38	16.14	16.5	1.0
20	16QAM	50	28	16.41	16.22	16.45		
20	16QAM	50	56	16.02	16.16	16.16		
20	16QAM	100	0	16.32	16.25	16.35	16.5	1.0
20	64QAM	1	1	17.15	17.41	17.03	17.5	0.0
20	64QAM	1	53	17.05	17.29	17.07		
20	64QAM	1	104	17.32	17.18	17.02		
20	64QAM	50	0	16.39	16.04	16.37	16.5	1.0
20	64QAM	50	28	16.44	16.37	16.10		
20	64QAM	50	56	16.47	16.17	16.29		
20	64QAM	100	0	16.43	16.26	16.45	16.5	1.0
20	256QAM	1	1	17.33	17.05	17.15	17.5	0.0
20	256QAM	1	53	17.47	17.37	17.21		
20	256QAM	1	104	17.44	17.07	17.37		
20	256QAM	50	0	16.42	16.16	16.27	16.5	1.0
20	256QAM	50	28	16.23	16.10	16.28		
20	256QAM	50	56	16.31	16.10	16.24		
20	256QAM	100	0	16.09	16.00	16.33	16.5	1.0
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	PI/2 BPSK	1	1	17.36	17.43	17.36	17.5	0.0
Channel				371000	376000	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	PI/2 BPSK	1	1	17.11	17.30	17.40	17.5	0.0
Channel				370500	376000	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	PI/2 BPSK	1	1	17.48	17.05	17.42	17.5	0.0

<n2 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376000	380000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1880	1900		
20	PI/2 BPSK	1	1	14.17	14.36	14.07	14.5	0.0
20	PI/2 BPSK	1	53	14.48	14.33	14.12		
20	PI/2 BPSK	1	104	14.15	14.15	14.10		
20	PI/2 BPSK	50	0	13.19	13.34	13.14	13.5	1.0
20	PI/2 BPSK	50	28	13.12	13.28	13.04		
20	PI/2 BPSK	50	56	13.34	13.29	13.20		
20	PI/2 BPSK	100	0	13.35	13.21	13.39	13.5	1.0
20	QPSK	1	1	14.35	14.24	14.40	14.5	0.0
20	QPSK	1	53	14.46	14.49	14.46		
20	QPSK	1	104	14.46	14.19	14.00		
20	QPSK	50	0	13.42	13.08	13.26	13.5	1.0
20	QPSK	50	28	13.35	13.34	13.07		
20	QPSK	50	56	13.46	13.49	13.20		
20	QPSK	100	0	13.47	13.35	13.25	13.5	1.0
20	16QAM	1	1	14.25	14.13	14.49	14.5	0.0
20	16QAM	1	53	14.03	14.19	14.27		
20	16QAM	1	104	14.46	14.46	14.31		
20	16QAM	50	0	13.01	13.30	13.19	13.5	1.0
20	16QAM	50	28	13.18	13.48	13.15		
20	16QAM	50	56	13.03	13.31	13.44		
20	16QAM	100	0	13.49	13.32	13.11	13.5	1.0
20	64QAM	1	1	14.44	14.00	14.32	14.5	0.0
20	64QAM	1	53	14.44	14.34	14.14		
20	64QAM	1	104	14.37	14.49	14.25		
20	64QAM	50	0	13.27	13.01	13.43	13.5	1.0
20	64QAM	50	28	13.11	13.23	13.30		
20	64QAM	50	56	13.48	13.15	13.09		
20	64QAM	100	0	13.10	13.17	13.14	13.5	1.0
20	256QAM	1	1	14.08	14.32	14.06	14.5	0.0
20	256QAM	1	53	14.29	14.38	14.19		
20	256QAM	1	104	14.34	14.23	14.02		
20	256QAM	50	0	13.42	13.02	13.17	13.5	1.0
20	256QAM	50	28	13.26	13.33	13.40		
20	256QAM	50	56	13.12	13.05	13.49		
20	256QAM	100	0	13.04	13.13	13.20	13.5	1.0
Channel				371500	376000	380500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1880	1902.5		
15	PI/2 BPSK	1	1	14.20	14.27	14.37	14.5	0.0
Channel				371000	376000	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1880	1905		
10	PI/2 BPSK	1	1	14.01	14.10	14.37	14.5	0.0
Channel				370500	376000	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1880	1907.5		
5	PI/2 BPSK	1	1	14.27	14.36	14.26	14.5	0.0

<n7 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				502000	507000	512000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2510	2535	2560		
20	PI/2 BPSK	1	1	19.10	19.36	19.11	19.5	0.0
20	PI/2 BPSK	1	53	19.41	19.34	19.36		
20	PI/2 BPSK	1	104	19.50	19.11	19.08		
20	PI/2 BPSK	50	0	18.37	18.15	18.18	18.5	1.0
20	PI/2 BPSK	50	28	18.30	18.35	18.17		
20	PI/2 BPSK	50	56	18.31	18.20	18.02		
20	PI/2 BPSK	100	0	18.25	18.45	18.20	18.5	1.0
20	QPSK	1	1	19.40	19.37	19.22	19.5	0.0
20	QPSK	1	53	19.39	19.37	19.49		
20	QPSK	1	104	19.39	19.47	19.35		
20	QPSK	50	0	18.04	18.28	18.13	18.5	1.0
20	QPSK	50	28	18.03	18.08	18.15		
20	QPSK	50	56	18.07	18.44	18.20		
20	QPSK	100	0	18.09	18.13	18.02	18.5	1.0
20	16QAM	1	1	19.22	19.22	19.22	19.5	0.0
20	16QAM	1	53	19.36	19.02	19.27		
20	16QAM	1	104	19.15	19.50	19.37		
20	16QAM	50	0	18.33	18.05	18.07	18.5	1.0
20	16QAM	50	28	18.37	18.26	18.43		
20	16QAM	50	56	18.13	18.47	18.15		
20	16QAM	100	0	18.09	18.47	18.12	18.5	1.0
20	64QAM	1	1	19.46	19.08	19.29	19.5	0.0
20	64QAM	1	53	19.38	19.23	19.03		
20	64QAM	1	104	19.49	19.08	19.24		
20	64QAM	50	0	18.15	18.18	18.03	18.5	1.0
20	64QAM	50	28	18.10	18.02	18.37		
20	64QAM	50	56	18.27	18.18	18.13		
20	64QAM	100	0	18.06	18.44	18.49	18.5	1.0
20	256QAM	1	1	19.18	19.48	19.11	19.5	0.0
20	256QAM	1	53	19.04	19.42	19.26		
20	256QAM	1	104	19.43	19.49	19.29		
20	256QAM	50	0	18.29	18.35	18.18	18.5	1.0
20	256QAM	50	28	18.09	18.42	18.35		
20	256QAM	50	56	18.12	18.48	18.33		
20	256QAM	100	0	18.33	18.03	18.05	18.5	1.0
Channel				501500	507000	511500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	PI/2 BPSK	1	1	19.20	19.01	19.15	19.5	0.0
Channel				501000	507000	511000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	PI/2 BPSK	1	1	19.46	19.06	19.20	19.5	0.0
Channel				500500	507000	510500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	PI/2 BPSK	1	1	19.12	19.19	19.27	19.5	0.0

<n7 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				502000	507000	512000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2510	2535	2560		
20	PI/2 BPSK	1	1	16.34	16.25	16.48	16.5	0.0
20	PI/2 BPSK	1	53	16.49	16.50	16.44		
20	PI/2 BPSK	1	104	16.37	16.43	16.06		
20	PI/2 BPSK	50	0	15.19	15.35	15.15	15.5	1.0
20	PI/2 BPSK	50	28	15.36	15.13	15.49		
20	PI/2 BPSK	50	56	15.11	15.08	15.16		
20	PI/2 BPSK	100	0	15.02	15.39	15.12	15.5	1.0
20	QPSK	1	1	16.13	16.10	16.04	16.5	0.0
20	QPSK	1	53	16.04	16.19	16.49		
20	QPSK	1	104	16.23	16.03	16.00		
20	QPSK	50	0	15.29	15.20	15.11	15.5	1.0
20	QPSK	50	28	15.32	15.43	15.11		
20	QPSK	50	56	15.06	15.37	15.44		
20	QPSK	100	0	15.26	15.43	15.36	15.5	1.0
20	16QAM	1	1	16.01	16.14	16.04	16.5	0.0
20	16QAM	1	53	16.38	16.46	16.50		
20	16QAM	1	104	16.32	16.17	16.43		
20	16QAM	50	0	15.23	15.25	15.11	15.5	1.0
20	16QAM	50	28	15.43	15.13	15.27		
20	16QAM	50	56	15.21	15.23	15.29		
20	16QAM	100	0	15.50	15.19	15.24	15.5	1.0
20	64QAM	1	1	16.18	16.29	16.44	16.5	0.0
20	64QAM	1	53	16.38	16.09	16.29		
20	64QAM	1	104	16.27	16.40	16.14		
20	64QAM	50	0	15.27	15.33	15.30	15.5	1.0
20	64QAM	50	28	15.16	15.30	15.11		
20	64QAM	50	56	15.05	15.16	15.48		
20	64QAM	100	0	15.25	15.21	15.11	15.5	1.0
20	256QAM	1	1	16.05	16.20	16.31	16.5	0.0
20	256QAM	1	53	16.32	16.11	16.00		
20	256QAM	1	104	16.31	16.29	16.06		
20	256QAM	50	0	15.34	15.13	15.39	15.5	1.0
20	256QAM	50	28	15.19	15.35	15.10		
20	256QAM	50	56	15.10	15.01	15.24		
20	256QAM	100	0	15.25	15.16	15.28	15.5	1.0
Channel				501500	507000	511500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2507.5	2535	2562.5		
15	PI/2 BPSK	1	1	16.38	16.21	16.13	16.5	0.0
Channel				501000	507000	511000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2505	2535	2565		
10	PI/2 BPSK	1	1	16.20	16.40	16.22	16.5	0.0
Channel				500500	507000	510500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2502.5	2535	2567.5		
5	PI/2 BPSK	1	1	16.31	16.25	16.06	16.5	0.0

<n25 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376500	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1882.5	1905		
20	PI/2 BPSK	1	1	17.17	17.25	17.33	17.5	0.0
20	PI/2 BPSK	1	53	17.47	17.11	17.28		
20	PI/2 BPSK	1	104	17.07	17.15	17.15		
20	PI/2 BPSK	50	0	16.09	16.41	16.30	16.5	1.0
20	PI/2 BPSK	50	28	16.49	16.24	16.01		
20	PI/2 BPSK	50	56	16.17	16.38	16.35		
20	PI/2 BPSK	100	0	16.00	16.06	16.34	16.5	1.0
20	QPSK	1	1	17.46	17.37	17.16	17.5	0.0
20	QPSK	1	53	17.20	17.31	17.28		
20	QPSK	1	104	17.32	17.41	17.32		
20	QPSK	50	0	16.10	16.49	16.16	16.5	1.0
20	QPSK	50	28	16.35	16.24	16.23		
20	QPSK	50	56	16.47	16.03	16.05		
20	QPSK	100	0	16.18	16.25	16.13	16.5	1.0
20	16QAM	1	1	17.25	17.34	17.46	17.5	0.0
20	16QAM	1	53	17.29	17.41	17.30		
20	16QAM	1	104	17.24	17.38	17.11		
20	16QAM	50	0	16.36	16.06	16.34	16.5	1.0
20	16QAM	50	28	16.46	16.36	16.08		
20	16QAM	50	56	16.31	16.06	16.35		
20	16QAM	100	0	16.17	16.16	16.16	16.5	1.0
20	64QAM	1	1	17.02	17.43	17.07	17.5	0.0
20	64QAM	1	53	17.24	17.01	17.24		
20	64QAM	1	104	17.04	17.05	17.29		
20	64QAM	50	0	16.32	16.09	16.03	16.5	1.0
20	64QAM	50	28	16.22	16.07	16.26		
20	64QAM	50	56	16.04	16.42	16.02		
20	64QAM	100	0	16.38	16.23	16.02	16.5	1.0
20	256QAM	1	1	17.50	17.45	17.06	17.5	0.0
20	256QAM	1	53	17.43	17.18	17.42		
20	256QAM	1	104	17.14	17.32	17.19		
20	256QAM	50	0	16.13	16.30	16.00	16.5	1.0
20	256QAM	50	28	16.49	16.26	16.39		
20	256QAM	50	56	16.25	16.09	16.12		
20	256QAM	100	0	16.50	16.08	16.43	16.5	1.0
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1882.5	1907.5		
15	PI/2 BPSK	1	1	17.45	17.48	17.41	17.5	0.0
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1882.5	1910		
10	PI/2 BPSK	1	1	17.50	17.20	17.07	17.5	0.0
Channel				370500	376500	382500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1882.5	1912.5		
5	PI/2 BPSK	1	1	17.45	17.08	17.49	17.5	0.0

<n25 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				372000	376500	381000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1860	1882.5	1905		
20	PI/2 BPSK	1	1	14.01	14.00	14.18	14.5	0.0
20	PI/2 BPSK	1	53	14.25	14.47	14.46		
20	PI/2 BPSK	1	104	14.45	14.10	14.27		
20	PI/2 BPSK	50	0	13.23	13.18	13.45	13.5	1.0
20	PI/2 BPSK	50	28	13.33	13.14	13.35		
20	PI/2 BPSK	50	56	13.42	13.16	13.32		
20	PI/2 BPSK	100	0	13.30	13.46	13.07	13.5	1.0
20	QPSK	1	1	14.44	14.18	14.29	14.5	0.0
20	QPSK	1	53	14.24	14.16	14.42		
20	QPSK	1	104	14.19	14.45	14.01		
20	QPSK	50	0	13.04	13.18	13.21	13.5	1.0
20	QPSK	50	28	13.28	13.17	13.27		
20	QPSK	50	56	13.00	13.37	13.06		
20	QPSK	100	0	13.04	13.19	13.41	13.5	1.0
20	16QAM	1	1	14.22	14.20	14.18	14.5	0.0
20	16QAM	1	53	14.45	14.44	14.41		
20	16QAM	1	104	14.15	14.18	14.29		
20	16QAM	50	0	13.46	13.16	13.16	13.5	1.0
20	16QAM	50	28	13.32	13.27	13.00		
20	16QAM	50	56	13.45	13.23	13.00		
20	16QAM	100	0	13.08	13.04	13.39	13.5	1.0
20	64QAM	1	1	14.06	14.26	14.27	14.5	0.0
20	64QAM	1	53	14.34	14.37	14.13		
20	64QAM	1	104	14.41	14.21	14.07		
20	64QAM	50	0	13.46	13.01	13.01	13.5	1.0
20	64QAM	50	28	13.42	13.00	13.46		
20	64QAM	50	56	13.28	13.48	13.34		
20	64QAM	100	0	13.16	13.03	13.09	13.5	1.0
20	256QAM	1	1	14.45	14.36	14.11	14.5	0.0
20	256QAM	1	53	14.08	14.13	14.20		
20	256QAM	1	104	14.31	14.26	14.28		
20	256QAM	50	0	13.17	13.27	13.46	13.5	1.0
20	256QAM	50	28	13.16	13.43	13.31		
20	256QAM	50	56	13.10	13.17	13.43		
20	256QAM	100	0	13.19	13.17	13.39	13.5	1.0
Channel				371500	376500	381500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1857.5	1882.5	1907.5		
15	PI/2 BPSK	1	1	14.24	14.35	14.40	14.5	0.0
Channel				371000	376500	382000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1855	1882.5	1910		
10	PI/2 BPSK	1	1	14.30	14.30	14.10	14.5	0.0
Channel				370500	376500	382500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1852.5	1882.5	1912.5		
5	PI/2 BPSK	1	1	14.32	14.04	14.11	14.5	0.0

<n41 PC2 & PC3 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	19.45	19.46	19.18	19.5	0.0
20	PI/2 BPSK	1	53	19.33	19.39	19.22		
20	PI/2 BPSK	1	104	19.24	19.46	19.38		
20	PI/2 BPSK	50	0	18.14	18.43	18.46	18.5	1.0
20	PI/2 BPSK	50	28	18.17	18.43	18.06		
20	PI/2 BPSK	50	56	18.37	18.38	18.49		
20	PI/2 BPSK	100	0	18.37	18.12	18.15	18.5	1.0
20	QPSK	1	1	19.24	19.02	19.48	19.5	0.0
20	QPSK	1	53	19.07	19.42	19.29		
20	QPSK	1	104	19.07	19.32	19.22		
20	QPSK	50	0	18.19	18.49	18.18	18.5	1.0
20	QPSK	50	28	18.17	18.06	18.41		
20	QPSK	50	56	18.48	18.11	18.10		
20	QPSK	100	0	18.16	18.36	18.06	18.5	1.0
20	16QAM	1	1	19.44	19.34	19.11	19.5	0.0
20	16QAM	1	53	19.04	19.37	19.02		
20	16QAM	1	104	19.41	19.16	19.17		
20	16QAM	50	0	18.30	18.43	18.40	18.5	1.0
20	16QAM	50	28	18.42	18.37	18.50		
20	16QAM	50	56	18.18	18.22	18.39		
20	16QAM	100	0	18.44	18.47	18.29	18.5	1.0
20	64QAM	1	1	19.44	19.30	19.19	19.5	0.0
20	64QAM	1	53	19.08	19.12	19.05		
20	64QAM	1	104	19.24	19.03	19.09		
20	64QAM	50	0	18.37	18.41	18.24	18.5	1.0
20	64QAM	50	28	18.02	18.35	18.13		
20	64QAM	50	56	18.44	18.49	18.35		
20	64QAM	100	0	18.18	18.46	18.50	18.5	1.0
20	256QAM	1	1	19.03	19.05	19.14	19.5	0.0
20	256QAM	1	53	19.07	19.02	19.21		
20	256QAM	1	104	19.25	19.48	19.05		
20	256QAM	50	0	18.45	18.33	18.45	18.5	1.0
20	256QAM	50	28	18.22	18.09	18.23		
20	256QAM	50	56	18.42	18.04	18.42		
20	256QAM	100	0	18.13	18.11	18.07	18.5	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	19.37	19.33	19.27	19.5	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	19.47	19.37	19.03	19.5	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	19.47	19.33	19.01	19.5	0.0

<n41 PC2 & PC3 Ant3>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				501200	518601	536000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2506	2593	2680		
20	PI/2 BPSK	1	1	16.28	16.23	16.47	16.5	0.0
20	PI/2 BPSK	1	53	16.15	16.43	16.21		
20	PI/2 BPSK	1	104	16.47	16.04	16.27		
20	PI/2 BPSK	50	0	15.10	15.17	15.02	15.5	1.0
20	PI/2 BPSK	50	28	15.34	15.36	15.49		
20	PI/2 BPSK	50	56	15.48	15.27	15.14		
20	PI/2 BPSK	100	0	15.38	15.04	15.14	15.5	1.0
20	QPSK	1	1	16.37	16.35	16.32	16.5	0.0
20	QPSK	1	53	16.23	16.41	16.02		
20	QPSK	1	104	16.14	16.21	16.24		
20	QPSK	50	0	15.26	15.12	15.15	15.5	1.0
20	QPSK	50	28	15.45	15.48	15.20		
20	QPSK	50	56	15.05	15.18	15.27		
20	QPSK	100	0	15.26	15.39	15.26	15.5	1.0
20	16QAM	1	1	16.28	16.07	16.11	16.5	0.0
20	16QAM	1	53	16.05	16.39	16.29		
20	16QAM	1	104	16.12	16.06	16.37		
20	16QAM	50	0	15.33	15.30	15.19	15.5	1.0
20	16QAM	50	28	15.15	15.20	15.48		
20	16QAM	50	56	15.23	15.36	15.10		
20	16QAM	100	0	15.35	15.42	15.20	15.5	1.0
20	64QAM	1	1	16.47	16.15	16.21	16.5	0.0
20	64QAM	1	53	16.04	16.37	16.31		
20	64QAM	1	104	16.33	16.13	16.19		
20	64QAM	50	0	15.18	15.47	15.25	15.5	1.0
20	64QAM	50	28	15.40	15.12	15.41		
20	64QAM	50	56	15.31	15.29	15.08		
20	64QAM	100	0	15.06	15.11	15.23	15.5	1.0
20	256QAM	1	1	16.10	16.35	16.44	16.5	0.0
20	256QAM	1	53	16.05	16.11	16.23		
20	256QAM	1	104	16.32	16.40	16.22		
20	256QAM	50	0	15.32	15.40	15.14	15.5	1.0
20	256QAM	50	28	15.06	15.01	15.18		
20	256QAM	50	56	15.13	15.40	15.27		
20	256QAM	100	0	15.18	15.23	15.28	15.5	1.0
Channel				500700	518601	536500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2503.5	2593	2682.5		
15	PI/2 BPSK	1	1	16.45	16.10	16.13	16.5	0.0
Channel				500200	518601	537000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2501	2593	2685		
10	PI/2 BPSK	1	1	16.43	16.35	16.38	16.5	0.0
Channel				499700	518601	537500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				2498.5	2593	2687.5		
5	PI/2 BPSK	1	1	16.21	16.50	16.25	16.5	0.0

<n66 Ant0>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				344000	349000	354000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1720	1745	1770		
20	PI/2 BPSK	1	1	19.20	19.44	19.14	19.5	0.0
20	PI/2 BPSK	1	53	19.46	19.25	19.48		
20	PI/2 BPSK	1	104	19.09	19.18	19.10		
20	PI/2 BPSK	50	0	18.11	18.28	18.14	18.5	1.0
20	PI/2 BPSK	50	28	18.26	18.33	18.28		
20	PI/2 BPSK	50	56	18.06	18.16	18.17		
20	PI/2 BPSK	100	0	18.34	18.18	18.13	18.5	1.0
20	QPSK	1	1	19.00	19.11	19.50	19.5	0.0
20	QPSK	1	53	19.44	19.32	19.14		
20	QPSK	1	104	19.21	19.14	19.28		
20	QPSK	50	0	18.48	18.28	18.44	18.5	1.0
20	QPSK	50	28	18.17	18.04	18.21		
20	QPSK	50	56	18.45	18.17	18.48		
20	QPSK	100	0	18.15	18.33	18.50	18.5	1.0
20	16QAM	1	1	19.33	19.10	19.21	19.5	0.0
20	16QAM	1	53	19.27	19.43	19.31		
20	16QAM	1	104	19.21	19.36	19.18		
20	16QAM	50	0	18.03	18.26	18.38	18.5	1.0
20	16QAM	50	28	18.17	18.49	18.20		
20	16QAM	50	56	18.18	18.18	18.21		
20	16QAM	100	0	18.23	18.50	18.16	18.5	1.0
20	64QAM	1	1	19.49	19.15	19.15	19.5	0.0
20	64QAM	1	53	19.04	19.09	19.34		
20	64QAM	1	104	19.14	19.20	19.44		
20	64QAM	50	0	18.24	18.26	18.15	18.5	1.0
20	64QAM	50	28	18.30	18.34	18.21		
20	64QAM	50	56	18.13	18.19	18.12		
20	64QAM	100	0	18.36	18.38	18.12	18.5	1.0
20	256QAM	1	1	19.23	19.49	19.23	19.5	0.0
20	256QAM	1	53	19.14	19.10	19.17		
20	256QAM	1	104	19.03	19.25	19.39		
20	256QAM	50	0	18.10	18.43	18.11	18.5	1.0
20	256QAM	50	28	18.07	18.29	18.19		
20	256QAM	50	56	18.03	18.29	18.13		
20	256QAM	100	0	18.27	18.11	18.43	18.5	1.0
Channel				343500	349000	354500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	PI/2 BPSK	1	1	19.45	19.04	19.02	19.5	0.0
Channel				343000	349000	355000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	PI/2 BPSK	1	1	19.27	19.26	19.24	19.5	0.0
Channel				342500	349000	355500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	PI/2 BPSK	1	1	19.37	19.02	19.41	19.5	0.0

<n66 Ant8>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				344000	349000	354000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1720	1745	1770		
20	PI/2 BPSK	1	1	16.00	16.33	16.37	16.5	0.0
20	PI/2 BPSK	1	53	16.14	16.10	16.22		
20	PI/2 BPSK	1	104	16.25	16.03	16.27		
20	PI/2 BPSK	50	0	15.02	15.11	15.38	15.5	1.0
20	PI/2 BPSK	50	28	15.17	15.10	15.49		
20	PI/2 BPSK	50	56	15.11	15.39	15.12		
20	PI/2 BPSK	100	0	15.42	15.21	15.43	15.5	1.0
20	QPSK	1	1	16.07	16.24	16.05	16.5	0.0
20	QPSK	1	53	16.39	16.04	16.38		
20	QPSK	1	104	16.24	16.45	16.31		
20	QPSK	50	0	15.21	15.15	15.01	15.5	1.0
20	QPSK	50	28	15.02	15.25	15.40		
20	QPSK	50	56	15.13	15.12	15.37		
20	QPSK	100	0	15.03	15.12	15.20	15.5	1.0
20	16QAM	1	1	16.12	16.48	16.23	16.5	0.0
20	16QAM	1	53	16.35	16.12	16.10		
20	16QAM	1	104	16.29	16.35	16.46		
20	16QAM	50	0	15.36	15.13	15.41	15.5	1.0
20	16QAM	50	28	15.06	15.20	15.18		
20	16QAM	50	56	15.44	15.11	15.27		
20	16QAM	100	0	15.09	15.38	15.32	15.5	1.0
20	64QAM	1	1	16.42	16.49	16.49	16.5	0.0
20	64QAM	1	53	16.06	16.03	16.11		
20	64QAM	1	104	16.22	16.43	16.21		
20	64QAM	50	0	15.17	15.32	15.31	15.5	1.0
20	64QAM	50	28	15.18	15.20	15.04		
20	64QAM	50	56	15.06	15.35	15.25		
20	64QAM	100	0	15.41	15.08	15.43	15.5	1.0
20	256QAM	1	1	16.44	16.14	16.10	16.5	0.0
20	256QAM	1	53	16.07	16.35	16.10		
20	256QAM	1	104	16.42	16.37	16.19		
20	256QAM	50	0	15.50	15.46	15.47	15.5	1.0
20	256QAM	50	28	15.32	15.00	15.33		
20	256QAM	50	56	15.20	15.29	15.32		
20	256QAM	100	0	15.49	15.40	15.50	15.5	1.0
Channel				343500	349000	354500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1717.5	1745	1772.5		
15	PI/2 BPSK	1	1	16.45	16.28	16.40	16.5	0.0
Channel				343000	349000	355000	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1715	1745	1775		
10	PI/2 BPSK	1	1	16.01	16.09	16.42	16.5	0.0
Channel				342500	349000	355500	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				1712.5	1745	1777.5		
5	PI/2 BPSK	1	1	16.21	16.14	16.40	16.5	0.0

<n77 PC2 & PC3 Ant4>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	21.32	21.11	21.43	21.5	0.0
20	PI/2 BPSK	1	53	21.45	21.25	21.31		
20	PI/2 BPSK	1	104	21.43	21.17	21.12		
20	PI/2 BPSK	50	0	20.34	20.13	20.09	20.5	1.0
20	PI/2 BPSK	50	28	20.05	20.29	20.14		
20	PI/2 BPSK	50	56	20.04	20.33	20.31		
20	PI/2 BPSK	100	0	20.07	20.41	20.32	20.5	1.0
20	QPSK	1	1	21.17	21.42	21.44	21.5	0.0
20	QPSK	1	53	21.17	21.37	21.29		
20	QPSK	1	104	21.34	21.41	21.14		
20	QPSK	50	0	20.03	20.29	20.44	20.5	1.0
20	QPSK	50	28	20.30	20.06	20.42		
20	QPSK	50	56	20.47	20.12	20.45		
20	QPSK	100	0	20.44	20.47	20.17	20.5	1.0
20	16QAM	1	1	21.02	21.02	21.02	21.5	0.0
20	16QAM	1	53	21.28	21.23	21.30		
20	16QAM	1	104	21.48	21.05	21.37		
20	16QAM	50	0	20.35	20.34	20.06	20.5	1.0
20	16QAM	50	28	20.31	20.32	20.35		
20	16QAM	50	56	20.42	20.48	20.09		
20	16QAM	100	0	20.32	20.17	20.12	20.5	1.0
20	64QAM	1	1	21.12	21.36	21.26	21.5	0.0
20	64QAM	1	53	21.12	21.34	21.47		
20	64QAM	1	104	21.27	21.42	21.00		
20	64QAM	50	0	20.08	20.01	20.14	20.5	1.0
20	64QAM	50	28	20.01	20.37	20.30		
20	64QAM	50	56	20.40	20.38	20.13		
20	64QAM	100	0	20.15	20.40	20.03	20.5	1.0
20	256QAM	1	1	21.08	21.13	21.15	21.5	0.0
20	256QAM	1	53	21.32	21.10	21.08		
20	256QAM	1	104	21.30	21.10	21.45		
20	256QAM	50	0	20.10	20.26	20.20	20.5	1.0
20	256QAM	50	28	20.23	20.33	20.05		
20	256QAM	50	56	20.29	20.12	20.37		
20	256QAM	100	0	20.13	20.38	20.15	20.5	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	21.30	21.10	21.13	21.5	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	21.28	21.39	21.01	21.5	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	21.34	21.43	21.01	21.5	0.0

<n77 PC2 & PC3 Ant6>

BW [MHz]	Modulation	RB Size	RB Offset	Power Low Ch. / Freq.	Power Middle Ch. / Freq.	Power High Ch. / Freq.	Tune-up limit (dBm)	MPR (dB)
Channel				620666	646720	679333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3310	3750	4190		
20	PI/2 BPSK	1	1	18.13	18.30	18.30	18.5	0.0
20	PI/2 BPSK	1	53	18.11	18.06	18.48		
20	PI/2 BPSK	1	104	18.06	18.26	18.15		
20	PI/2 BPSK	50	0	17.11	17.35	17.05	17.5	1.0
20	PI/2 BPSK	50	28	17.31	17.09	17.30		
20	PI/2 BPSK	50	56	17.09	17.18	17.16		
20	PI/2 BPSK	100	0	17.01	17.11	17.00	17.5	1.0
20	QPSK	1	1	18.18	18.41	18.22	18.5	0.0
20	QPSK	1	53	18.10	18.29	18.46		
20	QPSK	1	104	18.48	18.44	18.43		
20	QPSK	50	0	17.43	17.39	17.13	17.5	1.0
20	QPSK	50	28	17.42	17.21	17.07		
20	QPSK	50	56	17.47	17.14	17.04		
20	QPSK	100	0	17.08	17.36	17.32	17.5	1.0
20	16QAM	1	1	18.06	18.31	18.17	18.5	0.0
20	16QAM	1	53	18.20	18.14	18.44		
20	16QAM	1	104	18.05	18.41	18.06		
20	16QAM	50	0	17.28	17.12	17.40	17.5	1.0
20	16QAM	50	28	17.10	17.18	17.04		
20	16QAM	50	56	17.49	17.31	17.37		
20	16QAM	100	0	17.12	17.04	17.26	17.5	1.0
20	64QAM	1	1	18.04	18.33	18.30	18.5	0.0
20	64QAM	1	53	18.43	18.41	18.41		
20	64QAM	1	104	18.49	18.29	18.18		
20	64QAM	50	0	17.40	17.15	17.29	17.5	1.0
20	64QAM	50	28	17.14	17.04	17.04		
20	64QAM	50	56	17.36	17.19	17.42		
20	64QAM	100	0	17.33	17.27	17.14	17.5	1.0
20	256QAM	1	1	18.07	18.12	18.06	18.5	0.0
20	256QAM	1	53	18.33	18.14	18.37		
20	256QAM	1	104	18.45	18.28	18.13		
20	256QAM	50	0	17.25	17.39	17.39	17.5	1.0
20	256QAM	50	28	17.01	17.17	17.17		
20	256QAM	50	56	17.05	17.21	17.18		
20	256QAM	100	0	17.13	17.47	17.39	17.5	1.0
Channel				620166	646720	679833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3307.5	3750	4192.5		
15	PI/2 BPSK	1	1	18.01	18.46	18.17	18.5	0.0
Channel				619666	646720	680333	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3305	3750	4195		
10	PI/2 BPSK	1	1	18.41	18.43	18.07	18.5	0.0
Channel				619166	646720	680833	Tune-up limit (dBm)	MPR (dB)
Frequency (MHz)				3302.5	3750	4197.5		
5	PI/2 BPSK	1	1	18.38	18.16	18.37	18.5	0.0

9. SAR Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WWAN: Reported SAR(W/kg)= Measured SAR(W/kg)*Tune-up Scaling Factor
2. Per KDB 447498 D01v06, for each exposure position, testing of other required channels within the operating mode of a frequency band is not required when the *reported* 1-g or 10-g SAR for the mid-band or highest output power channel is:
   - ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz
   - ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz
   - ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.

FR1 Note:

1. For 5G NR test procedure was following step similar FCC KDB 941225 D05:
   a. SAR testing start with the largest channel bandwidth and measure SAR for PI/2 BPSK with 1 RB allocation, using the RB offset and required test channel combination with the highest maximum output power for RB offsets at the upper edge, middle and lower edge of each required test channel.
   b. 50% RB allocation for PI/2 BPSK SAR testing follows 1RB PI/2 BPSK allocation procedure
   c. PI/2 BPSK with 100% RB allocation, SAR is not required when the highest maximum output power for 100 % RB allocation is less than the highest maximum output power in 50% and 1 RB allocations and the highest reported SAR for 1 RB and 50% RB allocation are ≤ 0.8 W/kg. Otherwise, SAR is measured for the highest output power channel; and if the reported SAR is > 1.45 W/kg, the remaining required test channels must also be tested.
   d. QPSK/16QAM/64QAM/256QAM output powers are not ½ dB higher than the same configuration in PI/2 BPSK, also reported SAR for the PI/2 BPSK configuration is less than 1.45 W/kg, QPSK/16QAM/64QAM/256QAM SAR testing are not required.
   e. Smaller bandwidth output power for each RB allocation configuration for this device will not ½ dB higher than the same configuration in the largest supported bandwidth, and the reported SAR for the largest supported bandwidth is ≤ 1.45 W/kg, smaller bandwidth SAR testing is not required for this device
   f. For 5G FR1 n5/n12/n41/n71 the maximum bandwidth does not support three non-overlapping channels, when a device supports overlapping channel assignment in a channel bandwidth configuration, the middle channel of the group of overlapping channels should be selected for testing.
2. Due to test setup limitations, SAR testing for NR was performed using Factory Test Mode software to establish the connection and perform SAR with 100% duty cycle. The Qualcomm QRCT program was used to establish the connection.

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 Band 2_Ant 8	20M	BPSK	1	53	Side A	10mm	376000	1880	14.33	14.50	0.425	0.44
	FR1 Band 2_Ant 8	20M	BPSK	50	28		10mm	376000	1880	13.28	13.50	0.369	0.39
	FR1 Band 2_Ant 8	20M	BPSK	1	53	Side C	10mm	376000	1880	14.33	14.50	0.269	0.28
	FR1 Band 2_Ant 8	20M	BPSK	50	28		10mm	376000	1880	13.28	13.50	0.157	0.17
	FR1 Band 2_Ant 8	20M	BPSK	1	53	Side D	10mm	376000	1880	14.33	14.50	0.536	0.56
	FR1 Band 2_Ant 8	20M	BPSK	50	28		10mm	376000	1880	13.28	13.50	0.415	0.44
	FR1 Band 5_Ant 0	10M	BPSK	1	53	Side C	10mm	167300	836.5	20.69	21.00	0.397	0.43
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side A	10mm	502000	2510	19.41	19.50	0.835	0.85
	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	507000	2535	19.34	19.50	0.984	1.02
	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	512000	2560	19.36	19.50	0.855	0.88
	FR1 Band 7_Ant 0	20M	BPSK	50	28		10mm	507000	2535	18.35	18.50	0.712	0.74
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side B	10mm	507000	2535	23.60	24.00	0.159	0.17
	FR1 Band 7_Ant 0	20M	BPSK	50	28		10mm	507000	2535	22.65	23.00	0.103	0.11
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side C	10mm	502000	2510	19.41	19.50	0.674	0.69
	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	507000	2535	19.34	19.50	0.803	0.83
	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	512000	2560	19.36	19.50	0.587	0.61
	FR1 Band 7_Ant 0	20M	BPSK	50	28		10mm	507000	2535	18.35	18.50	0.637	0.66
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side D	10mm	507000	2535	19.34	19.50	0.0543	0.06
	FR1 Band 7_Ant 0	20M	BPSK	50	28		10mm	507000	2535	18.35	18.50	0.0411	0.04
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side F	10mm	502000	2510	19.41	19.50	1.02	1.04
1	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	507000	2535	19.34	19.50	1.17	1.21
	FR1 Band 7_Ant 0	20M	BPSK	1	53		10mm	512000	2560	19.36	19.50	1.12	1.16
	FR1 Band 7_Ant 0	20M	BPSK	50	28		10mm	507000	2535	18.35	18.50	0.983	1.02
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side F	20mm	507000	2535	23.60	24.00	0.957	1.05
	FR1 Band 7_Ant 0	20M	BPSK	1	53	Side F	10mm	507000	2535	16.50	16.50	0.511	0.51
	Repeat	20M	BPSK	1	53	Side F	10mm	507000	2535	19.34	19.50	1.15	1.19
	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side A	10mm	372000	1860	17.47	17.50	0.879	0.89
	FR1 Band 25_Ant 0	20M	QPSK	1	53		10mm	376500	1882.5	17.11	17.50	1.01	1.11
	FR1 Band 25_Ant 0	20M	QPSK	1	53		10mm	381000	1905	17.28	17.50	1.04	1.10
	FR1 Band 25_Ant 0	20M	QPSK	50	28		10mm	376500	1882.5	16.24	16.50	0.824	0.88
	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side B	10mm	376500	1882.5	23.57	24.00	0.295	0.33
	FR1 Band 25_Ant 0	20M	QPSK	50	28		10mm	376500	1882.5	22.79	23.00	0.187	0.20
	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side C	10mm	376500	1882.5	17.11	17.50	0.713	0.78
	FR1 Band 25_Ant 0	20M	QPSK	50	28		10mm	376500	1882.5	16.24	16.50	0.625	0.66
	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side D	10mm	376500	1882.5	17.11	17.50	0.0170	0.02
	FR1 Band 25_Ant 0	20M	QPSK	50	28		10mm	376500	1882.5	16.24	16.50	0.0103	0.01
2	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side F	10mm	372000	1860	17.47	17.50	1.10	1.11
	FR1 Band 25_Ant 0	20M	QPSK	1	53		10mm	376500	1882.5	17.11	17.50	1.00	1.10
	FR1 Band 25_Ant 0	20M	QPSK	1	53		10mm	381000	1905	17.28	17.50	0.921	0.97
	FR1 Band 25_Ant 0	20M	QPSK	50	28		10mm	376500	1882.5	16.24	16.50	0.792	0.84
	FR1 Band 25_Ant 0	20M	QPSK	1	53	Side F	20mm	376500	1882.5	23.57	24.00	0.883	0.97
	FR1 Band 25_Ant 8	20M	QPSK	1	53	Side A	10mm	376500	1882.5	14.47	14.50	0.426	0.43
	FR1 Band 25_Ant 8	20M	QPSK	1	53	Side C	10mm	376500	1882.5	14.47	14.50	0.269	0.27
	FR1 Band 25_Ant 8	20M	QPSK	1	53	Side D	10mm	376500	1882.5	14.47	14.50	0.152	0.15
	FR1 Band 26_Ant 0	20M	BPSK	1	53	Side A	10mm	164800	824	23.70	24.00	0.800	0.86
	FR1 Band 26_Ant 0	20M	BPSK	1	53		10mm	166300	831.5	23.87	24.00	0.832	0.86
3	FR1 Band 26_Ant 0	20M	BPSK	1	53		10mm	167800	839	23.95	24.00	0.853	0.86
	FR1 Band 26_Ant 0	20M	BPSK	50	28		10mm	166300	831.5	22.56	23.00	0.711	0.79
	FR1 Band 26_Ant 0	20M	BPSK	1	53	Side B	10mm	166300	831.5	23.87	24.00	0.310	0.32
	FR1 Band 26_Ant 0	20M	BPSK	50	28		10mm	166300	831.5	22.56	23.00	0.265	0.29
	FR1 Band 26_Ant 0	20M	BPSK	1	53	Side C	10mm	164800	824	23.70	24.00	0.733	0.79
	FR1 Band 26_Ant 0	20M	BPSK	1	53		10mm	166300	831.5	23.87	24.00	0.822	0.85
	FR1 Band 26_Ant 0	20M	BPSK	1	53		10mm	167800	839	23.95	24.00	0.621	0.63
	FR1 Band 26_Ant 0	20M	BPSK	50	28		10mm	166300	831.5	22.56	23.00	0.702	0.78
	FR1 Band 26_Ant 0	20M	BPSK	1	53	Side D	10mm	166300	831.5	23.87	24.00	0.569	0.59
	FR1 Band 26_Ant 0	20M	BPSK	50	28		10mm	166300	831.5	22.56	23.00	0.418	0.46
	FR1 Band 26_Ant 0	20M	BPSK	1	53	Side F	10mm	166300	831.5	23.87	24.00	0.0889	0.09
	FR1 Band 26_Ant 0	20M	BPSK	50	28		10mm	166300	831.5	22.56	23.00	0.0736	0.08

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
4	FR1 Band 41_Ant 8	20M	BPSK	1	53	Side A	10mm	518601	2593	19.39	19.50	0.752	0.77
	FR1 Band 41_Ant 8	20M	BPSK	50	28		10mm	518601	2593	18.43	18.50	0.634	0.64
	FR1 Band 41_Ant 8	20M	BPSK	1	53	Side C	10mm	518601	2593	19.39	19.50	0.303	0.31
	FR1 Band 41_Ant 8	20M	BPSK	50	28		10mm	518601	2593	18.43	18.50	0.246	0.25
	FR1 Band 41_Ant 8	20M	BPSK	1	53	Side D	10mm	518601	2593	19.39	19.50	0.106	0.11
	FR1 Band 41_Ant 8	20M	BPSK	50	28		10mm	518601	2593	18.43	18.50	0.0922	0.09
	FR1 Band 41_Ant 8	20M	BPSK	1	53	Side A	20mm	518601	2593	26.77	27.00	0.736	0.78
	FR1 Band 41_Ant 8	20M	BPSK	1	53	Side A	10mm	518601	2593	16.38	16.50	0.301	0.31
	FR1 Band 41_Ant 3	20M	BPSK	1	53	Side A	10mm	518601	2593	16.43	16.50	0.326	0.33
	FR1 Band 41_Ant 3	20M	BPSK	1	53	Side C	10mm	518601	2593	16.43	16.50	0.126	0.13
	FR1 Band 41_Ant 3	20M	BPSK	1	53	Side D	10mm	518601	2593	16.43	16.50	0.0957	0.10
	2x2 UL Ant 8 & Ant 3	20M	BPSK	1	53	Side A	10mm	518601	2593	Above	Above	0.627	0.64
	FR1 Band 48_Ant 4	20M	BPSK	1	53	Side A	10mm	637333	3560	21.43	21.50	0.845	0.86
	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	640220	3603.3	21.37	21.50	1.06	1.09
	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	643113	3625	21.36	21.50	1.06	1.09
	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	646000	3690	21.02	21.50	0.859	0.96
	FR1 Band 48_Ant 4	20M	BPSK	50	28		10mm	643113	3625	20.49	20.50	0.722	0.72
	FR1 Band 48_Ant 4	20M	BPSK	1	53	Side B	10mm	643113	3625	21.36	21.50	0.305	0.31
	FR1 Band 48_Ant 4	20M	BPSK	50	28		10mm	643113	3625	20.49	20.50	0.207	0.21
	FR1 Band 48_Ant 4	20M	BPSK	1	53	Side C	10mm	643113	3625	21.36	21.50	0.666	0.69
	FR1 Band 48_Ant 4	20M	BPSK	50	28		10mm	643113	3625	20.49	20.50	0.533	0.53
	FR1 Band 48_Ant 4	20M	BPSK	1	53	Side F	10mm	637333	3560	21.43	21.50	1.09	1.11
5	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	640220	3603.3	21.37	21.50	1.17	1.21
	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	643113	3625	21.36	21.50	1.06	1.09
	FR1 Band 48_Ant 4	20M	BPSK	1	53		10mm	646000	3690	21.02	21.50	0.956	1.07
	FR1 Band 48_Ant 4	20M	BPSK	50	28		10mm	643113	3625	20.49	20.50	0.864	0.87
	FR1 Band 48_Ant 4	20M	BPSK	1	53	Side F	10mm	640220	3603.3	18.27	18.50	0.497	0.52
	Repeat	20M	BPSK	1	53	Side F	10mm	640220	3603.3	21.37	21.50	1.15	1.19
	FR1 Band 48_Ant 6	20M	BPSK	1	53	Side A	10mm	640220	3603.3	18.16	18.50	0.189	0.20
	FR1 Band 48_Ant 6	20M	BPSK	1	53	Side C	10mm	640220	3603.3	18.16	18.50	0.211	0.23
	FR1 Band 48_Ant 6	20M	BPSK	1	53	Side D	10mm	640220	3603.3	18.16	18.50	0.269	0.29
	FR1 Band 48_Ant 6	20M	BPSK	1	53	Side F	10mm	640220	3603.3	18.16	18.50	0.388	0.42
	2x2 UL Ant 4 & Ant 6	20M	BPSK	1	53	Side F	10mm	640220	3603.3	Above	Above	0.885	0.94
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side A	10mm	344000	1720	19.46	19.50	0.934	0.94
	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	349000	1745	19.25	19.50	1.05	1.11
	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	354000	1770	19.48	19.50	1.02	1.03
	FR1 Band 66_Ant 0	20M	BPSK	50	28		10mm	349000	1745	18.33	18.50	0.872	0.91
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side B	10mm	349000	1745	23.80	24.00	0.300	0.31
	FR1 Band 66_Ant 0	20M	BPSK	50	28		10mm	349000	1745	22.62	23.00	0.254	0.28
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side C	10mm	344000	1720	19.46	19.50	0.960	0.97
	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	349000	1745	19.25	19.50	1.00	1.06
	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	354000	1770	19.48	19.50	1.10	1.11
	FR1 Band 66_Ant 0	20M	BPSK	50	28		10mm	349000	1745	18.33	18.50	0.821	0.85
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side D	10mm	349000	1745	19.25	19.50	0.102	0.11
	FR1 Band 66_Ant 0	20M	BPSK	50	28		10mm	349000	1745	18.33	18.50	0.0856	0.09
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side F	10mm	344000	1720	19.46	19.50	0.995	1.00
6	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	349000	1745	19.25	19.50	1.12	1.19
	FR1 Band 66_Ant 0	20M	BPSK	1	53		10mm	354000	1770	19.48	19.50	1.06	1.06
	FR1 Band 66_Ant 0	20M	BPSK	50	28		10mm	349000	1745	18.33	16.50	0.822	0.54
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side F	20mm	349000	1745	23.80	24.50	0.867	1.02
	FR1 Band 66_Ant 0	20M	BPSK	1	53	Side F	10mm	349000	1745	16.42	16.50	0.501	0.51
	Repeat	20M	BPSK	1	53	Side F	10mm	349000	1745	19.25	19.50	1.10	1.17
	FR1 Band 66_Ant 8	20M	BPSK	1	53	Side A	10mm	349000	1745	16.10	16.50	0.367	0.40
	FR1 Band 66_Ant 8	20M	BPSK	50	28		10mm	349000	1745	15.10	15.50	0.244	0.27
	FR1 Band 66_Ant 8	20M	BPSK	1	53	Side C	10mm	349000	1745	16.10	16.50	0.317	0.35
	FR1 Band 66_Ant 8	20M	BPSK	50	28		10mm	349000	1745	15.10	15.50	0.203	0.22
	FR1 Band 66_Ant 8	20M	BPSK	1	53	Side D	10mm	349000	1745	16.10	16.50	0.459	0.50
	FR1 Band 66_Ant 8	20M	BPSK	50	28		10mm	349000	1745	15.10	15.50	0.384	0.42

Plot No.	Band	BW (MHz)	Modulation	RB Size	RB offset	Test Position	Gap (mm)	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side A	10mm	134600	673	23.51	24.00	0.899	1.01
7	FR1 Band 71_Ant 0	20M	BPSK	1	53		10mm	136100	680.5	23.51	24.00	1.06	1.19
	FR1 Band 71_Ant 0	20M	BPSK	1	53		10mm	137600	688	23.95	24.00	0.880	0.89
	FR1 Band 71_Ant 0	20M	BPSK	50	28		10mm	136100	680.5	22.52	23.00	0.755	0.84
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side B	10mm	136100	680.5	23.51	24.00	0.638	0.71
	FR1 Band 71_Ant 0	20M	BPSK	50	28		10mm	136100	680.5	22.52	23.00	0.522	0.58
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side C	10mm	134600	673	23.51	24.00	0.947	1.06
	FR1 Band 71_Ant 0	20M	BPSK	1	53		10mm	136100	680.5	23.51	24.00	0.988	1.11
	FR1 Band 71_Ant 0	20M	BPSK	1	53		10mm	137600	688	23.95	24.00	0.861	0.87
	FR1 Band 71_Ant 0	20M	BPSK	50	28		10mm	136100	680.5	22.52	23.00	0.752	0.84
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side D	10mm	136100	680.5	23.51	24.00	0.504	0.56
	FR1 Band 71_Ant 0	20M	BPSK	50	28		10mm	136100	680.5	22.52	23.00	0.426	0.48
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side F	10mm	134600	680.5	23.51	24.00	0.0631	0.07
	FR1 Band 71_Ant 0	20M	BPSK	50	28		10mm	136100	680.5	22.52	23.00	0.0517	0.06
	FR1 Band 71_Ant 0	20M	BPSK	1	53	Side A	10mm	136100	680.5	20.88	21.00	0.483	0.50
	Repeat	20M	BPSK	1	53	Side A	10mm	136100	680.5	23.51	24.00	1.04	1.16
8	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side A	10mm	646720	3700.8	21.36	21.50	0.745	0.77
	FR1 Band 77_Ant 4	20M	BPSK	50	28		10mm	646720	3700.8	20.14	20.50	0.632	0.69
	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side B	10mm	646720	3700.8	25.76	26.00	0.240	0.25
	FR1 Band 77_Ant 4	20M	BPSK	50	28		10mm	646720	3700.8	24.53	25.00	0.156	0.17
	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side C	10mm	646720	3700.8	21.36	21.50	0.613	0.63
	FR1 Band 77_Ant 4	20M	BPSK	50	28		10mm	646720	3700.8	20.14	20.50	0.534	0.58
	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side F	10mm	646720	3700.8	21.36	21.50	0.683	0.71
	FR1 Band 77_Ant 4	20M	BPSK	50	28		10mm	646720	3700.8	20.14	20.50	0.549	0.60
	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side F	20mm	646720	3700.8	25.92	26.00	0.744	0.76
	FR1 Band 77_Ant 4	20M	BPSK	1	53	Side F	10mm	646720	3700.8	18.36	18.50	0.303	0.31
	FR1 Band 77_Ant 6	20M	BPSK	1	53	Side A	10mm	646720	3700.8	18.43	18.50	0.296	0.30
	FR1 Band 77_Ant 6	20M	BPSK	50	28		10mm	646720	3700.8	17.29	17.50	0.159	0.17
	FR1 Band 77_Ant 6	20M	BPSK	1	53	Side C	10mm	646720	3700.8	18.43	18.50	0.102	0.10
	FR1 Band 77_Ant 6	20M	BPSK	50	28		10mm	646720	3700.8	17.29	17.50	0.0853	0.09
	FR1 Band 77_Ant 6	20M	BPSK	1	53	Side D	10mm	646720	3700.8	18.43	18.50	0.329	0.33
	FR1 Band 77_Ant 6	20M	BPSK	50	28		10mm	646720	3700.8	17.29	17.50	0.268	0.28
	FR1 Band 77_Ant 6	20M	BPSK	1	53	Side E	10mm	646720	3700.8	22.74	23.00	0.241	0.26
	FR1 Band 77_Ant 6	20M	BPSK	50	28		10mm	646720	3700.8	21.97	22.00	0.138	0.14

10. Simultaneous Transmission Analysis

The 3G/4G/WiFi data is located in report number SAR.20220809. The data listed in the tables below was extracted from the reports filed with this report.

Sim-Tx configuration

No.	Simultaneous Transmission Configuration	Exposure Positions
		Body
1	UMTS + 2.4 GHz Wifi 0 + 2.4 GHz WiFi 1	Yes
2	UMTS + 5 GHz Wifi 0 + 5 GHz WiFi 1	Yes
3	LTE + 2.4 GHz Wifi 0 + 2.4 GHz WiFi 1	Yes
4	LTE + 5 GHz Wifi 0 + 5 GHz WiFi 1	Yes
5	FR1 + 2.4 GHz Wifi 0 + 2.4 GHz WiFi 1	Yes
6	FR1 + 5 GHz Wifi 0 + 5 GHz WiFi 1	Yes
7	LTE + FR1 + 2.4 GHz WiFi 0 + 2.4 GHz WiFi 1	Yes
8	LTE + FR1 + 5 GHz WiFi 0 + 5 GHz WiFi 1	Yes

General Note:

1. The worst-case WLAN reported SAR for each configuration was used for SAR summation, regardless of whether the WLAN channel has Hotspot capability. Therefore, the following summations represent the absolute worst cases for simultaneous transmission with WLAN.
2. The Scaled SAR summation is calculated based on the same configuration and test position.

Body Exposure Conditions

WWAN Band	Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz Wi-Fi 0 1g SAR (W/kg)	3 2.4GHz Wi-Fi 1 1g SAR (W/kg)	4 5GHz Wi-Fi 0 1g SAR (W/kg)	5 5GHz Wi-Fi 1 1g SAR (W/kg)	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)
WCDMA II Ant 0	Side A	1.08	0.27	0.14	0.29	0.20	1.49	1.57
	Side B	0.06		0.11		0.38	0.17	0.44
	Side C	0.46	0.16	0.13	0.22	0.25	0.75	0.93
	Side D	1.10	0.25		0.32		1.35	1.42
	Side E		0.09		0.14		0.09	0.14
	Side F	1.36		0.04		0.15	1.40	1.51
WCDMA IV Ant 0	Side A	0.47	0.27	0.14	0.29	0.20	0.88	0.96
	Side B	0.19		0.11		0.38	0.30	0.57
	Side C	0.66	0.16	0.13	0.22	0.25	0.95	1.13
	Side D	0.52	0.25		0.32		0.77	0.84
	Side E		0.09		0.14		0.09	0.14
	Side F	1.30		0.04		0.15	1.34	1.45
WCDMA V Ant 0	Side A	1.09	0.27	0.14	0.29	0.20	1.50	1.58
	Side B	0.71		0.11		0.38	0.82	1.09
	Side C	1.12	0.16	0.13	0.22	0.25	1.45	1.59
	Side D	0.56	0.25		0.32		0.81	0.88
	Side E		0.09		0.14		0.09	0.14
	Side F	0.10		0.04		0.15	0.14	0.25
LTE Band 7 Ant 0	Side A	0.72	0.27	0.14	0.29	0.20	1.13	1.21
	Side B	0.12		0.11		0.38	0.23	0.50
	Side C	0.34	0.16	0.13	0.22	0.25	0.63	0.81
	Side D	0.23	0.25		0.32		0.48	0.55
	Side E		0.09		0.14		0.09	0.14
	Side F	1.18		0.04		0.15	1.22	1.33
LTE Band 12 Ant 0	Side A	0.84	0.27	0.14	0.29	0.20	1.25	1.33
	Side B	0.54		0.11		0.38	0.65	0.92
	Side C	0.79	0.16	0.13	0.22	0.25	1.08	1.26
	Side D	0.47	0.25		0.32		0.72	0.79
	Side E		0.09		0.14		0.09	0.14
	Side F	0.08		0.04		0.15	0.12	0.23
LTE Band 13 Ant 0	Side A	0.77	0.27	0.14	0.29	0.20	1.18	1.26
	Side B	0.45		0.11		0.38	0.56	0.83
	Side C	0.71	0.16	0.13	0.22	0.25	1.00	1.18
	Side D	0.33	0.25		0.32		0.58	0.65
	Side E		0.09		0.14		0.09	0.14
	Side F	0.11		0.04		0.15	0.15	0.26
LTE Band 25 Ant 0	Side A	1.10	0.27	0.14	0.29	0.20	1.51	1.59
	Side B	0.13		0.11		0.38	0.24	0.51
	Side C	1.08	0.16	0.13	0.22	0.25	1.37	1.55
	Side D	0.63	0.25		0.32		0.88	0.95
	Side E		0.09		0.14		0.09	0.14
	Side F	1.34		0.04		0.15	1.38	1.49

WWAN Band	Exposure Position	1 WWAN 1g SAR (W/kg)	2 2.4GHz Wi-Fi 0 1g SAR (W/kg)	3 2.4GHz Wi-Fi 1 1g SAR (W/kg)	4 5GHz Wi-Fi 0 1g SAR (W/kg)	5 5GHz Wi-Fi 1 1g SAR (W/kg)	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)
LTE Band 26 Ant 0	Side A	1.09	0.27	0.14	0.29	0.20	1.50	1.58
	Side B	0.60		0.11		0.38	0.71	0.98
	Side C	1.12	0.16	0.13	0.22	0.25	1.41	1.59
	Side D	0.48	0.25		0.32		0.73	0.80
	Side E		0.09		0.14		0.09	0.14
	Side F	0.13		0.04		0.15	0.17	0.28
LTE Band 41 Ant 0	Side A	0.50	0.27	0.14	0.29	0.20	0.91	0.99
	Side B	0.30		0.11		0.38	0.41	0.68
	Side C	0.36	0.16	0.13	0.22	0.25	0.65	0.83
	Side D	1.04	0.25		0.32		1.29	1.36
	Side E		0.09		0.14		0.09	0.14
	Side F	0.63		0.04		0.15	0.67	0.78
LTE Band 48 Ant 4	Side A	0.45	0.27	0.14	0.29	0.20	0.86	0.94
	Side B	0.25		0.11		0.38	0.36	0.63
	Side C	0.26	0.16	0.13	0.22	0.25	0.55	0.73
	Side D		0.25		0.32		0.25	0.32
	Side E		0.09		0.14		0.09	0.14
	Side F	0.50		0.04		0.15	0.54	0.65
LTE Band 66 Ant 0	Side A	0.41	0.27	0.14	0.29	0.20	0.82	0.90
	Side B	0.09		0.11		0.38	0.20	0.47
	Side C	0.55	0.16	0.13	0.22	0.25	0.84	1.02
	Side D	0.70	0.25		0.32		0.95	1.02
	Side E		0.09		0.14		0.09	0.14
	Side F	1.27		0.04		0.15	1.31	1.42
LTE Band 71 Ant 0	Side A	0.84	0.27	0.14	0.29	0.20	1.25	1.33
	Side B	0.34		0.11		0.38	0.45	0.72
	Side C	0.76	0.16	0.13	0.22	0.25	1.05	1.23
	Side D	0.46	0.25		0.32		0.71	0.78
	Side E		0.09		0.14		0.09	0.14
	Side F	0.08		0.04		0.15	0.12	0.23
FR1 Band n7 Ant 0	Side A	1.02	0.27	0.14	0.29	0.20	1.43	1.51
	Side B	0.17		0.11		0.38	0.28	0.55
	Side C	0.83	0.16	0.13	0.22	0.25	1.12	1.30
	Side D	0.06	0.25		0.32		0.31	0.38
	Side E		0.09		0.14		0.09	0.14
	Side F	1.21		0.04		0.15	1.25	1.36
FR1 Band n25 Ant 0	Side A	1.11	0.27	0.14	0.29	0.20	1.52	1.60
	Side B	0.33		0.11		0.38	0.44	0.71
	Side C	0.78	0.16	0.13	0.22	0.25	1.07	1.25
	Side D	0.02	0.25		0.32		0.27	0.34
	Side E		0.09		0.14		0.09	0.14
	Side F	1.11		0.04		0.15	1.15	1.26
FR1 Band n26 Ant 0	Side A	0.86	0.27	0.14	0.29	0.20	1.27	1.35
	Side B	0.32		0.11		0.38	0.43	0.70
	Side C	0.85	0.16	0.13	0.22	0.25	1.14	1.32
	Side D	0.59	0.25		0.32		0.84	0.91
	Side E		0.09		0.14		0.09	0.14
	Side F	0.09		0.04		0.15	0.13	0.24
FR1 Band n41 Ant 8	Side A	0.77	0.27	0.14	0.29	0.20	1.18	1.26
	Side B			0.11		0.38	0.11	0.38
	Side C	0.31	0.16	0.13	0.22	0.25	0.60	0.78
	Side D	0.11	0.25		0.32		0.36	0.43
	Side E		0.09		0.14		0.09	0.14
	Side F			0.04		0.15	0.04	0.15

WWAN Band	Exposure Position	1	2	3	4	5	1+2+3 Summed 1g SAR (W/kg)	1+4+5 Summed 1g SAR (W/kg)
		WWAN	2.4GHz Wi-Fi 0	2.4GHz Wi-Fi 1	5GHz Wi-Fi 0	5GHz Wi-Fi 1		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
FR1 Band n48 Ant 4	Side A	1.09	0.27	0.14	0.29	0.20	1.50	1.58
	Side B	0.31		0.11		0.38	0.42	0.69
	Side C	0.69	0.16	0.13	0.22	0.25	0.98	1.16
	Side D		0.25		0.32		0.25	0.32
	Side E		0.09		0.14		0.09	0.14
	Side F	1.21		0.04		0.15	1.25	1.36
FR1 Band n66 Ant 0	Side A	1.11	0.27	0.14	0.29	0.20	1.52	1.60
	Side B	0.31		0.11		0.38	0.42	0.69
	Side C	1.11	0.16	0.13	0.22	0.25	1.40	1.58
	Side D	0.11	0.25		0.32		0.36	0.43
	Side E		0.09		0.14		0.09	0.14
	Side F	1.19		0.04		0.15	1.23	1.34
FR1 Band n71 Ant 0	Side A	1.19	0.27	0.14	0.29	0.20	1.60	1.68
	Side B	0.71		0.11		0.38	0.82	1.09
	Side C	1.11	0.16	0.13	0.22	0.25	1.40	1.58
	Side D	0.56	0.25		0.32		0.81	0.88
	Side E		0.09		0.14		0.09	0.14
	Side F	0.07		0.04		0.15	0.11	0.22
FR1 Band n77 Ant 4	Side A	0.77	0.27	0.14	0.29	0.20	1.18	1.26
	Side B	0.26		0.11		0.38	0.37	0.64
	Side C	0.63	0.16	0.13	0.22	0.25	0.92	1.10
	Side D		0.25		0.32		0.25	0.32
	Side E		0.09		0.14		0.09	0.14
	Side F	0.71		0.04		0.15	0.75	0.86

The SPLRS is not met for Band n71. Therefore, a scan was conducted with both WiFi0 and WiFi1 transmitting on channel 157 at maximum power for the WiFi volume scan. And, FR1 Band n71 was conducted for the cellular band volume scan. The two scans were then combined to give the resultant SAR simultaneous value. Below is the scan data.

RF Exposure Lab

DUT: M3000B; Type: Hotspot; FID: BI160522F00365

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: HSL600; Medium parameters used (interpolated): f = 680.5 MHz; σ = 0.88 S/m; ε_r = 41.387; ρ = 1000 kg/m^3
Phantom section: Flat Section

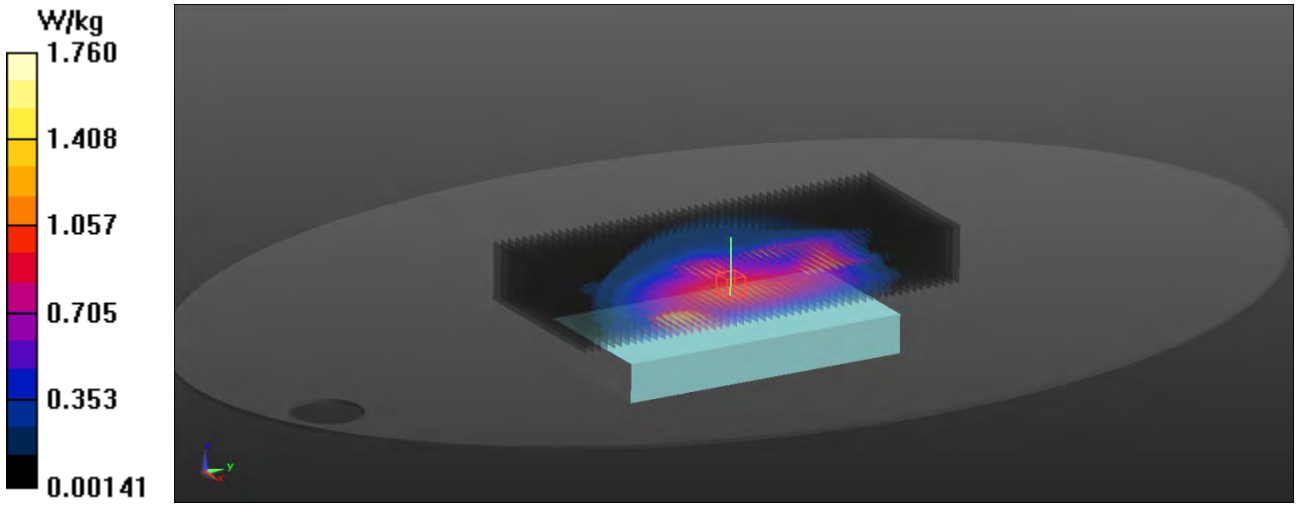
Communication System: WiFi 802.11a (OFDM, 6 Mbps); Frequency: 5785 MHz; Duty Cycle: 1:1
Medium: HSL3-6GHz; Medium parameters used (interpolated): f = 5785 MHz; σ = 5.335 S/m; ε_r = 34.77; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 10/14/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN3693; ConvF(10.46, 10.46, 10.46); Calibrated: 8/28/2022
Probe: EX3DV4 - SN3693; ConvF(4.7, 4.7, 4.7); Calibrated: 8/28/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 4/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

Multi Band Result:
SAR(1 g) = 1.21 W/kg
Maximum value of SAR (interpolated) = 1.76 W/kg



LTE UL CA	Exposure Position	1	2	3	4	5	6	1+2+3+4 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
		1ST UL	2nd UL	2.4GHz Wi-Fi 0	2.4GHz Wi-Fi 1	5GHz Wi-Fi 0	5GHz Wi-Fi 1		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
2A-4A	Side A		0.24	0.27	0.14	0.29	0.20	0.65	0.73
	Side B				0.11		0.38	0.11	0.38
	Side C		0.38	0.16	0.13	0.22	0.25	0.67	0.85
	Side D		0.37	0.25		0.32		0.62	0.69
	Side E			0.09		0.14		0.09	0.14
	Side F	0.44			0.04		0.15	0.48	0.59
2A-12A	Side A	0.33	0.34	0.27	0.14	0.29	0.20	1.08	1.16
	Side B				0.11		0.38	0.11	0.38
	Side C	0.36		0.16	0.13	0.22	0.25	0.65	0.83
	Side D	0.46		0.25		0.32		0.71	0.78
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
2A-66A	Side A		0.27	0.27	0.14	0.29	0.20	0.68	0.76
	Side B				0.11		0.38	0.11	0.38
	Side C		0.34	0.16	0.13	0.22	0.25	0.63	0.81
	Side D		0.43	0.25		0.32		0.68	0.75
	Side E			0.09		0.14		0.09	0.14
	Side F	0.44			0.04		0.15	0.48	0.59
4A-12A	Side A	0.24	0.34	0.27	0.14	0.29	0.20	0.99	1.07
	Side B				0.11		0.38	0.11	0.38
	Side C	0.38		0.16	0.13	0.22	0.25	0.67	0.85
	Side D	0.37		0.25		0.32		0.62	0.69
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
12A-66A	Side A	0.34	0.27	0.27	0.14	0.29	0.20	1.02	1.10
	Side B				0.11		0.38	0.11	0.38
	Side C		0.34	0.16	0.13	0.22	0.25	0.63	0.81
	Side D		0.43	0.25		0.32		0.68	0.75
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15

FR1 UL ENDC-LTE (NSA)	Exposure Position	1	2	3	4	5	6	1+2+3+4 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
		1ST UL	2nd UL	2.4GHz Wi-Fi 0	2.4GHz Wi-Fi 1	5GHz Wi-Fi 0	5GHz Wi-Fi 1		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
12A-n2A	Side A	0.34	0.44	0.27	0.14	0.29	0.20	1.19	1.27
	Side B				0.11		0.38	0.11	0.38
	Side C		0.28	0.16	0.13	0.22	0.25	0.57	0.75
	Side D		0.56	0.25		0.32		0.81	0.88
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
7A-n5A	Side A			0.27	0.14	0.29	0.20	0.41	0.49
	Side B				0.11		0.38	0.11	0.38
	Side C		0.43	0.16	0.13	0.22	0.25	0.72	0.90
	Side D	0.37		0.25		0.32		0.62	0.69
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
66A-n7A	Side A	0.27		0.27	0.14	0.29	0.20	0.68	0.76
	Side B				0.11		0.38	0.11	0.38
	Side C	0.32		0.16	0.13	0.22	0.25	0.61	0.79
	Side D	0.43		0.25		0.32		0.68	0.75
	Side E			0.09		0.14		0.09	0.14
	Side F		0.51		0.04		0.15	0.55	0.66
48A-n25A	Side A			0.27	0.14	0.29	0.20	0.41	0.49
	Side B				0.11		0.38	0.11	0.38
	Side C			0.16	0.13	0.22	0.25	0.29	0.47
	Side D			0.25		0.32		0.25	0.32
	Side E			0.09		0.14		0.09	0.14
	Side F	0.22	0.43		0.04		0.15	0.69	0.80
66A-n25A	Side A		0.43	0.27	0.14	0.29	0.20	0.84	0.92
	Side B				0.11		0.38	0.11	0.38
	Side C		0.27	0.16	0.13	0.22	0.25	0.56	0.74
	Side D		0.15	0.25		0.32		0.40	0.47
	Side E			0.09		0.14		0.09	0.14
	Side F	0.42			0.04		0.15	0.46	0.57
2A-n41A	Side A		0.31	0.27	0.14	0.29	0.20	0.72	0.80
	Side B				0.11		0.38	0.11	0.38
	Side C			0.16	0.13	0.22	0.25	0.29	0.47
	Side D			0.25		0.32		0.25	0.32
	Side E			0.09		0.14		0.09	0.14
	Side F	0.44			0.04		0.15	0.48	0.59
66A-n41A	Side A		0.31	0.27	0.14	0.29	0.20	0.72	0.80
	Side B				0.11		0.38	0.11	0.38
	Side C			0.16	0.13	0.22	0.25	0.29	0.47
	Side D			0.25		0.32		0.25	0.32
	Side E			0.09		0.14		0.09	0.14
	Side F	0.42			0.04		0.15	0.46	0.57
2A-n66A	Side A		0.40	0.27	0.14	0.29	0.20	0.81	0.89
	Side B				0.11		0.38	0.11	0.38
	Side C		0.35	0.16	0.13	0.22	0.25	0.64	0.82
	Side D		0.50	0.25		0.32		0.75	0.82
	Side E			0.09		0.14		0.09	0.14
	Side F	0.44			0.04		0.15	0.48	0.59
7A-n66A	Side A		0.40	0.27	0.14	0.29	0.20	0.81	0.89
	Side B				0.11		0.38	0.11	0.38
	Side C		0.35	0.16	0.13	0.22	0.25	0.64	0.82
	Side D		0.50	0.25		0.32		0.75	0.82
	Side E			0.09		0.14		0.09	0.14
	Side F	0.39			0.04		0.15	0.43	0.54

FR1 UL ENDC-LTE (NSA)	Exposure Position	1	2	3	4	5	6	1+2+3+4 Summed 1g SAR (W/kg)	1+2+5+6 Summed 1g SAR (W/kg)
		1ST UL	2nd UL	2.4GHz Wi-Fi 0	2.4GHz Wi-Fi 1	5GHz Wi-Fi 0	5GHz Wi-Fi 1		
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)		
12A-n66A	Side A	0.34	0.40	0.27	0.14	0.29	0.20	1.15	1.23
	Side B				0.11		0.38	0.11	0.38
	Side C		0.35	0.16	0.13	0.22	0.25	0.64	0.82
	Side D		0.50	0.25		0.32		0.75	0.82
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
48A-n66A	Side A		0.40	0.27	0.14	0.29	0.20	0.81	0.89
	Side B				0.11		0.38	0.11	0.38
	Side C		0.35	0.16	0.13	0.22	0.25	0.64	0.82
	Side D		0.50	0.25		0.32		0.75	0.82
	Side E			0.09		0.14		0.09	0.14
	Side F	0.22			0.04		0.15	0.26	0.37
2A-n71A	Side A	0.24	0.50	0.27	0.14	0.29	0.20	1.15	1.23
	Side B				0.11		0.38	0.11	0.38
	Side C	0.38		0.16	0.13	0.22	0.25	0.67	0.85
	Side D	0.37		0.25		0.32		0.62	0.69
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
66A-n71A	Side A	0.27	0.50	0.27	0.14	0.29	0.20	1.18	1.26
	Side B				0.11		0.38	0.11	0.38
	Side C	0.32		0.16	0.13	0.22	0.25	0.61	0.79
	Side D	0.43		0.25		0.32		0.68	0.75
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15
n41A-n41A Ant 8-Ant 3	Side A	0.77	0.33	0.27	0.14	0.29	0.20	1.51	1.59
	Side B				0.11		0.38	0.11	0.38
	Side C	0.31		0.16	0.13	0.22	0.25	0.6	0.78
	Side D	0.11		0.25		0.32		0.36	0.43
	Side E			0.09		0.14		0.09	0.14
	Side F				0.04		0.15	0.04	0.15

11. Test Equipment List

Table 11.1 Equipment Specifications

Type	Calibration Due Date	Calibration Done Date	Serial Number
Staubli Robot TX60L	N/A	N/A	F07/55M6A1/A/01
Measurement Controller CS8c	N/A	N/A	1012
ELI5 Flat Phantom	N/A	N/A	1251
Device Holder	N/A	N/A	N/A
Data Acquisition Electronics 4	03/24/2023	03/24/2022	1217
SPEAG E-Field Probe EX3DV4	01/14/2023	01/14/2022	7530
SPEAG E-Field Probe EX3DV4	08/28/2023	08/28/2022	3693
Speag Validation Dipole D750V2	06/04/2023	06/04/2021	1053
Speag Validation Dipole D900V2	06/04/2023	06/04/2021	1d128
Speag Validation Dipole D1750V2	06/03/2023	06/03/2021	1061
Speag Validation Dipole D1900V2	06/04/2023	06/04/2021	5d147
Speag Validation Dipole D2550V2	06/03/2023	06/03/2021	1003
Speag Validation Dipole D3300V2	01/17/2023	01/17/2021	1032
Speag Validation Dipole D3500V2	04/13/2023	04/13/2021	1061
Speag Validation Dipole D3700V2	04/13/2023	04/13/2021	1024
Speag Validation Dipole D3900V2	01/13/2023	01/13/2022	1082
Speag Validation Dipole D4200V2	01/13/2023	01/13/2022	1025
Agilent N1911A Power Meter	03/16/2023	03/16/2022	GB45100254
Agilent N1922A Power Sensor	03/17/2023	03/17/2022	MY45240464
Agilent (HP) 8561E Spectrum Analyzer	03/17/2023	03/17/2022	31720068
Agilent (HP) 83752A Synthesized Sweeper	03/17/2023	03/17/2022	3610A01048
Agilent (HP) 8753C Vector Network Analyzer	03/17/2023	03/17/2022	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	03/16/2023	03/16/2022	2904A00595
Anritsu MT8821C	N/A	N/A	6201381721
Aprel Dielectric Probe Assembly	N/A	N/A	0011
Head Equivalent Matter (600 MHz)	N/A	N/A	N/A
Head Equivalent Matter (900 MHz)	N/A	N/A	N/A
Head Equivalent Matter (1750 MHz)	N/A	N/A	N/A
Head Equivalent Matter (1900 MHz)	N/A	N/A	N/A
Head Equivalent Matter (2450 MHz)	N/A	N/A	N/A
Head Equivalent Matter (2550 MHz)	N/A	N/A	N/A
Head Equivalent Matter (3-6 GHz)	N/A	N/A	N/A

12. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC. These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests. The tested device complies with the requirements in respect to all parameters subject to the test. The test results and statements relate only to the item(s) tested.

Please note that the absorption and distribution of electromagnetic energy in the body is a very complex phenomena that depends on the mass, shape, and size of the body; the orientation of the body with respect to the field vectors; and, the electrical properties of both the body and the environment. Other variables that may play a substantial role in possible biological effects are those that characterize the environment (e.g. ambient temperature, air velocity, relative humidity, and body insulation) and those that characterize the individual (e.g. age, gender, activity level, debilitation, or disease). Because innumerable factors may interact to determine the specific biological outcome of an exposure to electromagnetic fields, any protection guide shall consider maximal amplification of biological effects as a result of field-body interactions, environmental conditions, and physiological variables.

13. References

[1] Federal Communications Commission, ET Docket 93-62, Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation, August 1996

[2] ANSI/IEEE C95.1 – 1992, American National Standard Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300kHz to 100GHz, New York: IEEE, 1992.

[3] ANSI/IEEE C95.3 – 1992, IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave, New York: IEEE, 1992.

[4] International Electrotechnical Commission, IEC 62209-2 (Edition 1.0), Human Exposure to radio frequency fields from hand-held and body mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz), March 2010.

[5] IEEE Standard 1528 – 2013, IEEE Recommended Practice for Determining the Peak-Spatial Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques, June 2013.

[6] Industry Canada, RSS – 102 Issue 5, Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), March 2015.

[7] Health Canada, Safety Code 6, Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3kHz to 300 GHz, 2009.

Appendix A – System Validation Plots and Data

```
**********************************************************
Test Result for UIM Dielectric Parameter
Thu 04/Aug/2022
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.5800	42.82	0.88	41.46	0.88
0.5900	42.77	0.88	41.40	0.88
0.6000	42.72	0.88	41.35	0.88
0.6100	42.67	0.88	41.30	0.89
0.6200	42.62	0.88	41.25	0.89
0.6300	42.56	0.88	41.18	0.89
0.6400	42.51	0.88	41.12	0.89
0.6500	42.46	0.88	41.06	0.89
0.6600	42.41	0.88	41.00	0.90
0.6700	42.36	0.89	40.94	0.90
0.6730	42.345	0.89	40.922	0.90*
0.6800	42.31	0.89	40.88	0.90
0.6805	42.307	0.89	40.877	0.901*
0.6880	42.262	0.89	40.832	0.908*
0.6900	42.25	0.89	40.82	0.91
0.7000	42.20	0.89	40.76	0.91
0.7000	42.20	0.89	40.66	0.91
0.7100	42.15	0.89	40.59	0.91
0.7200	42.10	0.89	40.54	0.91
0.7300	42.05	0.89	40.47	0.92
0.7400	41.99	0.89	40.41	0.92
0.7500	41.94	0.89	40.36	0.92
0.7600	41.89	0.89	40.30	0.93

* value intepolated

```
**********************************************************
Test Result for UIM Dielectric Parameter
Fri 05/Aug/2022
Freq   Frequency(GHz)
eH Limits for Head Epsilon
sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
Freq         eH     sH     Test_e Test_s
0.8000       41.68  0.90   40.79  0.91
0.8100       41.63  0.90   40.74  0.92
0.8200       41.58  0.90   40.68  0.93
0.8240       41.56  0.90   40.70  0.93*
0.8300       41.53  0.90   40.73  0.93
0.8315       41.526 0.902  40.726 0.932*
0.8390       41.503 0.909  40.703 0.939*
0.8400       41.50  0.91   40.70  0.94
0.8500       41.50  0.92   40.68  0.95
0.8600       41.50  0.93   40.66  0.96
0.8700       41.50  0.94   40.64  0.97
0.8800       41.50  0.95   40.63  0.98
0.8900       41.50  0.96   40.62  0.99
0.9000       41.50  0.97   40.61  1.00
0.9100       41.50  0.98   40.60  1.01
0.9200       41.49  0.98   40.59  1.01

* value interpolated


**********************************************************
Test Result for UIM Dielectric Parameter
Thu 11/Aug/2022
Freq   Frequency(GHz)
eH Limits for Head Epsilon
sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
Freq         eH     sH     Test_e Test_s
1.7000       40.16  1.34   39.54  1.37
1.7100       40.14  1.35   39.52  1.38
1.7200       40.13  1.35   39.50  1.39
1.7300       40.11  1.36   39.48  1.39
1.7400       40.09  1.37   39.46  1.40
1.7450       40.085 1.37   39.45  1.405*
1.7500       40.08  1.37   39.44  1.41
1.7600       40.06  1.38   39.42  1.42
1.7700       40.05  1.38   39.40  1.43
1.7800       40.03  1.39   39.38  1.43
1.7900       40.02  1.39   39.36  1.44

* value interpolated
```

```
************************************************************
Test Result for UIM Dielectric Parameter
Fri 12/Aug/2022
Freq   Frequency(GHz)
eH Limits for Head Epsilon
sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
```

Freq	eH	sH	Test_e	Test_s
1.8500	40.00	1.40	39.19	1.44
1.8600	40.00	1.40	39.17	1.45
1.8700	40.00	1.40	39.15	1.45
1.8800	40.00	1.40	39.13	1.46
1.8825	40.00	1.40	39.125	1.46*
1.8900	40.00	1.40	39.11	1.46
1.9000	40.00	1.40	39.09	1.46
1.9050	40.00	1.40	39.08	1.465*
1.9100	40.00	1.40	39.07	1.47
1.9200	40.00	1.40	39.06	1.48

* value interpolated

```
************************************************************
Test Result for UIM Dielectric Parameter
Mon 15/Aug/2022
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
************************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
2.4900	39.15	1.84	38.50	1.86
2.5000	39.14	1.85	38.48	1.87
2.5060	39.128	1.862	38.462	1.876*
2.5100	39.12	1.87	38.45	1.88
2.5200	39.11	1.88	38.43	1.90
2.5300	39.10	1.89	38.41	1.91
2.5350	39.095	1.895	38.395	1.915*
2.5400	39.09	1.90	38.38	1.92
2.5495	39.071	1.91	38.361	1.939*
2.5500	39.07	1.91	38.36	1.94
2.5600	39.06	1.92	38.34	1.95
2.5700	39.05	1.93	38.31	1.96
2.5800	39.03	1.94	38.29	1.98
2.5900	39.02	1.95	38.26	1.99
2.5930	39.017	1.953	38.263	1.99*
2.6000	39.01	1.96	38.27	1.99
2.6100	39.00	1.97	38.25	2.00
2.6200	38.98	1.99	38.24	2.01
2.6300	38.97	2.00	38.22	2.02
2.6365	38.964	2.007	38.207	2.027*
2.6400	38.96	2.01	38.20	2.03
2.6500	38.95	2.02	38.18	2.04
2.6600	38.93	2.03	38.17	2.05
2.6700	38.92	2.04	38.15	2.06
2.6800	38.91	2.05	38.13	2.07
2.6900	38.89	2.06	38.11	2.08
2.7000	38.88	2.07	38.10	2.09

* value interpolated

```
**********************************************************
Test Result for UIM Dielectric Parameter
Mon 08/Aug/2022
Freq    Frequency(GHz)
FCC_eH  Limits for Head Epsilon
FCC_sH  Limits for Head Sigma
Test_e  Epsilon  of  UIM
Test_s  Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
3.3000	38.16	2.70	37.48	2.71
3.3100	38.15	2.71	37.47	2.72*
3.3200	38.14	2.72	37.46	2.73
3.3400	38.12	2.74	37.44	2.75
3.3600	38.09	2.76	37.41	2.77
3.3800	38.07	2.78	37.39	2.79
3.4000	38.05	2.80	37.37	2.81
3.4077	38.038	2.808	37.358	2.818*
3.4200	38.02	2.82	37.34	2.83
3.4400	38.00	2.85	37.32	2.86
3.4600	37.98	2.87	37.30	2.88
3.4800	37.95	2.89	37.27	2.90
3.5000	37.93	2.91	37.25	2.92
3.5054	37.925	2.915	37.245	2.925*
3.5200	37.91	2.93	37.23	2.94
3.5400	37.88	2.95	37.20	2.96
3.5600	37.86	2.97	37.18	2.98
3.5800	37.84	2.99	37.16	3.00
3.6000	37.81	3.02	37.13	3.03
3.6031	37.807	3.023	37.127	3.033*
3.6033	37.807	3.023	37.127	3.033*
3.6200	37.79	3.04	37.11	3.05
3.6400	37.77	3.06	37.09	3.07
3.6467	37.763	3.067	37.083	3.077*
3.6600	37.75	3.08	37.07	3.09
3.6800	37.72	3.10	37.04	3.11
3.6900	37.71	3.11	37.03	3.12*
3.7000	37.70	3.12	37.02	3.13
3.7008	37.699	3.121	37.019	3.131*
3.7200	37.68	3.14	37.00	3.15
3.7400	37.65	3.17	36.97	3.18
3.7600	37.63	3.19	36.95	3.20
3.7800	37.61	3.21	36.93	3.22
3.7985	37.582	3.229	36.902	3.239*
3.8000	37.58	3.23	36.90	3.24
3.8200	37.56	3.25	36.88	3.26
3.8400	37.54	3.27	36.86	3.28
3.8600	37.51	3.29	36.83	3.30
3.8800	37.49	3.31	36.81	3.32
3.8962	37.474	3.334	36.794	3.344*
3.9000	37.47	3.34	36.79	3.35
3.9200	37.44	3.36	36.76	3.37
3.9400	37.42	3.38	36.74	3.39
3.9600	37.40	3.40	36.72	3.41
3.9800	37.37	3.42	36.69	3.43
3.9939	37.356	3.434	36.676	3.444*
4.0000	37.35	3.44	36.67	3.45
4.0200	37.33	3.46	36.65	3.47
4.0400	37.30	3.48	36.62	3.49
4.0600	37.28	3.51	36.60	3.52
4.0800	37.26	3.53	36.58	3.54
4.0916	37.243	3.542	36.563	3.552*
4.1000	37.23	3.55	36.55	3.56
4.1200	37.21	3.57	36.53	3.58
4.1400	37.19	3.59	36.51	3.60
4.1600	37.16	3.61	36.48	3.62
4.1800	37.14	3.63	36.46	3.64
4.1900	37.13	3.64	36.45	3.65
4.2000	37.12	3.65	36.44	3.66
4.2200	37.09	3.68	36.52	3.71
4.2400	37.07	3.70	36.50	3.73

* value interpolated

```
**********************************************************
Test Result for UIM Dielectric Parameter
Mon 19/Sep/2022
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
2.4900	39.15	1.84	38.89	1.89
2.5000	39.14	1.85	38.87	1.90
2.5060	39.128	1.862	38.852	1.906*
2.5100	39.12	1.87	38.84	1.91
2.5200	39.11	1.88	38.82	1.93
2.5300	39.10	1.89	38.80	1.94
2.5400	39.09	1.90	38.77	1.95
2.5495	39.071	1.91	38.751	1.969*
2.5500	39.07	1.91	38.75	1.97
2.5600	39.06	1.92	38.73	1.98
2.5700	39.05	1.93	38.70	1.99
2.5800	39.03	1.94	38.68	2.01
2.5900	39.02	1.95	38.65	2.02
2.5930	39.017	1.953	38.653	2.02*
2.6000	39.01	1.96	38.66	2.02
2.6100	39.00	1.97	38.64	2.03
2.6200	38.98	1.99	38.63	2.04
2.6300	38.97	2.00	38.61	2.05
2.6365	38.964	2.007	38.597	2.057*
2.6400	38.96	2.01	38.59	2.06
2.6500	38.95	2.02	38.57	2.07
2.6600	38.93	2.03	38.56	2.08
2.6700	38.92	2.04	38.54	2.09
2.6800	38.91	2.05	38.52	2.10
2.6900	38.89	2.06	38.50	2.11
2.7000	38.88	2.07	38.49	2.12

* value interpolated

```
**********************************************************
Test Result for UIM Dielectric Parameter
Fri 14/Oct/2022
Freq   Frequency(GHz)
FCC_eH Limits for Head Epsilon
FCC_sH Limits for Head Sigma
Test_e Epsilon  of  UIM
Test_s Sigma of UIM
**********************************************************
```

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.6800	42.31	0.89	41.39	0.88
0.6805	42.307	0.89	41.387	0.88
0.6900	42.25	0.89	41.33	0.88
0.7000	42.20	0.89	41.27	0.89
0.7040	42.18	0.89	41.242	0.894*
0.7075	42.163	0.89	41.218	0.898*
0.7100	42.15	0.89	41.20	0.90
0.7110	42.145	0.89	41.195	0.901*
0.7200	42.10	0.89	41.15	0.91
0.7300	42.05	0.89	41.08	0.92
0.7400	41.99	0.89	41.02	0.92
0.7500	41.94	0.89	40.97	0.93
0.7600	41.89	0.89	40.91	0.94
0.7700	41.84	0.89	40.85	0.95
0.7800	41.79	0.90	40.79	0.95
0.7900	41.73	0.90	40.73	0.96
0.8000	41.68	0.90	40.69	0.96

* value interpolated

RF Exposure Lab

Plot 1

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN 1053

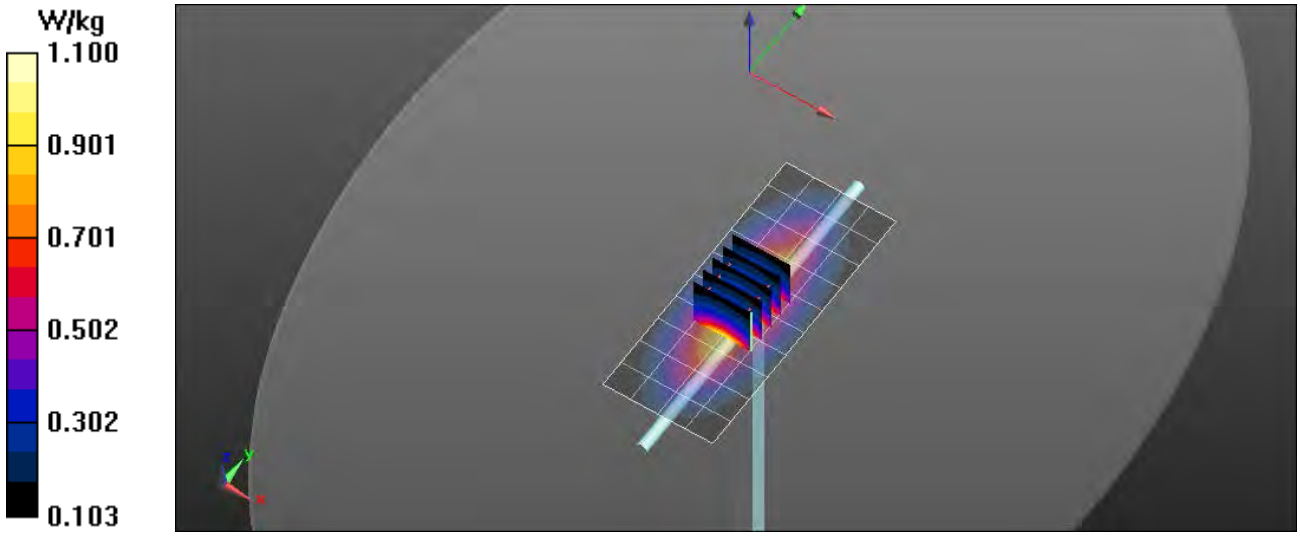
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: HSL600; Medium parameters used (interpolated): f = 750 MHz; σ = 0.92 S/m; ε_r = 40.36; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/4/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7530; ConvF(10.44, 10.44, 10.44); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

750 MHz Head/Verification/Area Scan (41x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (measured) = 1.08 W/kg

750 MHz Head/Verification /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.227 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.30 W/kg
P_{in}= 100 mW
SAR(1 g) = 0.865 W/kg; SAR(10 g) = 0.549 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



RF Exposure Lab

Plot 2

DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: D900V2 - SN:1d128

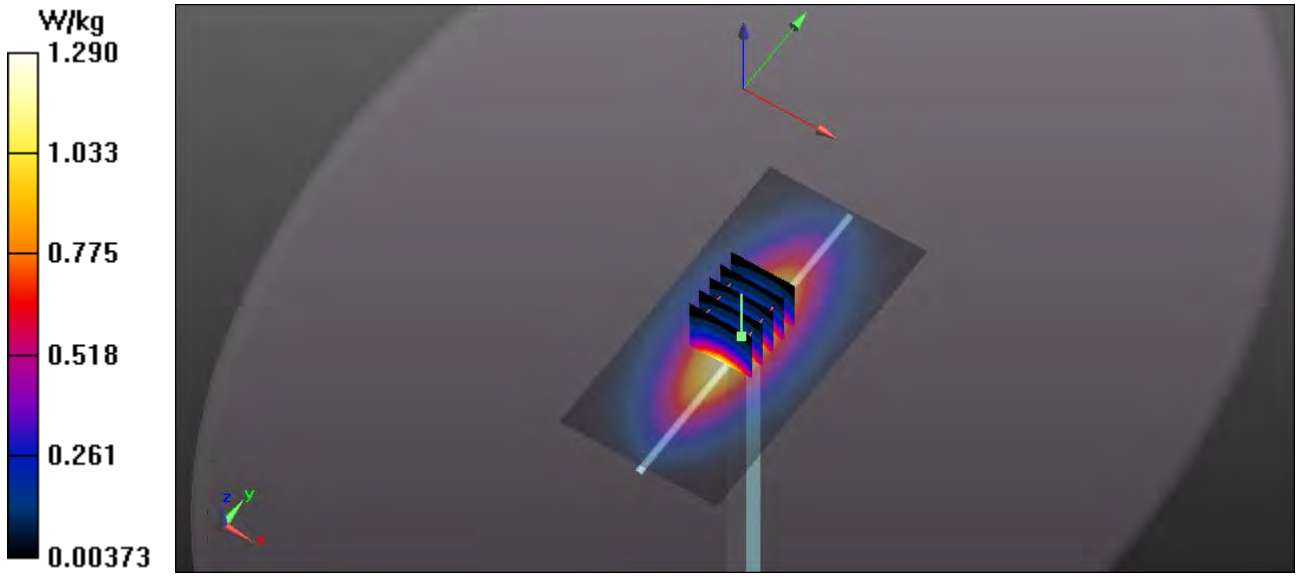
Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium: HSL900; Medium parameters used: f = 900 MHz; σ = 1 S/m; ε_r = 40.61; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/5/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(9.98, 9.98, 9.98); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

900 MHz Head/Verification/Area Scan (41x101x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.29 W/kg

900 MHz Head/Verification/Zoom Scan (5x5x8)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.612 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.47 W/kg
P_{in}= 100 mW
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.722 W/kg
Maximum value of SAR (measured) = 1.29 W/kg



RF Exposure Lab

Plot 3

DUT: Dipole 1750 MHz D1750V2; Type: D1750V2; Serial: D1750V2 - SN:1061

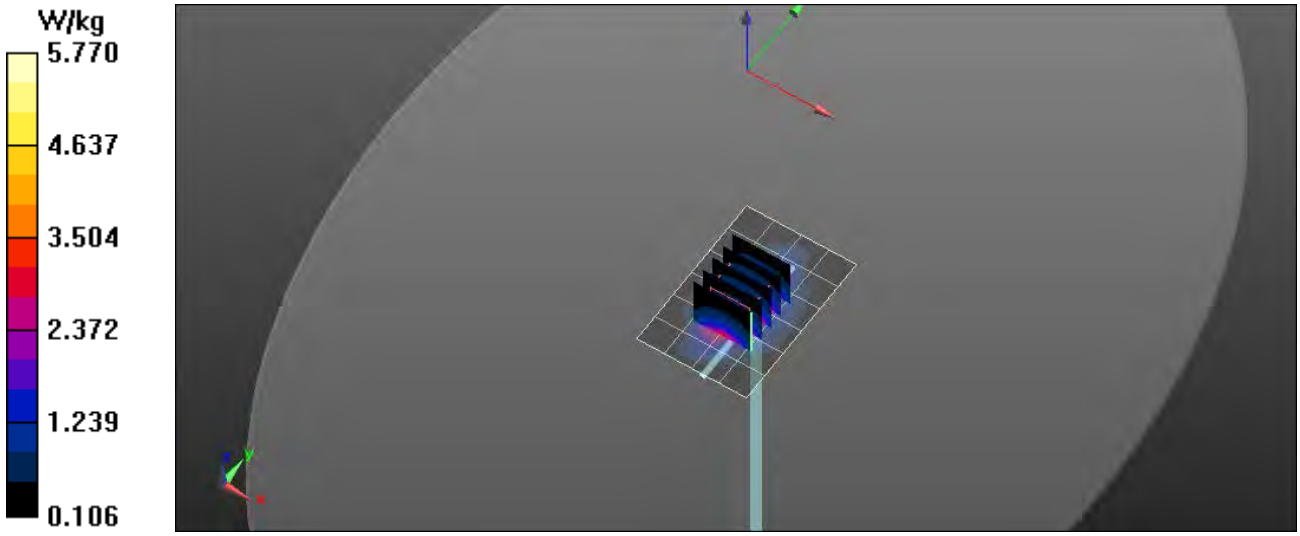
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: HSL1750; Medium parameters used: f = 1750 MHz; σ = 1.41 S/m; ε_r = 39.44; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/11/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(8.42, 8.42, 8.42); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

1750 MHz/Verification/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 5.46 W/kg

1750 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.568 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 6.92 W/kg
P_{in}= 100 mW
SAR(1 g) = 3.79 W/kg; SAR(10 g) = 1.96 W/kg
Maximum value of SAR (measured) = 5.47 W/kg



RF Exposure Lab

Plot 4

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2; Serial: D1900V2 - SN: 5d147

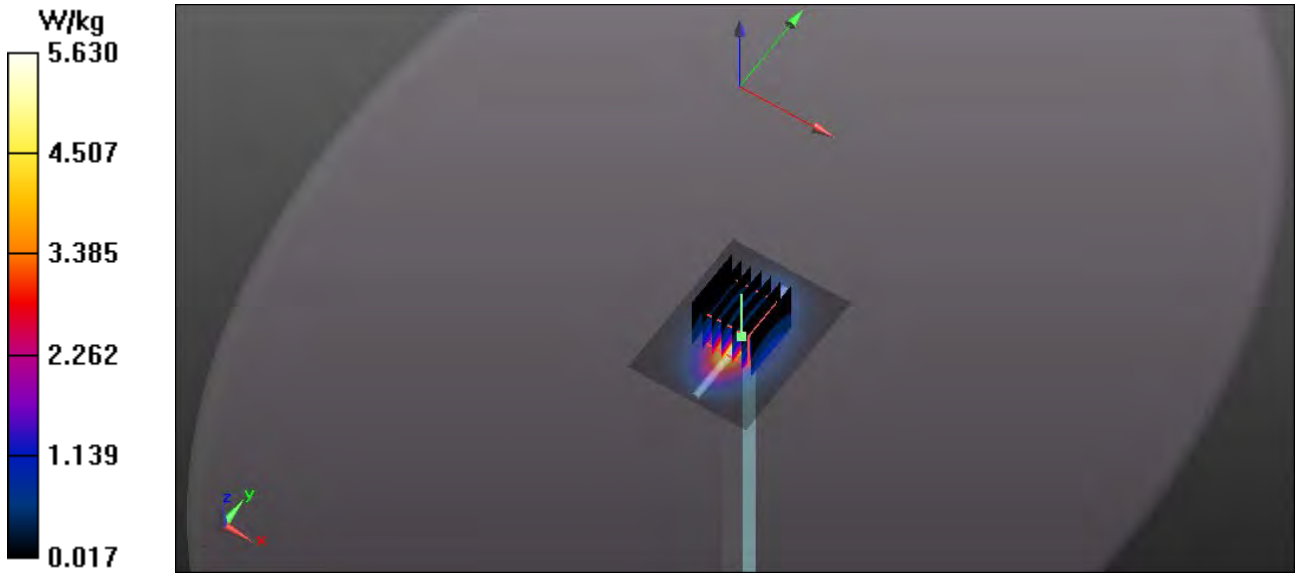
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium parameters used: f = 1900 MHz; σ = 1.46 S/m; ε_r = 39.09; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/12/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(8.06, 8.06, 8.06); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

1900 MHz/Verification/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 5.63 W/kg

1900 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.612 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 6.68 W/kg
P_{in}= 100 mW
SAR(1 g) = 4.11 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 5.63 W/kg



RF Exposure Lab

Plot 5

DUT: Dipole 2550 MHz D2550V2; Type: D2550V2; Serial: D2550V2 - SN:1003

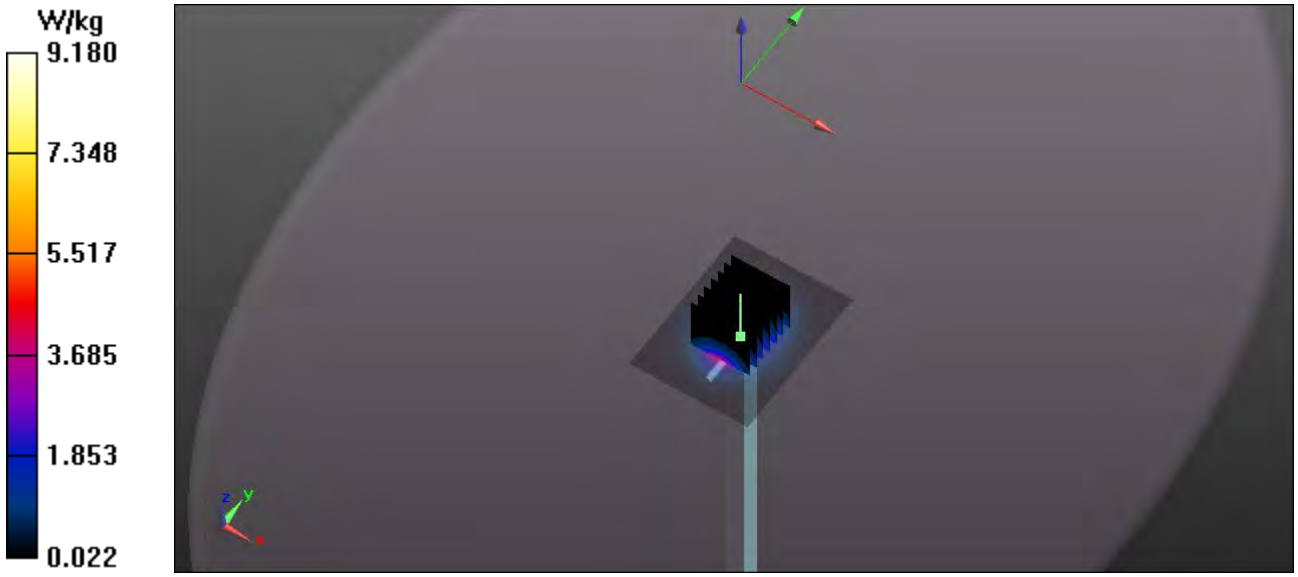
Communication System: CW; Frequency: 2550 MHz; Duty Cycle: 1:1
Medium: HSL2550; Medium parameters used: f = 2550 MHz; σ = 1.94 S/m; ε_r = 38.36; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/15/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(7.42, 7.42, 7.42); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

2550 MHz/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.95 W/kg

2550 MHz/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.249 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 11.43 W/kg
Pin=100 mW
SAR(1 g) = 5.67 W/kg; SAR(10 g) = 2.51 W/kg
Maximum value of SAR (measured) = 9.17 W/kg



RF Exposure Lab

Plot 6

DUT: Dipole D3300V2; Type: D3300V2; Serial: D3300V2 - SN: 1032

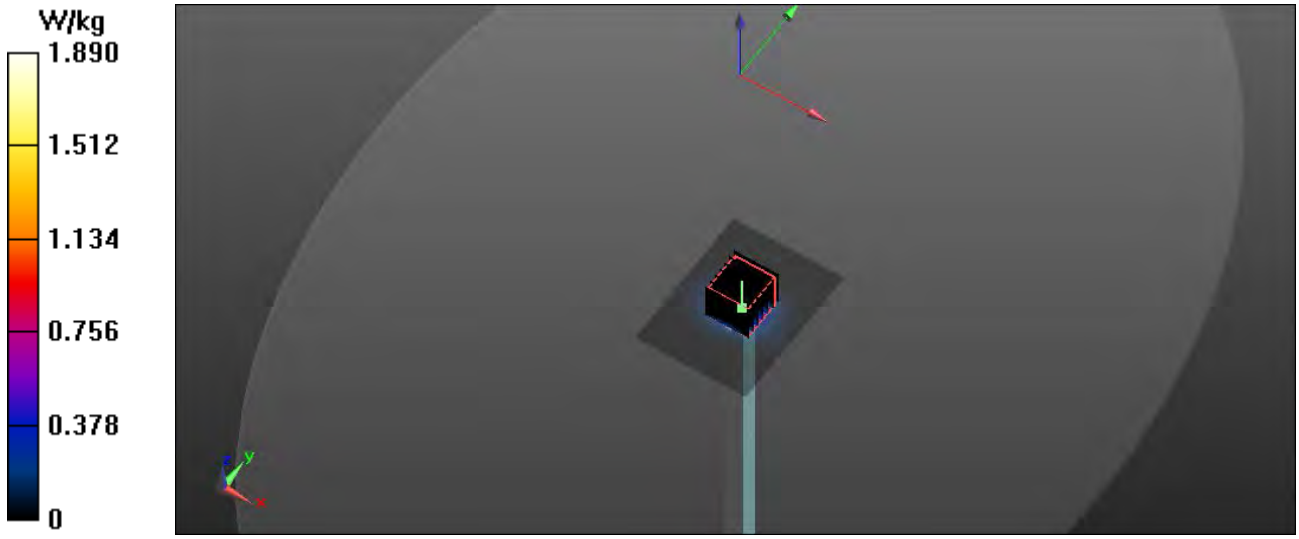
Communication System: CW; Frequency: 3300 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3300 MHz; σ = 2.71 S/m; ε_r = 37.48; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7530; ConvF(7.12, 7.12, 7.12); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

3300 MHz Head/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.9 W/kg

3300 MHz Head/Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.722 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.22 W/kg
Pin=10 mW
SAR(1 g) = 0.662 W/kg; SAR(10 g) = 0.255 W/kg
Maximum value of SAR (measured) = 1.89 W/kg



RF Exposure Lab

Plot 7

DUT: Dipole D3500V2; Type: D3500V2; Serial: D3500V2 - SN: 1061

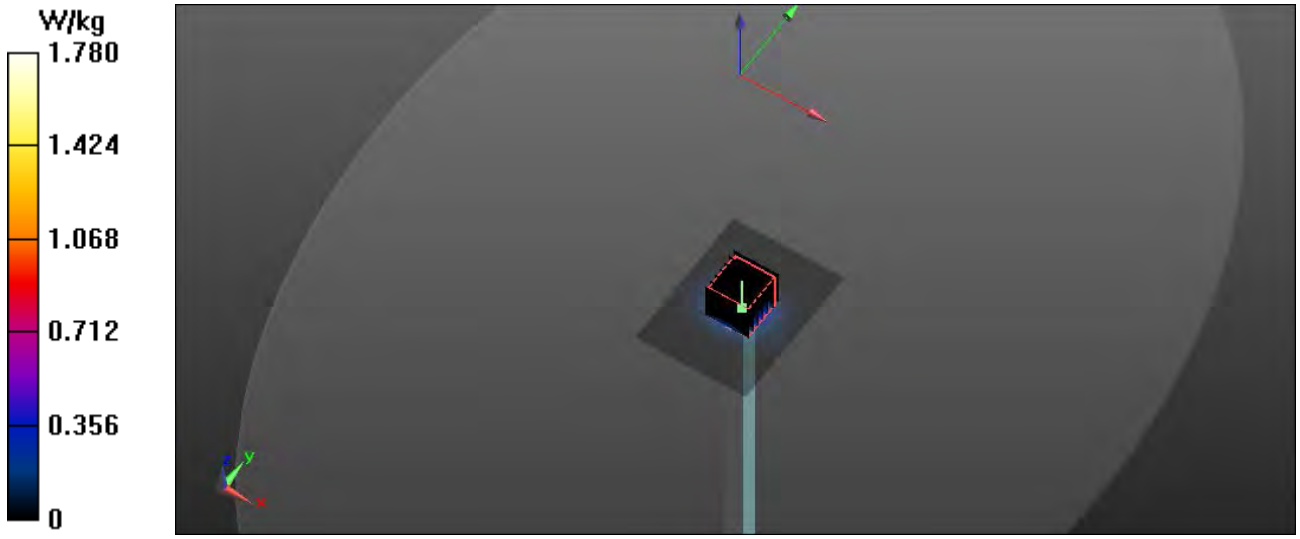
Communication System: CW; Frequency: 3500 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3500 MHz; σ = 2.92 S/m; ε_r = 37.25; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(7.1, 7.1, 7.1); Calibrated: 4/12/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

3500 MHz Head/Verification/Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 1.76 W/kg

3500 MHz Head/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 12.321 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.78 W/kg
P_{in}= 10 mW
SAR(1 g) = 0.688 W/kg; SAR(10 g) = 0.252 W/kg
Maximum value of SAR (measured) = 1.75 W/kg



RF Exposure Lab

Plot 8

DUT: Dipole D3700V2; Type: D3700V2; Serial: D3700V2 - SN:1024

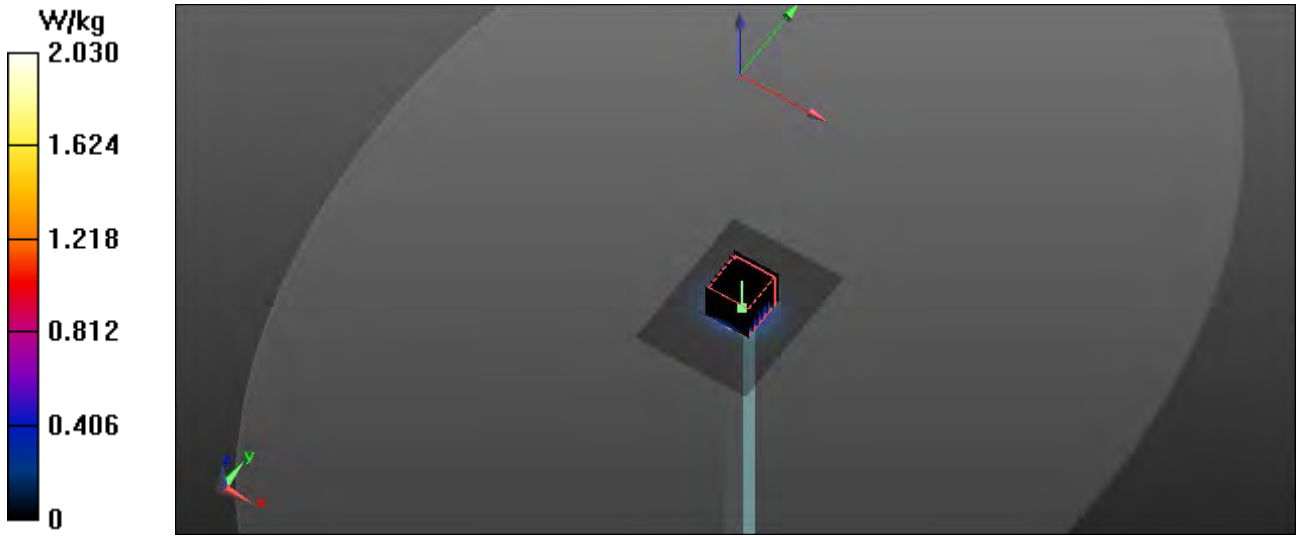
Communication System: CW; Frequency: 3700 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3700 MHz; σ = 3.13 S/m; ε_r = 37.02; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7530; ConvF(6.9, 6.9, 6.9); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

3700 MHz Head/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.01 W/kg

3700 MHz Head/Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 13.367 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.35 W/kg
P_{in}= 10 mW
SAR(1 g) = 0.695 W/kg; SAR(10 g) = 0.249 W/kg
Maximum value of SAR (measured) = 2.02 W/kg



RF Exposure Lab

Plot 9

DUT: Dipole D3900V2; Type: D3900V2; Serial: D3900V2 - SN:1082

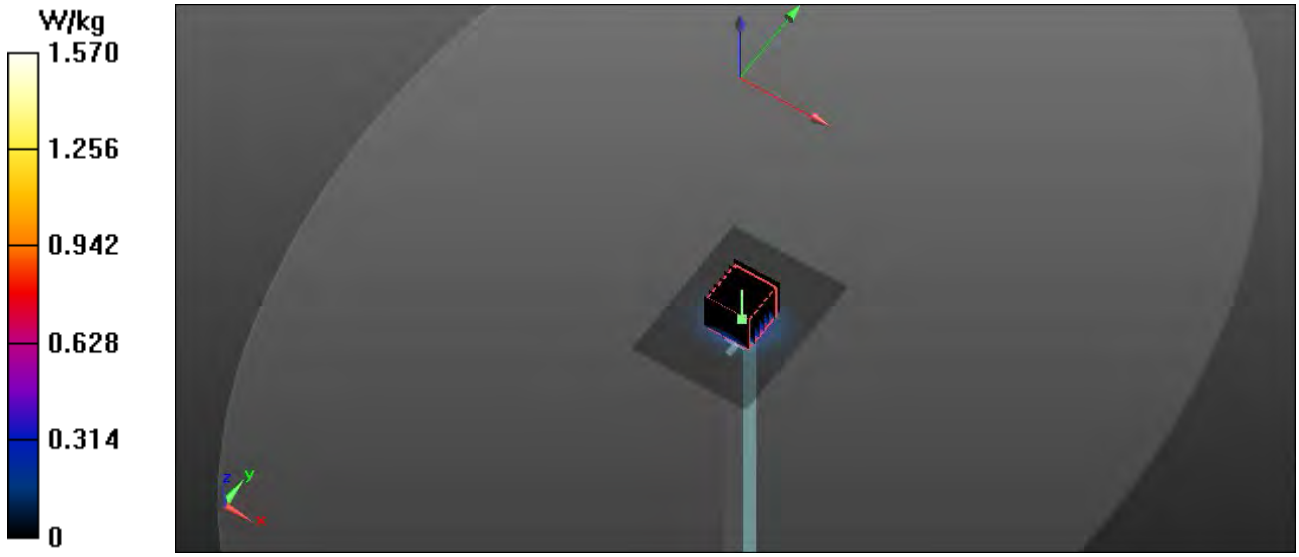
Communication System: CW; Frequency: 3900 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3900 MHz; σ = 3.35 S/m; ε_r = 36.79; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7530; ConvF(4.9, 4.9, 4.9); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

3900 MHz Head/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.55 W/kg

3900 MHz Head/Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.568 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.09 W/kg
Pin=10 mW
SAR(1 g) = 0.712 W/kg; SAR(10 g) = 0.251 W/kg
Maximum value of SAR (measured) = 1.57 W/kg



RF Exposure Lab

Plot 10

DUT: Dipole D4200V2; Type: D4200V2; Serial: D4200V2 - SN:1025

Communication System: CW; Frequency: 4200 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 4200 MHz; σ = 3.66 S/m; ε_r = 36.44; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7530; ConvF(6.38, 6.38, 6.38); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

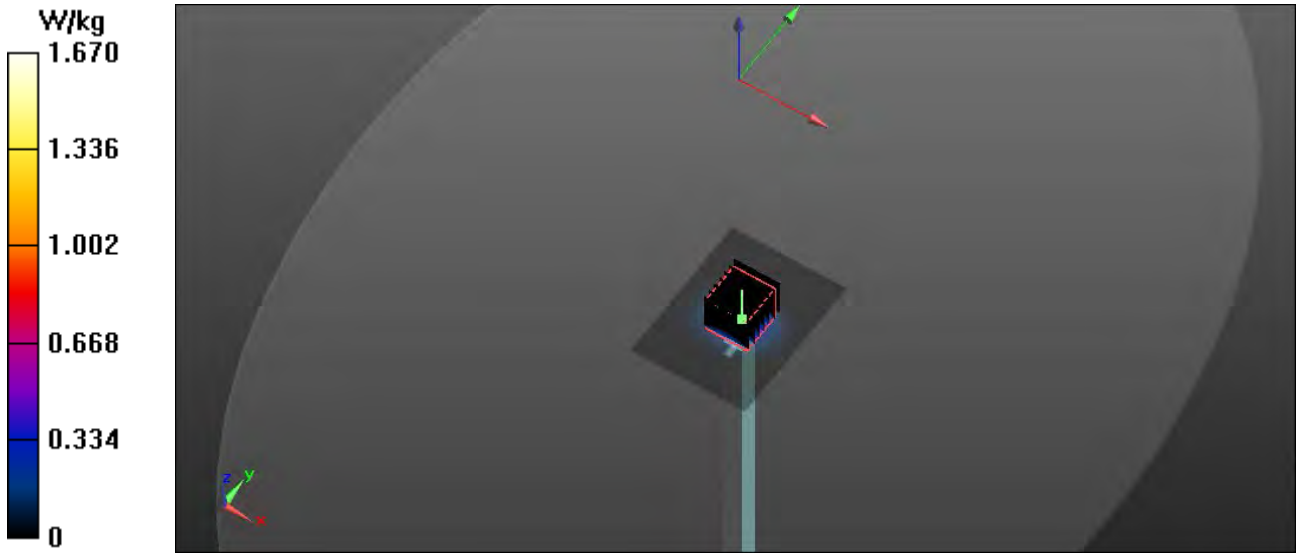
Procedure Notes:

4200 MHz Head/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (interpolated) = 1.68 W/kg

4200 MHz Head/Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 12.964 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.37 W/kg
Pin=10 mW
SAR(1 g) = 0.672 W/kg; SAR(10 g) = 0.225 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.67 W/kg



RF Exposure Lab

Plot 11

DUT: Dipole 2550 MHz D2550V2; Type: D2550V2; Serial: D2550V2 - SN:1003

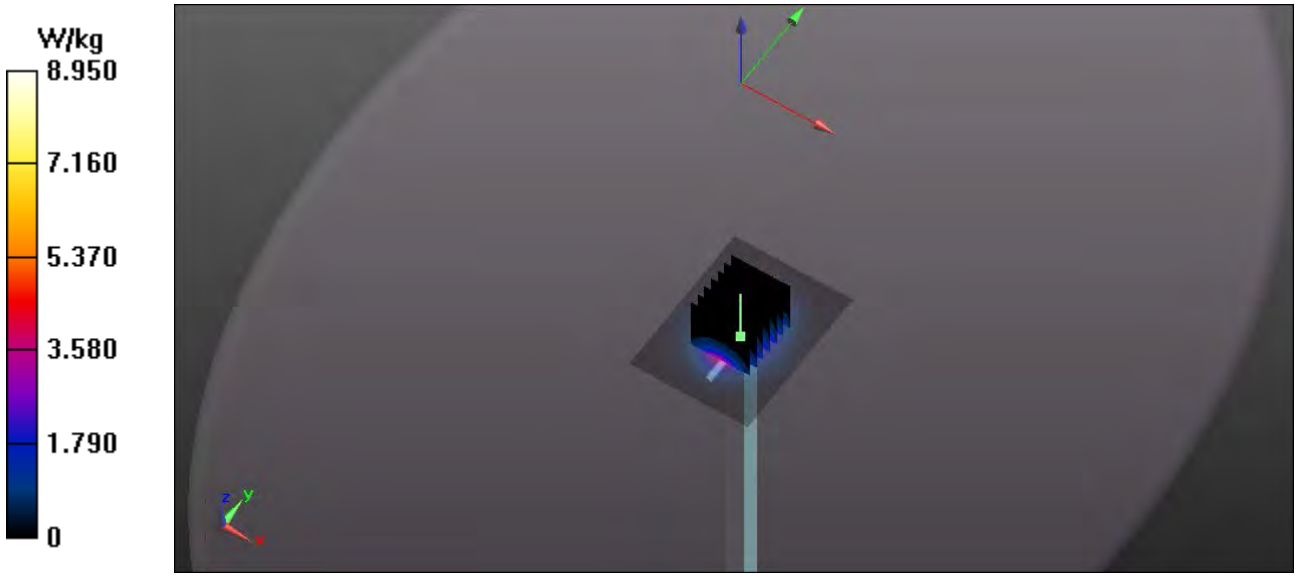
Communication System: CW; Frequency: 2550 MHz; Duty Cycle: 1:1
Medium: HSL2550; Medium parameters used: f = 2550 MHz; σ = 1.97 S/m; ε_r = 38.75; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 9/19/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7530; ConvF(7.42, 7.42, 7.42); Calibrated: 1/14/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

2550 MHz/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 8.85 W/kg

2550 MHz/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 51.895 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 10.87 W/kg
Pin=100 mW
SAR(1 g) = 5.62 W/kg; SAR(10 g) = 2.49 W/kg
Maximum value of SAR (measured) = 8.98 W/kg



RF Exposure Lab

Plot 12

DUT: Dipole 750 MHz D750V3; Type: D750V3; Serial: D750V3 - SN 1053

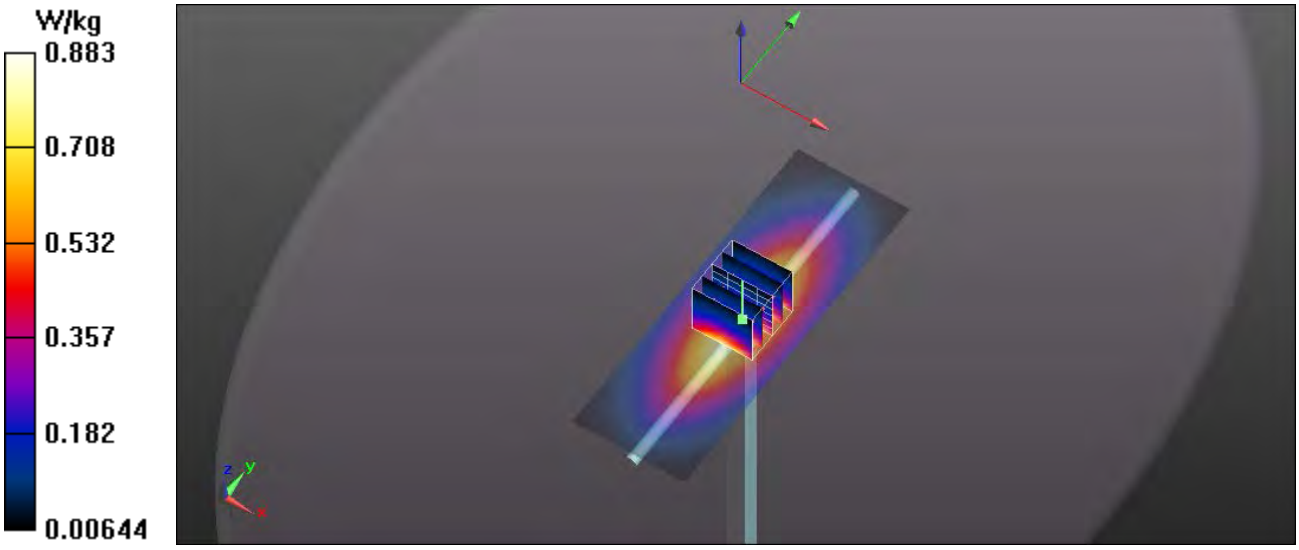
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: HSL750; Medium parameters used (interpolated): f = 750 MHz; σ = 0.93 S/m; ε_r = 40.97; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 10/14/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN3693; ConvF(10.46, 10.46, 10.46); Calibrated: 8/28/2022;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

750 MHz Head/Verification/Area Scan (41x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.871 W/kg

750 MHz Head/Verification /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.452 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.76 mW/g
P_{in}= 100 mW
SAR(1 g) = 0.866 mW/g; SAR(10 g) = 0.559 mW/g
Maximum value of SAR (measured) = 0.883 W/kg



Appendix B – SAR Test Data Plots

RF Exposure Lab

Plot 1

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz; Duty Cycle: 1:1
Medium: HSL2550; Medium parameters used (interpolated): f = 2535 MHz; σ = 1.915 S/m; ε_r = 38.395; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/15/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(7.42, 7.42, 7.42); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

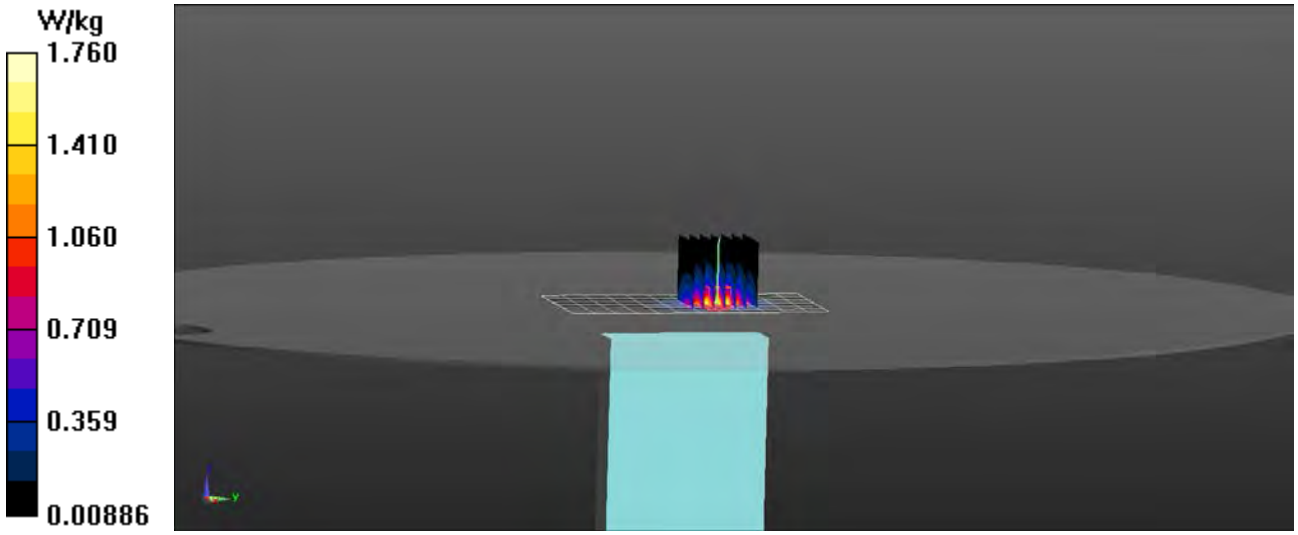
Procedure Notes:

Band n7 LTE/Side F 1 RB 49 Offset Ant 0 Mid/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.60 W/kg

Band n7 LTE/Side F 1 RB 49 Offset Ant 0 Mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.14 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.32 W/kg
SAR(1 g) = 1.17 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.76 W/kg



RF Exposure Lab

Plot 2

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1860 MHz; Duty Cycle: 1:1
Medium: HSL1900; Medium parameters used: f = 1860 MHz; σ = 1.45 S/m; ε_r = 39.17; ρ = 1000 kg/m^3
Phantom section: Flat Section

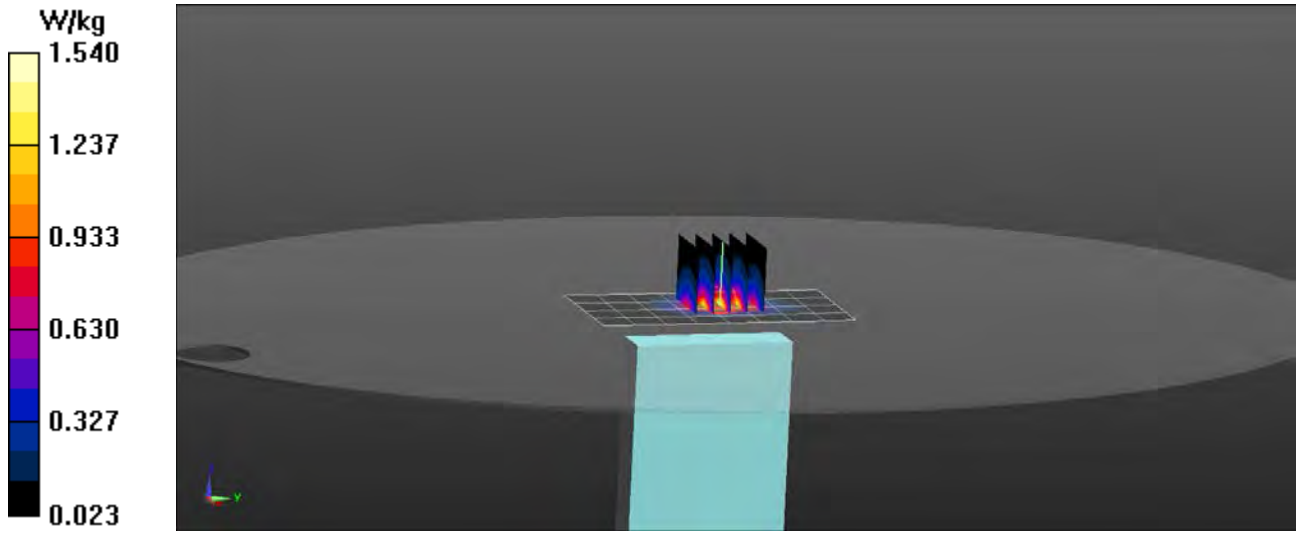
Test Date: Date: 8/12/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(8.06, 8.06, 8.06); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

Band n25 LTE/Side F 1 RB 49 Offset Ant 0 Low/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.30 W/kg

Band n25 LTE/Side F 1 RB 49 Offset Ant 0 Low/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 27.31 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.93 W/kg
SAR(1 g) = 1.1 W/kg
Maximum value of SAR (measured) = 1.54 W/kg



RF Exposure Lab

Plot 3

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 839 MHz; Duty Cycle: 1:1
Medium: HSL835; Medium parameters used (interpolated): f = 839 MHz; σ = 0.939 S/m; ε_r = 40.703; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/5/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(9.98, 9.98, 9.98); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

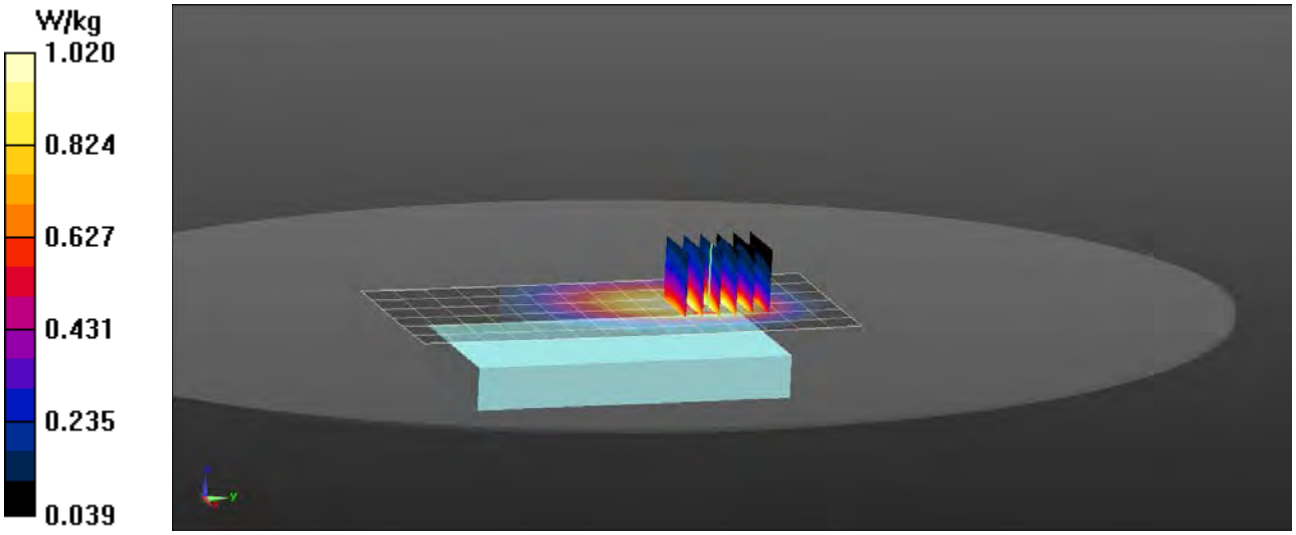
Procedure Notes:

Band n26 LTE/Side A 1 RB 49 Offset Ant 0 High/Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.05 W/kg

Band n26 LTE/Side A 1 RB 49 Offset Ant 0 High/Zoom Scan (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.24 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.21 W/kg
SAR(1 g) = 0.853 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.02 W/kg



RF Exposure Lab

Plot 4

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2593 MHz; Duty Cycle: 1:1
Medium: HSL2550; Medium parameters used (interpolated): f = 2593 MHz; σ = 1.99 S/m; ε_r = 38.263; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/15/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(7.42, 7.42, 7.42); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

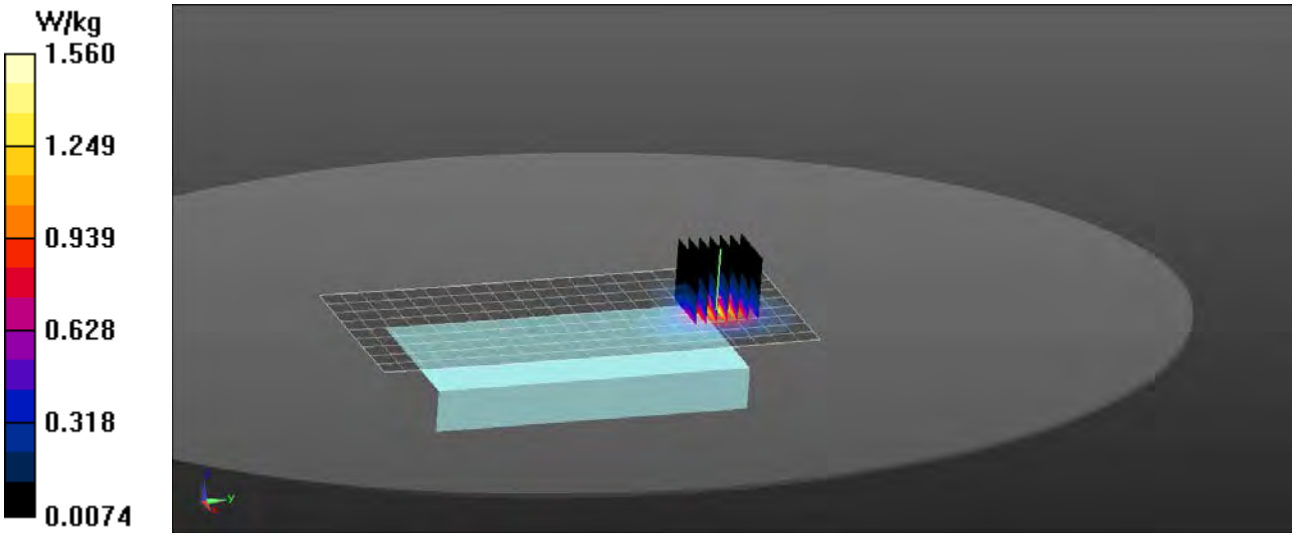
Procedure Notes:

Band n41 LTE/Side A 1 RB 49 Offset Ant 0 Mid/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.39 W/kg

Band n41 LTE/Side A 1 RB 49 Offset Ant 0 Mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.95 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 2.07 W/kg
SAR(1 g) = 0.752 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.56 W/kg



RF Exposure Lab

Plot 5

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3603.3 MHz; Duty Cycle: 1:1
Medium: HSL3-6GHz; Medium parameters used (interpolated): f = 3603.3 MHz; σ = 3.033 S/m; ε_r = 37.127; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/8/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(6.9, 6.9, 6.9); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

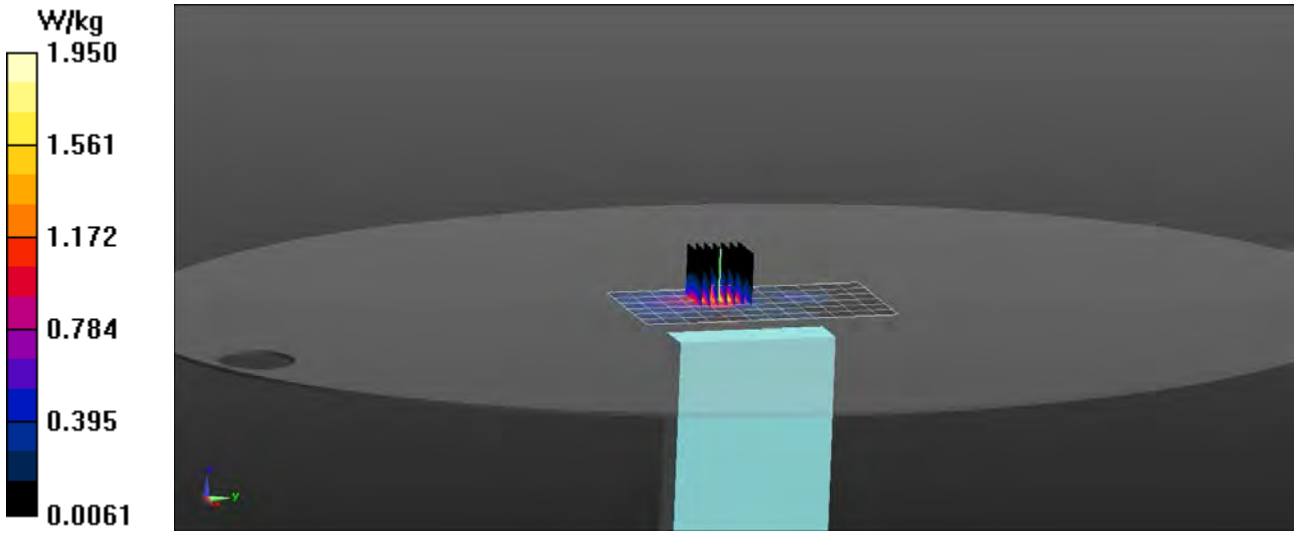
Procedure Notes:

Band n48 LTE/Side F 1 RB 49 Offset Ant 4 Mid1/Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.80 W/kg

Band n48 LTE/Side F 1 RB 49 Offset Ant 4 Mid1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 9.832 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 2.75 W/kg
SAR(1 g) = 1.17 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.95 W/kg



RF Exposure Lab

Plot 6

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 1745 MHz; Duty Cycle: 1:1
Medium: HSL1750; Medium parameters used (interpolated): f = 1745 MHz; σ = 1.405 S/m; ε_r = 39.45; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/11/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(8.42, 8.42, 8.42); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

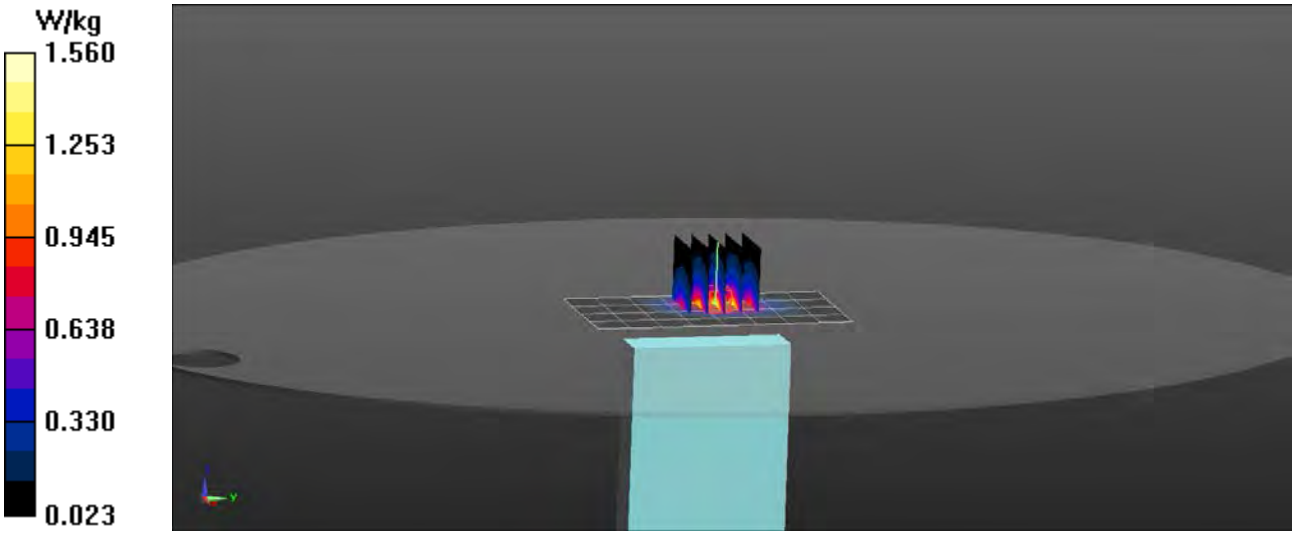
Procedure Notes:

Band n66 LTE/Side F 1 RB 49 Offset Ant 0 Mid/Area Scan (5x9x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.13 W/kg

Band n66 LTE/Side F 1 RB 49 Offset Ant 0 Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.62 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.97 W/kg
SAR(1 g) = 1.12 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.56 W/kg



RF Exposure Lab

Plot 7

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 680.5 MHz; Duty Cycle: 1:1
Medium: HSL600; Medium parameters used (interpolated): f = 680.5 MHz; σ = 0.901 S/m; ε_r = 40.877; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/4/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(10.44, 10.44, 10.44); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

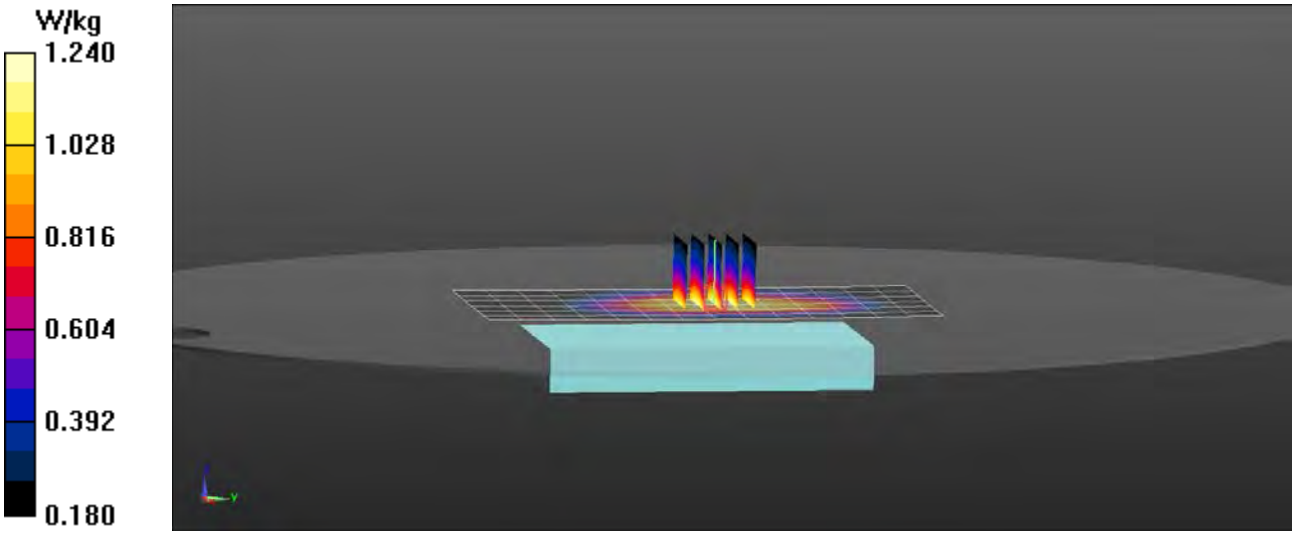
Procedure Notes:

Band n71 LTE/Side A 1 RB 49 Offset Ant 0 Mid/Area Scan (7x15x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.22 W/kg

Band n71 LTE/Side A 1 RB 49 Offset Ant 0 Mid/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.83 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 1.06 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.24 W/kg



RF Exposure Lab

Plot 8

DUT: M3000B; Type: Hotspot; FID: BI160522F00489

Communication System: LTE (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 3700.8 MHz; Duty Cycle: 1:1
Medium: HSL3-6GHz; Medium parameters used (interpolated): f = 3700.8 MHz; σ = 3.131 S/m; ε_r = 37.019; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 8/9/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 - SN7530; ConvF(7.1, 7.1, 7.1); Calibrated: 1/14/2022
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1217; Calibrated: 3/24/2022
Phantom: ELI v5.0; Type: QDOVA002AA; Serial: 1251
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

Band n77 LTE/Side A 1 RB 49 Offset Ant 4 Mid/Area Scan (10x22x1): Measurement grid: dx=10mm, dy=10mm

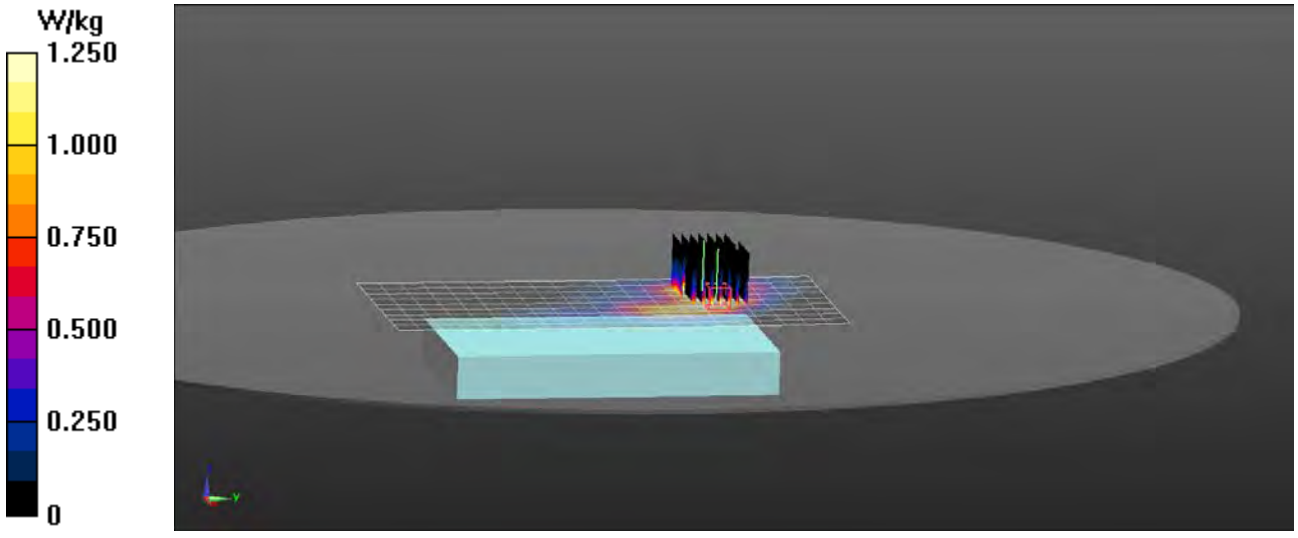
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.81 W/kg

Band n77 LTE/Side A 1 RB 49 Offset Ant 4 Mid/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 8.061 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 2.51 W/kg
SAR(1 g) = 0.745 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.73 W/kg

Band n77 LTE/Side A 1 RB 49 Offset Ant 4 Mid/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 8.061 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 5.30 W/kg
SAR(1 g) = 0.574 W/kg

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 1.25 W/kg



Appendix C – SAR Test Setup Photos

Test Position Side A 10 mm Gap

Test Position Side A 20 mm Gap

Test Position Side B 10 mm Gap

Test Position Side C 10 mm Gap

Test Position Side C 20 mm Gap

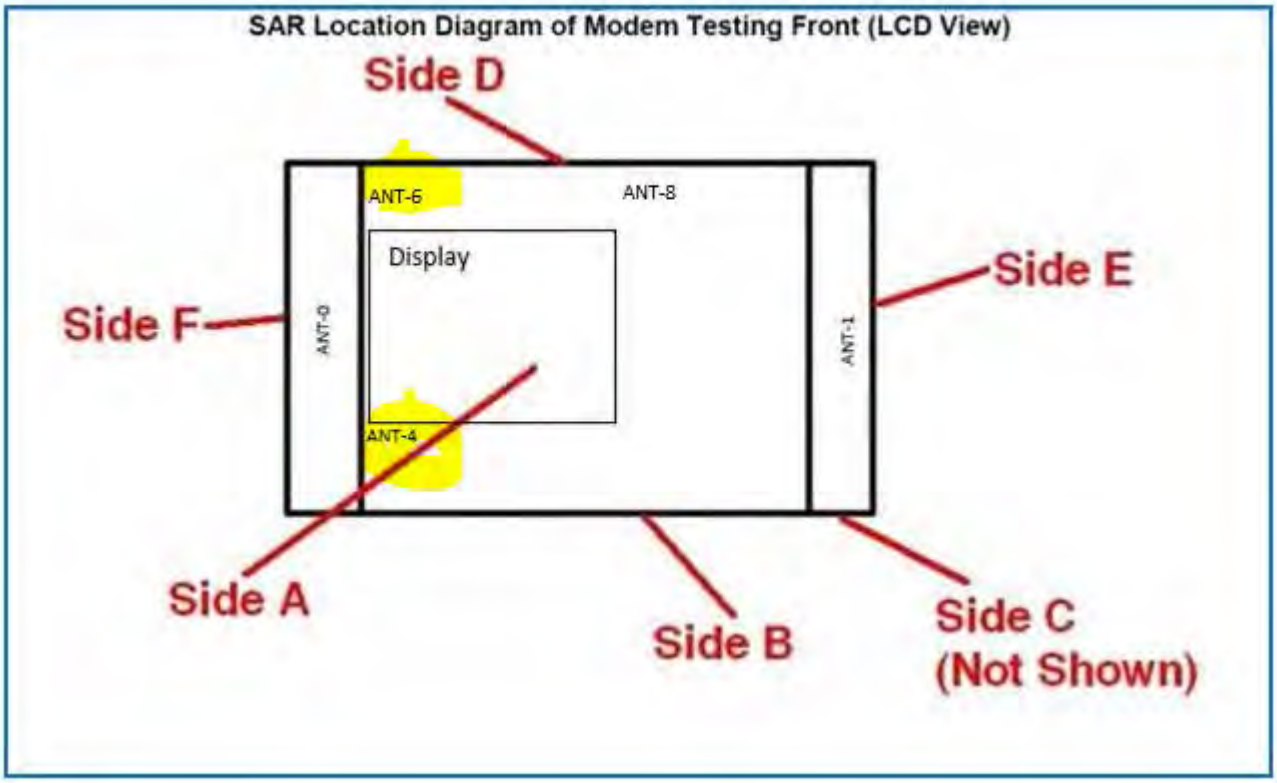
Test Position Side D 10 mm Gap

Test Position Side D 20 mm Gap

Test Position Side E 10 mm Gap

Test Position Side F 10 mm Gap

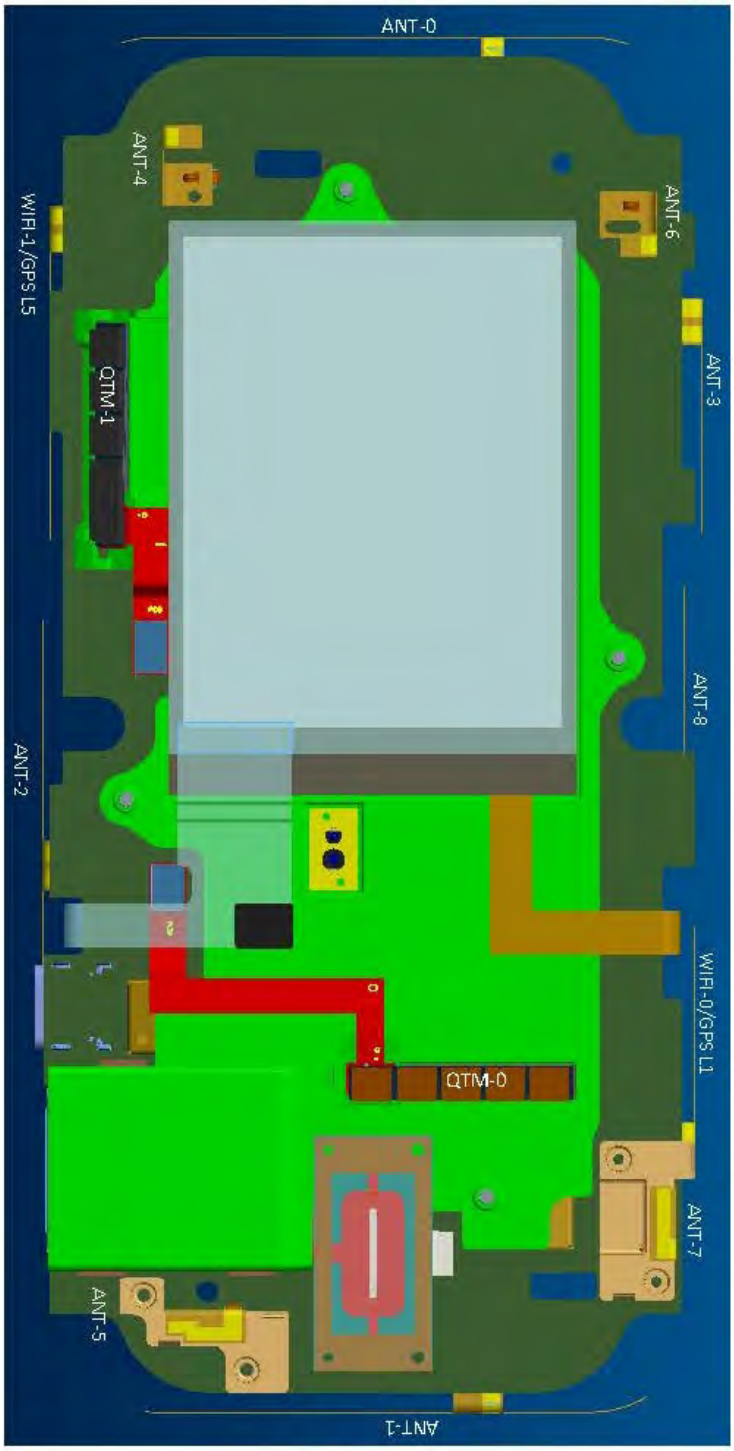
Test Position Side F 20 mm Gap



Test Positions

Side F

Side C Not Shown



Side B

Side D

Side A Shown

Side E

Antenna Locations

Front of Device

Back of Device

Appendix D – Probe Calibration Data Sheets

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client RF Exposure Lab

Certificate No: EX3-7530_Jan22

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:7530

Calibration procedure(s): QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v6, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes

Calibration date: January 14, 2022

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-22
DAE4	SN: 660	13-Oct-21 (No. DAE4-660_Oct21)	Oct-22
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ES3-3013_Dec21)	Dec-22
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Sven Kühn	Deputy Manager	

Issued: January 19, 2022

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR:* PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7530

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.42	0.48	0.43	± 10.1 %
DCP (mV)[B]	99.3	99.7	98.7	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	159.3	±2.2 %	± 4.7 %
		Y	0.0	0.0	1.0		142.4		
		Z	0.0	0.0	1.0		141.6		

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7530

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-141.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3-4 mm for an *Area Scan* job.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7530

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
13	55.0	0.75	19.61	19.61	19.61	0.00	1.00	± 13.3 %
30	55.0	0.75	17.99	17.99	17.99	0.00	1.00	± 13.3 %
750	41.9	0.89	10.44	10.44	10.44	0.56	0.80	± 12.0 %
900	41.5	0.97	9.98	9.98	9.98	0.48	0.80	± 12.0 %
1300	40.8	1.14	9.27	9.27	9.27	0.40	0.95	± 12.0 %
1750	40.1	1.37	8.42	8.42	8.42	0.30	0.86	± 12.0 %
1900	40.0	1.40	8.06	8.06	8.06	0.30	0.86	± 12.0 %
2300	39.5	1.67	7.85	7.85	7.85	0.34	0.90	± 12.0 %
2450	39.2	1.80	7.65	7.65	7.65	0.33	0.90	± 12.0 %
2600	39.0	1.96	7.42	7.42	7.42	0.35	0.90	± 12.0 %
3300	38.2	2.71	7.12	7.12	7.12	0.35	1.30	± 13.1 %
3500	37.9	2.91	7.10	7.10	7.10	0.35	1.30	± 13.1 %
3700	37.7	3.12	6.90	6.90	6.90	0.35	1.30	± 13.1 %
3900	37.5	3.32	6.83	6.83	6.83	0.40	1.60	± 13.1 %
4200	37.1	3.63	6.38	6.38	6.38	0.40	1.70	± 13.1 %
5250	35.9	4.71	5.45	5.45	5.45	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.80	4.80	4.80	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.98	4.98	4.98	0.40	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

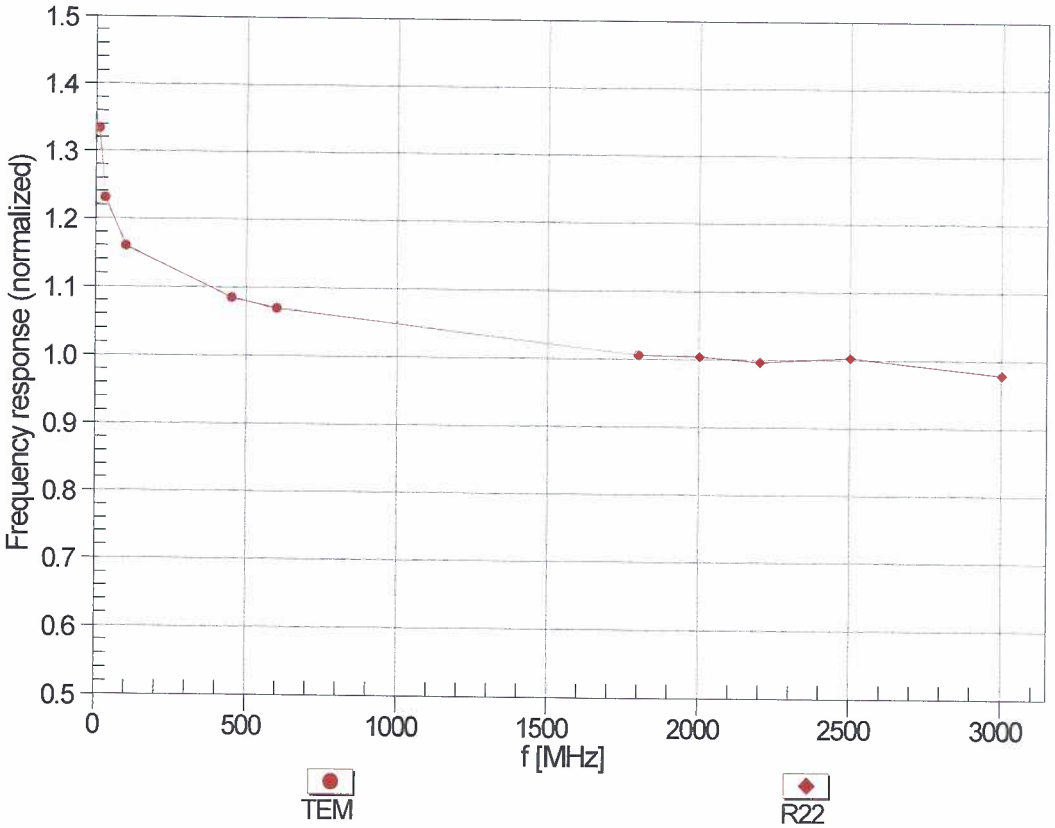
DASY/EASY - Parameters of Probe: EX3DV4 - SN:7530

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
6500	34.5	6.07	5.60	5.60	5.60	0.20	2.50	± 18.6 %

[C] Frequency validity above 6GHz is ± 700 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] At frequencies 6-10 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz; below ± 2% for frequencies between 3-6 GHz; and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.

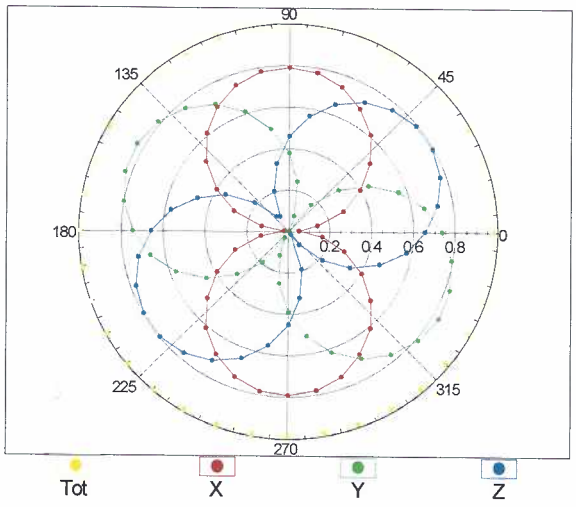
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



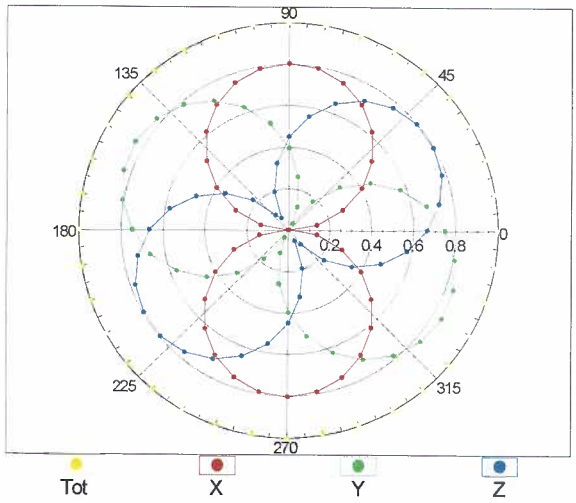
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

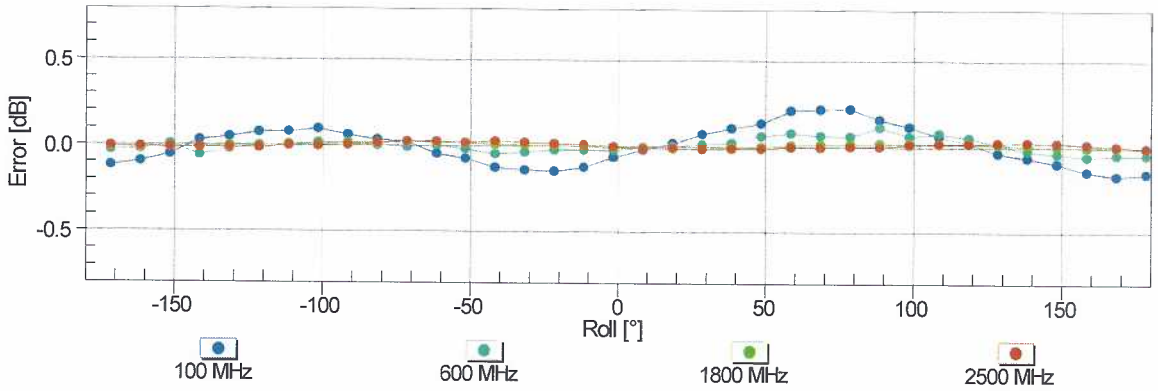
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22

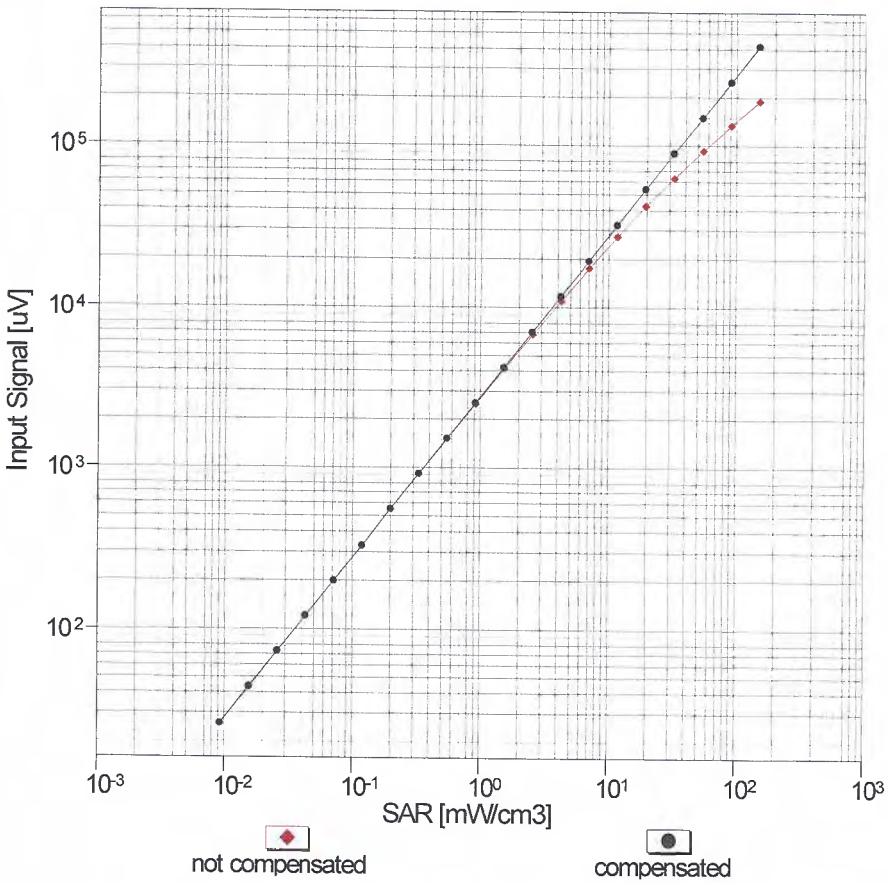


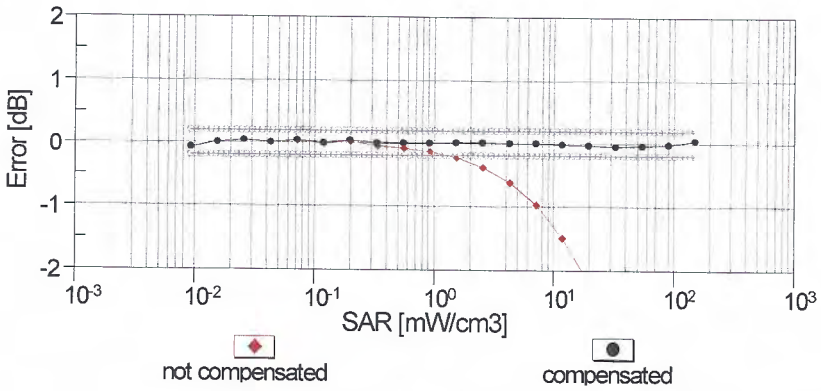


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR$_{head}$)

(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)