RF Exposure Lab

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CERTIFICATE OF COMPLIANCE
SAR EVALUATION

Juniper Systems	Dates of Test:	January 27 – February 4, 2022
1132 West 1700 North	Test Report Number:	SAR.20220203
Logan, UT 84321		Revision C

FCC ID:	VSF29579, N7NEM74B
IC Certificate:	7980A-29579, 2417C-EM74B
Model(s):	ST1
Test Sample:	Engineering Unit Same as Production
Serial Number:	014
Equipment Type:	Wireless Rugged Tablet
Classification:	Portable Transmitter Next to Body
TX Frequency Range:	663 – 698 MHz, 699 – 716 MHz, 777 – 787 MHz, 788 – 798 MHz, 814 – 849 MHz, 1710 – 1780 MHz, 1850 – 1915 MHz, 2496 – 2690 MHz, 3400 – 3600 MHz, 3550 – 3700 MHz, 2412 – 2462 MHz, 5150 – 5350 MHz, 5500 – 5700 MHz, 5745 – 5825 MHz, 2402 – 2480 MHz
Frequency Tolerance:	± 2.5 ppm
Maximum RF Output:	600 MHz (LTE) – 24.0 dBm, 750 MHz (LTE) – 24.0 dBm, 850 MHz (WCDMA) – 24.0 dBm, 850 MHz (LTE) – 23.5 dBm, 1750 MHz (WCDMA) – 24.0 dBm, 1750 MHz (LTE) – 23.5 dBm, 1900 MHz (WCDMA) – 24.0 dBm, 1900 MHz (LTE) – 23.5 dBm, 2550 MHz (LTE) – 23.0 dBm, 3500 MHz (LTE) – 23.0 dBm, 3600 MHz (LTE) – 23.0 dBm, 2450 MHz (b) – 16.5 dB, 2450 MHz (g) – 16.5 dB, 2450 MHz (n20) – 16.5 dB, 2450 MHz (n40) – 16.5 dB, 5250 MHz (a) – 14.75 dB, 5250 MHz (n20) – 14.75 dB, 5250 MHz (n40) – 14.75 dB, 5250 MHz (ac) – 14.75 dB, 5600 MHz (a) – 14.0 dB, 5600 MHz (n20) – 14.0 dB, 5600 MHz (n40) – 14.0 dB, 5600 MHz (ac) – 14.0 dB, 5800 MHz (a) – 14.0 dB, 5800 MHz (n20) – 14.0 dB, 5800 MHz (n40) – 14.0 dB, 5800 MHz (ac) – 14.0 dB Conducted
Signal Modulation:	WCDMA, QPSK, 16QAM, DSSS, OFDM
Antenna Type:	Internal
Application Type:	Certification
FCC Rule Parts:	Part 2, 15C, 22, 24, 27, 90
KDB Test Methodology:	KDB 447498 D01 v07, KDB 248227 v02r02, KDB 616217 D01 v01r01, KDB 941225 D01 v03r01, D02 v02r01 & D05 v02r05
Industry Canada:	RSS-102 Issue 5, Safety Code 6
Max. Stand Alone SAR Value:	1.54 W/kg Reported
Max. Simultaneous SAR Value:	0.03 Separation Ratio
Separation Distance:	0 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

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Comment/Revision	Date
Original Release	March 3, 2022
Revision A – Correct 2.4 GHz upper tolerance, correct typo in WCDMA Band 4 measurement results table & add triggering table and illustrations.	September 20, 2022
Revision B – Correct UNII Band IIC upper tolerance on page 5 & tilt data with power sensor description	September 28, 2022
Revision C – Correct FCC ID for Cell Module & rewrite tilt with power sensor description	October 4, 2022

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

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1. Introduction

This measurement report shows compliance of the Juniper Systems Model ST1 FCC ID: VSF29579, N7NEM74B with FCC Part 2, 1093, ET Docket 93-62 Rules for mobile and portable devices and IC Certificate: 7980A-29579, 2417C-EM74B with RSS102 Issue 5 & Safety Code 6. The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on August 6, 1996 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 Juniper Systems Model ST1 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 ST1 Wireless Rugged Tablet. 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 71 – 600 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 71 – 600 MHz	LTE	Backoff	22.0	22.0	±1.0	21.0	23.0
Band 12 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 12 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 13 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 13 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 14 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 14 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 5 & 26 – 835 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 5 & 26 – 835 MHz	LTE	Backoff	22.5	22.5	±1.0	21.5	23.5
Band 4 & 66 – 1750 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 4 & 66 – 1750 MHz	LTE	Backoff	19.5	19.5	±1.0	18.5	20.5
Band 2 & 25 – 1900 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 2 & 25 – 1900 MHz	LTE	Backoff	18.0	18.0	±1.0	17.0	19.0
Band 7 – 2550 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 7 – 2550 MHz	LTE	Backoff	17.0	17.0	±1.0	16.0	18.0
Band 41 – 2550 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 41 – 2550 MHz	LTE	Backoff	21.0	21.0	±1.0	20.0	22.0
Band 42 – 3500 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 42 – 3500 MHz	LTE	Backoff	19.0	19.0	±1.0	18.0	20.0
Band 48 – 3600 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 48 – 3600 MHz	LTE	Backoff	19.0	19.0	±1.0	18.0	20.0
Band 5 – 850 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 5 – 850 MHz	WCDMA/HSPA	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 4 – 1750 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 4 – 1750 MHz	WCDMA/HSPA	Backoff	16.0	16.0	±1.0	15.0	17.0
Band 2 – 1900 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 2 – 1900 MHz	WCDMA/HSPA	Backoff	15.0	15.0	±1.0	14.0	16.0

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Band	Technology	3GPP Nominal Power dBm	Calibrated Nominal Power dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
WLAN – 2.4 GHz Primary	802.11bgn20n40/ac	N/A	15.00	±1.5	13.50	16.50
WLAN – 2.4 GHz Secondary	802.11bgn20n40/ac	N/A	13.00	±1.5	11.50	14.50
WLAN – 5 GHz Band I & IIA Primary	802.11an20n40/ac	N/A	13.25	±1.5	11.75	14.75
WLAN – 5 GHz Band I & IIA Secondary	802.11an20n40/ac	N/A	11.25	±1.5	9.75	12.75
WLAN – 5 GHz Band IIC Primary	802.11an20n40/ac	N/A	12.50	±1.5	11.00	14.00
WLAN – 5 GHz Band IIC Secondary	802.11an20n40/ac	N/A	13.25	±1.5	11.75	14.75
WLAN – 5 GHz Band III Primary	802.11an20n40/ac	N/A	12.50	±1.5	11.00	14.00
WLAN – 5 GHz Band III Secondary	802.11an20n40/ac	N/A	11.50	±1.5	10.00	13.00
BT – BDR	Bluetooth	N/A	10.00	±1.5	8.50	11.50
BT – EDR2 & EDR3	Bluetooth	N/A	9.50	±1.5	8.00	11.00
BT – BLE	Bluetooth	N/A	8.50	±1.5	7.00	10.00

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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)

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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.

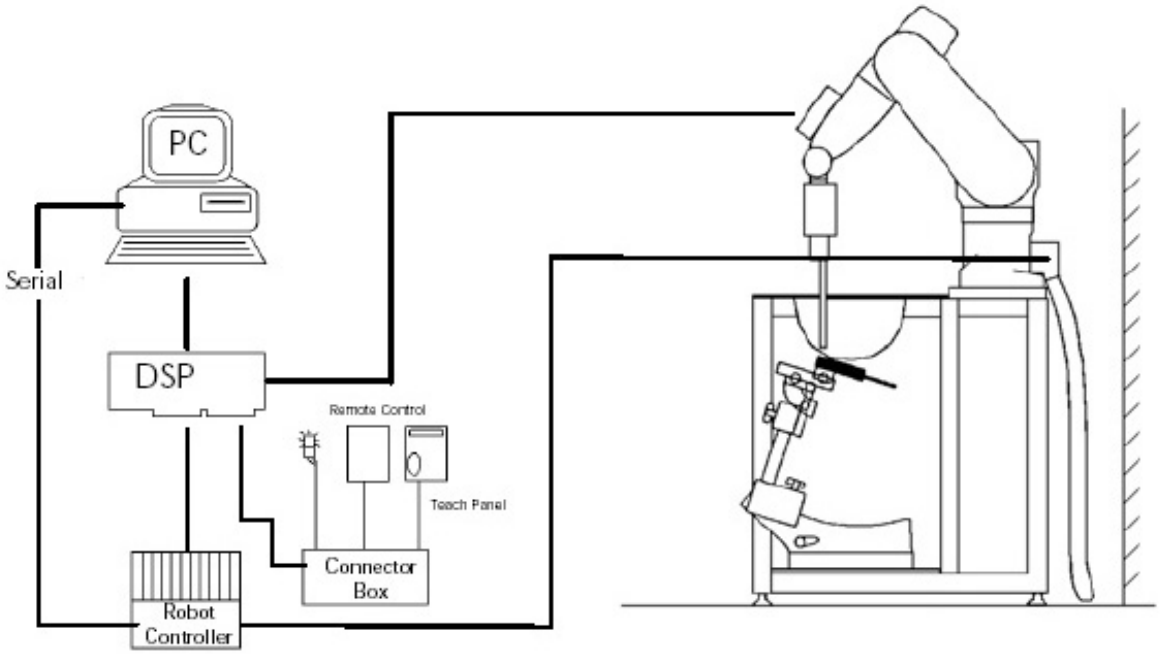

Figure 2.1 SAR Measurement System Setup

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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

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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

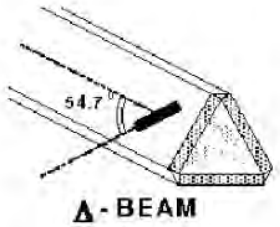

Figure 2.2 Triangular Probe Configurations

Figure 2.3 Probe Thick-Film Technique

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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

$$SAR = C\frac{\Delta T}{\Delta t}$$

where:

Δt = exposure time (30 seconds),

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

ΔT = temperature increase due to RF exposure.

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

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;

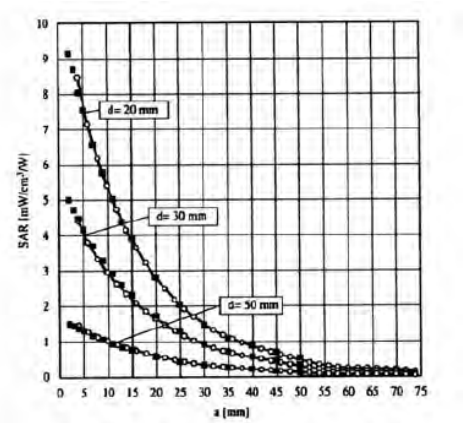

Figure 2.4 E-Field and Temperature Measurements at 900MHz

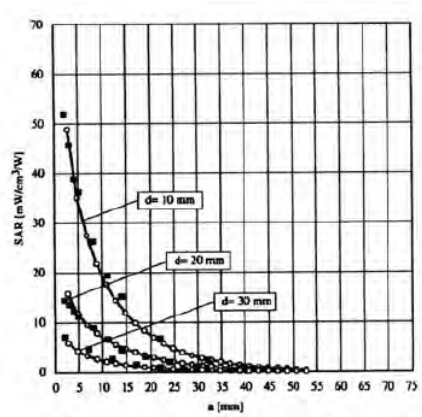

Figure 2.5 E-Field and Temperature Measurements at 1800MHz

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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

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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.

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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.

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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

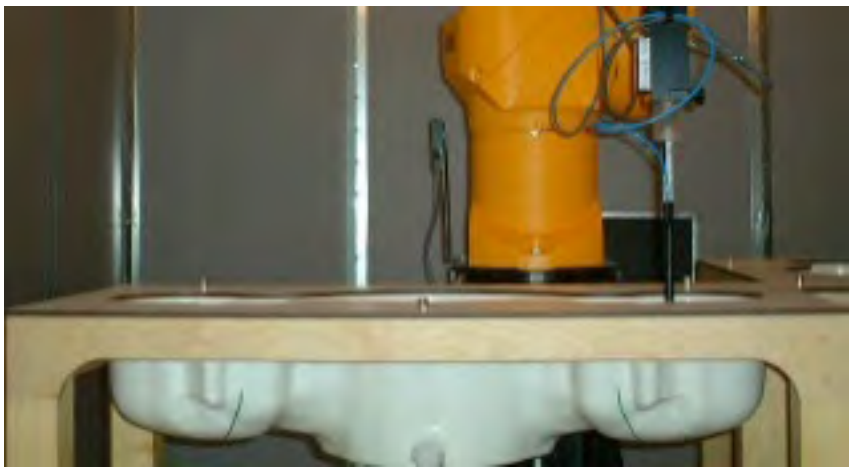

Figure 2.6 SAM Twin Phantom

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.

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3. Probe and Dipole Calibration

See Appendix D and E.

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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	750 MHz Head	900 MHz Head	1750 MHz Head	1900 MHz Head	2550 MHz Head
Mixing Percentage							
Water		Proprietary Purchased From Speag					
Sugar							
Salt							
HEC							
Bactericide							
DGBE							
Dielectric Constant	Target	42.72	41.94	41.50	40.08	40.00	39.07
Conductivity (S/m)	Target	0.88	0.89	0.97	1.37	1.40	1.91

Ingredients		Simulating Tissue					
		3500 MHz Head	3700 MHz Head	2450 MHz Head	5250 MHz Head	5600 MHz Head	5750 MHz Head
Mixing Percentage							
Water		Proprietary Purchased From Speag					
Sugar							
Salt							
HEC							
Bactericide							
DGBE							
Dielectric Constant	Target	37.93	37.70	39.20	35.93	35.53	35.36
Conductivity (S/m)	Target	2.91	3.12	1.80	4.71	5.07	5.22

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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.

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6. Measurement Uncertainty

Exposure Assessment Measurement Uncertainty

Relative DASY5 Uncertainty Budget for SAR Tests								
According to IEC62209-2/2010 (30 MHz - 6 GHz range)								
Error Description	Uncertainty Value	Probability Distribution	Divisor	c_i (1g)	c_i (10g)	Standard Uncertainty ± %, (1g)	Standard Uncertainty ± %, (10g)	v_i^2 or v_{eff}
Measurement System								
Probe calibration	± 6.6%	Normal	1	1	1	± 6.6%	± 6.6%	∞
Axial isotropy	± 4.7%	Rectangular	√3	0.7	0.7	± 1.9%	± 1.9%	∞
Hemispherical isotropy	± 9.6%	Rectangular	√3	0.7	0.7	± 3.9%	± 3.9%	∞
Boundary effects	± 2.0%	Rectangular	√3	1	1	± 1.2%	± 1.2%	∞
Probe linearity	± 4.7%	Rectangular	√3	1	1	± 2.7%	± 2.7%	∞
System detection limits	± 1.0%	Rectangular	√3	1	1	± 0.6%	± 0.6%	∞
Modulation response	± 2.4%	Rectangular	√3	1	1	± 1.4%	± 1.4%	∞
Readout electronics	± 0.3%	Normal	1	1	1	± 0.3%	± 0.3%	∞
Response time	± 0.8%	Rectangular	√3	1	1	± 0.5%	± 0.5%	∞
Integration time	± 2.6%	Rectangular	√3	1	1	± 1.5%	± 1.5%	∞
RF ambient noise	± 3.0%	Rectangular	√3	1	1	± 1.7%	± 1.7%	∞
RF ambient reflections	± 3.0%	Rectangular	√3	1	1	± 1.7%	± 1.7%	∞
Probe positioner	± 0.8%	Rectangular	√3	1	1	± 0.5%	± 0.5%	∞
Probe positioning	± 6.7%	Rectangular	√3	1	1	± 3.9%	± 3.9%	∞
Post-processing	± 4.0%	Rectangular	√3	1	1	± 2.3%	± 2.3%	∞
Test Sample Related								
Device positioning	± 2.9%	Normal	1	1	1	± 2.9%	± 2.9%	145
Device holder uncertainty	± 3.6%	Normal	1	1	1	± 3.6%	± 3.6%	5
Power drift	± 5.0%	Rectangular	√3	1	1	± 2.9%	± 2.9%	∞
Phantom and Setup								
Phantom uncertainty	± 7.9%	Rectangular	√3	1	1	± 4.6%	± 4.6%	∞
SAR algorithm correction	± 1.9%	Normal	1	1	0.84	± 1.9%	± 1.9%	∞
Liquid conductivity (meas.)	± 5.0%	Rectangular	√3	0.78	0.71	± 0.1%	± 0.1%	∞
Liquid permittivity (meas.)	± 5.0%	Rectangular	√3	0.26	0.26	± 0.1%	± 0.1%	∞
Temp. Unc. – Conductivity	± 3.4%	Rectangular	√3	0.78	0.71	± 1.5%	± 1.5%	∞
Temp. Unc. – Permittivity	± 0.4%	Rectangular	√3	0.23	0.26	± 0.1%	± 0.1%	∞
Combined Uncertainty						± 12.4%	± 12.3%	330
Expanded Std. Uncertainty						± 24.8%	± 24.6%	

Worst case uncertainty budget for DASY5 assessed according to IEC62209-2/2010 standard. The budget is valid for the frequency range 30 MHz – 6 GHz and represents a worst-case analysis. For specific tests and configurations, the uncertainty could be considerable smaller.

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7. System Validation

Tissue Verification

Table 7.1 Measured Tissue Parameters

		600 MHz Head		750 MHz Head		900 MHz Head	
Date(s)		Feb. 3, 2022		Feb. 2, 2022		Feb. 2, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		42.72	42.11	41.94	41.46	41.50	41.34
Conductivity: σ		0.88	0.92	0.89	0.90	0.97	0.98
		1750 MHz Head		1900 MHz Head		2550 MHz Head	
Date(s)		Jan. 31, 2022		Jan. 28, 2022		Jan. 27, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		40.08	39.24	40.00	39.87	39.07	38.95
Conductivity: σ		1.37	1.40	1.40	1.39	1.91	1.94
		3500 MHz Head		3700 MHz Head		2450 MHz Head	
Date(s)		Feb. 1, 2022		Feb. 1, 2022		Feb. 3, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		37.93	37.00	37.70	36.53	39.20	38.34
Conductivity: σ		2.91	2.96	3.12	3.09	1.80	1.81
		5250 MHz Head		5600 MHz Head		5750 MHz Head	
Date(s)		Feb. 4, 2022		Feb. 4, 2022		Feb. 4, 2022	
Liquid Temperature (˚C)	20.0	Target	Measured	Target	Measured	Target	Measured
Dielectric Constant: ε		35.93	34.77	35.53	34.35	35.36	34.18
Conductivity: σ		4.71	4.73	5.07	5.11	5.22	5.28

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
03-Feb-2022	600 MHz	6.51	6.56	Head	+ 0.77	1
02-Feb-2022	750 MHz	8.57	8.58	Head	+ 0.12	2
02-Feb-2022	900 MHz	11.20	11.50	Head	+ 2.68	3
31-Jan-2022	1750 MHz	37.70	37.80	Head	+ 0.27	4
28-Jan-2022	1900 MHz	40.40	41.50	Head	+ 2.72	5
27-Jan-2022	2550 MHz	55.30	56.40	Head	+ 1.99	6
01-Feb-2022	3500 MHz	67.00	67.80	Head	+ 1.19	7
01-Feb-2022	3700 MHz	68.30	69.50	Head	+ 1.76	8
03-Feb-2022	2450 MHz	54.10	54.60	Head	+ 0.92	9
04-Feb-2022	5250 MHz	79.50	80.30	Head	+ 1.01	10
04-Feb-2022	5600 MHz	83.20	83.50	Head	+ 0.36	11
04-Feb-2022	5750 MHz	80.50	80.50	Head	+ 0.00	12

See Appendix A for data plots.

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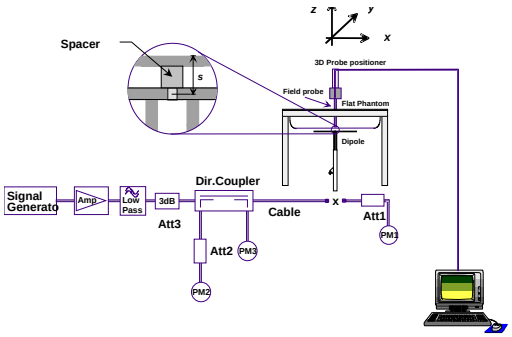

Figure 7.1 Dipole Validation Test Setup

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8. LTE Document Checklist

1) Identify the operating frequency range of each LTE transmission band used by the device

LTE Operating Band	Uplink (transmit) Low - high	Downlink (Receive) Low - high	Duplex mode (FDD/TDD)
2	1850-1910	1930-1990	FDD
4	1710-1755	2110-2155	FDD
5	824-849	869-894	FDD
7	2500-2570	2620-2690	FDD
12	699-716	729-746	FDD
13	777-787	746-756	FDD
14	788-798	758-768	FDD
25	1850-1915	1930-1995	FDD
26	814-849	859-894	FDD
41	2496-2690	2496-2690	TDD
42	3400-3600	3400-3600	TDD
48	3550-3700	3550-3700	TDD
66	1710-1780	2110-2200	FDD
71	663-698	617-652	FDD

2) Identify the channel bandwidths used in each frequency band; 1.4, 3, 5, 10, 15, 20 MHz etc

LTE Band Class	Bandwidth (MHz)	Frequency or Freq. Band (MHz)
2	1.4, 3, 5, 10, 15, 20	1850-1910 MHz
4	1.4, 3, 5, 10, 15, 20	1710-1755 MHz
5	1.4, 3, 5, 10	824-849 MHz
7	5, 10, 15, 20	2500-2570 MHz
12	1.4, 3, 5, 10	699-716 MHz
13	5, 10	777-787 MHz
14	5, 10	788-798 MHz
25	1.4, 3, 5, 10, 15, 20	1850-1915 MHz
26	1.4, 3, 5, 10, 15	814-849 MHz
41	5, 10, 15, 20	2496-2690 MHz
42	5, 10, 15, 20	3400-3600 MHz
48	5, 10, 15, 20	3550-3700 MHz
66	1.4, 3, 5, 10, 15, 20	1710-1780 MHz
71	5, 10, 15, 20	663-698 MHz

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3) Identify the high, middle and low (H, M, L) channel numbers and frequencies in each LTE frequency band

LTE Band Class	Bandwidth (MHz)	Frequency (MHz)/Channel #					
		Low		Mid		High	
2	1.4	1850.7	18607	1880.0	18900	1909.3	19193
2	3	1851.5	18615	1880.0	18900	1908.5	19185
2	5	1852.5	18625	1880.0	18900	1907.5	19175
2	10	1855.0	18650	1880.0	18900	1905.0	19150
2	15	1857.5	18675	1880.0	18900	1902.5	19125
2	20	1860.0	18700	1880.0	18900	1900.0	19100
4	1.4	1710.7	19957	1732.5	20175	1754.3	20393
4	3	1711.5	19965	1732.5	20175	1753.5	20385
4	5	1712.5	19975	1732.5	20175	1752.5	20375
4	10	1715.0	20000	1732.5	20175	1750.0	20350
4	15	1717.5	20025	1732.5	20175	1747.5	20325
4	20	1720.0	20050	1732.5	20175	1745.0	20300
5	1.4	824.7	20407	836.5	20525	848.3	20643
5	3	825.5	20415	836.5	20525	847.5	20635
5	5	826.5	20425	836.5	20525	846.5	20625
5	10	829.0	20450	836.5	20525	844.0	20600
7	5	2502.5	20775	2535.0	21100	2567.5	21425
7	10	2505.0	20800	2535.0	21100	2565.0	21400
7	15	2507.5	20825	2535.0	21100	2562.5	21375
7	20	2510.0	20850	2535.0	21100	2560.0	21350
12	1.4	699.7	23017	707.5	23095	715.3	23173
12	3	700.5	23025	707.5	23095	714.5	23165
12	5	701.5	23035	707.5	23095	713.5	23155
12	10	704.0	23060	707.5	23095	711.0	23130
13	5	779.5	23205	782.0	23230	784.5	23225
13	10	-----	-----	782.0	23230	-----	-----
14	5	790.5	23305	793.0	23330	795.5	23355
14	10	-----	-----	793.0	23330	-----	-----
25	1.4	1850.7	26047	1882.5	26365	1914.3	26683
25	3	1851.5	26055	1882.5	26365	1913.5	26675
25	5	1852.5	26065	1882.5	26365	1912.5	26665
25	10	1855.0	26090	1882.5	26365	1910.0	26640
25	15	1857.5	26115	1882.5	26365	1907.5	26615
25	20	1860.0	26140	1882.5	26365	1905.0	26590
26	1.4	814.7	26697	831.5	26865	848.3	27033
26	3	815.5	26705	831.5	26865	847.5	27025
26	5	816.5	26715	831.5	26865	846.5	27015
26	10	819.0	26740	831.5	26865	844.0	26990
26	15	821.5	26765	831.5	26865	841.5	26995
41	5	2498.5	39675	2593	40620	2687.5	41565
41	10	2501.0	39700	2593	40620	2685.0	41540
41	15	2503.5	39725	2593	40620	2682.5	41515
41	20	2506.0	39750	2593	40620	2680.0	41490
42	5	3402.5	41615	3500.0	42590	3597.5	43565
42	10	3405.0	41640	3500.0	42590	3595.0	43540
42	15	3207.5	41665	3500.0	42590	3592.5	43515
42	20	3410.0	41690	3500.0	42590	3590.0	43490
48	5	3552.5	55265	3526.0	55990	3697.5	56715
48	10	3555.0	55290	3526.0	55990	3695.0	56690
48	15	3557.5	55315	3526.0	55990	3692.5	56665
48	20	3560.0	55340	3526.0	55990	3690.0	56640
66	1.4	1710.7	131979	1755.0	132422	1779.3	132665
66	3	1711.5	131987	1755.0	132422	1778.5	132657
66	5	1712.5	131997	1755.0	132422	1777.4	132646
66	10	1716.1	132033	1755.0	132422	1774.9	132621
66	15	1717.5	132047	1755.0	132422	1772.4	132596
66	20	1720.0	132072	1755.0	132422	1769.9	132571
71	5	665.5	133147	680.5	133297	695.5	133447
71	10	668.0	133172	680.5	133297	693.0	133422
71	15	670.5	133197	680.5	133297	690.5	133397
71	20	673.0	133222	680.5	133297	688.0	133372

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4) Specify the UE category and uplink modulations used:
   - UE Category: 3
   - Uplink modulations: QPSK and 16QAM

5) Include descriptions of the LTE transmitter and antenna implementation; and also identify whether it is a standalone transmitter operating independently of other wireless transmitters in the device or sharing hardware components and/or antenna(s) with other transmitters etc

   The device has 4 antennas:
   - WWAN Main (Transmit and Receive) Antenna
   - WLAN Primary (Transmit and Receive) Antenna
   - WLAN Secondary (Transmit and Receive) Antenna
   - WWAN Diversity (Receive Only) Antenna

   Transmission relationship
   - All transmission (TX) is limited to the WWAN and WLAN antennas only
   - The device is unable to transmit WCDMA/HSPA and LTE simultaneously.
   - The Diversity antenna is receive only antenna which is reserved for the WWAN operation.
   - Rx is simultaneous on Main and Diversity
   - Simultaneous Tx with the WWAN and WLAN/BT is allowed.

Antenna port	WCDMA/HSPA		LTE		802.11 b/g/n/BT	
	TX	RX	TX	RX	TX	RX
#1 WWAN Main	**Yes**	**Yes**	**Yes**	**Yes**	No	No
#2 WLAN Primary	No	No	No	No	**Yes**	**Yes**
#2 WLAN Secondary	No	No	No	No	**Yes**	**Yes**
#3 (Diversity)	No	**Yes**	No	**Yes**	No	No

6) Identify the LTE voice/data requirements in each operating mode and exposure condition with respect to head and body test configurations, antenna locations, handset flip-cover or slide positions, antenna diversity conditions etc

   The device is a data only. Data mode was tested in each operating mode and exposure condition in the body configuration. See test setup photos to see all configurations tested.

7) Identify if Maximum Power Reduction (MPR) is optional or mandatory, i.e. built-in by design:

   a) Only mandatory MPR may be considered during SAR testing, when the maximum output power is permanently limited by the MPR implemented within the UE; and only for the applicable RB (resource block) configurations specified in LTE standards

   MPR is mandatory, built-in by design on all production units. It was enabled during testing.

Modulation	Channel Bandwidth/transmission Bandwidth Configuration (RB)						MPR (dB)
	1.4 MHz	3.0 MHZ	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

   b) A-MPR (additional MPR) must be disabled
   c) A-MPR was disabled during testing.

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8) Include the maximum average conducted output power measured on the required test channels for each channel bandwidth and UL modulation used in each frequency band:

The maximum average conducted output power measured for the testing is listed on pages 48-112 of this report. The below table shows the factory set point with the allowable tolerance.

Band	Technology	Power	3GPP Nominal Power dBm	Calibrated Nominal Power dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
Band 71 – 600 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 71 – 600 MHz	LTE	Backoff	22.0	22.0	±1.0	21.0	23.0
Band 12 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 12 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 13 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 13 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 14 – 750 MHz	LTE	Full	23.0	23.0	±1.0	22.0	24.0
Band 14 – 750 MHz	LTE	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 5 & 26 – 835 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 5 & 26 – 835 MHz	LTE	Backoff	22.5	22.5	±1.0	21.5	23.5
Band 4 & 66 – 1750 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 4 & 66 – 1750 MHz	LTE	Backoff	19.5	19.5	±1.0	18.5	20.5
Band 2 & 25 – 1900 MHz	LTE	Full	22.5	22.5	±1.0	21.5	23.5
Band 2 & 25 – 1900 MHz	LTE	Backoff	18.0	18.0	±1.0	17.0	19.0
Band 7 – 2550 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 7 – 2550 MHz	LTE	Backoff	17.0	17.0	±1.0	16.0	18.0
Band 41 – 2550 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 41 – 2550 MHz	LTE	Backoff	21.0	21.0	±1.0	20.0	22.0
Band 42 – 3500 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 42 – 3500 MHz	LTE	Backoff	19.0	19.0	±1.0	18.0	20.0
Band 48 – 3600 MHz	LTE	Full	22.0	22.0	±1.0	21.0	23.0
Band 48 – 3600 MHz	LTE	Backoff	19.0	19.0	±1.0	18.0	20.0

9) Identify all other U.S. wireless operating modes (3G, Wi-Fi, WiMax, Bluetooth etc), device/exposure configurations (head and body, antenna and handset flip-cover or slide positions, antenna diversity conditions etc.) and frequency bands used for these modes

Other wireless modes:

Band	Technology	Power	3GPP Nominal Power dBm	Calibrated Nominal Power dBm	Tolerance dBm	Lower Tolerance dBm	Upper Tolerance dBm
Band 5 – 850 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 5 – 850 MHz	WCDMA/HSPA	Backoff	23.0	23.0	±1.0	22.0	24.0
Band 4 – 1750 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 4 – 1750 MHz	WCDMA/HSPA	Backoff	16.0	16.0	±1.0	15.0	17.0
Band 2 – 1900 MHz	WCDMA/HSPA	Full	23.0	23.0	±1.0	22.0	24.0
Band 2 – 1900 MHz	WCDMA/HSPA	Backoff	15.0	15.0	±1.0	14.0	16.0
WLAN – 2.4 GHz Primary	802.11bgn20n40/ac	N/A	N/A	13.0	±1.5	11.5	14.5
WLAN – 2.4 GHz Secondary	802.11bgn20n40/ac	N/A	N/A	13.0	±1.5	11.5	14.5
WLAN – 5 GHz Band I & IIA	802.11an20n40/ac	N/A	N/A	11.25	±1.5	9.75	12.75
WLAN – 5 GHz Band IIC	802.11an20n40/ac	N/A	N/A	11.0	±1.5	9.5	12.5
WLAN – 5 GHz Band III	802.11an20n40/ac	N/A	N/A	11.5	±1.5	10.0	13.0
BT – BDR	Bluetooth	N/A	N/A	10.0	±1.5	8.5	11.5
BT – EDR2 & EDR3	Bluetooth	N/A	N/A	9.5	±1.5	8.0	11.0
BT – BLE	Bluetooth	N/A	N/A	8.5	±1.5	7.0	10.0

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10) Include the maximum average conducted output power measured for the other wireless modes and frequency bands.

The maximum average conducted output power measured for the testing is listed on pages 29-33 of this report. The table in item 9 shows the factory set point with the allowable tolerance.

11) Identify the simultaneous transmission conditions for the voice and data configurations supported by all wireless modes, device configurations and frequency bands, for the head and body exposure conditions and device operating configurations (handset flip or cover positions, antenna diversity conditions etc.)

The device is unable to transmit WCDMA & LTE simultaneously.

The device is able to transmit WWAN and WLAN/BT simultaneously.

TX Modes	WCDMA	LTE	802.11 b/g/n	Bluetooth
1	**ON**	OFF	**ON**	**ON**
2	OFF	**ON**	**ON**	**ON**
3	**ON**	OFF	**ON**	**ON**
4	OFF	**ON**	**ON**	**ON**

12) When power reduction is applied to certain wireless modes to satisfy SAR compliance for simultaneous transmission conditions, other equipment certification or operating requirements, include the maximum average conducted output power measured in each power reduction mode applicable to the simultaneous voice/data transmission configurations for such wireless configurations and frequency bands; and also include details of the power reduction implementation and measurement setup

Power reduction is required to satisfy SAR compliance. The DUT has a capacitive coupling sensor to sense the body being close to the unit. When the sensor is triggered, the maximum power is backed off based on the power levels listed on page 4 of this report. Only the cellular bands are backed off.

13) Include descriptions of the test equipment, test software, built-in test firmware etc. required to support testing the device when power reduction is applied to one or more transmitters/antennas for simultaneous voice/data transmission

The DUT back off was set in the firmware of the module using the existing AT commands. There was no special test equipment or test software required for the testing.

14) When appropriate, include a SAR test plan proposal with respect to the above

Testing was conduct at 0 mm with the sensor operational for all measurements. The sensor was tested by moving the DUT away from the phantom and slowly moving it closer to see when the sensor would trip. The closest distance the sensor trip was 23 mm. The highest SAR value in each band was then tested at 22 mm with the sensor disabled to insure it would not trip.

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15) If applicable, include preliminary SAR test data and/or supporting information in laboratory testing inquiries to address specific issues and concerns or for requesting further test reduction considerations appropriate for the device; for example, simultaneous transmission configurations.

Not applicable.

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9. 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.

The testing was conducted on all edges closest to each antenna. The back, left and top sides were tested for the WWAN antenna. The remaining sides were not tested as the WWAN antenna was more than 2.5 cm from the side. The back, right and bottom sides were tested for the WLAN antennas. The remaining sides were not tested as the antenna was more than 2.5 cm from these sides. All further test reductions are shown on pages 46 for WCDMA bands, page 34-45 for WLAN/BT and pages 113-135 for LTE bands. See the photo in Appendix C for a pictorial of the setups and antenna locations.

The WCDMA testing was conducted using 12.2 kbps RMC configured in Test Loop Mode 1. The HSPA testing was conducted with HS-DPCCH, E-DPCCH and E-DPDCH all enabled and a 12.2 kbps RMC. FRC was configured according to HS-DPCCH Sub-Test 1 using H-set 1 and QPSK.

Required Test Positions						
Antenna	Back	Front	Left	Right	Top	Bottom
Ant 0	Yes	No	Yes	No	Yes	No
Ant 1	No	No	No	No	No	No
WiFi 0	Yes	No	No	No	Yes	No
WiFi 1	Yes	No	Yes	No	No	No

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.

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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 sensor is integral to the physical cellular antenna and the detection is active across the full length, width, height and sides for the antenna. Due to the sensor being integral to the antenna, the triggering is active whenever the antenna is in close proximity to a body.

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.

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- 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 Band 2	23.82	15.94
	UMTS Band 4	23.98	16.74
	LTE FDD Band 2	23.5	18.4
	LTE FDD Band 4	23.1	20.1
	LTE FDD Band 7	22.6	17.9
	LTE FDD Band 25	23.0	18.9
	LTE TDD Band 41	22.8	21.6
	LTE TDD Band 42	22.6	19.7
	LTE TDD Band 48	22.8	19.9
	LTE FDD Band 66	23.2	20.4
	LTE FDD Band 71	23.8	22.6

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	Back	Low	23	25	22
	Left	Low	24	25	22
	Top	Low	23	23	22
	Tilt	Low	26	28	22
	Back	Mid	22	24	22
	Left	Mid	24	23	22
	Top	Mid	23	22	22
	Tilt	Mid	25	26	22
	Back	High	25	24	22
	Left	High	23	25	22
	Top	High	24	23	22
	Tilt	High	27	26	22

Note: The tilt has a larger distance in all cases then the Back, Left and Top. The tablet was rotated around each edge with the tablet set at the minimum trigger distance for the edge being tested. The tablet was rotated at 10 degree increments until the device was ± 45 degrees from the 0 degree position. The sensor remained in the triggered condition for all measurements. Therefore, the trigger tables were excluded as they would be just larger trigger distances than the other positions. No additional SAR measurements were required since the distance is larger than the three positions tested.

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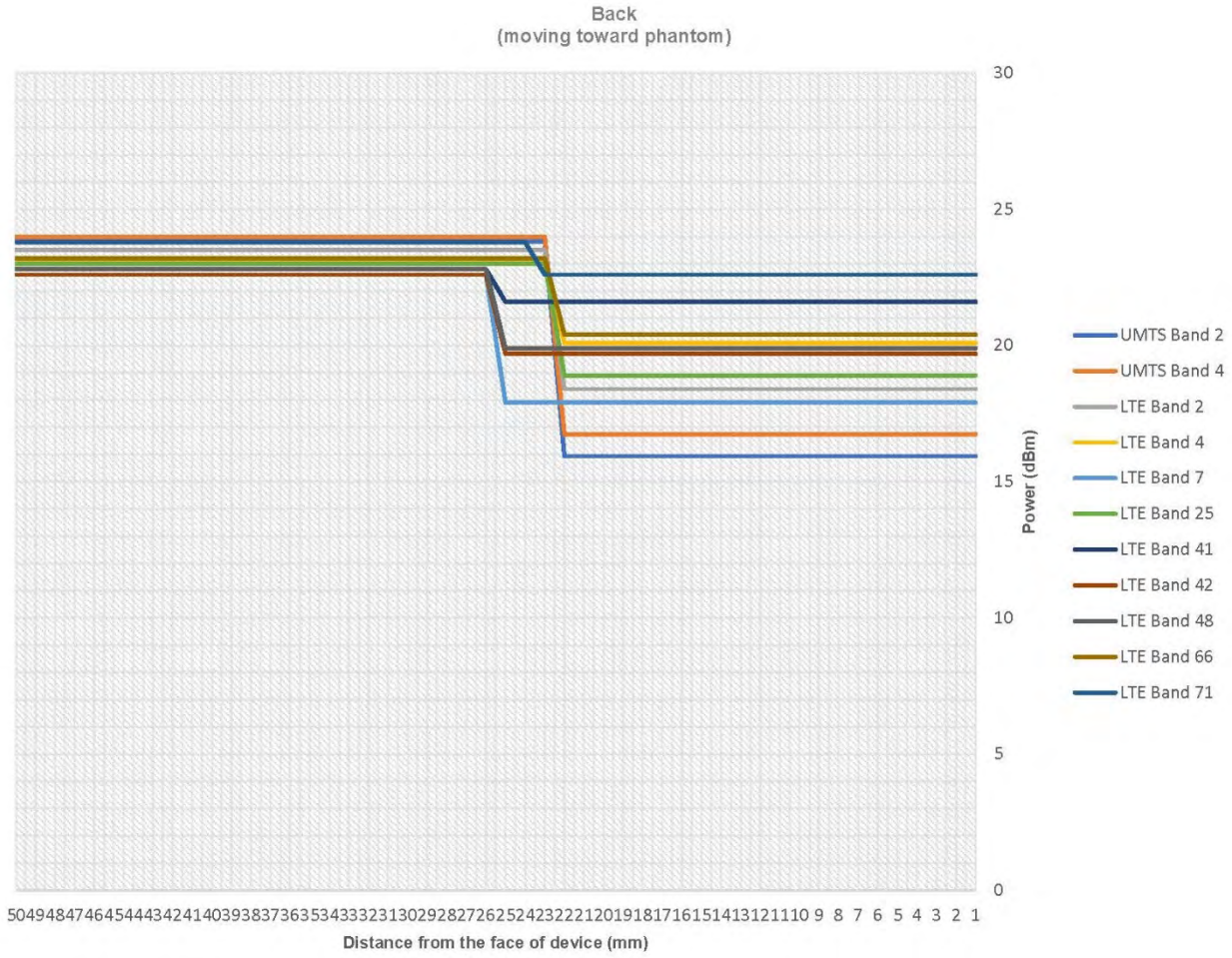

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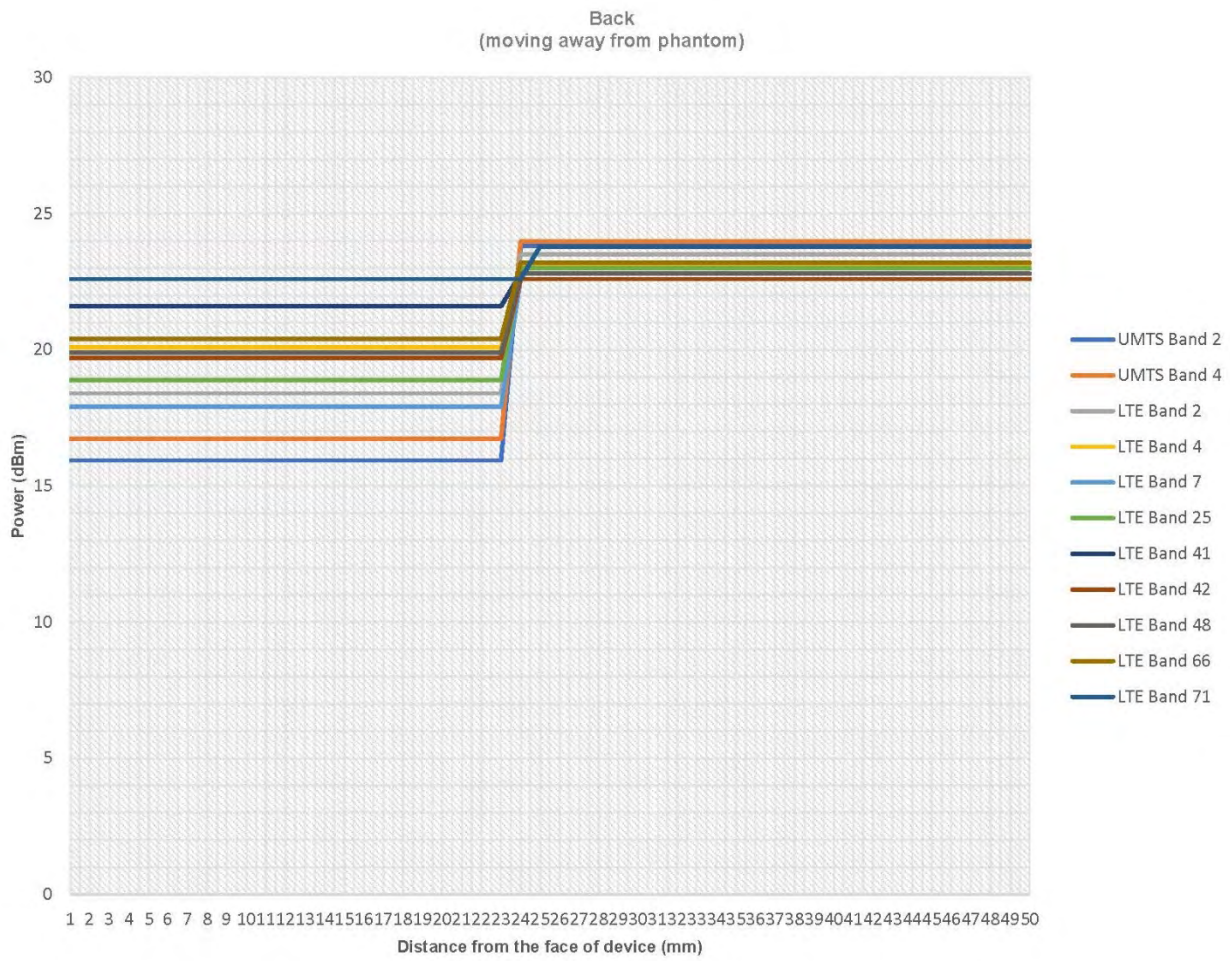

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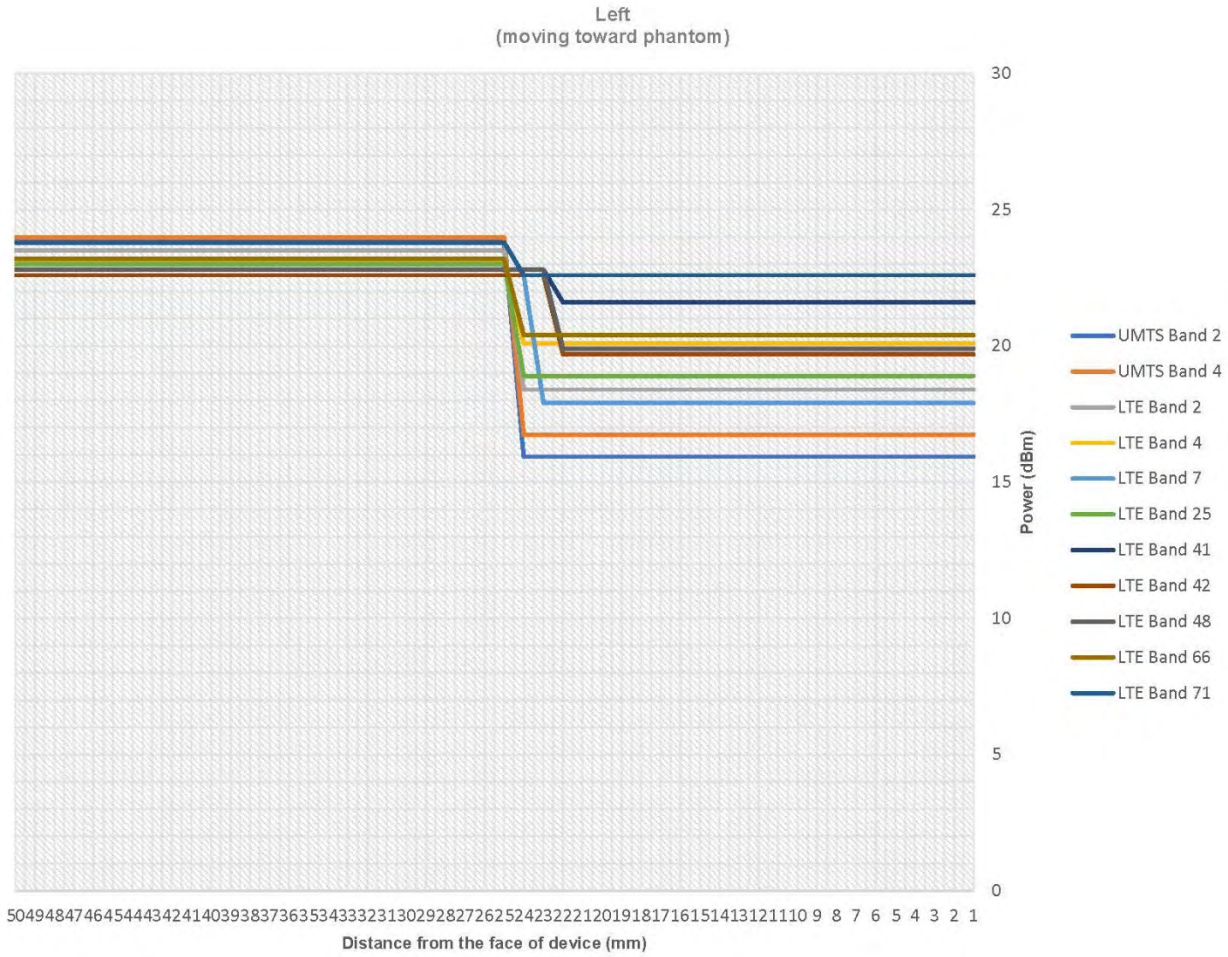

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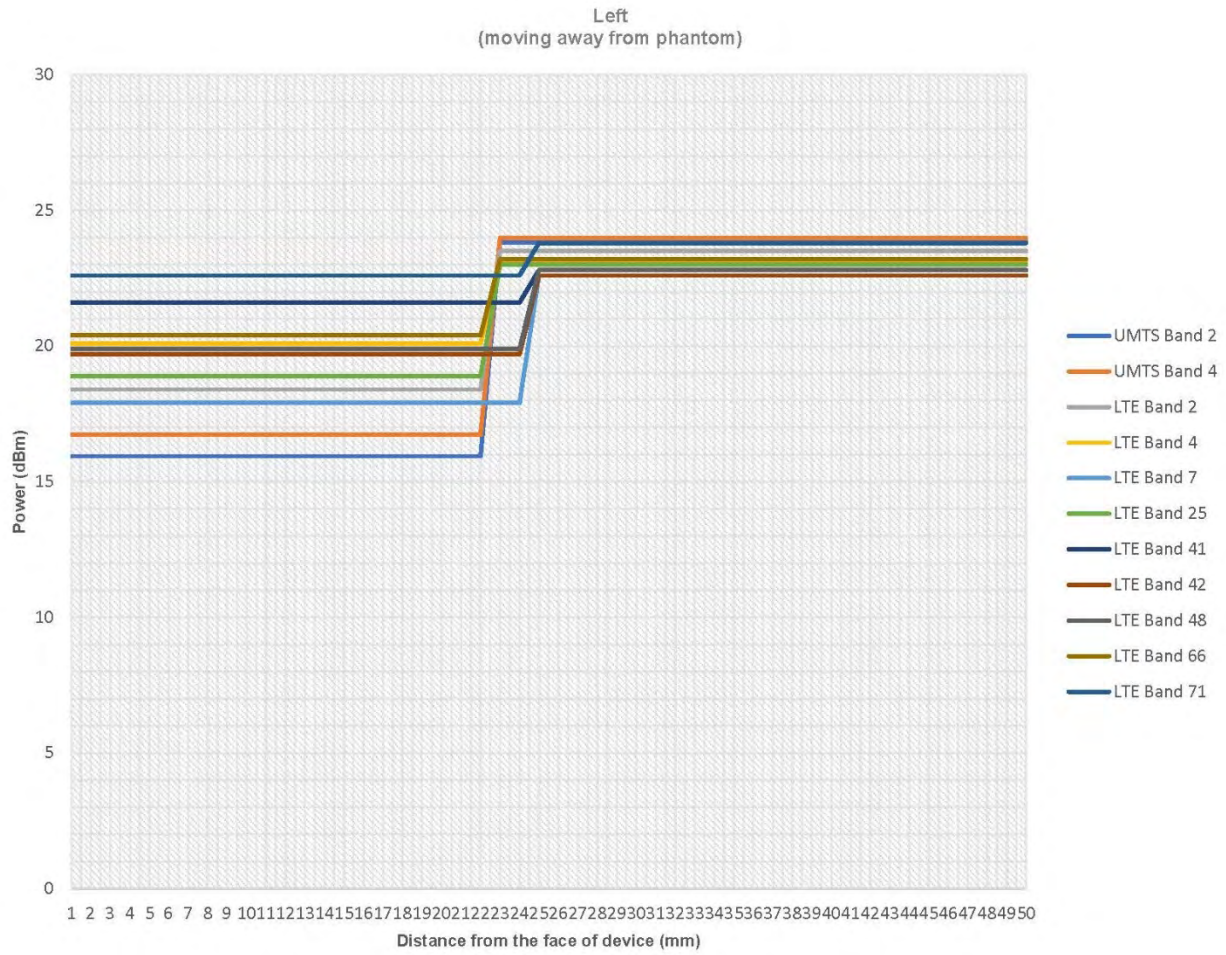

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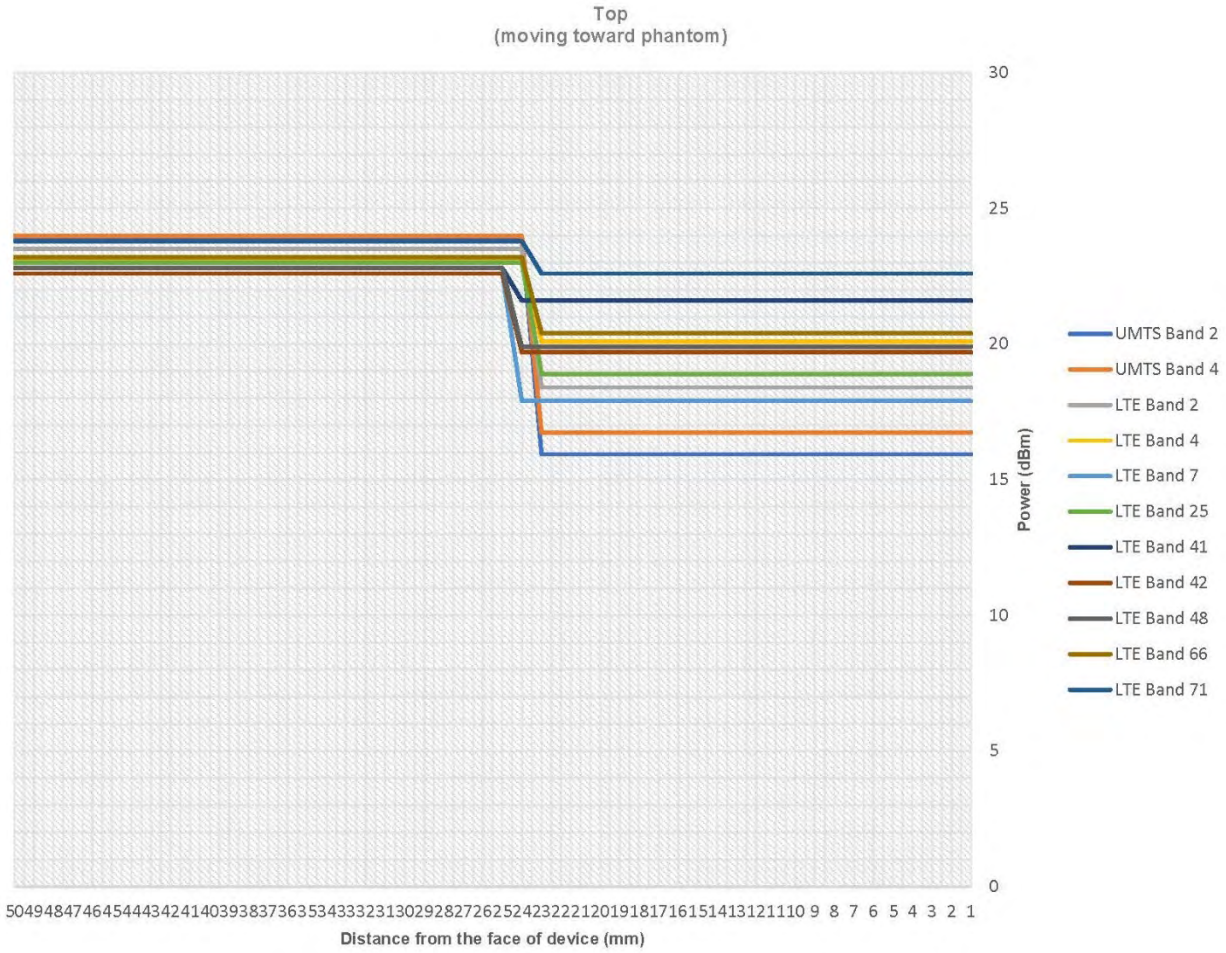

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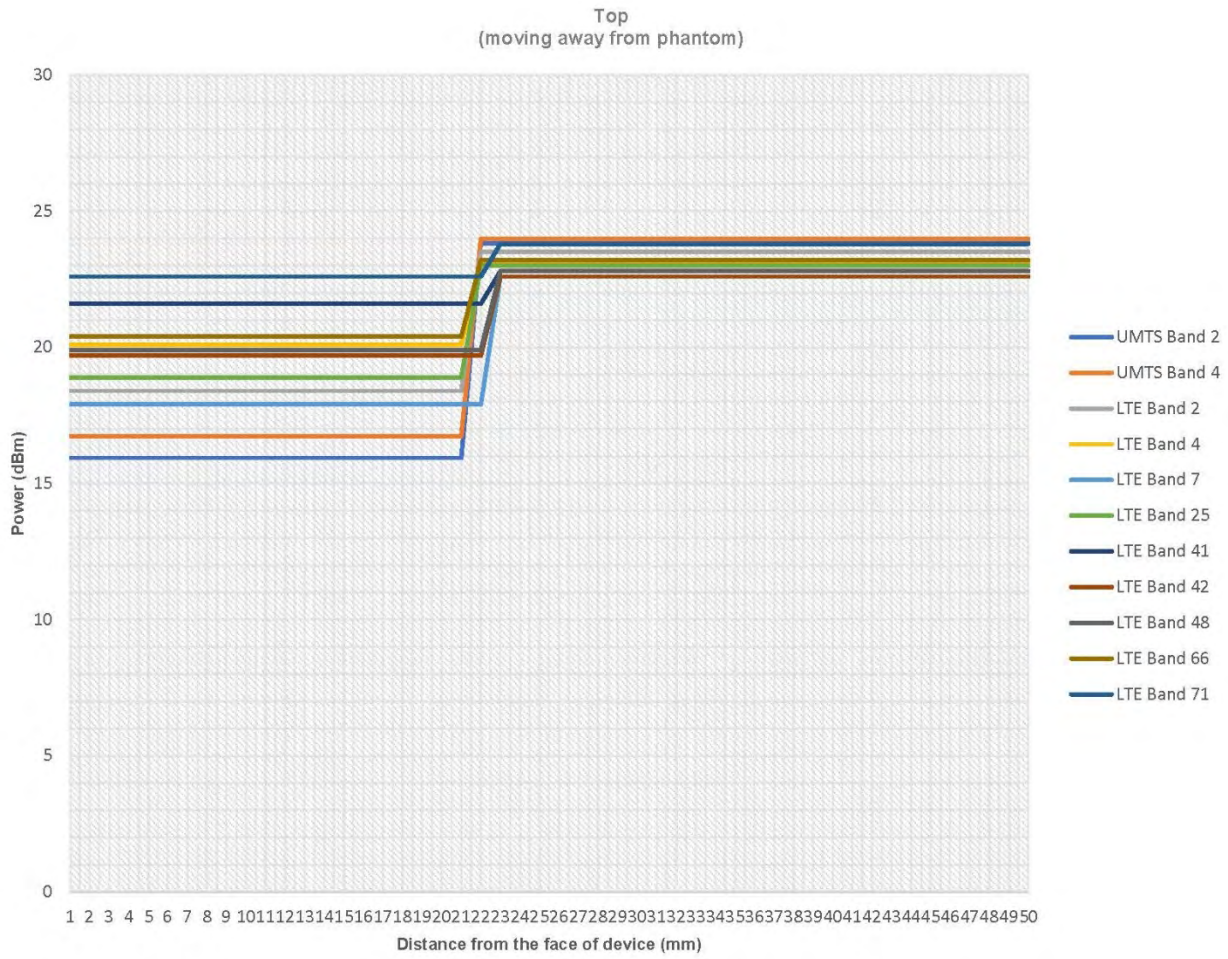

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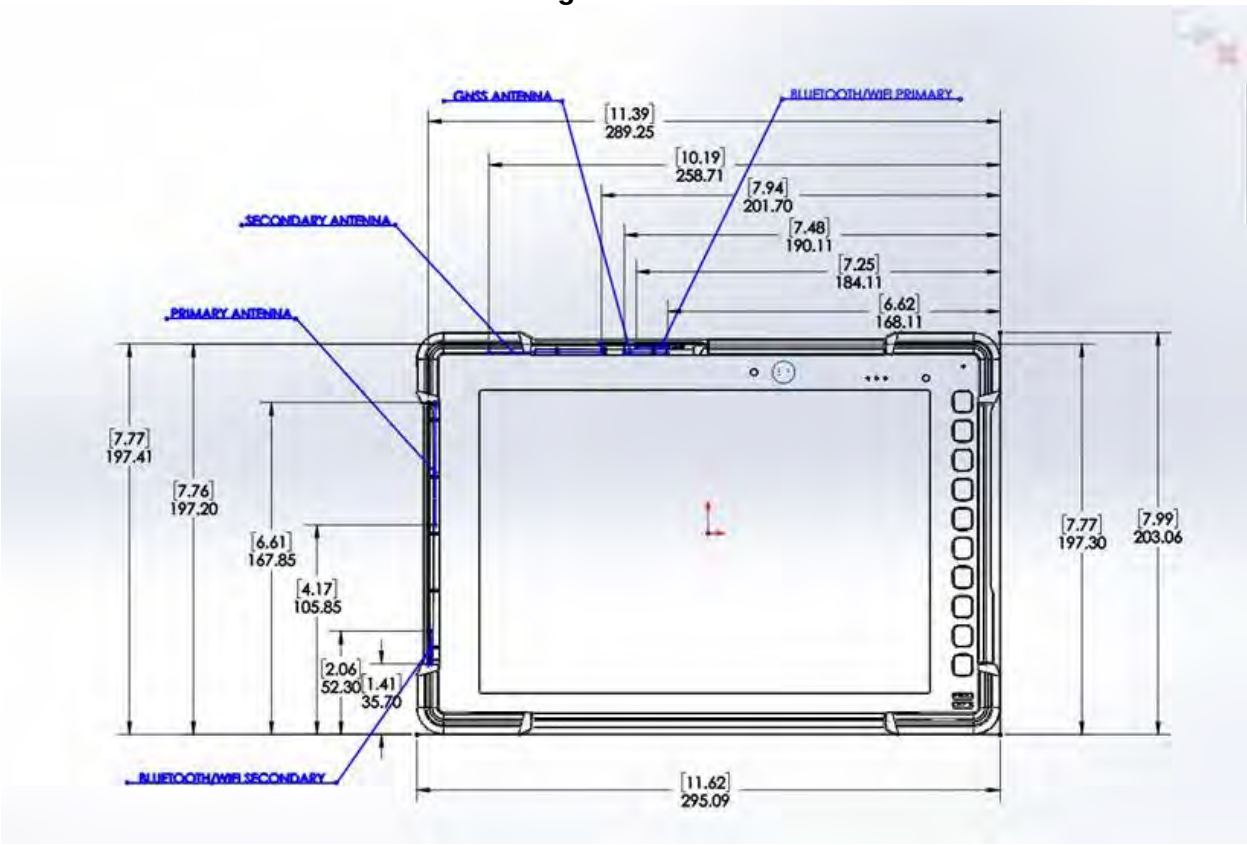
Figure 9.1
SAR Location Diagram of Antenna Distances



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9.1 SAR Measurement Conditions for WCDMA/HSDPA/HSUPA

Configure the call box 8960 to support all WCDMA tests in respect to the 3GPP 34.121 (listed in Table below). Measure the power at Ch4132, 4182 and 4233 for US cell; Ch9262, 9400 and 9538 for US PCS band.

For Rel99

- Set a Test Mode 1 loop back with a 12.2kbps Reference Measurement Channel (RMC).
- Set and send continuously Up power control commands to the device
- Measure the power at the device antenna connector using the power meter with average detector.

For HSDPA Rel 6

- Establish a Test Mode 1 look back with both 1 12.2kbps RMC channel and a H-Set1 Fixed Reference Channel (FRC). With the 8960 this is accomplished by setting the signal Channel Coding to “Fixed Reference Channel” and configuring for HSET-1 QKSP.
- Set beta values and HSDPA settings for HSDPA Subtest1 according to Table below.
- Send continuously Up power control commands to the device
- Measure the power at the device antenna connector using the power meter with modulated average detector.
- Repeat the measurement for the HSDPA Subtest2, 3 and 4 as given in Table below.

For HSUPA Rel 6

- Use UL RMC 12.2kbps and FRC H-Set1 QPSK, Test Mode 1 loop back. With the 8960 this is accomplished by setting the signal Channel Coding to “E-DCH Test Channel” and configuring the equipment category to Cat5_10ms.
- Set the Absolute Grant for HSUPA Subtest1 according to Table below.
- Set the device power to be at least 5dB lower than the Maximum output power
- Send power control bits to give one TPC_cmd = +1 command to the device. If device doesn’t send any E-DPCH data with decreased E-TFCI within 500ms, then repeat this process until the decreased E-TFCI is reported.
- Confirm that the E-TFCI transmitted by the device is equal to the target E-TFCI in Table below. If the E-TFCI transmitted by the device is not equal to the target E-TFCI, then send power control bits to give one TPC_cmd = -1 command to the UE. If UE sends any E-DPCH data with decreased E-TFCI within 500 ms, send new power control bits to give one TPC_cmd = -1 command to the UE. Then confirm that the E-TFCI transmitted by the UE is equal to the target E-TFCI in Table below.
- Measure the power using the power meter with modulated average detector.
- Repeat the measurement for the HSUPA Subtest2, 3, 4 and 5 as given in Table below.

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Full Power Measurements

3GPP Release Version	Mode	Cellular Band [dBm]			Sub-Test (See Table Below)	MPR
		4132	4183	4233		
99	WCDMA	23.72	23.82	23.64	-	-
6	HSDPA	23.56	23.61	23.54	1	0
6		23.66	23.83	23.59	2	0
6		23.50	23.24	23.49	3	0.5
6		23.43	23.31	23.41	4	0.5
6	HSUPA	23.59	23.54	23.76	1	0
6		21.78	21.64	21.98	2	2
6		22.93	22.65	22.94	3	1
6		21.85	21.65	21.76	4	2
6		23.88	24.00	23.87	5	0

3GPP Release Version	Mode	AWS Band [dBm]			Sub-Test (See Table Below)	MPR
		1312	1413	1513		
99	WCDMA	24.00	23.98	23.86	-	-
6	HSDPA	23.94	23.91	23.76	1	0
6		23.82	23.76	23.66	2	0
6		23.53	23.25	23.34	3	0.5
6		23.15	23.26	23.58	4	0.5
6	HSUPA	23.87	24.02	23.65	1	0
6		21.91	21.72	22.06	2	2
6		22.85	22.97	22.84	3	1
6		21.74	21.84	21.94	4	2
6		23.86	23.64	23.93	5	0

3GPP Release Version	Mode	PCS Band [dBm]			Sub-Test (See Table Below)	MPR
		9262	9400	9538		
99	WCDMA	24.00	23.82	23.92	-	-
6	HSDPA	23.81	23.95	23.69	1	0
6		23.95	23.88	23.70	2	0
6		23.32	23.56	23.16	3	0.5
6		23.51	23.51	23.54	4	0.5
6	HSUPA	23.66	23.81	23.92	1	0
6		22.10	21.96	21.81	2	2
6		23.04	22.82	22.90	3	1
6		21.65	21.74	21.84	4	2
6		23.69	23.78	23.85	5	0

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Backed Off Power Measurements

3GPP Release Version	Mode	AWS Band [dBm]			Sub-Test (See Table Below)	MPR
		1312	1413	1513		
99	WCDMA	16.67	16.74	17.00	-	-
6	HSDPA	17.05	16.67	16.70	1	0
6		16.69	16.73	16.63	2	0
6		16.31	16.59	16.18	3	0.5
6		16.31	16.39	16.22	4	0.5
6	HSUPA	16.79	16.91	16.83	1	0
6		14.98	14.91	14.69	2	2
6		15.91	15.67	15.70	3	1
6		14.76	15.01	14.92	4	2
6		16.60	16.96	16.78	5	0

3GPP Release Version	Mode	PCS Band [dBm]			Sub-Test (See Table Below)	MPR
		9262	9400	9538		
99	WCDMA	15.96	15.94	15.98	-	-
6	HSDPA	15.81	16.02	15.62	1	0
6		15.84	15.97	15.84	2	0
6		15.45	15.11	15.38	3	0.5
6		15.42	15.53	15.12	4	0.5
6	HSUPA	16.01	15.64	15.62	1	0
6		14.07	13.72	14.04	2	2
6		14.93	14.64	14.96	3	1
6		13.84	14.03	14.08	4	2
6		15.78	16.02	16.05	5	0

Sub-Test Setup for Release 6 HSDPA

Sub-Test	β_c	β_d	B_c/β_d	β_{hs}
1	2/15	15/15	2/15	4/15
2	12/15	15/15	15/15	24/15
3	15/15	8/15	15/8	30/15
4	15/15	4/15	15/4	30/15
Δ_{ack}, Δ_{nack} and Δ_{cqi} = 8				

Sub-Test Setup for Release 6 HSUPA

Sub-Test	β_c	β_d	B_c/β_d	β_{hs}	B_{ec}	B_{ed}	MPR	AG Index	E-TFCI
1	11/15	15/15	11/15	22/15	209/225	1039/225	0.0	20	75
2	6/15	15/15	6/15	12/15	12/15	94/75	2.0	12	67
3	15/15	9/15	15/9	30/15	30/15	47/15	1.0	15	92
4	2/15	15/15	2/15	4/15	2/15	56/15	2.0	17	71
5	15/15	15/15	15/15	30/15	24/15	134/15	0.0	21	81
Δ_{ack}, Δ_{nack} and Δ_{cqi} = 8									

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Band	Mode	Bandwidth (MHz)	Channel	Frequency (MHz)	Data Rate	Antenna	Avg Power (dBm)	Tune-up Pwr (dBm)
2450 MHz	802.11b	20	1	2412	1 Mbps	Primary	14.45	16.50
			6	2437			14.50	16.50
			11	2462			14.42	16.50
			1	2412		Secondary	14.44	14.50
			6	2437			14.45	14.50
			11	2462			14.46	14.50
	802.11g	20	1	2412	6 Mbps	Primary	13.97	16.50
			6	2437			13.94	16.50
			11	2462			13.94	16.50
			1	2412		Secondary	13.89	14.50
			6	2437			13.86	14.50
			11	2462			13.92	14.50
	802.11n	20	1	2412	HT0	Primary	13.95	16.50
			6	2437			13.87	16.50
			11	2462			13.90	16.50
			1	2412		Secondary	13.91	14.50
			6	2437			13.88	14.50
			11	2462			13.89	14.50
	802.11n	40	3	2422	HT0	Primary	13.95	16.50
			6	2437			13.87	16.50
			10	2457			13.90	16.50
			3	2422		Secondary	13.91	14.50
			6	2437			13.88	14.50
			10	2457			13.89	14.50
5.15-5.25 GHz	802.11a	20	38	5190	6 Mbps	Primary	12.70	14.75
			40	5200			12.75	14.75
			44	5220			12.75	14.75
			48	5240			12.67	14.75
			36	5180		Secondary	12.69	12.75
			40	5200			12.75	12.75
			44	5220			12.75	12.75
			48	5240			12.74	12.75
	802.11n	20	38	5190	HT0	Primary	11.91	14.75
			40	5200			11.88	14.75
			44	5220			11.89	14.75
			46	5230			11.85	14.75
			36	5180		Secondary	11.84	12.75
			40	5200			11.88	12.75
			44	5220			11.89	12.75
			46	5230			11.83	12.75
	802.11n	40	38	5190	HT0	Primary	11.92	14.75
			46	5230			11.94	14.75
			38	5190	HT0	Secondary	11.98	12.75
			46	5230			11.95	12.75
	802.11ac	80	42	5210	VHT0	Primary	11.92	14.75
						Secondary	11.94	12.75
		160	50	5250		Primary	11.86	14.75
			50	5250		Secondary	11.89	12.75
5.25-5.35 GHz	802.11a	20	52	5260	6 Mbps	Primary	12.71	14.75
			56	5280			12.75	14.75
			60	5300			12.75	14.75
			63	5315			12.67	14.75
			52	5260		Secondary	12.94	12.75
			56	5280			12.00	12.75
			60	5300			12.00	12.75
			63	5315			12.98	12.75
	802.11n	20	54	5270	HT0	Primary	11.92	14.75
			56	5280			11.89	14.75
			60	5300			11.88	14.75
			62	5310			11.90	14.75
			52	5260		Secondary	11.91	12.75
			56	5280			11.83	12.75
			60	5300			11.96	12.75
			62	5310			11.89	12.75
	802.11n	40	54	5270	HT0	Primary	11.82	14.75
			62	5310			11.84	14.75
			54	5270	HT0	Secondary	11.89	12.75
			60	5300			11.80	12.75
	802.11ac	80	58	5290	VHT0	Primary	11.85	14.75
						Secondary	11.91	12.75

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Band	Mode	Bandwidth (MHz)	Channel	Frequency (MHz)	Data Rate	Antenna	Avg Power (dBm)	Tune-up Pwr (dBm)
5600 MHz	802.11a	20	102	5510	6 Mbps	Primary	12.42	14.00
			104	5520			12.50	14.00
			108	5540			12.44	14.00
			112	5560			12.47	14.00
			116	5580			12.50	14.00
			120	5600			12.41	14.00
			124	5620			12.50	14.00
			128	5640			12.48	14.00
			132	5660			12.44	14.00
			136	5680			12.50	14.00
			138	5690			12.45	14.00
			100	5500		Secondary	12.49	12.50
			104	5520			12.50	12.50
			108	5540			12.42	12.50
			112	5560			12.47	12.50
			116	5580			12.50	12.50
			120	5600			12.43	12.50
			124	5620			12.50	12.50
			128	5640			12.41	12.50
			132	5660			12.46	12.50
			136	5680			12.50	12.50
			138	5690			12.44	12.50
	802.11n	20	102	5510	HT0	Primary	11.88	14.00
			104	5520			11.83	14.00
			108	5540			11.85	14.00
			112	5560			11.86	14.00
			116	5580			11.84	14.00
			120	5600			11.90	14.00
			124	5620			11.91	14.00
			128	5640			11.94	14.00
			132	5660			11.81	14.00
			136	5680			11.89	14.00
			138	5690			11.88	14.00
			100	5500		Secondary	11.92	12.50
			104	5520			11.90	12.50
			108	5540			11.87	12.50
			112	5560			11.89	12.50
			116	5580			11.83	12.50
			120	5600			11.86	12.50
			124	5620			11.90	12.50
			128	5640			11.94	12.50
			132	5660			11.91	12.50
			136	5680			11.86	12.50
			138	5690			11.89	12.50
	802.11n	40	102	5510	HT0	Primary	11.95	14.00
			110	5550			11.90	14.00
			118	5580			11.92	14.00
			126	5610			11.87	14.00
			134	5670			11.88	14.00
			102	5510		Secondary	11.94	12.50
			110	5550			11.90	12.50
			118	5580			11.93	12.50
			126	5610			11.88	12.50
			134	5670			11.85	12.50
	802.11ac	80	106	5530	VHT0	Primary	11.88	14.00
			122	5610			11.92	14.00
			138	5690			11.86	14.00
			106	5530		Secondary	11.88	12.50
			122	5610			11.91	12.50
			138	5690			11.88	12.50
		160	114	5570		Primary	11.89	14.00
			114	5570		Secondary	11.91	12.50

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Band	Mode	Bandwidth (MHz)	Channel	Frequency (MHz)	Data Rate	Antenna	Avg Power (dBm)	Tune-up Pwr (dBm)
5800 MHz	802.11a	20	149	5745	6 Mbps	Primary	13.00	14.00
			153	5765			12.92	14.00
			157	5785			13.00	14.00
			161	5805			12.94	14.00
			165	5825			13.00	14.00
			150	5750		Secondary	13.00	13.00
			153	5765			12.93	13.00
			157	5785			13.00	13.00
			161	5805			12.94	13.00
			165	5825			13.00	13.00
	802.11n	20	150	5750	HT0	Primary	12.88	14.00
			153	5765			12.87	14.00
			157	5785			12.90	14.00
			161	5805			12.92	14.00
			164	5820			12.94	14.00
			150	5750		Secondary	12.95	13.00
			153	5765			12.90	13.00
			157	5785			12.89	13.00
			161	5805			12.85	13.00
			164	5820			12.87	13.00
	802.11n	40	152	5760	HT0	Primary	12.92	14.00
			159	5795			12.95	14.00
			152	5760		Secondary	12.93	13.00
			159	5795			12.90	13.00
	802.11ac	80	155	5775	VHT0	Primary	12.92	14.00
						Secondary	12.94	13.00

Band	Mode	Channel	Frequency (MHz)	Data Rate	Antenna	Avg Power (dBm)	Tune-up Pwr (dBm)
2450 MHz	Bluetooth v4.0	0	2402	Basic Rate GFSK	Secondary	11.40	11.50
		39	2441			11.47	11.50
		78	2480			11.42	11.50
		0	2402	EDR π/4 DQPSK		7.42	8.00
		39	2441			7.43	8.00
		78	2480			7.38	8.00
		0	2402	EDR 8-DPSK		6.44	7.00
		39	2441			6.41	7.00
		78	2480			6.43	7.00
		0	2402	Low Energy GFSK		6.99	7.00
		39	2441			6.88	7.00
		78	2480			6.93	7.00

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Figure 10.1 Test Reduction Table – 2.4 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11b	Back	1 – 2412 MHz	Reduced[1]
		6 – 2437 MHz	Tested
		11 – 2462 MHz	Reduced[1]
	Top	1 – 2412 MHz	Reduced[2]
		6 – 2437 MHz	Tested
		11 – 2462 MHz	Tested
	Right, Left, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]
802.11g	Back	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Top	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Right, Left, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]
802.11n	Back	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Top	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Right, Left, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required per KDB 248227 D01 v02r02 section 5.2.2 2) page 10.
Reduced[4] – The side is excluded per 47 CFR 1.1307.

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Figure 10.2 Test Reduction Table – 2.4 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11b	Back	1 – 2412 MHz	Reduced[1]
		6 – 2437 MHz	Tested
		11 – 2462 MHz	Reduced[1]
	Left	1 – 2412 MHz	Reduced[2]
		6 – 2437 MHz	Tested
		11 – 2462 MHz	Tested
	Right, Top, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]
802.11g	Back	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Left	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Right, Top, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]
802.11n	Back	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Left	1 – 2412 MHz	Reduced[3]
		6 – 2437 MHz	Reduced[3]
		11 – 2462 MHz	Reduced[3]
	Right, Top, Bottom	1 – 2412 MHz	Reduced[4]
		6 – 2437 MHz	Reduced[4]
		11 – 2462 MHz	Reduced[4]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR is not required per KDB 248227 D01 v02r02 section 5.2.2 2) page 10.
Reduced[4] – The side is excluded per 47 CFR 1.1307.

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Figure 10.3 Test Reduction Table – 5.1 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5150 MHz	Back	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Top	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Right, Left, Bottom	36 – 5180 MHz	Reduced[2]
		40 – 5200 MHz	Reduced[2]
		44 – 5220 MHz	Reduced[2]
		48 – 5240 MHz	Reduced[2]
802.11n 5150 MHz	Back	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Top	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Right, Left, Bottom	36 – 5180 MHz	Reduced[2]
		40 – 5200 MHz	Reduced[2]
		44 – 5220 MHz	Reduced[2]
		48 – 5240 MHz	Reduced[2]
802.11ac 5210 MHz	Back	42 – 5210 MHz	Reduced[1]
	Top	42 – 5210 MHz	Reduced[1]
	Right, Left, Bottom	42 – 5210 MHz	Reduced[2]

Reduced[1] – When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the UNII-1 with the same or lower maximum output power in that test configuration per KDB 248227 D01 v02r02 section 5.3.1 1) page 11.
Reduced[2] – The side is excluded per 47 CFR 1.1307.

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Figure 10.4 Test Reduction Table – 5.1 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5150 MHz	Back	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Left	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Right, Top, Bottom	36 – 5180 MHz	Reduced[2]
		40 – 5200 MHz	Reduced[2]
		44 – 5220 MHz	Reduced[2]
		48 – 5240 MHz	Reduced[2]
802.11n 5150 MHz	Back	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Left	36 – 5180 MHz	Reduced[1]
		40 – 5200 MHz	Reduced[1]
		44 – 5220 MHz	Reduced[1]
		48 – 5240 MHz	Reduced[1]
	Right, Top, Bottom	36 – 5180 MHz	Reduced[2]
		40 – 5200 MHz	Reduced[2]
		44 – 5220 MHz	Reduced[2]
		48 – 5240 MHz	Reduced[2]
802.11ac 5210 MHz	Back	42 – 5210 MHz	Reduced[1]
	Left	42 – 5210 MHz	Reduced[1]
	Right, Top, Bottom	42 – 5210 MHz	Reduced[2]

Reduced[1] – When the adjusted SAR is ≤ 1.2 W/kg, SAR is not required for the UNII-1 with the same or lower maximum output power in that test configuration per KDB 248227 D01 v02r02 section 5.3.1 1) page 11.
Reduced[2] – The side is excluded per 47 CFR 1.1307.

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Figure 10.5 Test Reduction Table – 5.2 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5250 MHz	Back	52 – 5260 MHz	Reduced[1]
		56 – 5280 MHz	Reduced[1]
		60 – 5300 MHz	Tested
		64 – 5320 MHz	Reduced[1]
	Top	52 – 5260 MHz	Reduced[2]
		56 – 5280 MHz	Tested
		60 – 5300 MHz	Tested
		64 – 5320 MHz	Reduced[2]
	Right, Left, Bottom	52 – 5260 MHz	Reduced[3]
		56 – 5280 MHz	Reduced[3]
		60 – 5300 MHz	Reduced[3]
		64 – 5320 MHz	Reduced[3]
802.11n 5250 MHz	Back	52 – 5260 MHz	Reduced[1]
		56 – 5280 MHz	Reduced[1]
		60 – 5300 MHz	Reduced[1]
		64 – 5320 MHz	Reduced[1]
	Top	52 – 5260 MHz	Reduced[2]
		56 – 5280 MHz	Reduced[2]
		60 – 5300 MHz	Reduced[2]
		64 – 5320 MHz	Reduced[2]
	Right, Left, Bottom	52 – 5260 MHz	Reduced[3]
		56 – 5280 MHz	Reduced[3]
		60 – 5300 MHz	Reduced[3]
		64 – 5320 MHz	Reduced[3]
802.11ac 5210 MHz	Back	58 – 5290 MHz	Reduced[1]
	Top	58 – 5290 MHz	Reduced[2]
	Right, Left, Bottom	58 – 5290 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.4 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 2) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.6 Test Reduction Table – 5.2 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5250 MHz	Back	52 – 5260 MHz	Reduced[1]
		56 – 5280 MHz	Reduced[1]
		60 – 5300 MHz	Tested
		64 – 5320 MHz	Reduced[1]
	Left	52 – 5260 MHz	Reduced[2]
		56 – 5280 MHz	Tested
		60 – 5300 MHz	Tested
		64 – 5320 MHz	Reduced[2]
	Right, Top, Bottom	52 – 5260 MHz	Reduced[3]
		56 – 5280 MHz	Reduced[3]
		60 – 5300 MHz	Reduced[3]
		64 – 5320 MHz	Reduced[3]
802.11n 5250 MHz	Back	52 – 5260 MHz	Reduced[1]
		56 – 5280 MHz	Reduced[1]
		60 – 5300 MHz	Reduced[1]
		64 – 5320 MHz	Reduced[1]
	Left	52 – 5260 MHz	Reduced[2]
		56 – 5280 MHz	Reduced[2]
		60 – 5300 MHz	Reduced[2]
		64 – 5320 MHz	Reduced[2]
	Right, Top, Bottom	52 – 5260 MHz	Reduced[3]
		56 – 5280 MHz	Reduced[3]
		60 – 5300 MHz	Reduced[3]
		64 – 5320 MHz	Reduced[3]
802.11ac 5210 MHz	Back	58 – 5290 MHz	Reduced[1]
	Left	58 – 5290 MHz	Reduced[2]
	Right, Top, Bottom	58 – 5290 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.7 Test Reduction Table – 5.6 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5600 MHz	Back	100 – 5500 MHz	Reduced[1]
		104 – 5520 MHz	Reduced[1]
		108 – 5540 MHz	Reduced[1]
		112 – 5560 MHz	Reduced[1]
		116 – 5580 MHz	Reduced[1]
		120 – 5600 MHz	Reduced[1]
		124 – 5620 MHz	Tested
		128 – 5640 MHz	Reduced[1]
		132 – 5660 MHz	Reduced[1]
		136 – 5680 MHz	Reduced[1]
		140 – 5700 MHz	Reduced[1]
	Top	100 – 5500 MHz	Reduced[2]
		104 – 5520 MHz	Reduced[2]
		108 – 5540 MHz	Reduced[2]
		112 – 5560 MHz	Reduced[2]
		116 – 5580 MHz	Tested
		120 – 5600 MHz	Reduced[2]
		124 – 5620 MHz	Tested
		128 – 5640 MHz	Reduced[2]
		132 – 5660 MHz	Reduced[2]
		136 – 5680 MHz	Reduced[2]
		140 – 5700 MHz	Reduced[2]
	Right, Left, Bottom	100 – 5500 MHz	Reduced[3]
		104 – 5520 MHz	Reduced[3]
		108 – 5540 MHz	Reduced[3]
		112 – 5560 MHz	Reduced[3]
		116 – 5580 MHz	Reduced[3]
		120 – 5600 MHz	Reduced[3]
		124 – 5620 MHz	Reduced[3]
		128 – 5640 MHz	Reduced[3]
		132 – 5660 MHz	Reduced[3]
		136 – 5680 MHz	Reduced[3]
		140 – 5700 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.

Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.

Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.8 Test Reduction Table – 5.6 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11n 5600 MHz	Back	100 – 5500 MHz	Reduced[1]
		104 – 5520 MHz	Reduced[1]
		108 – 5540 MHz	Reduced[1]
		112 – 5560 MHz	Reduced[1]
		116 – 5580 MHz	Reduced[1]
		120 – 5600 MHz	Reduced[1]
		124 – 5620 MHz	Reduced[1]
		128 – 5640 MHz	Reduced[1]
		132 – 5660 MHz	Reduced[1]
		136 – 5680 MHz	Reduced[1]
		140 – 5700 MHz	Reduced[1]
	Top	100 – 5500 MHz	Reduced[2]
		104 – 5520 MHz	Reduced[2]
		108 – 5540 MHz	Reduced[2]
		112 – 5560 MHz	Reduced[2]
		116 – 5580 MHz	Reduced[2]
		120 – 5600 MHz	Reduced[2]
		124 – 5620 MHz	Reduced[2]
		128 – 5640 MHz	Reduced[2]
		132 – 5660 MHz	Reduced[2]
		136 – 5680 MHz	Reduced[2]
		140 – 5700 MHz	Reduced[2]
	Right, Left, Bottom	100 – 5500 MHz	Reduced[3]
		104 – 5520 MHz	Reduced[3]
		108 – 5540 MHz	Reduced[3]
		112 – 5560 MHz	Reduced[3]
		116 – 5580 MHz	Reduced[3]
		120 – 5600 MHz	Reduced[3]
		124 – 5620 MHz	Reduced[3]
		128 – 5640 MHz	Reduced[3]
		132 – 5660 MHz	Reduced[3]
		136 – 5680 MHz	Reduced[3]
		140 – 5700 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

Figure 10.9 Test Reduction Table – 5.6 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11ac 5600 MHz	Back	106 – 5530 MHz	Reduced[1]
		122 – 5610 MHz	Reduced[1]
		138 – 5690 MHz	Reduced[1]
	Top	106 – 5530 MHz	Reduced[2]
		122 – 5610 MHz	Reduced[2]
		138 – 5690 MHz	Reduced[2]
	Right, Left, Bottom	106 – 5530 MHz	Reduced[3]
		122 – 5610 MHz	Reduced[3]
		138 – 5690 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.10 Test Reduction Table – 5.6 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5600 MHz	Back	100 – 5500 MHz	Reduced[1]
		104 – 5520 MHz	Reduced[1]
		108 – 5540 MHz	Reduced[1]
		112 – 5560 MHz	Reduced[1]
		116 – 5580 MHz	Reduced[1]
		120 – 5600 MHz	Reduced[1]
		124 – 5620 MHz	Tested
		128 – 5640 MHz	Reduced[1]
		132 – 5660 MHz	Reduced[1]
		136 – 5680 MHz	Reduced[1]
		140 – 5700 MHz	Reduced[1]
	Left	100 – 5500 MHz	Reduced[2]
		104 – 5520 MHz	Reduced[2]
		108 – 5540 MHz	Reduced[2]
		112 – 5560 MHz	Reduced[2]
		116 – 5580 MHz	Tested
		120 – 5600 MHz	Reduced[2]
		124 – 5620 MHz	Tested
		128 – 5640 MHz	Reduced[2]
		132 – 5660 MHz	Reduced[2]
		136 – 5680 MHz	Reduced[2]
		140 – 5700 MHz	Reduced[2]
	Right, Top, Bottom	100 – 5500 MHz	Reduced[3]
		104 – 5520 MHz	Reduced[3]
		108 – 5540 MHz	Reduced[3]
		112 – 5560 MHz	Reduced[3]
		116 – 5580 MHz	Reduced[3]
		120 – 5600 MHz	Reduced[3]
		124 – 5620 MHz	Reduced[3]
		128 – 5640 MHz	Reduced[3]
		132 – 5660 MHz	Reduced[3]
		136 – 5680 MHz	Reduced[3]
		140 – 5700 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.11 Test Reduction Table – 5.6 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11n 5600 MHz	Back	100 – 5500 MHz	Reduced[1]
		104 – 5520 MHz	Reduced[1]
		108 – 5540 MHz	Reduced[1]
		112 – 5560 MHz	Reduced[1]
		116 – 5580 MHz	Reduced[1]
		120 – 5600 MHz	Reduced[1]
		124 – 5620 MHz	Reduced[1]
		128 – 5640 MHz	Reduced[1]
		132 – 5660 MHz	Reduced[1]
		136 – 5680 MHz	Reduced[1]
		140 – 5700 MHz	Reduced[1]
	Left	100 – 5500 MHz	Reduced[2]
		104 – 5520 MHz	Reduced[2]
		108 – 5540 MHz	Reduced[2]
		112 – 5560 MHz	Reduced[2]
		116 – 5580 MHz	Reduced[2]
		120 – 5600 MHz	Reduced[2]
		124 – 5620 MHz	Reduced[2]
		128 – 5640 MHz	Reduced[2]
		132 – 5660 MHz	Reduced[2]
		136 – 5680 MHz	Reduced[2]
		140 – 5700 MHz	Reduced[2]
	Right, Top, Bottom	100 – 5500 MHz	Reduced[3]
		104 – 5520 MHz	Reduced[3]
		108 – 5540 MHz	Reduced[3]
		112 – 5560 MHz	Reduced[3]
		116 – 5580 MHz	Reduced[3]
		120 – 5600 MHz	Reduced[3]
		124 – 5620 MHz	Reduced[3]
		128 – 5640 MHz	Reduced[3]
		132 – 5660 MHz	Reduced[3]
		136 – 5680 MHz	Reduced[3]
		140 – 5700 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

Figure 10.12 Test Reduction Table – 5.6 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11ac 5600 MHz	Back	106 – 5530 MHz	Reduced[1]
		122 – 5610 MHz	Reduced[1]
		138 – 5690 MHz	Reduced[1]
	Left	106 – 5530 MHz	Reduced[2]
		122 – 5610 MHz	Reduced[2]
		138 – 5690 MHz	Reduced[2]
	Right, Top, Bottom	106 – 5530 MHz	Reduced[3]
		122 – 5610 MHz	Reduced[3]
		138 – 5690 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.13 Test Reduction Table – 5.8 GHz Primary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5800 MHz	Back	149 – 5745 MHz	Reduced[1]
		153 – 5765 MHz	Reduced[1]
		157 – 5785 MHz	Tested
		161 – 5805 MHz	Reduced[1]
		165 – 5825 MHz	Reduced[1]
	Top	149 – 5745 MHz	Reduced[2]
		153 – 5765 MHz	Reduced[2]
		157 – 5785 MHz	Tested
		161 – 5805 MHz	Reduced[2]
		165 – 5825 MHz	Tested
	Right, Left, Bottom	149 – 5745 MHz	Reduced[3]
		153 – 5765 MHz	Reduced[3]
		157 – 5785 MHz	Reduced[3]
		161 – 5805 MHz	Reduced[3]
		165 – 5825 MHz	Reduced[3]
802.11n 5800 MHz	Back	149 – 5745 MHz	Reduced[1]
		153 – 5765 MHz	Reduced[1]
		157 – 5785 MHz	Reduced[1]
		161 – 5805 MHz	Reduced[1]
		165 – 5825 MHz	Reduced[1]
	Top	149 – 5745 MHz	Reduced[2]
		153 – 5765 MHz	Reduced[2]
		157 – 5785 MHz	Reduced[2]
		161 – 5805 MHz	Reduced[2]
		165 – 5825 MHz	Reduced[2]
	Right, Left, Bottom	149 – 5745 MHz	Reduced[3]
		153 – 5765 MHz	Reduced[3]
		157 – 5785 MHz	Reduced[3]
		161 – 5805 MHz	Reduced[3]
		165 – 5825 MHz	Reduced[3]
802.11ac 5800 MHz	Back	155 – 5775 MHz	Reduced[1]
	Top	155 – 5775 MHz	Reduced[2]
	Right, Left, Bottom	155 – 5775 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.14 Test Reduction Table – 5.8 GHz Secondary

Mode	Side	Required Channel	Tested/Reduced
802.11a 5800 MHz	Back	149 – 5745 MHz	Reduced[1]
		153 – 5765 MHz	Reduced[1]
		157 – 5785 MHz	Tested
		161 – 5805 MHz	Reduced[1]
		165 – 5825 MHz	Reduced[1]
	Left	149 – 5745 MHz	Reduced[2]
		153 – 5765 MHz	Reduced[2]
		157 – 5785 MHz	Tested
		161 – 5805 MHz	Reduced[2]
		165 – 5825 MHz	Tested
	Right, Top, Bottom	149 – 5745 MHz	Reduced[3]
		153 – 5765 MHz	Reduced[3]
		157 – 5785 MHz	Reduced[3]
		161 – 5805 MHz	Reduced[3]
		165 – 5825 MHz	Reduced[3]
802.11n 5800 MHz	Back	149 – 5745 MHz	Reduced[1]
		153 – 5765 MHz	Reduced[1]
		157 – 5785 MHz	Reduced[1]
		161 – 5805 MHz	Reduced[1]
		165 – 5825 MHz	Reduced[1]
	Left	149 – 5745 MHz	Reduced[2]
		153 – 5765 MHz	Reduced[2]
		157 – 5785 MHz	Reduced[2]
		161 – 5805 MHz	Reduced[2]
		165 – 5825 MHz	Reduced[2]
	Right, Top, Bottom	149 – 5745 MHz	Reduced[3]
		153 – 5765 MHz	Reduced[3]
		157 – 5785 MHz	Reduced[3]
		161 – 5805 MHz	Reduced[3]
		165 – 5825 MHz	Reduced[3]
802.11ac 5800 MHz	Back	155 – 5775 MHz	Reduced[1]
	Left	155 – 5775 MHz	Reduced[2]
	Right, Top, Bottom	155 – 5775 MHz	Reduced[3]

Reduced[1] – When the reported SAR is ≤ 0.4 W/kg, SAR is not required for the remaining test configuration per KDB 248227 D01 v02r02 section 5.1.1 1) page 9.
Reduced[2] – When the reported SAR is >0.8 W/kg, test the next highest configuration until the SAR value is ≤ 1.2 W/kg per KDB 248227 D01 v02r02 section 5.1.1 3) page 9.
Reduced[3] – The side is excluded per 47 CFR 1.1307.

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Figure 10.15 Test Reduction Table – 3G WCDMA

Band/ Frequency (MHz)	Technology	Side	Required Channel	Tested/ Reduced
Band 5 824-849 MHz	WCDMA	Back	4132	Reduced[1]
			4183	Tested
			4233	Reduced[1]
		Left	4132	Tested
			4183	Tested
			4233	Tested
		Top	4132	Reduced[1]
			4183	Tested
			4233	Reduced[1]
		Remaining Sides		Reduced[2]
Band 4 1710-1755 MHz		Back	1312	Reduced[1]
			1413	Tested
			1513	Reduced[1]
		Left	1312	Tested
			1413	Tested
			1513	Tested
		Top	1312	Reduced[1]
			1413	Tested
			1513	Reduced[1]
		Remaining Sides		Reduced[2]
Band 2 1850-1910 MHz		Back	9262	Reduced[1]
			9400	Tested
			9538	Reduced[1]
		Left	9262	Tested
			9400	Tested
			9538	Tested
		Top	9262	Reduced[1]
			9400	Tested
			9538	Reduced[1]
		Remaining Sides		Reduced[2]

Reduced[1] – When the mid channel is 3 dB below the limit, the remaining channels are not required per KDB 447498 D01 v07 section 4.3.3 page 14.
Reduced[2] – The side is excluded per 47 CFR 1.1307.

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10.1.1 LTE Functionality

The follow table identifies all the channel bandwidths in each frequency band supported by this device.

LTE Band Class	Bandwidth (MHz)	Frequency or Freq. Band (MHz)
2	1.4, 3, 5, 10, 15, 20	1850-1910 MHz
4	1.4, 3, 5, 10, 15, 20	1710-1755 MHz
5	1.4, 3, 5, 10	824-849 MHz
7	5, 10, 15, 20	2500-2570 MHz
12	1.4, 3, 5, 10	699-716 MHz
13	5, 10	777-787 MHz
14	5, 10	788-798 MHz
25	1.4, 3, 5, 10, 15, 20	1850-1915 MHz
26	1.4, 3, 5, 10, 15	814-849 MHz
41	5, 10, 15, 20	2496-2690 MHz
42	5, 10, 15, 20	3400-3600 MHz
48	5, 10, 15, 20	3550-3700 MHz
66	1.4, 3, 5, 10, 15, 20	1710-1780 MHz
71	5, 10, 15, 20	663-698 MHz

10.1.2 Test Conditions

All SAR measurements for LTE were performed using the Anritsu MT8820C. A closed loop power control setting allowed the UE to transmit at the maximum output power during the SAR measurements. The Figure 11.1 table indicates all the test reduction utilized for this report.

MPR was enabled for this device. A-MPR was disabled for all SAR test measurements.

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Table 10.1.1 LTE Full Power Measurements

Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	1.4 MHz	1	0	18607	1850.7	23.3	22.1
				18900	1880.0	23.4	22.5
				19193	1909.3	23.3	22.0
			3	18607	1850.7	23.4	21.9
				18900	1880.0	23.2	21.8
				19193	1909.3	23.1	22.4
			5	18607	1850.7	23.4	21.9
				18900	1880.0	23.1	22.1
				19193	1909.3	22.8	21.9
		3	0	18607	1850.7	22.8	22.3
				18900	1880.0	23.5	22.4
				19193	1909.3	23.5	22.3
			1	18607	1850.7	23.4	22.3
				18900	1880.0	22.8	22.0
				19193	1909.3	23.4	22.5
			3	18607	1850.7	23.1	22.1
				18900	1880.0	22.9	22.3
				19193	1909.3	22.9	22.4
		6	0	18607	1850.7	22.5	21.1
				18900	1880.0	22.3	21.1
				19193	1909.3	22.4	21.2
	3 MHz	1	0	18615	1851.5	22.9	21.9
				18900	1880.0	23.1	22.4
				19185	1908.5	23.4	21.9
			7	18615	1851.5	23.0	22.2
				18900	1880.0	23.3	22.1
				19185	1908.5	23.3	21.9
			14	18615	1851.5	23.5	22.3
				18900	1880.0	22.9	22.2
				19185	1908.5	23.0	22.0
		8	0	18615	1851.5	22.3	20.8
				18900	1880.0	22.1	21.0
				19185	1908.5	22.4	21.3
			7	18615	1851.5	22.1	21.3
				18900	1880.0	22.3	21.0
				19185	1908.5	22.3	21.3
			14	18615	1851.5	22.0	21.2
				18900	1880.0	22.2	21.2
				19185	1908.5	22.0	21.4
		15	0	18615	1851.5	22.0	20.9
				18900	1880.0	22.0	21.1
				19185	1908.5	22.0	21.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	5 MHz	1	0	18625	1852.5	22.8	21.9
				18900	1880.0	23.4	22.2
				19175	1907.5	23.1	22.2
			12	18625	1852.5	23.3	22.2
				18900	1880.0	23.2	22.2
				19175	1907.5	23.3	21.8
			24	18625	1852.5	23.2	22.3
				18900	1880.0	23.2	22.3
				19175	1907.5	23.3	22.2
		12	0	18625	1852.5	21.9	21.3
				18900	1880.0	22.0	21.1
				19175	1907.5	22.3	21.2
			6	18625	1852.5	22.0	21.0
				18900	1880.0	21.9	21.3
				19175	1907.5	22.4	21.3
			13	18625	1852.5	22.2	21.3
				18900	1880.0	22.3	21.3
				19175	1907.5	22.0	21.2
		25	0	18625	1852.5	21.8	21.4
				18900	1880.0	22.2	21.4
				19175	1907.5	22.1	21.1
	10 MHz	1	0	18650	1855.0	23.1	22.4
				18900	1880.0	23.2	22.1
				19150	1905.0	23.4	21.9
			24	18650	1855.0	22.9	22.4
				18900	1880.0	23.0	22.4
				19150	1905.0	23.4	22.2
			49	18650	1855.0	23.5	22.1
				18900	1880.0	23.0	21.9
				19150	1905.0	23.3	21.8
		25	0	18650	1855.0	21.8	21.3
				18900	1880.0	22.0	21.1
				19150	1905.0	21.9	21.2
			13	18650	1855.0	22.3	20.8
				18900	1880.0	22.2	20.8
				19150	1905.0	22.2	20.9
			25	18650	1855.0	22.1	21.3
				18900	1880.0	22.1	21.2
				19150	1905.0	22.0	21.2
		50	0	18650	1855.0	22.1	21.3
				18900	1880.0	21.9	21.3
				19150	1905.0	21.8	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	15 MHz	1	0	18675	1857.5	23.0	22.0
				18900	1880.0	23.5	21.9
				19125	1902.5	22.9	22.4
			37	18675	1857.5	22.9	22.0
				18900	1880.0	23.4	22.4
				19125	1902.5	23.3	21.9
			74	18675	1857.5	23.5	22.1
				18900	1880.0	23.4	22.3
				19125	1902.5	23.0	22.4
		36	0	18675	1857.5	21.8	21.2
				18900	1880.0	22.0	20.9
				19125	1902.5	21.9	21.1
			19	18675	1857.5	22.1	21.3
				18900	1880.0	21.9	20.9
				19125	1902.5	22.0	21.1
			39	18675	1857.5	22.2	21.0
				18900	1880.0	22.0	20.9
				19125	1902.5	21.9	21.1
		75	0	18675	1857.5	22.3	20.9
				18900	1880.0	22.3	21.4
				19125	1902.5	22.3	21.2
	20 MHz	1	0	18700	1860.0	22.8	22.5
				18900	1880.0	22.9	22.5
				19100	1900.0	23.3	22.4
			49	18700	1860.0	22.8	22.3
				18900	1880.0	23.5	22.1
				19100	1900.0	22.8	21.9
			99	18700	1860.0	23.1	22.1
				18900	1880.0	23.5	21.9
				19100	1900.0	23.5	21.9
		50	0	18700	1860.0	22.4	21.5
				18900	1880.0	22.3	21.1
				19100	1900.0	21.9	21.4
			24	18700	1860.0	22.4	21.0
				18900	1880.0	22.5	21.2
				19100	1900.0	21.9	21.2
			50	18700	1860.0	22.2	20.8
				18900	1880.0	22.3	20.9
				19100	1900.0	21.9	20.9
		100	0	18700	1860.0	22.0	21.1
				18900	1880.0	22.5	21.1
				19100	1900.0	22.2	21.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	1.4 MHz	1	0	19957	1710.7	22.9	22.1
				20175	1732.5	23.1	22.1
				20393	1754.3	23.2	22.2
			3	19957	1710.7	23.1	22.5
				20175	1732.5	23.4	21.9
				20393	1754.3	23.4	22.3
			5	19957	1710.7	23.3	22.4
				20175	1732.5	23.5	22.2
				20393	1754.3	23.5	22.2
		3	0	19957	1710.7	22.8	22.4
				20175	1732.5	23.0	22.2
				20393	1754.3	23.3	22.4
			1	19957	1710.7	22.9	22.3
				20175	1732.5	23.2	22.4
				20393	1754.3	23.5	22.4
			3	19957	1710.7	23.4	22.3
				20175	1732.5	23.3	22.4
				20393	1754.3	23.2	22.3
		6	0	19957	1710.7	22.4	21.5
				20175	1732.5	21.9	21.4
				20393	1754.3	22.4	21.4
	3 MHz	1	0	19965	1711.5	23.3	22.3
				20175	1732.5	23.1	22.4
				20385	1753.5	23.2	22.0
			7	19965	1711.5	23.5	21.9
				20175	1732.5	23.5	22.4
				20385	1753.5	23.1	22.4
			14	19965	1711.5	22.9	22.2
				20175	1732.5	23.4	22.0
				20385	1753.5	23.4	22.3
		8	0	19965	1711.5	22.3	21.2
				20175	1732.5	22.5	20.8
				20385	1753.5	21.9	20.9
			7	19965	1711.5	22.1	21.0
				20175	1732.5	21.9	21.4
				20385	1753.5	22.0	21.1
			14	19965	1711.5	22.1	21.0
				20175	1732.5	22.0	21.5
				20385	1753.5	22.5	21.2
		15	0	19965	1711.5	22.0	21.0
				20175	1732.5	22.3	21.3
				20385	1753.5	21.9	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	5 MHz	1	0	19975	1712.5	23.3	22.2
				20175	1732.5	23.4	22.5
				20375	1752.5	23.1	22.1
			12	19975	1712.5	23.1	22.1
				20175	1732.5	23.2	21.9
				20375	1752.5	23.0	21.9
			24	19975	1712.5	23.1	22.0
				20175	1732.5	22.9	22.5
				20375	1752.5	23.3	22.2
		12	0	19975	1712.5	21.8	21.1
				20175	1732.5	22.1	20.9
				20375	1752.5	21.9	20.9
			6	19975	1712.5	22.2	21.4
				20175	1732.5	22.0	21.4
				20375	1752.5	22.1	21.4
			13	19975	1712.5	22.5	21.4
				20175	1732.5	22.0	21.3
				20375	1752.5	21.8	20.9
		25	0	19975	1712.5	22.4	21.3
				20175	1732.5	22.1	21.0
				20375	1752.5	22.4	21.4
	10 MHz	1	0	20000	1715.0	23.3	22.0
				20175	1732.5	23.3	22.0
				20350	1750.0	23.2	22.3
			24	20000	1715.0	23.1	22.4
				20175	1732.5	23.4	22.0
				20350	1750.0	23.1	22.1
			49	20000	1715.0	23.1	22.3
				20175	1732.5	23.2	22.3
				20350	1750.0	23.3	22.1
		25	0	20000	1715.0	22.3	20.9
				20175	1732.5	22.3	21.3
				20350	1750.0	22.5	21.1
			13	20000	1715.0	22.1	21.3
				20175	1732.5	22.1	21.3
				20350	1750.0	21.9	21.4
			25	20000	1715.0	22.0	21.2
				20175	1732.5	22.1	21.5
				20350	1750.0	21.9	21.3
		50	0	20000	1715.0	22.2	21.3
				20175	1732.5	22.1	20.9
				20350	1750.0	21.9	21.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	15 MHz	1	0	20025	1717.5	23.4	22.1
				20175	1732.5	23.2	22.5
				20325	1747.5	23.1	22.0
			37	20025	1717.5	22.9	22.2
				20175	1732.5	23.5	22.4
				20325	1747.5	23.3	22.1
			74	20025	1717.5	23.1	22.5
				20175	1732.5	23.0	22.4
				20325	1747.5	23.2	22.0
		36	0	20025	1717.5	22.3	21.5
				20175	1732.5	22.4	21.1
				20325	1747.5	22.5	21.1
			19	20025	1717.5	22.2	20.9
				20175	1732.5	22.0	21.0
				20325	1747.5	22.4	21.0
			39	20025	1717.5	22.4	20.9
				20175	1732.5	21.9	20.9
				20325	1747.5	21.9	21.4
		75	0	20025	1717.5	22.2	21.2
				20175	1732.5	22.0	21.1
				20325	1747.5	21.9	21.5
	20 MHz	1	0	20050	1720.0	23.4	22.3
				20175	1732.5	23.2	22.3
				20300	1745.0	23.2	22.3
			49	20050	1720.0	23.3	21.9
				20175	1732.5	23.1	22.3
				20300	1745.0	23.0	22.0
			99	20050	1720.0	23.4	22.4
				20175	1732.5	23.3	22.1
				20300	1745.0	23.4	22.4
		50	0	20050	1720.0	21.8	21.1
				20175	1732.5	21.9	21.1
				20300	1745.0	22.1	21.1
			24	20050	1720.0	22.1	21.4
				20175	1732.5	22.4	20.9
				20300	1745.0	22.4	20.9
			50	20050	1720.0	22.3	21.3
				20175	1732.5	22.5	21.2
				20300	1745.0	22.4	21.5
		100	0	20050	1720.0	21.9	21.4
				20175	1732.5	22.4	21.3
				20300	1745.0	22.4	20.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
5	1.4 MHz	1	0	20407	824.7	23.3	21.9
				20525	836.5	23.1	21.9
				20643	848.3	22.8	22.3
			3	20407	824.7	23.3	22.3
				20525	836.5	22.8	22.1
				20643	848.3	23.3	22.2
			5	20407	824.7	23.1	22.0
				20525	836.5	23.1	22.5
				20643	848.3	23.3	21.8
		3	0	20407	824.7	23.1	22.1
				20525	836.5	22.8	22.1
				20643	848.3	22.9	22.1
			1	20407	824.7	23.1	22.2
				20525	836.5	23.4	21.9
				20643	848.3	23.5	21.9
			3	20407	824.7	23.0	21.8
				20525	836.5	23.3	22.3
				20643	848.3	23.1	21.9
		6	0	20407	824.7	22.2	20.9
				20525	836.5	22.2	21.4
				20643	848.3	21.9	21.0
	3 MHz	1	0	20415	825.5	23.2	22.4
				20525	836.5	23.1	21.9
				20635	847.5	23.4	22.5
			7	20415	825.5	23.1	21.9
				20525	836.5	23.3	22.4
				20635	847.5	23.0	21.8
			14	20415	825.5	23.0	22.3
				20525	836.5	22.8	21.9
				20635	847.5	23.2	22.3
		8	0	20415	825.5	22.4	21.0
				20525	836.5	22.5	21.4
				20635	847.5	22.0	21.2
			7	20415	825.5	21.8	21.1
				20525	836.5	22.5	20.9
				20635	847.5	22.4	20.9
			14	20415	825.5	22.3	21.3
				20525	836.5	22.2	21.2
				20635	847.5	22.5	21.2
		15	0	20415	825.5	22.2	21.2
				20525	836.5	22.0	21.2
				20635	847.5	22.1	20.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
5	5 MHz	1	0	20425	826.5	23.3	22.3
				20525	836.5	23.2	21.9
				20625	846.5	22.9	22.2
			12	20425	826.5	23.4	22.4
				20525	836.5	23.1	22.5
				20625	846.5	23.3	22.4
			24	20425	826.5	23.4	22.4
				20525	836.5	23.4	22.4
				20625	846.5	23.2	22.2
		12	0	20425	826.5	22.5	21.4
				20525	836.5	22.1	21.1
				20625	846.5	22.4	21.3
			6	20425	826.5	22.2	21.4
				20525	836.5	22.1	21.2
				20625	846.5	22.5	21.1
			13	20425	826.5	22.0	21.0
				20525	836.5	22.2	21.0
				20625	846.5	21.9	20.8
		25	0	20425	826.5	22.4	21.3
				20525	836.5	21.9	21.0
				20625	846.5	22.1	21.0
	10 MHz	1	0	20450	829.0	23.0	22.0
				20525	836.5	23.4	21.8
				20600	844.0	23.0	22.5
			24	20450	829.0	23.2	22.4
				20525	836.5	23.2	22.4
				20600	844.0	23.3	22.3
			49	20450	829.0	23.4	22.2
				20525	836.5	23.0	21.8
				20600	844.0	23.2	22.1
		25	0	20450	829.0	21.9	21.2
				20525	836.5	22.4	21.3
				20600	844.0	22.2	21.5
			13	20450	829.0	22.1	20.9
				20525	836.5	22.1	21.4
				20600	844.0	22.4	21.0
			25	20450	829.0	22.0	21.5
				20525	836.5	22.2	21.3
				20600	844.0	22.4	21.5
		50	0	20450	829.0	21.9	21.0
				20525	836.5	22.2	20.8
				20600	844.0	22.0	21.2

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
7	5 MHz	1	0	20775	2502.5	22.4	21.6
				21100	2535.0	22.4	21.5
				21425	2567.5	22.9	21.7
			12	20775	2502.5	22.7	21.7
				21100	2535.0	22.8	21.9
				21425	2567.5	22.9	21.9
			24	20775	2502.5	22.9	21.8
				21100	2535.0	22.5	21.6
				21425	2567.5	22.9	21.9
		12	0	20775	2502.5	21.5	20.9
				21100	2535.0	22.0	20.3
				21425	2567.5	21.5	20.9
			6	20775	2502.5	21.6	20.6
				21100	2535.0	21.9	20.4
				21425	2567.5	22.0	20.7
			13	20775	2502.5	21.4	20.7
				21100	2535.0	21.9	20.3
				21425	2567.5	21.5	20.9
		25	0	20775	2502.5	21.5	20.5
				21100	2535.0	21.5	20.7
				21425	2567.5	21.8	20.9
	10 MHz	1	0	20800	2505.0	22.3	21.4
				21100	2535.0	22.7	21.5
				21400	2565.0	22.4	21.9
			24	20800	2505.0	22.5	21.4
				21100	2535.0	22.3	21.9
				21400	2565.0	22.9	21.8
			49	20800	2505.0	22.3	21.5
				21100	2535.0	22.4	21.6
				21400	2565.0	22.6	21.8
		25	0	20800	2505.0	21.6	20.9
				21100	2535.0	21.9	20.9
				21400	2565.0	21.6	20.6
			13	20800	2505.0	21.7	20.3
				21100	2535.0	21.4	21.0
				21400	2565.0	21.7	20.9
			25	20800	2505.0	21.5	20.8
				21100	2535.0	21.3	20.3
				21400	2565.0	21.8	20.8
		50	0	20800	2505.0	21.4	20.5
				21100	2535.0	21.4	20.9
				21400	2565.0	22.0	21.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
7	15 MHz	1	0	20825	2507.5	22.5	21.6
				21100	2535.0	22.4	21.8
				21375	2562.5	22.7	21.9
			37	20825	2507.5	22.9	21.4
				21100	2535.0	22.3	21.4
				21375	2562.5	22.7	21.3
			74	20825	2507.5	22.6	21.7
				21100	2535.0	22.7	21.5
				21375	2562.5	23.0	21.6
		36	0	20825	2507.5	21.7	20.7
				21100	2535.0	21.8	20.8
				21375	2562.5	21.6	20.6
			19	20825	2507.5	21.4	20.4
				21100	2535.0	21.7	20.8
				21375	2562.5	21.8	20.6
			39	20825	2507.5	21.8	20.4
				21100	2535.0	21.9	20.3
				21375	2562.5	21.8	20.9
		75	0	20825	2507.5	21.6	20.7
				21100	2535.0	21.8	20.8
				21375	2562.5	21.3	20.4
	20 MHz	1	0	20850	2510.0	22.9	22.0
				21100	2535.0	22.3	22.0
				21350	2560.0	22.9	21.6
			49	20850	2510.0	22.9	21.7
				21100	2535.0	22.6	21.4
				21350	2560.0	22.9	21.6
			99	20850	2510.0	22.9	21.6
				21100	2535.0	22.9	21.7
				21350	2560.0	22.7	21.7
		50	0	20850	2510.0	21.5	20.4
				21100	2535.0	21.6	20.6
				21350	2560.0	21.8	20.8
			24	20850	2510.0	22.0	20.4
				21100	2535.0	22.0	20.9
				21350	2560.0	21.5	20.9
			50	20850	2510.0	21.6	20.8
				21100	2535.0	21.4	20.5
				21350	2560.0	21.4	20.9
		100	0	20850	2510.0	21.7	20.5
				21100	2535.0	21.9	20.3
				21350	2560.0	21.4	20.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
12	1.4 MHz	1	0	23017	699.7	23.5	23.0
				23095	707.5	23.7	22.5
				23173	715.3	23.4	22.3
			3	23017	699.7	23.9	22.7
				23095	707.5	23.7	22.8
				23173	715.3	23.5	22.4
			5	23017	699.7	23.9	22.9
				23095	707.5	24.0	22.5
				23173	715.3	23.8	22.9
		3	0	23017	699.7	23.4	22.8
				23095	707.5	23.9	22.6
				23173	715.3	23.5	22.5
			1	23017	699.7	23.6	22.3
				23095	707.5	23.9	23.0
				23173	715.3	23.5	22.5
			3	23017	699.7	23.3	22.6
				23095	707.5	23.4	22.4
				23173	715.3	23.5	22.6
		6	0	23017	699.7	23.0	21.8
				23095	707.5	22.4	21.4
				23173	715.3	22.4	21.9
	3 MHz	1	0	23025	700.5	23.3	22.9
				23095	707.5	23.7	22.8
				23165	714.5	23.4	22.5
			7	23025	700.5	23.9	22.6
				23095	707.5	23.5	22.8
				23165	714.5	23.6	22.4
			14	23025	700.5	23.9	22.3
				23095	707.5	23.3	22.8
				23165	714.5	23.6	23.0
		8	0	23025	700.5	22.8	21.4
				23095	707.5	22.9	21.4
				23165	714.5	22.7	21.5
			7	23025	700.5	22.9	21.4
				23095	707.5	22.9	21.3
				23165	714.5	22.7	21.8
			14	23025	700.5	22.3	21.7
				23095	707.5	22.5	21.9
				23165	714.5	22.5	21.5
		15	0	23025	700.5	22.7	21.4
				23095	707.5	22.4	21.4
				23165	714.5	22.7	21.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
12	5 MHz	1	0	23035	701.5	23.9	22.7
				23095	707.5	23.8	22.9
				23155	713.5	23.5	22.9
			12	23035	701.5	23.5	22.9
				23095	707.5	23.6	22.6
				23155	713.5	23.9	22.8
			24	23035	701.5	23.4	22.7
				23095	707.5	23.4	22.7
				23155	713.5	23.7	22.9
		12	0	23035	701.5	22.4	21.6
				23095	707.5	22.6	21.7
				23155	713.5	22.4	21.4
			6	23035	701.5	22.4	21.4
				23095	707.5	23.0	21.7
				23155	713.5	22.9	21.4
			13	23035	701.5	23.0	21.9
				23095	707.5	22.9	21.5
				23155	713.5	22.9	21.6
		25	0	23035	701.5	22.7	21.4
				23095	707.5	22.3	21.9
				23155	713.5	22.7	21.7
	10 MHz	1	0	23060	704.0	23.7	22.5
				23095	707.5	23.9	22.9
				23130	711.0	23.5	22.5
			24	23060	704.0	23.6	22.8
				23095	707.5	23.7	22.4
				23130	711.0	23.8	22.6
			49	23060	704.0	23.4	22.5
				23095	707.5	23.8	22.8
				23130	711.0	23.6	22.4
		25	0	23060	704.0	22.4	21.9
				23095	707.5	22.8	21.4
				23130	711.0	22.9	21.3
			13	23060	704.0	22.6	21.5
				23095	707.5	22.6	21.4
				23130	711.0	23.0	21.9
			25	23060	704.0	22.9	21.6
				23095	707.5	22.8	21.7
				23130	711.0	22.8	21.4
		50	0	23060	704.0	22.4	21.5
				23095	707.5	22.9	21.6
				23130	711.0	22.9	21.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
13	5 MHz	1	0	23205	779.5	23.9	22.5
				23230	782.0	23.7	22.7
				23129	784.5	23.6	22.5
			12	23205	779.5	23.7	22.8
				23230	782.0	23.5	22.8
				23129	784.5	23.8	22.6
			24	23205	779.5	23.9	22.9
				23230	782.0	23.4	22.8
				23129	784.5	23.6	22.9
		12	0	23205	779.5	22.3	21.6
				23230	782.0	22.6	21.9
				23129	784.5	22.4	21.5
			6	23205	779.5	22.6	21.9
				23230	782.0	22.3	21.4
				23129	784.5	23.0	21.7
			13	23205	779.5	22.6	21.4
				23230	782.0	22.7	21.5
				23129	784.5	22.4	21.6
		25	0	23205	779.5	23.0	21.5
				23230	782.0	23.0	21.3
				23129	784.5	22.9	22.0
	10 MHz	1	0	23230	782.0	23.4	22.8
			24	23230	782.0	23.9	22.7
			49	23230	782.0	23.6	22.8
		25	0	23230	782.0	22.9	21.4
			13	23230	782.0	22.8	21.7
			25	23230	782.0	22.9	21.6
		50	0	23230	782.0	22.9	21.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
14	5 MHz	1	0	23305	790.5	23.5	22.8
				23330	793.0	23.9	22.6
				23355	795.5	23.4	22.5
			12	23305	790.5	23.3	22.5
				23330	793.0	23.7	22.5
				23355	795.5	23.6	22.6
			24	23305	790.5	23.9	22.7
				23330	793.0	23.8	22.9
				23355	795.5	24.0	22.7
		12	0	23305	790.5	22.8	21.9
				23330	793.0	22.5	21.5
				23355	795.5	22.8	21.6
			6	23305	790.5	22.8	21.4
				23330	793.0	22.9	21.6
				23355	795.5	22.9	21.9
			13	23305	790.5	22.5	21.7
				23330	793.0	22.6	21.3
				23355	795.5	22.5	21.6
		25	0	23305	790.5	22.5	21.3
				23330	793.0	22.6	21.5
				23355	795.5	22.6	21.9
	10 MHz	1	0	23330	793.0	23.7	22.3
			24	23330	793.0	23.8	22.9
			49	23330	793.0	23.5	22.9
		25	0	23330	793.0	22.5	21.8
			13	23330	793.0	22.6	21.6
			25	23330	793.0	22.6	21.7
		50	0	23330	793.0	22.7	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	1.4 MHz	1	0	26047	1850.7	23.2	21.9
				26365	1882.5	23.0	22.1
				26683	1914.3	22.8	22.0
			3	26047	1850.7	22.8	22.1
				26365	1882.5	23.3	22.0
				26683	1914.3	23.0	22.4
			5	26047	1850.7	23.0	22.1
				26365	1882.5	22.8	21.8
				26683	1914.3	23.0	22.4
		3	0	26047	1850.7	23.3	21.8
				26365	1882.5	23.2	22.3
				26683	1914.3	22.9	22.0
			1	26047	1850.7	23.1	22.0
				26365	1882.5	23.5	22.3
				26683	1914.3	22.8	22.1
			3	26047	1850.7	23.2	22.0
				26365	1882.5	23.0	21.9
				26683	1914.3	22.9	22.4
		6	0	26047	1850.7	21.8	21.2
				26365	1882.5	22.1	21.2
				26683	1914.3	22.2	21.1
	3 MHz	1	0	26055	1851.5	23.1	21.8
				26365	1882.5	23.1	22.5
				26675	1913.5	23.4	22.4
			7	26055	1851.5	23.3	22.1
				26365	1882.5	23.3	22.0
				26675	1913.5	23.5	22.4
			14	26055	1851.5	23.3	22.4
				26365	1882.5	23.3	21.9
				26675	1913.5	23.2	22.3
		8	0	26055	1851.5	22.0	21.2
				26365	1882.5	22.1	21.4
				26675	1913.5	22.2	21.1
			7	26055	1851.5	22.1	21.0
				26365	1882.5	21.8	21.2
				26675	1913.5	22.4	21.0
			14	26055	1851.5	22.1	21.1
				26365	1882.5	22.2	21.3
				26675	1913.5	21.9	21.2
		15	0	26055	1851.5	21.9	21.0
				26365	1882.5	22.1	21.4
				26675	1913.5	21.9	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	5 MHz	1	0	26065	1852.5	23.4	22.5
				26365	1882.5	23.0	22.1
				26665	1912.5	22.9	22.0
			12	26065	1852.5	23.3	22.0
				26365	1882.5	23.2	22.5
				26665	1912.5	22.8	21.9
			24	26065	1852.5	23.1	22.4
				26365	1882.5	22.8	22.3
				26665	1912.5	23.5	22.2
		12	0	26065	1852.5	22.2	21.5
				26365	1882.5	22.2	21.4
				26665	1912.5	22.0	21.0
			6	26065	1852.5	22.2	21.0
				26365	1882.5	22.0	21.4
				26665	1912.5	22.0	20.8
			13	26065	1852.5	22.4	21.3
				26365	1882.5	22.0	21.3
				26665	1912.5	21.8	21.0
		25	0	26065	1852.5	22.2	21.3
				26365	1882.5	21.9	21.2
				26665	1912.5	22.4	21.1
	10 MHz	1	0	26090	1855.0	23.5	22.1
				26365	1882.5	23.4	22.3
				26640	1910.0	23.5	22.2
			24	26090	1855.0	23.4	22.5
				26365	1882.5	23.4	22.0
				26640	1910.0	23.1	22.1
			49	26090	1855.0	23.1	22.1
				26365	1882.5	22.9	22.1
				26640	1910.0	23.4	22.2
		25	0	26090	1855.0	22.1	21.1
				26365	1882.5	22.3	20.9
				26640	1910.0	22.5	21.2
			13	26090	1855.0	22.1	21.4
				26365	1882.5	22.4	21.3
				26640	1910.0	22.1	20.9
			25	26090	1855.0	21.9	21.2
				26365	1882.5	22.4	20.8
				26640	1910.0	22.1	21.0
		50	0	26090	1855.0	21.8	20.8
				26365	1882.5	21.9	21.1
				26640	1910.0	22.5	20.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	15 MHz	1	0	26115	1857.5	23.4	22.4
				26365	1882.5	23.4	21.9
				26615	1907.5	23.2	22.0
			37	26115	1857.5	23.1	21.9
				26365	1882.5	22.8	21.9
				26615	1907.5	23.4	22.0
			74	26115	1857.5	23.1	22.2
				26365	1882.5	22.9	22.2
				26615	1907.5	23.2	22.2
		36	0	26115	1857.5	21.9	21.1
				26365	1882.5	22.4	21.4
				26615	1907.5	22.4	20.9
			19	26115	1857.5	22.5	21.0
				26365	1882.5	22.0	21.0
				26615	1907.5	22.2	21.3
			39	26115	1857.5	21.9	21.1
				26365	1882.5	22.1	21.2
				26615	1907.5	21.9	21.5
		75	0	26115	1857.5	21.8	21.4
				26365	1882.5	21.9	21.0
				26615	1907.5	22.0	21.1
	20 MHz	1	0	26140	1860.0	23.4	21.8
				26365	1882.5	23.0	22.4
				26590	1905.0	23.3	22.3
			49	26140	1860.0	23.4	22.2
				26365	1882.5	23.0	22.0
				26590	1905.0	23.2	22.1
			99	26140	1860.0	23.0	22.3
				26365	1882.5	23.5	22.5
				26590	1905.0	23.2	22.2
		50	0	26140	1860.0	21.9	21.2
				26365	1882.5	22.3	21.2
				26590	1905.0	22.4	21.2
			24	26140	1860.0	21.9	21.3
				26365	1882.5	22.2	21.1
				26590	1905.0	21.9	21.4
			50	26140	1860.0	22.3	20.9
				26365	1882.5	21.9	21.0
				26590	1905.0	22.0	21.5
		100	0	26140	1860.0	22.0	21.4
				26365	1882.5	22.2	21.4
				26590	1905.0	22.3	21.2

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
26	1.4 MHz	1	0	26697	814.7	22.9	21.9
				26865	831.5	23.0	21.9
				27033	848.3	23.4	22.1
			3	26697	814.7	23.2	22.4
				26865	831.5	23.0	22.4
				27033	848.3	23.3	22.1
			5	26697	814.7	23.1	22.3
				26865	831.5	23.2	21.8
				27033	848.3	23.4	22.5
		3	0	26697	814.7	23.3	22.2
				26865	831.5	23.4	22.1
				27033	848.3	23.1	22.2
			1	26697	814.7	23.5	22.5
				26865	831.5	23.4	22.1
				27033	848.3	23.0	22.1
			3	26697	814.7	23.0	22.1
				26865	831.5	23.4	22.0
				27033	848.3	23.2	22.0
		6	0	26697	814.7	21.9	21.4
				26865	831.5	22.1	21.3
				27033	848.3	22.4	21.3
	3 MHz	1	0	26705	815.5	23.3	22.1
				26865	831.5	23.1	22.4
				27025	847.5	23.5	22.2
			7	26705	815.5	23.4	22.3
				26865	831.5	23.0	22.3
				27025	847.5	23.1	22.1
			14	26705	815.5	22.8	22.0
				26865	831.5	22.9	22.2
				27025	847.5	23.4	22.5
		8	0	26705	815.5	22.1	20.9
				26865	831.5	22.0	21.0
				27025	847.5	22.4	21.0
			7	26705	815.5	22.2	21.1
				26865	831.5	22.0	21.5
				27025	847.5	22.4	21.4
			14	26705	815.5	22.0	21.5
				26865	831.5	21.9	21.0
				27025	847.5	22.0	20.9
		15	0	26705	815.5	22.4	21.5
				26865	831.5	21.8	20.9
				27025	847.5	22.1	21.2

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
26	5 MHz	1	0	26715	816.5	23.4	22.2
				26865	831.5	23.5	21.9
				27015	846.5	23.3	22.1
			12	26715	816.5	23.0	22.3
				26865	831.5	23.1	21.9
				27015	846.5	23.2	21.8
			24	26715	816.5	22.9	21.9
				26865	831.5	23.0	22.3
				27015	846.5	22.9	22.2
		12	0	26715	816.5	22.2	21.4
				26865	831.5	21.9	21.2
				27015	846.5	22.3	21.1
			6	26715	816.5	22.3	20.9
				26865	831.5	21.9	21.2
				27015	846.5	22.0	21.3
			13	26715	816.5	22.2	21.0
				26865	831.5	22.1	21.1
				27015	846.5	22.2	21.3
		25	0	26715	816.5	21.8	21.2
				26865	831.5	22.1	21.5
				27015	846.5	22.1	21.2
	10 MHz	1	0	26740	819.0	23.1	21.8
				26865	831.5	22.9	22.4
				26990	844.0	23.3	22.2
			24	26740	819.0	23.2	22.3
				26865	831.5	23.5	22.3
				26990	844.0	22.9	22.0
			49	26740	819.0	23.4	22.1
				26865	831.5	23.4	22.2
				26990	844.0	23.4	22.0
		25	0	26740	819.0	21.9	21.4
				26865	831.5	21.9	21.0
				26990	844.0	22.5	21.2
			13	26740	819.0	21.9	20.8
				26865	831.5	22.0	21.2
				26990	844.0	22.1	20.8
			25	26740	819.0	22.1	21.1
				26865	831.5	22.3	21.1
				26990	844.0	22.1	21.0
		50	0	26740	819.0	22.2	21.4
				26865	831.5	22.4	21.4
				26990	844.0	22.3	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
26	15 MHz	1	0	26765	821.5	23.3	21.9
				26865	831.5	23.3	22.4
				26965	841.5	23.0	22.1
			37	26765	821.5	22.8	22.0
				26865	831.5	23.1	22.4
				26965	841.5	22.9	22.0
			74	26765	821.5	23.3	22.1
				26865	831.5	23.2	22.5
				26965	841.5	22.9	22.0
		36	0	26765	821.5	21.8	20.9
				26865	831.5	22.0	21.3
				26965	841.5	21.9	21.2
			19	26765	821.5	21.9	20.9
				26865	831.5	22.3	20.9
				26965	841.5	22.5	20.9
			39	26765	821.5	22.0	20.8
				26865	831.5	22.4	21.5
				26965	841.5	22.0	20.9
		75	0	26765	821.5	22.0	21.1
				26865	831.5	22.5	21.3
				26965	841.5	21.9	21.1

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	5 MHz	1	0	39675	2498.5	22.5	21.7
				40148	2545.8	22.4	21.5
				40620	2593.0	22.8	21.6
				41093	2640.3	22.6	21.9
				41565	2687.5	23.0	22.0
			12	39675	2498.5	22.7	21.7
				40148	2545.8	22.6	21.7
				40620	2593.0	22.9	21.9
				41093	2640.3	22.8	22.0
				41565	2687.5	22.8	21.3
			24	39675	2498.5	22.8	21.6
				40148	2545.8	22.4	21.9
				40620	2593.0	22.6	21.6
				41093	2640.3	22.6	21.7
				41565	2687.5	22.7	21.7
		12	0	39675	2498.5	21.9	20.7
				40148	2545.8	21.3	20.5
				40620	2593.0	21.4	21.0
				41093	2640.3	21.5	20.9
				41565	2687.5	21.4	20.3
			6	39675	2498.5	21.9	20.3
				40148	2545.8	21.6	20.8
				40620	2593.0	21.5	21.0
				41093	2640.3	21.6	20.6
				41565	2687.5	21.5	20.7
			13	39675	2498.5	21.4	20.4
				40148	2545.8	21.9	20.5
				40620	2593.0	21.6	20.5
				41093	2640.3	21.4	20.6
				41565	2687.5	21.9	21.0
		25	0	39675	2498.5	21.7	20.5
				40148	2545.8	21.3	20.7
				40620	2593.0	21.9	20.7
				41093	2640.3	21.4	20.6
				41565	2687.5	21.9	20.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	10 MHz	1	0	39700	2501.0	22.5	21.9
				40160	2547.0	22.5	21.7
				40620	2593.0	22.4	21.7
				41080	2639.0	22.6	21.8
				41540	2685.0	22.8	21.9
			24	39700	2501.0	23.0	21.5
				40160	2547.0	22.8	21.3
				40620	2593.0	22.7	21.9
				41080	2639.0	22.5	21.8
				41540	2685.0	22.9	21.7
			49	39700	2501.0	22.6	21.5
				40160	2547.0	22.7	21.5
				40620	2593.0	22.7	21.7
				41080	2639.0	22.8	21.5
				41540	2685.0	22.9	21.3
		25	0	39700	2501.0	21.5	20.7
				40160	2547.0	21.5	20.3
				40620	2593.0	21.7	20.5
				41080	2639.0	21.4	20.7
				41540	2685.0	21.4	21.0
			13	39700	2501.0	21.4	20.3
				40160	2547.0	21.8	20.7
				40620	2593.0	21.7	20.4
				41080	2639.0	21.9	20.6
				41540	2685.0	21.7	20.8
			25	39700	2501.0	21.9	20.6
				40160	2547.0	21.6	20.5
				40620	2593.0	21.9	20.9
				41080	2639.0	21.9	20.7
				41540	2685.0	21.7	20.8
		50	0	39700	2501.0	21.8	20.7
				40160	2547.0	21.4	20.7
				40620	2593.0	21.4	20.4
				41080	2639.0	21.3	20.9
				41540	2685.0	21.5	20.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	15 MHz	1	0	39725	2503.5	22.9	21.6
				40173	2548.3	22.9	21.5
				40620	2593.0	22.5	21.5
				41068	2637.8	22.9	21.8
				41515	2682.5	22.8	22.0
			37	39725	2503.5	22.5	21.6
				40173	2548.3	22.6	21.9
				40620	2593.0	22.6	21.6
				41068	2637.8	22.6	21.9
				41515	2682.5	22.3	21.8
			74	39725	2503.5	22.5	21.8
				40173	2548.3	22.5	22.0
				40620	2593.0	22.7	21.9
				41068	2637.8	22.8	21.8
				41515	2682.5	22.9	21.5
		36	0	39725	2503.5	21.3	20.6
				40173	2548.3	21.8	20.4
				40620	2593.0	21.9	20.9
				41068	2637.8	21.7	20.9
				41515	2682.5	21.4	20.5
			19	39725	2503.5	21.3	20.5
				40173	2548.3	21.8	20.8
				40620	2593.0	21.9	20.5
				41068	2637.8	21.4	21.0
				41515	2682.5	21.7	20.8
			39	39725	2503.5	21.6	20.5
				40173	2548.3	21.3	20.6
				40620	2593.0	21.6	20.4
				41068	2637.8	21.4	20.5
				41515	2682.5	21.5	21.0
		75	0	39725	2503.5	21.7	20.5
				40173	2548.3	21.7	20.9
				40620	2593.0	21.4	20.8
				41068	2637.8	21.7	20.6
				41515	2682.5	22.0	20.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	20 MHz	1	0	39750	2506.0	22.8	21.9
				40185	2549.5	22.9	21.6
				40620	2593.0	22.8	21.7
				41055	2636.5	22.6	21.8
				41490	2680.0	22.5	21.8
			49	39750	2506.0	22.6	22.0
				40185	2549.5	22.5	21.8
				40620	2593.0	22.8	21.7
				41055	2636.5	22.6	21.7
				41490	2680.0	22.3	21.6
			99	39750	2506.0	22.3	21.7
				40185	2549.5	22.5	21.5
				40620	2593.0	22.5	21.3
				41055	2636.5	22.4	21.4
				41490	2680.0	22.3	21.6
		50	0	39750	2506.0	21.3	20.4
				40185	2549.5	21.5	20.7
				40620	2593.0	21.7	20.7
				41055	2636.5	21.7	20.5
				41490	2680.0	21.3	20.6
			24	39750	2506.0	21.9	20.4
				40185	2549.5	21.7	20.9
				40620	2593.0	21.9	20.7
				41055	2636.5	21.3	20.8
				41490	2680.0	21.5	20.4
			50	39750	2506.0	22.0	20.8
				40185	2549.5	21.8	21.0
				40620	2593.0	21.7	20.4
				41055	2636.5	21.8	21.0
				41490	2680.0	21.8	20.4
		100	0	39750	2506.0	21.9	20.3
				40185	2549.5	21.8	20.5
				40620	2593.0	22.0	20.6
				41055	2636.5	21.6	20.8
				41490	2680.0	21.6	20.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	5 MHz	1	0	41615	3402.5	22.6	21.4
				42103	3451.3	23.0	21.7
				42590	3500.0	22.5	21.9
				43078	3548.8	22.8	21.9
				43565	3597.5	22.9	22.0
			12	41615	3402.5	22.7	21.6
				42103	3451.3	22.7	21.7
				42590	3500.0	22.5	21.8
				43078	3548.8	22.3	21.9
				43565	3597.5	22.6	21.4
			24	41615	3402.5	22.4	21.8
				42103	3451.3	22.5	21.7
				42590	3500.0	22.3	22.0
				43078	3548.8	22.9	21.4
				43565	3597.5	22.6	21.9
		12	0	41615	3402.5	22.0	20.5
				42103	3451.3	21.6	20.9
				42590	3500.0	21.4	21.0
				43078	3548.8	21.9	20.6
				43565	3597.5	21.6	20.6
			6	41615	3402.5	21.5	20.4
				42103	3451.3	21.9	20.7
				42590	3500.0	21.8	20.5
				43078	3548.8	21.8	20.9
				43565	3597.5	21.7	20.3
			13	41615	3402.5	21.8	20.8
				42103	3451.3	21.6	20.4
				42590	3500.0	21.5	20.4
				43078	3548.8	21.6	20.6
				43565	3597.5	22.0	21.0
		25	0	41615	3402.5	21.4	20.5
				42103	3451.3	22.0	21.0
				42590	3500.0	21.6	20.5
				43078	3548.8	21.5	20.5
				43565	3597.5	21.4	20.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	10 MHz	1	0	41640	3405.0	22.7	21.5
				42115	3452.5	22.6	21.7
				42590	3500.0	22.5	21.7
				43065	3547.5	22.6	21.6
				43540	3595.0	22.6	21.5
			24	41640	3405.0	22.3	21.7
				42115	3452.5	23.0	22.0
				42590	3500.0	22.5	21.9
				43065	3547.5	22.6	21.7
				43540	3595.0	22.6	21.6
			49	41640	3405.0	22.8	21.9
				42115	3452.5	22.6	22.0
				42590	3500.0	22.5	21.3
				43065	3547.5	22.6	21.5
				43540	3595.0	22.9	21.7
		25	0	41640	3405.0	22.0	20.3
				42115	3452.5	21.8	20.7
				42590	3500.0	21.6	20.9
				43065	3547.5	21.8	21.0
				43540	3595.0	21.9	20.7
			13	41640	3405.0	21.5	20.5
				42115	3452.5	21.6	20.9
				42590	3500.0	22.0	20.7
				43065	3547.5	21.9	20.7
				43540	3595.0	21.8	20.4
			25	41640	3405.0	21.9	20.4
				42115	3452.5	21.6	20.8
				42590	3500.0	21.6	20.9
				43065	3547.5	21.4	20.9
				43540	3595.0	21.9	20.4
		50	0	41640	3405.0	21.9	20.4
				42115	3452.5	21.8	20.5
				42590	3500.0	21.8	20.5
				43065	3547.5	21.5	21.0
				43540	3595.0	21.5	20.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	15 MHz	1	0	41665	3407.5	22.4	21.3
				42128	3453.8	22.6	21.5
				42590	3500.0	22.6	21.7
				43053	3546.3	22.8	21.7
				43515	3592.5	22.8	21.6
			37	41665	3407.5	22.6	21.3
				42128	3453.8	22.3	21.6
				42590	3500.0	22.9	21.6
				43053	3546.3	23.0	21.9
				43515	3592.5	22.4	21.4
			74	41665	3407.5	22.4	22.0
				42128	3453.8	22.6	21.8
				42590	3500.0	22.6	21.9
				43053	3546.3	22.9	21.8
				43515	3592.5	22.7	21.9
		36	0	41665	3407.5	22.0	20.5
				42128	3453.8	21.7	20.7
				42590	3500.0	21.4	20.4
				43053	3546.3	21.6	20.3
				43515	3592.5	21.7	20.3
			19	41665	3407.5	21.6	20.3
				42128	3453.8	21.9	20.9
				42590	3500.0	21.3	20.3
				43053	3546.3	21.4	20.3
				43515	3592.5	21.9	20.8
			39	41665	3407.5	21.8	20.9
				42128	3453.8	21.5	20.6
				42590	3500.0	21.9	20.9
				43053	3546.3	21.7	20.9
				43515	3592.5	21.4	20.9
		75	0	41665	3407.5	21.6	20.8
				42128	3453.8	22.0	20.9
				42590	3500.0	21.4	20.6
				43053	3546.3	22.0	21.0
				43515	3592.5	21.5	20.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	20 MHz	1	0	41690	3410.0	22.5	21.8
				42040	3445.0	22.7	21.5
				42590	3500.0	22.7	21.9
				43040	3545.0	22.7	21.6
				43490	3590.0	22.6	22.0
			49	41690	3410.0	22.8	21.9
				42040	3445.0	22.8	21.8
				42590	3500.0	22.6	21.7
				43040	3545.0	22.4	21.7
				43490	3590.0	22.5	21.4
			99	41690	3410.0	22.6	21.4
				42040	3445.0	22.7	21.7
				42590	3500.0	22.9	21.4
				43040	3545.0	22.9	21.9
				43490	3590.0	22.5	21.9
		50	0	41690	3410.0	21.5	20.6
				42040	3445.0	21.7	20.7
				42590	3500.0	21.5	20.6
				43040	3545.0	21.4	20.8
				43490	3590.0	21.9	20.3
			24	41690	3410.0	21.5	20.5
				42040	3445.0	21.8	20.3
				42590	3500.0	21.7	20.6
				43040	3545.0	21.8	20.3
				43490	3590.0	21.4	20.4
			50	41690	3410.0	21.9	20.9
				42040	3445.0	21.6	20.8
				42590	3500.0	21.9	20.9
				43040	3545.0	21.6	20.9
				43490	3590.0	21.9	20.4
		100	0	41690	3410.0	21.9	20.9
				42040	3445.0	21.5	20.9
				42590	3500.0	21.9	20.8
				43040	3545.0	21.4	20.5
				43490	3590.0	22.0	20.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	5 MHz	1	0	55265	3552.5	22.9	21.6
				55627	3588.7	22.7	22.0
				55990	3625.0	22.4	21.4
				56352	3661.2	22.7	21.8
				56715	3697.5	22.6	21.8
			12	55265	3552.5	22.8	21.7
				55627	3588.7	22.5	21.7
				55990	3625.0	22.4	21.8
				56352	3661.2	22.3	21.6
				56715	3697.5	22.9	21.9
			24	55265	3552.5	22.3	21.3
				55627	3588.7	22.6	21.3
				55990	3625.0	22.3	21.9
				56352	3661.2	22.8	21.3
				56715	3697.5	22.5	21.4
		12	0	55265	3552.5	21.6	21.0
				55627	3588.7	21.5	20.6
				55990	3625.0	21.7	20.9
				56352	3661.2	21.4	20.5
				56715	3697.5	21.4	20.5
			6	55265	3552.5	21.8	20.3
				55627	3588.7	21.5	20.8
				55990	3625.0	21.9	20.4
				56352	3661.2	21.7	20.3
				56715	3697.5	21.4	20.4
			13	55265	3552.5	21.7	20.7
				55627	3588.7	21.8	20.8
				55990	3625.0	21.5	20.5
				56352	3661.2	21.7	20.9
				56715	3697.5	21.7	20.3
		25	0	55265	3552.5	21.7	20.7
				55627	3588.7	21.4	21.0
				55990	3625.0	21.5	20.8
				56352	3661.2	21.9	20.4
				56715	3697.5	21.6	20.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	10 MHz	1	0	55290	3555.0	22.7	21.7
				55640	3590.0	22.3	21.4
				55990	3625.0	22.6	21.5
				56340	3660.0	22.8	21.3
				56690	3695.0	22.5	21.8
			24	55290	3555.0	22.9	21.8
				55640	3590.0	22.5	21.5
				55990	3625.0	22.9	21.7
				56340	3660.0	22.4	21.9
				56690	3695.0	22.8	21.4
			49	55290	3555.0	22.5	21.4
				55640	3590.0	22.5	21.9
				55990	3625.0	22.8	21.9
				56340	3660.0	22.3	21.6
				56690	3695.0	22.3	21.5
		25	0	55290	3555.0	21.3	20.9
				55640	3590.0	21.4	20.6
				55990	3625.0	21.8	20.5
				56340	3660.0	21.8	20.5
				56690	3695.0	21.4	21.0
			13	55290	3555.0	21.5	20.8
				55640	3590.0	21.4	20.6
				55990	3625.0	21.8	20.9
				56340	3660.0	21.8	20.6
				56690	3695.0	22.0	20.5
			25	55290	3555.0	21.9	20.7
				55640	3590.0	21.4	20.6
				55990	3625.0	21.7	20.4
				56340	3660.0	21.5	20.7
				56690	3695.0	21.6	20.9
		50	0	55290	3555.0	21.6	20.3
				55640	3590.0	21.6	20.5
				55990	3625.0	21.4	20.9
				56340	3660.0	21.5	20.5
				56690	3695.0	21.8	20.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	15 MHz	1	0	55315	3557.5	22.5	21.8
				55652	3591.2	22.6	21.5
				55990	3625.0	22.7	21.4
				56327	3658.7	22.4	21.7
				56665	3692.5	22.6	21.9
			37	55315	3557.5	23.0	21.9
				55652	3591.2	22.4	21.6
				55990	3625.0	22.5	21.5
				56327	3658.7	22.3	21.9
				56665	3692.5	22.4	21.8
			74	55315	3557.5	22.8	21.4
				55652	3591.2	22.6	21.6
				55990	3625.0	23.0	21.6
				56327	3658.7	22.9	21.7
				56665	3692.5	22.9	21.8
		36	0	55315	3557.5	21.9	20.6
				55652	3591.2	21.6	20.4
				55990	3625.0	21.9	20.6
				56327	3658.7	21.7	20.4
				56665	3692.5	21.9	20.5
			19	55315	3557.5	21.4	20.8
				55652	3591.2	21.8	20.5
				55990	3625.0	21.9	20.6
				56327	3658.7	21.8	20.8
				56665	3692.5	21.5	20.4
			39	55315	3557.5	21.3	20.5
				55652	3591.2	21.8	21.0
				55990	3625.0	21.6	20.6
				56327	3658.7	21.7	20.9
				56665	3692.5	21.8	20.5
		75	0	55315	3557.5	22.0	20.4
				55652	3591.2	21.9	20.5
				55990	3625.0	21.5	20.9
				56327	3658.7	21.6	20.5
				56665	3692.5	21.9	20.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	20 MHz	1	0	55340	3560.0	22.5	21.4
				55665	3592.5	23.0	21.9
				55990	3625.0	22.7	21.6
				56315	3657.5	22.5	21.8
				56640	3690.0	22.5	21.7
			49	55340	3560.0	22.7	21.7
				55665	3592.5	22.6	21.3
				55990	3625.0	22.8	21.9
				56315	3657.5	22.6	21.4
				56640	3690.0	22.6	21.8
			99	55340	3560.0	22.5	21.8
				55665	3592.5	22.3	21.9
				55990	3625.0	22.4	22.0
				56315	3657.5	22.3	21.4
				56640	3690.0	22.9	21.9
		50	0	55340	3560.0	21.5	20.4
				55665	3592.5	21.9	20.5
				55990	3625.0	21.5	20.9
				56315	3657.5	21.4	20.8
				56640	3690.0	21.5	20.4
			24	55340	3560.0	21.9	20.3
				55665	3592.5	21.6	20.9
				55990	3625.0	21.4	20.9
				56315	3657.5	21.8	20.8
				56640	3690.0	21.6	20.5
			50	55340	3560.0	21.8	21.0
				55665	3592.5	21.8	20.7
				55990	3625.0	21.7	20.6
				56315	3657.5	21.6	20.7
				56640	3690.0	21.4	20.9
		100	0	55340	3560.0	21.4	20.4
				55665	3592.5	21.7	20.8
				55990	3625.0	21.7	20.9
				56315	3657.5	21.6	20.5
				56640	3690.0	21.9	20.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	1.4 MHz	1	0	131979	1710.7	23.1	22.1
				132322	1745.0	23.0	22.2
				132665	1779.3	22.9	22.5
			3	131979	1710.7	22.9	21.9
				132322	1745.0	23.0	21.9
				132665	1779.3	23.3	22.2
			5	131979	1710.7	23.4	22.3
				132322	1745.0	23.1	22.0
				132665	1779.3	22.9	21.9
		3	0	131979	1710.7	23.3	22.1
				132322	1745.0	23.3	22.1
				132665	1779.3	23.2	22.4
			1	131979	1710.7	22.9	21.8
				132322	1745.0	23.0	22.3
				132665	1779.3	22.9	22.4
			3	131979	1710.7	23.0	22.0
				132322	1745.0	23.3	22.2
				132665	1779.3	23.1	22.0
		6	0	131979	1710.7	21.8	21.1
				132322	1745.0	22.4	21.2
				132665	1779.3	21.9	21.3
	3 MHz	1	0	131987	1711.5	23.0	22.4
				132322	1745.0	23.2	22.0
				132657	1778.5	22.9	21.9
			7	131987	1711.5	23.4	22.3
				132322	1745.0	23.1	22.0
				132657	1778.5	23.5	22.2
			14	131987	1711.5	22.9	22.0
				132322	1745.0	23.1	21.9
				132657	1778.5	23.3	22.0
		8	0	131987	1711.5	22.0	21.3
				132322	1745.0	21.8	21.0
				132657	1778.5	22.2	21.4
			7	131987	1711.5	21.9	20.9
				132322	1745.0	22.4	21.1
				132657	1778.5	22.2	21.3
			14	131987	1711.5	22.1	21.3
				132322	1745.0	22.5	21.1
				132657	1778.5	22.5	21.1
		15	0	131987	1711.5	22.5	21.2
				132322	1745.0	22.5	21.0
				132657	1778.5	22.2	21.1

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	5 MHz	1	0	131997	1712.5	23.1	22.5
				132322	1745.0	23.3	21.9
				132646	1777.4	23.3	22.0
			12	131997	1712.5	23.3	22.1
				132322	1745.0	23.3	22.1
				132646	1777.4	23.3	22.3
			24	131997	1712.5	23.4	22.3
				132322	1745.0	23.2	22.4
				132646	1777.4	23.2	22.0
		12	0	131997	1712.5	22.1	21.5
				132322	1745.0	21.9	21.1
				132646	1777.4	21.8	20.8
			6	131997	1712.5	22.4	21.0
				132322	1745.0	22.0	21.1
				132646	1777.4	22.4	21.3
			13	131997	1712.5	21.9	20.8
				132322	1745.0	22.3	21.1
				132646	1777.4	22.4	20.9
		25	0	131997	1712.5	22.4	21.1
				132322	1745.0	21.9	21.3
				132646	1777.4	22.0	21.5
	10 MHz	1	0	132033	1716.1	23.0	21.8
				132322	1745.0	23.0	21.9
				132621	1774.9	23.0	22.2
			24	132033	1716.1	22.9	22.4
				132322	1745.0	22.9	22.4
				132621	1774.9	23.0	22.0
			49	132033	1716.1	22.9	22.2
				132322	1745.0	23.4	22.0
				132621	1774.9	23.3	22.5
		25	0	132033	1716.1	21.9	21.4
				132322	1745.0	21.8	21.3
				132621	1774.9	21.9	21.1
			13	132033	1716.1	22.0	21.0
				132322	1745.0	22.1	21.4
				132621	1774.9	22.4	21.3
			25	132033	1716.1	22.1	21.4
				132322	1745.0	22.0	21.1
				132621	1774.9	22.2	21.3
		50	0	132033	1716.1	21.9	21.5
				132322	1745.0	22.5	21.3
				132621	1774.9	22.4	21.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	15 MHz	1	0	132047	1717.5	23.4	21.8
				132322	1745.0	23.3	22.1
				132596	1772.4	23.0	22.1
			37	132047	1717.5	23.3	22.1
				132322	1745.0	23.4	22.4
				132596	1772.4	23.3	21.8
			74	132047	1717.5	23.1	22.3
				132322	1745.0	23.3	22.5
				132596	1772.4	23.1	22.3
		36	0	132047	1717.5	22.4	21.3
				132322	1745.0	22.1	21.2
				132596	1772.4	22.5	21.0
			19	132047	1717.5	21.8	20.8
				132322	1745.0	22.5	21.1
				132596	1772.4	22.2	21.4
			39	132047	1717.5	22.3	20.8
				132322	1745.0	22.2	21.4
				132596	1772.4	22.0	21.0
		75	0	132047	1717.5	21.8	20.9
				132322	1745.0	21.9	21.0
				132596	1772.4	22.0	21.5
	20 MHz	1	0	132072	1720.0	23.4	22.0
				132322	1745.0	23.3	21.9
				132571	1769.9	22.9	22.1
			49	132072	1720.0	23.2	22.3
				132322	1745.0	23.2	22.4
				132571	1769.9	22.9	21.9
			99	132072	1720.0	23.0	22.0
				132322	1745.0	23.1	22.2
				132571	1769.9	23.0	22.2
		50	0	132072	1720.0	21.9	21.4
				132322	1745.0	22.4	20.9
				132571	1769.9	21.8	21.0
			24	132072	1720.0	22.1	21.0
				132322	1745.0	22.2	21.2
				132571	1769.9	22.0	21.2
			50	132072	1720.0	22.1	21.3
				132322	1745.0	22.1	21.5
				132571	1769.9	22.4	21.3
		100	0	132072	1720.0	22.4	20.9
				132322	1745.0	22.0	20.9
				132571	1769.9	22.3	21.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
71	5 MHz	1	0	133147	665.5	23.4	22.7
				133297	680.5	23.7	22.5
				133447	695.5	23.4	22.6
			12	133147	665.5	23.5	22.6
				133297	680.5	23.7	22.5
				133447	695.5	23.4	22.4
			24	133147	665.5	23.8	22.9
				133297	680.5	23.6	22.4
				133447	695.5	23.4	22.4
		12	0	133147	665.5	22.8	21.8
				133297	680.5	22.6	21.4
				133447	695.5	22.3	21.3
			6	133147	665.5	22.7	21.9
				133297	680.5	22.5	21.7
				133447	695.5	22.8	21.7
			13	133147	665.5	22.7	21.4
				133297	680.5	22.6	21.4
				133447	695.5	22.8	21.4
		25	0	133147	665.5	22.6	21.9
				133297	680.5	22.3	21.5
				133447	695.5	22.3	21.4
	10 MHz	1	0	133172	668.0	23.7	22.7
				133297	680.5	23.8	22.3
				133422	693.0	23.6	23.0
			24	133172	668.0	23.8	22.5
				133297	680.5	24.0	22.9
				133422	693.0	23.6	22.7
			49	133172	668.0	23.6	22.8
				133297	680.5	23.9	22.7
				133422	693.0	23.8	22.5
		25	0	133172	668.0	22.4	21.8
				133297	680.5	22.5	21.7
				133422	693.0	22.6	21.4
			13	133172	668.0	22.5	21.4
				133297	680.5	22.5	21.6
				133422	693.0	22.5	21.6
			25	133172	668.0	23.0	21.5
				133297	680.5	22.9	21.4
				133422	693.0	23.0	21.6
		50	0	133172	668.0	22.5	21.6
				133297	680.5	22.9	21.9
				133422	693.0	22.9	21.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
71	15 MHz	1	0	133197	670.5	23.8	22.5
				133297	680.5	23.8	23.0
				133397	690.5	23.7	22.4
			37	133197	670.5	23.6	22.3
				133297	680.5	23.9	22.4
				133397	690.5	23.4	23.0
			74	133197	670.5	23.3	22.8
				133297	680.5	23.4	22.6
				133397	690.5	23.9	22.4
		36	0	133197	670.5	22.4	21.5
				133297	680.5	22.8	22.0
				133397	690.5	22.5	22.0
			19	133197	670.5	22.4	21.4
				133297	680.5	22.4	21.8
				133397	690.5	22.4	21.7
			39	133197	670.5	22.5	21.9
				133297	680.5	22.9	21.8
				133397	690.5	22.4	21.6
		75	0	133197	670.5	23.0	21.4
				133297	680.5	22.5	21.5
				133397	690.5	22.6	21.7
	20 MHz	1	0	133222	673.0	23.6	22.5
				133297	680.5	24.0	22.3
				133372	688.0	23.5	22.7
			49	133222	673.0	23.4	22.8
				133297	680.5	23.8	22.4
				133372	688.0	23.8	22.4
			99	133222	673.0	23.8	22.4
				133297	680.5	23.4	22.5
				133372	688.0	23.5	22.5
		50	0	133222	673.0	22.6	21.3
				133297	680.5	22.6	21.9
				133372	688.0	22.8	21.5
			24	133222	673.0	22.5	21.7
				133297	680.5	23.0	21.8
				133372	688.0	22.7	21.8
			50	133222	673.0	23.0	21.8
				133297	680.5	22.8	21.3
				133372	688.0	22.7	21.7
		100	0	133222	673.0	22.4	21.8
				133297	680.5	22.4	21.4
				133372	688.0	22.7	21.7

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Table 10.1.2 LTE Backoff Power Measurements

Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	1.4 MHz	1	0	18607	1850.7	18.5	17.9
				18900	1880.0	18.9	17.5
				19193	1909.3	18.6	17.6
			3	18607	1850.7	18.9	18.0
				18900	1880.0	18.3	17.9
				19193	1909.3	18.4	17.4
			5	18607	1850.7	18.5	17.5
				18900	1880.0	18.6	17.6
				19193	1909.3	18.4	17.5
		3	0	18607	1850.7	19.0	17.5
				18900	1880.0	18.5	17.5
				19193	1909.3	18.6	17.3
			1	18607	1850.7	18.9	17.9
				18900	1880.0	18.7	18.0
				19193	1909.3	18.6	17.7
			3	18607	1850.7	18.7	17.6
				18900	1880.0	18.5	17.6
				19193	1909.3	18.7	17.6
		6	0	18607	1850.7	18.0	16.9
				18900	1880.0	18.0	17.0
				19193	1909.3	17.9	16.6
	3 MHz	1	0	18615	1851.5	18.6	17.7
				18900	1880.0	18.6	17.5
				19185	1908.5	18.4	17.4
			7	18615	1851.5	18.4	17.5
				18900	1880.0	18.7	17.9
				19185	1908.5	18.3	17.8
			14	18615	1851.5	18.5	17.8
				18900	1880.0	18.5	17.6
				19185	1908.5	18.4	17.3
		8	0	18615	1851.5	17.6	16.7
				18900	1880.0	17.5	16.8
				19185	1908.5	17.5	16.3
			7	18615	1851.5	17.9	16.9
				18900	1880.0	17.6	16.4
				19185	1908.5	18.0	16.3
			14	18615	1851.5	17.5	16.7
				18900	1880.0	17.7	16.4
				19185	1908.5	17.7	16.7
		15	0	18615	1851.5	17.6	17.0
				18900	1880.0	17.9	16.6
				19185	1908.5	17.4	16.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	5 MHz	1	0	18625	1852.5	18.6	17.5
				18900	1880.0	18.9	17.9
				19175	1907.5	18.7	17.4
			12	18625	1852.5	18.4	17.9
				18900	1880.0	18.4	17.8
				19175	1907.5	18.6	17.3
			24	18625	1852.5	18.6	17.7
				18900	1880.0	18.4	17.6
				19175	1907.5	18.7	17.8
		12	0	18625	1852.5	18.0	17.0
				18900	1880.0	17.8	16.9
				19175	1907.5	17.9	16.9
			6	18625	1852.5	17.9	16.5
				18900	1880.0	17.5	16.5
				19175	1907.5	17.9	16.9
			13	18625	1852.5	17.8	16.8
				18900	1880.0	17.6	16.4
				19175	1907.5	17.4	16.4
		25	0	18625	1852.5	17.6	16.4
				18900	1880.0	17.9	16.7
				19175	1907.5	17.5	16.3
	10 MHz	1	0	18650	1855.0	18.6	17.4
				18900	1880.0	18.4	17.9
				19150	1905.0	18.3	17.7
			24	18650	1855.0	18.6	17.5
				18900	1880.0	18.6	17.4
				19150	1905.0	18.8	17.4
			49	18650	1855.0	18.5	17.7
				18900	1880.0	18.9	17.8
				19150	1905.0	18.3	17.5
		25	0	18650	1855.0	17.4	16.5
				18900	1880.0	17.6	16.8
				19150	1905.0	18.0	16.5
			13	18650	1855.0	17.4	16.5
				18900	1880.0	17.7	16.4
				19150	1905.0	17.7	16.4
			25	18650	1855.0	17.3	16.4
				18900	1880.0	17.8	16.5
				19150	1905.0	17.6	16.8
		50	0	18650	1855.0	17.7	16.5
				18900	1880.0	17.5	16.7
				19150	1905.0	17.6	16.3

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
2	15 MHz	1	0	18675	1857.5	18.9	17.4
				18900	1880.0	19.0	17.5
				19125	1902.5	18.7	17.8
			37	18675	1857.5	18.6	17.6
				18900	1880.0	18.7	17.7
				19125	1902.5	18.9	17.5
			74	18675	1857.5	18.5	17.6
				18900	1880.0	18.3	17.7
				19125	1902.5	18.7	17.6
		36	0	18675	1857.5	17.5	16.9
				18900	1880.0	18.0	16.6
				19125	1902.5	17.7	16.7
			19	18675	1857.5	17.4	16.6
				18900	1880.0	17.9	16.4
				19125	1902.5	17.4	16.7
			39	18675	1857.5	17.4	16.7
				18900	1880.0	17.3	16.4
				19125	1902.5	17.7	17.0
		75	0	18675	1857.5	17.5	16.3
				18900	1880.0	17.6	16.6
				19125	1902.5	17.7	16.9
	20 MHz	1	0	18700	1860.0	18.8	17.9
				18900	1880.0	18.5	17.4
				19100	1900.0	18.3	17.8
			49	18700	1860.0	18.8	17.6
				18900	1880.0	18.4	17.7
				19100	1900.0	18.4	17.3
			99	18700	1860.0	18.8	17.8
				18900	1880.0	18.4	17.8
				19100	1900.0	18.7	17.7
		50	0	18700	1860.0	17.7	16.4
				18900	1880.0	17.9	17.0
				19100	1900.0	17.7	16.7
			24	18700	1860.0	17.4	16.8
				18900	1880.0	17.5	16.9
				19100	1900.0	17.4	16.5
			50	18700	1860.0	17.8	16.7
				18900	1880.0	18.0	16.3
				19100	1900.0	17.8	16.8
		100	0	18700	1860.0	17.4	16.9
				18900	1880.0	17.4	16.6
				19100	1900.0	17.6	16.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	1.4 MHz	1	0	19957	1710.7	19.9	18.8
				20175	1732.5	20.0	18.9
				20393	1754.3	20.5	19.4
			3	19957	1710.7	20.2	19.1
				20175	1732.5	20.1	19.3
				20393	1754.3	20.5	19.4
			5	19957	1710.7	20.2	19.5
				20175	1732.5	19.9	19.2
				20393	1754.3	20.2	19.1
		3	0	19957	1710.7	20.2	19.2
				20175	1732.5	20.0	18.9
				20393	1754.3	20.0	19.2
			1	19957	1710.7	20.4	19.4
				20175	1732.5	19.9	19.1
				20393	1754.3	20.1	19.0
			3	19957	1710.7	20.4	19.3
				20175	1732.5	20.4	18.9
				20393	1754.3	19.9	19.4
		6	0	19957	1710.7	19.0	18.3
				20175	1732.5	19.1	17.9
				20393	1754.3	19.2	18.0
	3 MHz	1	0	19965	1711.5	19.8	19.4
				20175	1732.5	19.9	19.0
				20385	1753.5	20.2	19.0
			7	19965	1711.5	19.9	19.0
				20175	1732.5	20.2	19.4
				20385	1753.5	20.1	19.2
			14	19965	1711.5	20.1	18.8
				20175	1732.5	20.1	19.2
				20385	1753.5	20.2	19.1
		8	0	19965	1711.5	19.0	18.2
				20175	1732.5	19.2	18.3
				20385	1753.5	19.3	18.3
			7	19965	1711.5	19.1	18.1
				20175	1732.5	19.0	18.4
				20385	1753.5	19.1	18.0
			14	19965	1711.5	19.4	18.1
				20175	1732.5	18.9	18.0
				20385	1753.5	19.4	18.4
		15	0	19965	1711.5	19.4	18.3
				20175	1732.5	18.9	18.5
				20385	1753.5	18.8	17.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	5 MHz	1	0	19975	1712.5	20.0	19.1
				20175	1732.5	19.9	19.5
				20375	1752.5	20.2	19.2
			12	19975	1712.5	20.0	19.4
				20175	1732.5	20.3	19.5
				20375	1752.5	20.2	18.9
			24	19975	1712.5	19.8	19.3
				20175	1732.5	19.9	19.1
				20375	1752.5	20.0	19.1
		12	0	19975	1712.5	19.3	18.4
				20175	1732.5	19.4	17.9
				20375	1752.5	19.0	18.2
			6	19975	1712.5	19.4	18.4
				20175	1732.5	19.0	18.5
				20375	1752.5	19.0	18.3
			13	19975	1712.5	18.8	18.2
				20175	1732.5	19.2	18.2
				20375	1752.5	18.9	18.0
		25	0	19975	1712.5	19.3	17.8
				20175	1732.5	19.2	17.9
				20375	1752.5	19.3	18.4
	10 MHz	1	0	20000	1715.0	19.9	19.1
				20175	1732.5	20.3	18.9
				20350	1750.0	20.4	18.9
			24	20000	1715.0	20.4	19.1
				20175	1732.5	20.2	18.8
				20350	1750.0	20.4	19.3
			49	20000	1715.0	20.2	19.3
				20175	1732.5	20.2	19.1
				20350	1750.0	20.1	18.9
		25	0	20000	1715.0	19.2	18.0
				20175	1732.5	19.4	18.2
				20350	1750.0	19.0	18.0
			13	20000	1715.0	19.0	17.9
				20175	1732.5	18.9	18.2
				20350	1750.0	18.9	18.1
			25	20000	1715.0	19.4	17.9
				20175	1732.5	19.4	18.2
				20350	1750.0	19.0	18.4
		50	0	20000	1715.0	19.2	18.3
				20175	1732.5	19.1	17.9
				20350	1750.0	19.0	18.2

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
4	15 MHz	1	0	20025	1717.5	20.0	19.0
				20175	1732.5	20.3	18.9
				20325	1747.5	19.9	18.8
			37	20025	1717.5	20.1	19.1
				20175	1732.5	20.4	19.3
				20325	1747.5	20.1	19.4
			74	20025	1717.5	19.8	18.8
				20175	1732.5	19.9	19.0
				20325	1747.5	19.9	19.5
		36	0	20025	1717.5	19.5	17.9
				20175	1732.5	18.9	18.5
				20325	1747.5	19.4	18.0
			19	20025	1717.5	19.2	18.1
				20175	1732.5	19.0	18.4
				20325	1747.5	19.3	18.3
			39	20025	1717.5	18.8	18.1
				20175	1732.5	19.2	17.9
				20325	1747.5	19.0	17.9
		75	0	20025	1717.5	18.9	18.4
				20175	1732.5	18.8	18.1
				20325	1747.5	19.5	17.8
	20 MHz	1	0	20050	1720.0	20.4	18.9
				20175	1732.5	20.3	19.1
				20300	1745.0	20.5	19.0
			49	20050	1720.0	20.3	19.2
				20175	1732.5	20.1	19.0
				20300	1745.0	20.4	19.4
			99	20050	1720.0	20.0	19.0
				20175	1732.5	20.5	19.3
				20300	1745.0	20.4	19.5
		50	0	20050	1720.0	19.1	17.9
				20175	1732.5	19.0	18.3
				20300	1745.0	19.2	17.8
			24	20050	1720.0	19.5	18.3
				20175	1732.5	19.0	18.2
				20300	1745.0	19.0	18.4
			50	20050	1720.0	19.4	18.5
				20175	1732.5	19.3	17.9
				20300	1745.0	19.3	18.0
		100	0	20050	1720.0	18.9	18.3
				20175	1732.5	18.8	18.5
				20300	1745.0	19.3	17.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
7	5 MHz	1	0	20775	2502.5	17.6	16.9
				21100	2535.0	17.9	16.5
				21425	2567.5	17.9	16.6
			12	20775	2502.5	17.7	16.7
				21100	2535.0	17.5	16.4
				21425	2567.5	17.6	17.0
			24	20775	2502.5	17.5	16.6
				21100	2535.0	17.3	16.7
				21425	2567.5	17.4	16.6
		12	0	20775	2502.5	16.6	15.5
				21100	2535.0	16.4	15.3
				21425	2567.5	16.9	15.7
			6	20775	2502.5	16.5	15.6
				21100	2535.0	16.8	15.8
				21425	2567.5	16.6	15.5
			13	20775	2502.5	16.4	15.8
				21100	2535.0	16.5	16.0
				21425	2567.5	16.4	16.0
		25	0	20775	2502.5	16.7	15.9
				21100	2535.0	16.9	15.9
				21425	2567.5	16.3	15.6
	10 MHz	1	0	20800	2505.0	17.6	16.9
				21100	2535.0	17.8	16.4
				21400	2565.0	17.8	16.7
			24	20800	2505.0	17.8	16.7
				21100	2535.0	17.6	16.9
				21400	2565.0	17.7	16.6
			49	20800	2505.0	17.5	16.5
				21100	2535.0	17.9	17.0
				21400	2565.0	17.5	16.8
		25	0	20800	2505.0	16.9	15.7
				21100	2535.0	16.4	15.3
				21400	2565.0	17.0	15.8
			13	20800	2505.0	16.7	15.6
				21100	2535.0	16.4	15.4
				21400	2565.0	16.8	15.9
			25	20800	2505.0	16.9	15.6
				21100	2535.0	16.6	15.5
				21400	2565.0	16.8	15.6
		50	0	20800	2505.0	16.4	15.9
				21100	2535.0	16.4	15.6
				21400	2565.0	16.9	15.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
7	15 MHz	1	0	20825	2507.5	17.4	16.8
				21100	2535.0	17.5	16.4
				21375	2562.5	17.7	16.6
			37	20825	2507.5	17.8	16.7
				21100	2535.0	17.8	16.7
				21375	2562.5	17.6	16.7
			74	20825	2507.5	17.8	16.8
				21100	2535.0	17.8	16.5
				21375	2562.5	17.3	16.8
		36	0	20825	2507.5	16.3	15.9
				21100	2535.0	16.3	16.0
				21375	2562.5	16.3	15.4
			19	20825	2507.5	17.0	15.4
				21100	2535.0	16.7	16.0
				21375	2562.5	17.0	15.8
			39	20825	2507.5	16.7	15.3
				21100	2535.0	16.9	15.3
				21375	2562.5	16.6	15.4
		75	0	20825	2507.5	16.5	15.6
				21100	2535.0	16.9	15.7
				21375	2562.5	16.3	15.7
	20 MHz	1	0	20850	2510.0	17.8	16.4
				21100	2535.0	17.7	16.6
				21350	2560.0	18.0	16.3
			49	20850	2510.0	17.8	16.7
				21100	2535.0	17.9	16.7
				21350	2560.0	17.8	17.0
			99	20850	2510.0	17.4	16.4
				21100	2535.0	17.8	16.8
				21350	2560.0	18.0	16.7
		50	0	20850	2510.0	16.6	15.5
				21100	2535.0	16.8	15.8
				21350	2560.0	16.9	16.0
			24	20850	2510.0	17.0	15.9
				21100	2535.0	16.8	16.0
				21350	2560.0	16.7	15.5
			50	20850	2510.0	16.6	15.6
				21100	2535.0	16.9	15.7
				21350	2560.0	16.5	15.9
		100	0	20850	2510.0	16.3	15.7
				21100	2535.0	16.5	15.4
				21350	2560.0	16.9	15.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	1.4 MHz	1	0	26047	1850.7	18.4	17.6
				26365	1882.5	18.9	18.0
				26683	1914.3	18.6	17.8
			3	26047	1850.7	18.8	17.7
				26365	1882.5	18.9	17.7
				26683	1914.3	18.7	17.7
			5	26047	1850.7	18.4	18.0
				26365	1882.5	18.3	17.4
				26683	1914.3	18.9	17.5
		3	0	26047	1850.7	18.4	17.7
				26365	1882.5	18.7	17.9
				26683	1914.3	18.6	17.6
			1	26047	1850.7	18.7	17.6
				26365	1882.5	18.6	17.7
				26683	1914.3	18.6	18.0
			3	26047	1850.7	18.7	17.7
				26365	1882.5	18.5	17.8
				26683	1914.3	18.9	17.6
		6	0	26047	1850.7	18.0	16.7
				26365	1882.5	17.6	16.6
				26683	1914.3	17.4	16.6
	3 MHz	1	0	26055	1851.5	18.7	17.4
				26365	1882.5	18.8	17.9
				26675	1913.5	18.4	17.7
			7	26055	1851.5	18.8	17.8
				26365	1882.5	18.5	17.6
				26675	1913.5	18.4	17.4
			14	26055	1851.5	18.9	17.5
				26365	1882.5	18.7	17.9
				26675	1913.5	18.9	17.5
		8	0	26055	1851.5	17.6	16.7
				26365	1882.5	17.8	16.7
				26675	1913.5	17.6	16.6
			7	26055	1851.5	17.6	16.6
				26365	1882.5	17.9	16.5
				26675	1913.5	17.4	16.8
			14	26055	1851.5	17.4	16.7
				26365	1882.5	17.5	16.4
				26675	1913.5	17.5	16.7
		15	0	26055	1851.5	17.5	16.6
				26365	1882.5	17.5	16.3
				26675	1913.5	17.9	16.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	5 MHz	1	0	26065	1852.5	18.6	17.4
				26365	1882.5	19.0	17.8
				26665	1912.5	18.6	18.0
			12	26065	1852.5	18.4	17.9
				26365	1882.5	18.7	17.3
				26665	1912.5	19.0	17.4
			24	26065	1852.5	18.4	17.5
				26365	1882.5	18.4	17.3
				26665	1912.5	18.6	17.4
		12	0	26065	1852.5	17.5	16.7
				26365	1882.5	17.5	16.7
				26665	1912.5	17.4	16.7
			6	26065	1852.5	17.6	16.7
				26365	1882.5	17.4	16.6
				26665	1912.5	17.4	16.8
			13	26065	1852.5	17.6	16.9
				26365	1882.5	17.7	16.9
				26665	1912.5	17.4	16.8
		25	0	26065	1852.5	17.3	17.0
				26365	1882.5	17.3	16.6
				26665	1912.5	17.9	16.6
	10 MHz	1	0	26090	1855.0	18.3	17.7
				26365	1882.5	18.5	17.9
				26640	1910.0	18.7	17.9
			24	26090	1855.0	18.6	17.7
				26365	1882.5	18.3	17.9
				26640	1910.0	18.4	17.9
			49	26090	1855.0	18.6	17.5
				26365	1882.5	19.0	17.5
				26640	1910.0	18.9	17.9
		25	0	26090	1855.0	18.0	16.4
				26365	1882.5	17.8	16.4
				26640	1910.0	17.6	16.8
			13	26090	1855.0	17.5	16.9
				26365	1882.5	17.5	16.5
				26640	1910.0	18.0	16.5
			25	26090	1855.0	17.9	16.9
				26365	1882.5	17.4	16.4
				26640	1910.0	17.4	16.7
		50	0	26090	1855.0	17.9	16.9
				26365	1882.5	18.0	16.6
				26640	1910.0	17.7	16.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
25	15 MHz	1	0	26115	1857.5	18.4	17.8
				26365	1882.5	18.7	18.0
				26615	1907.5	18.6	18.0
			37	26115	1857.5	18.7	17.6
				26365	1882.5	18.7	17.8
				26615	1907.5	18.4	17.7
			74	26115	1857.5	18.8	17.7
				26365	1882.5	18.9	17.5
				26615	1907.5	18.9	17.7
		36	0	26115	1857.5	17.4	16.3
				26365	1882.5	17.3	16.8
				26615	1907.5	17.6	16.9
			19	26115	1857.5	17.9	16.3
				26365	1882.5	17.9	17.0
				26615	1907.5	17.9	16.6
			39	26115	1857.5	17.5	16.8
				26365	1882.5	17.5	17.0
				26615	1907.5	18.0	16.5
		75	0	26115	1857.5	17.5	16.6
				26365	1882.5	17.6	16.5
				26615	1907.5	17.5	16.4
	20 MHz	1	0	26140	1860.0	18.8	17.6
				26365	1882.5	18.8	17.3
				26590	1905.0	18.5	17.7
			49	26140	1860.0	18.8	17.4
				26365	1882.5	18.9	17.7
				26590	1905.0	18.8	17.6
			99	26140	1860.0	18.6	17.4
				26365	1882.5	18.9	18.0
				26590	1905.0	18.7	17.6
		50	0	26140	1860.0	17.8	16.7
				26365	1882.5	18.0	17.0
				26590	1905.0	17.6	16.5
			24	26140	1860.0	17.9	16.6
				26365	1882.5	17.4	16.9
				26590	1905.0	17.6	16.7
			50	26140	1860.0	17.9	16.5
				26365	1882.5	17.5	16.9
				26590	1905.0	17.5	16.9
		100	0	26140	1860.0	18.0	16.4
				26365	1882.5	17.8	16.4
				26590	1905.0	17.9	16.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	5 MHz	1	0	39675	2498.5	21.6	20.4
				40148	2545.8	21.4	20.5
				40620	2593.0	21.7	20.8
				41093	2640.3	21.9	20.9
				41565	2687.5	21.3	20.3
			12	39675	2498.5	22.0	20.8
				40148	2545.8	21.5	20.7
				40620	2593.0	21.4	20.7
				41093	2640.3	21.8	20.4
				41565	2687.5	21.8	20.9
			24	39675	2498.5	21.9	20.8
				40148	2545.8	21.9	20.9
				40620	2593.0	21.9	20.9
				41093	2640.3	21.3	20.6
				41565	2687.5	21.9	20.7
		12	0	39675	2498.5	20.5	19.5
				40148	2545.8	20.6	19.8
				40620	2593.0	20.6	19.6
				41093	2640.3	20.4	19.9
				41565	2687.5	20.3	19.8
			6	39675	2498.5	20.8	19.6
				40148	2545.8	20.5	20.0
				40620	2593.0	20.7	19.5
				41093	2640.3	20.6	19.7
				41565	2687.5	20.7	19.9
			13	39675	2498.5	20.6	19.6
				40148	2545.8	20.7	19.7
				40620	2593.0	20.8	19.3
				41093	2640.3	20.6	19.9
				41565	2687.5	20.9	19.6
		25	0	39675	2498.5	20.4	19.5
				40148	2545.8	20.5	19.9
				40620	2593.0	20.5	19.7
				41093	2640.3	20.3	19.7
				41565	2687.5	20.8	20.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	10 MHz	1	0	39700	2501.0	21.6	20.8
				40160	2547.0	21.9	20.7
				40620	2593.0	21.7	20.7
				41080	2639.0	21.6	20.3
				41540	2685.0	21.3	20.9
			24	39700	2501.0	21.8	20.3
				40160	2547.0	21.6	20.9
				40620	2593.0	21.3	20.9
				41080	2639.0	22.0	20.3
				41540	2685.0	21.8	20.3
			49	39700	2501.0	21.7	21.0
				40160	2547.0	21.5	20.4
				40620	2593.0	21.7	20.7
				41080	2639.0	21.4	20.7
				41540	2685.0	21.7	20.3
		25	0	39700	2501.0	20.8	19.5
				40160	2547.0	20.8	19.7
				40620	2593.0	21.0	19.4
				41080	2639.0	20.7	19.5
				41540	2685.0	20.5	19.5
			13	39700	2501.0	20.7	19.9
				40160	2547.0	20.5	19.5
				40620	2593.0	20.5	19.6
				41080	2639.0	20.9	19.5
				41540	2685.0	20.7	19.4
			25	39700	2501.0	20.4	20.0
				40160	2547.0	20.8	19.7
				40620	2593.0	20.9	19.7
				41080	2639.0	20.4	19.9
				41540	2685.0	20.6	19.5
		50	0	39700	2501.0	20.8	19.3
				40160	2547.0	20.5	19.5
				40620	2593.0	20.9	19.6
				41080	2639.0	20.7	19.6
				41540	2685.0	20.6	19.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	15 MHz	1	0	39725	2503.5	21.6	20.9
				40173	2548.3	21.3	20.6
				40620	2593.0	22.0	20.7
				41068	2637.8	22.0	20.4
				41515	2682.5	21.7	20.3
			37	39725	2503.5	21.6	20.9
				40173	2548.3	22.0	20.6
				40620	2593.0	21.8	20.4
				41068	2637.8	21.8	20.8
				41515	2682.5	21.3	20.5
			74	39725	2503.5	21.6	20.8
				40173	2548.3	21.5	20.7
				40620	2593.0	21.7	20.5
				41068	2637.8	21.3	20.8
				41515	2682.5	21.6	20.4
		36	0	39725	2503.5	20.7	19.7
				40173	2548.3	20.3	19.5
				40620	2593.0	20.8	19.4
				41068	2637.8	20.4	19.7
				41515	2682.5	20.4	19.8
			19	39725	2503.5	20.7	19.5
				40173	2548.3	20.6	19.7
				40620	2593.0	20.4	19.4
				41068	2637.8	20.7	19.4
				41515	2682.5	21.0	19.9
			39	39725	2503.5	20.4	19.5
				40173	2548.3	21.0	19.9
				40620	2593.0	20.8	19.8
				41068	2637.8	20.4	19.5
				41515	2682.5	20.8	19.3
		75	0	39725	2503.5	20.7	19.3
				40173	2548.3	20.4	19.4
				40620	2593.0	20.9	19.4
				41068	2637.8	20.8	19.9
				41515	2682.5	20.4	19.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
41	20 MHz	1	0	39750	2506.0	21.8	20.3
				40185	2549.5	21.6	21.0
				40620	2593.0	21.6	20.6
				41055	2636.5	21.7	20.8
				41490	2680.0	21.4	20.8
			49	39750	2506.0	21.6	20.4
				40185	2549.5	21.8	20.6
				40620	2593.0	21.6	20.4
				41055	2636.5	21.8	20.9
				41490	2680.0	21.5	20.4
			99	39750	2506.0	21.9	20.8
				40185	2549.5	21.6	20.3
				40620	2593.0	21.6	20.8
				41055	2636.5	21.8	20.7
				41490	2680.0	21.8	20.9
		50	0	39750	2506.0	20.5	19.6
				40185	2549.5	20.7	19.6
				40620	2593.0	20.7	19.4
				41055	2636.5	20.8	19.8
				41490	2680.0	20.5	19.9
			24	39750	2506.0	20.5	19.7
				40185	2549.5	20.7	19.4
				40620	2593.0	20.6	19.9
				41055	2636.5	20.9	19.5
				41490	2680.0	20.8	19.4
			50	39750	2506.0	20.4	19.8
				40185	2549.5	20.9	19.9
				40620	2593.0	20.6	19.8
				41055	2636.5	20.6	19.5
				41490	2680.0	20.9	19.4
		100	0	39750	2506.0	20.6	19.5
				40185	2549.5	20.7	19.4
				40620	2593.0	20.4	19.9
				41055	2636.5	20.5	19.4
				41490	2680.0	20.4	19.7

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	5 MHz	1	0	41615	3402.5	19.4	18.9
				42103	3451.3	19.6	18.6
				42590	3500.0	19.6	18.9
				43078	3548.8	19.4	18.6
				43565	3597.5	19.3	18.6
			12	41615	3402.5	19.3	18.9
				42103	3451.3	19.9	18.3
				42590	3500.0	19.9	18.3
				43078	3548.8	19.9	18.4
				43565	3597.5	19.5	18.9
			24	41615	3402.5	19.7	18.3
				42103	3451.3	19.9	18.7
				42590	3500.0	20.0	18.6
				43078	3548.8	19.7	18.5
				43565	3597.5	19.5	18.8
		12	0	41615	3402.5	18.3	17.9
				42103	3451.3	18.7	17.4
				42590	3500.0	18.8	17.6
				43078	3548.8	18.6	17.4
				43565	3597.5	18.4	17.4
			6	41615	3402.5	18.5	17.7
				42103	3451.3	18.5	17.9
				42590	3500.0	18.6	17.7
				43078	3548.8	18.8	17.6
				43565	3597.5	18.3	17.3
			13	41615	3402.5	18.7	17.8
				42103	3451.3	18.4	17.9
				42590	3500.0	18.4	17.8
				43078	3548.8	18.3	17.8
				43565	3597.5	18.8	17.9
		25	0	41615	3402.5	18.7	17.3
				42103	3451.3	18.8	17.5
				42590	3500.0	18.4	17.5
				43078	3548.8	18.9	17.6
				43565	3597.5	18.4	17.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	10 MHz	1	0	41640	3405.0	19.9	18.9
				42115	3452.5	19.5	18.7
				42590	3500.0	19.4	18.5
				43065	3547.5	19.8	18.7
				43540	3595.0	19.8	19.0
			24	41640	3405.0	19.7	18.7
				42115	3452.5	19.6	18.3
				42590	3500.0	19.7	18.9
				43065	3547.5	19.7	18.9
				43540	3595.0	19.6	19.0
			49	41640	3405.0	19.8	19.0
				42115	3452.5	20.0	18.5
				42590	3500.0	19.6	18.8
				43065	3547.5	19.4	18.3
				43540	3595.0	19.6	18.7
		25	0	41640	3405.0	18.7	17.4
				42115	3452.5	18.8	17.3
				42590	3500.0	18.4	17.5
				43065	3547.5	18.8	17.4
				43540	3595.0	18.5	17.5
			13	41640	3405.0	18.6	17.7
				42115	3452.5	18.5	17.6
				42590	3500.0	18.5	17.4
				43065	3547.5	18.5	17.5
				43540	3595.0	18.3	17.9
			25	41640	3405.0	18.4	17.8
				42115	3452.5	18.7	17.5
				42590	3500.0	18.5	17.5
				43065	3547.5	19.0	17.3
				43540	3595.0	18.5	17.8
		50	0	41640	3405.0	18.3	17.9
				42115	3452.5	19.0	17.7
				42590	3500.0	18.5	17.5
				43065	3547.5	18.8	17.7
				43540	3595.0	18.6	17.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	15 MHz	1	0	41665	3407.5	19.6	19.0
				42128	3453.8	19.7	18.5
				42590	3500.0	19.7	18.9
				43053	3546.3	19.8	18.6
				43515	3592.5	19.6	18.7
			37	41665	3407.5	19.5	18.7
				42128	3453.8	19.4	18.6
				42590	3500.0	19.5	18.8
				43053	3546.3	19.9	18.9
				43515	3592.5	19.8	18.9
			74	41665	3407.5	19.8	18.6
				42128	3453.8	19.4	18.5
				42590	3500.0	19.5	18.7
				43053	3546.3	19.9	18.4
				43515	3592.5	19.6	18.5
		36	0	41665	3407.5	18.9	17.9
				42128	3453.8	18.9	17.4
				42590	3500.0	18.5	17.6
				43053	3546.3	18.4	17.6
				43515	3592.5	18.9	17.7
			19	41665	3407.5	18.4	17.3
				42128	3453.8	18.6	17.9
				42590	3500.0	18.5	17.8
				43053	3546.3	18.5	17.3
				43515	3592.5	18.6	18.0
			39	41665	3407.5	18.7	17.4
				42128	3453.8	18.6	17.3
				42590	3500.0	19.0	17.9
				43053	3546.3	18.4	17.5
				43515	3592.5	19.0	18.0
		75	0	41665	3407.5	18.9	18.0
				42128	3453.8	18.5	17.3
				42590	3500.0	18.5	17.8
				43053	3546.3	19.0	17.8
				43515	3592.5	18.8	17.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
42	20 MHz	1	0	41690	3410.0	19.9	18.6
				42040	3445.0	19.5	18.5
				42590	3500.0	19.4	18.8
				43040	3545.0	19.5	18.7
				43490	3590.0	19.4	18.8
			49	41690	3410.0	19.8	18.4
				42040	3445.0	19.7	18.6
				42590	3500.0	19.7	18.6
				43040	3545.0	19.9	18.8
				43490	3590.0	19.9	18.9
			99	41690	3410.0	19.5	18.4
				42040	3445.0	19.4	18.8
				42590	3500.0	19.4	18.8
				43040	3545.0	20.0	18.5
				43490	3590.0	19.8	18.8
		50	0	41690	3410.0	18.8	17.6
				42040	3445.0	18.8	17.6
				42590	3500.0	18.8	17.8
				43040	3545.0	18.5	17.7
				43490	3590.0	18.5	17.4
			24	41690	3410.0	18.9	17.5
				42040	3445.0	18.4	17.7
				42590	3500.0	18.7	17.9
				43040	3545.0	18.4	17.5
				43490	3590.0	18.4	17.3
			50	41690	3410.0	18.6	17.9
				42040	3445.0	18.8	17.9
				42590	3500.0	18.4	17.4
				43040	3545.0	19.0	17.3
				43490	3590.0	18.8	17.8
		100	0	41690	3410.0	18.5	17.6
				42040	3445.0	18.8	17.6
				42590	3500.0	18.9	17.9
				43040	3545.0	18.4	17.9
				43490	3590.0	18.9	17.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	5 MHz	1	0	55265	3552.5	19.7	19.0
				55627	3588.7	19.8	18.7
				55990	3625.0	19.5	18.8
				56352	3661.2	19.5	18.6
				56715	3697.5	19.4	18.4
			12	55265	3552.5	19.5	18.9
				55627	3588.7	19.5	18.9
				55990	3625.0	19.7	18.5
				56352	3661.2	20.0	18.8
				56715	3697.5	19.4	18.4
			24	55265	3552.5	19.6	18.6
				55627	3588.7	19.6	18.5
				55990	3625.0	19.5	18.6
				56352	3661.2	20.0	18.5
				56715	3697.5	19.8	18.9
		12	0	55265	3552.5	18.8	17.5
				55627	3588.7	18.7	17.4
				55990	3625.0	18.5	17.7
				56352	3661.2	18.8	17.7
				56715	3697.5	18.8	17.9
			6	55265	3552.5	18.7	17.5
				55627	3588.7	18.6	17.3
				55990	3625.0	18.6	17.5
				56352	3661.2	18.7	17.7
				56715	3697.5	18.5	17.9
			13	55265	3552.5	18.4	17.7
				55627	3588.7	18.4	17.4
				55990	3625.0	18.8	17.7
				56352	3661.2	18.6	17.3
				56715	3697.5	18.8	17.6
		25	0	55265	3552.5	18.3	17.6
				55627	3588.7	18.4	18.0
				55990	3625.0	18.6	17.6
				56352	3661.2	18.5	17.8
				56715	3697.5	18.6	17.6

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	10 MHz	1	0	55290	3555.0	19.9	18.4
				55640	3590.0	19.6	18.4
				55990	3625.0	19.5	18.7
				56340	3660.0	20.0	18.9
				56690	3695.0	19.3	18.5
			24	55290	3555.0	19.9	18.9
				55640	3590.0	19.9	18.5
				55990	3625.0	19.6	18.8
				56340	3660.0	19.8	18.8
				56690	3695.0	19.5	18.5
			49	55290	3555.0	19.4	18.9
				55640	3590.0	19.9	18.6
				55990	3625.0	19.7	18.8
				56340	3660.0	19.6	18.8
				56690	3695.0	19.7	18.9
		25	0	55290	3555.0	18.6	17.5
				55640	3590.0	18.9	18.0
				55990	3625.0	18.4	17.3
				56340	3660.0	18.3	17.9
				56690	3695.0	18.4	17.9
			13	55290	3555.0	18.4	17.7
				55640	3590.0	18.7	17.4
				55990	3625.0	18.7	17.4
				56340	3660.0	18.8	17.9
				56690	3695.0	18.5	17.4
			25	55290	3555.0	19.0	17.8
				55640	3590.0	18.8	17.8
				55990	3625.0	18.6	17.5
				56340	3660.0	18.9	17.7
				56690	3695.0	18.6	17.5
		50	0	55290	3555.0	18.7	17.6
				55640	3590.0	19.0	17.3
				55990	3625.0	18.6	17.6
				56340	3660.0	18.5	18.0
				56690	3695.0	18.9	17.8

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	15 MHz	1	0	55315	3557.5	19.4	18.5
				55652	3591.2	19.4	18.9
				55990	3625.0	19.4	18.8
				56327	3658.7	19.7	18.6
				56665	3692.5	19.4	18.6
			37	55315	3557.5	19.8	18.6
				55652	3591.2	19.4	18.7
				55990	3625.0	19.7	18.9
				56327	3658.7	19.5	18.8
				56665	3692.5	19.6	18.7
			74	55315	3557.5	19.5	18.4
				55652	3591.2	19.8	18.7
				55990	3625.0	19.9	18.8
				56327	3658.7	19.7	18.6
				56665	3692.5	19.8	18.9
		36	0	55315	3557.5	18.4	17.8
				55652	3591.2	18.8	17.5
				55990	3625.0	19.0	17.8
				56327	3658.7	18.4	17.6
				56665	3692.5	18.6	18.0
			19	55315	3557.5	18.7	17.3
				55652	3591.2	18.4	17.9
				55990	3625.0	18.7	17.9
				56327	3658.7	18.5	17.4
				56665	3692.5	18.7	18.0
			39	55315	3557.5	18.6	17.4
				55652	3591.2	18.6	17.9
				55990	3625.0	18.4	17.4
				56327	3658.7	18.9	17.5
				56665	3692.5	19.0	17.9
		75	0	55315	3557.5	18.5	17.5
				55652	3591.2	18.5	17.7
				55990	3625.0	18.7	17.9
				56327	3658.7	18.9	17.6
				56665	3692.5	18.9	18.0

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
48	20 MHz	1	0	55340	3560.0	19.8	18.7
				55665	3592.5	19.7	18.4
				55990	3625.0	19.3	18.6
				56315	3657.5	19.9	18.8
				56640	3690.0	19.8	18.9
			49	55340	3560.0	19.9	18.7
				55665	3592.5	19.7	18.7
				55990	3625.0	19.9	18.7
				56315	3657.5	19.7	18.7
				56640	3690.0	19.9	18.7
			99	55340	3560.0	19.9	18.4
				55665	3592.5	19.9	18.3
				55990	3625.0	19.6	18.9
				56315	3657.5	20.0	18.6
				56640	3690.0	19.9	18.3
		50	0	55340	3560.0	18.5	17.5
				55665	3592.5	18.7	17.6
				55990	3625.0	19.0	17.7
				56315	3657.5	18.8	17.3
				56640	3690.0	18.4	18.0
			24	55340	3560.0	18.5	17.6
				55665	3592.5	18.5	17.9
				55990	3625.0	19.0	17.9
				56315	3657.5	18.4	17.8
				56640	3690.0	18.5	17.4
			50	55340	3560.0	18.3	17.5
				55665	3592.5	18.8	17.3
				55990	3625.0	18.6	17.5
				56315	3657.5	18.9	18.0
				56640	3690.0	18.5	17.5
		100	0	55340	3560.0	18.6	17.6
				55665	3592.5	18.5	17.9
				55990	3625.0	18.8	17.4
				56315	3657.5	18.7	17.9
				56640	3690.0	18.3	17.9

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	1.4 MHz	1	0	131979	1710.7	20.3	18.8
				132322	1745.0	20.2	19.4
				132665	1779.3	20.0	19.3
			3	131979	1710.7	20.0	19.2
				132322	1745.0	20.4	19.1
				132665	1779.3	19.9	19.0
			5	131979	1710.7	19.9	19.1
				132322	1745.0	19.9	19.1
				132665	1779.3	20.4	19.0
		3	0	131979	1710.7	20.2	18.8
				132322	1745.0	19.9	18.9
				132665	1779.3	19.9	18.9
			1	131979	1710.7	20.1	18.9
				132322	1745.0	20.3	19.0
				132665	1779.3	20.3	19.2
			3	131979	1710.7	20.1	19.3
				132322	1745.0	20.0	19.0
				132665	1779.3	20.5	19.2
		6	0	131979	1710.7	19.2	18.2
				132322	1745.0	19.0	17.9
				132665	1779.3	19.2	18.0
	3 MHz	1	0	131987	1711.5	20.0	19.3
				132322	1745.0	19.9	19.4
				132657	1778.5	19.9	19.2
			7	131987	1711.5	20.0	19.3
				132322	1745.0	19.9	18.9
				132657	1778.5	20.4	19.0
			14	131987	1711.5	20.2	18.8
				132322	1745.0	20.0	18.9
				132657	1778.5	20.5	18.9
		8	0	131987	1711.5	19.1	18.4
				132322	1745.0	19.0	18.1
				132657	1778.5	19.1	18.1
			7	131987	1711.5	19.2	17.8
				132322	1745.0	18.8	18.0
				132657	1778.5	19.2	17.8
			14	131987	1711.5	19.5	18.1
				132322	1745.0	19.3	18.0
				132657	1778.5	18.8	17.8
		15	0	131987	1711.5	19.0	18.2
				132322	1745.0	19.3	17.9
				132657	1778.5	19.5	18.4

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	5 MHz	1	0	131997	1712.5	20.4	19.3
				132322	1745.0	20.2	19.2
				132646	1777.4	20.0	19.3
			12	131997	1712.5	20.0	19.3
				132322	1745.0	19.9	19.5
				132646	1777.4	20.0	19.0
			24	131997	1712.5	20.4	19.4
				132322	1745.0	20.0	19.0
				132646	1777.4	20.0	19.4
		12	0	131997	1712.5	19.1	18.2
				132322	1745.0	19.3	18.0
				132646	1777.4	19.3	18.1
			6	131997	1712.5	18.9	18.5
				132322	1745.0	19.2	18.2
				132646	1777.4	19.2	18.0
			13	131997	1712.5	19.3	18.1
				132322	1745.0	19.4	18.2
				132646	1777.4	19.0	18.1
		25	0	131997	1712.5	19.3	18.1
				132322	1745.0	18.9	17.9
				132646	1777.4	19.1	17.9
	10 MHz	1	0	132033	1716.1	20.2	19.4
				132322	1745.0	19.9	19.2
				132621	1774.9	20.5	19.5
			24	132033	1716.1	20.1	19.2
				132322	1745.0	20.2	19.2
				132621	1774.9	20.4	19.5
			49	132033	1716.1	20.0	19.3
				132322	1745.0	20.5	18.9
				132621	1774.9	19.9	19.0
		25	0	132033	1716.1	18.9	17.8
				132322	1745.0	19.2	18.1
				132621	1774.9	18.9	17.9
			13	132033	1716.1	19.0	18.1
				132322	1745.0	19.3	18.1
				132621	1774.9	19.2	18.2
			25	132033	1716.1	19.1	17.9
				132322	1745.0	19.2	18.1
				132621	1774.9	19.2	18.1
		50	0	132033	1716.1	19.0	18.2
				132322	1745.0	19.3	18.0
				132621	1774.9	19.5	18.1

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
66	15 MHz	1	0	132047	1717.5	20.3	19.4
				132322	1745.0	20.1	19.2
				132596	1772.4	20.0	18.9
			37	132047	1717.5	19.9	19.2
				132322	1745.0	19.8	19.3
				132596	1772.4	20.3	19.2
			74	132047	1717.5	20.2	19.1
				132322	1745.0	20.2	19.3
				132596	1772.4	20.0	19.1
		36	0	132047	1717.5	18.9	18.3
				132322	1745.0	18.8	18.1
				132596	1772.4	19.2	18.2
			19	132047	1717.5	19.3	17.9
				132322	1745.0	19.3	17.8
				132596	1772.4	19.2	18.3
			39	132047	1717.5	19.0	18.4
				132322	1745.0	18.8	18.4
				132596	1772.4	19.2	18.4
		75	0	132047	1717.5	19.3	17.9
				132322	1745.0	19.1	18.2
				132596	1772.4	18.9	17.9
	20 MHz	1	0	132072	1720.0	20.2	19.4
				132322	1745.0	20.2	19.3
				132571	1769.9	20.2	18.9
			49	132072	1720.0	20.4	19.4
				132322	1745.0	20.4	19.2
				132571	1769.9	20.3	19.2
			99	132072	1720.0	20.2	18.8
				132322	1745.0	20.2	19.2
				132571	1769.9	20.0	19.0
		50	0	132072	1720.0	19.1	18.1
				132322	1745.0	18.8	18.3
				132571	1769.9	19.2	17.9
			24	132072	1720.0	18.8	17.9
				132322	1745.0	19.2	18.2
				132571	1769.9	19.0	18.4
			50	132072	1720.0	18.8	18.3
				132322	1745.0	19.1	17.8
				132571	1769.9	19.3	17.8
		100	0	132072	1720.0	19.4	18.0
				132322	1745.0	19.1	18.2
				132571	1769.9	19.0	18.2

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
71	5 MHz	1	0	133147	665.5	22.4	21.6
				133297	680.5	22.7	21.9
				133447	695.5	22.7	21.8
			12	133147	665.5	22.9	21.5
				133297	680.5	22.3	21.8
				133447	695.5	22.5	21.9
			24	133147	665.5	22.8	21.4
				133297	680.5	22.6	21.5
				133447	695.5	22.6	21.8
		12	0	133147	665.5	21.5	21.0
				133297	680.5	21.8	20.4
				133447	695.5	21.4	20.8
			6	133147	665.5	22.0	20.8
				133297	680.5	21.4	20.8
				133447	695.5	21.4	20.5
			13	133147	665.5	21.9	21.0
				133297	680.5	21.8	20.9
				133447	695.5	21.9	20.8
		25	0	133147	665.5	21.3	20.4
				133297	680.5	21.4	20.6
				133447	695.5	21.9	20.5
	10 MHz	1	0	133172	668.0	22.5	21.9
				133297	680.5	22.8	21.7
				133422	693.0	22.6	21.7
			24	133172	668.0	22.4	21.5
				133297	680.5	22.3	21.4
				133422	693.0	23.0	21.7
			49	133172	668.0	22.7	21.7
				133297	680.5	22.9	21.5
				133422	693.0	22.8	21.7
		25	0	133172	668.0	21.9	20.9
				133297	680.5	21.6	20.8
				133422	693.0	21.5	21.0
			13	133172	668.0	21.8	20.6
				133297	680.5	21.9	20.9
				133422	693.0	21.5	20.4
			25	133172	668.0	21.7	20.7
				133297	680.5	21.6	20.5
				133422	693.0	21.5	20.7
		50	0	133172	668.0	21.5	21.0
				133297	680.5	21.9	20.9
				133422	693.0	21.8	20.5

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Band	Bandwidth	RB Size	RB Offset	Channel	Frequency	QPSK	16QAM
71	15 MHz	1	0	133197	670.5	22.8	21.5
				133297	680.5	22.6	21.6
				133397	690.5	22.5	21.7
			37	133197	670.5	22.6	21.7
				133297	680.5	22.5	21.4
				133397	690.5	22.8	22.0
			74	133197	670.5	22.6	21.7
				133297	680.5	22.5	21.8
				133397	690.5	22.4	21.7
		36	0	133197	670.5	21.5	20.6
				133297	680.5	21.8	20.9
				133397	690.5	21.7	20.9
			19	133197	670.5	21.4	20.5
				133297	680.5	21.8	20.7
				133397	690.5	21.4	20.4
			39	133197	670.5	21.7	20.5
				133297	680.5	21.5	20.4
				133397	690.5	21.5	20.8
		75	0	133197	670.5	21.4	20.4
				133297	680.5	21.7	20.6
				133397	690.5	21.3	21.0
	20 MHz	1	0	133222	673.0	22.5	21.9
				133297	680.5	22.4	21.9
				133372	688.0	22.6	21.9
			49	133222	673.0	23.0	21.6
				133297	680.5	22.6	21.9
				133372	688.0	22.5	21.4
			99	133222	673.0	22.8	21.9
				133297	680.5	22.7	21.8
				133372	688.0	22.9	21.7
		50	0	133222	673.0	21.4	20.4
				133297	680.5	21.4	20.3
				133372	688.0	21.7	20.4
			24	133222	673.0	21.6	20.3
				133297	680.5	21.8	20.5
				133372	688.0	21.5	20.9
			50	133222	673.0	21.3	20.8
				133297	680.5	21.9	20.9
				133372	688.0	21.7	20.4
		100	0	133222	673.0	21.6	20.6
				133297	680.5	21.9	20.5
				133372	688.0	21.6	20.9

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Table 10.1.3 Test Reduction Table – LTE

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 7 2500-2570 MHz	Back	20850	20 MHz	QPSK	50	25	Reduced[1]
		21100					Tested
		21350					Reduced[1]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[1]
		21100					Tested
		21350					Reduced[1]
		20850				99	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	Left	20850	20 MHz	QPSK	50	25	Tested
		21100					Tested
		21350					Tested
		20850			100	0	Reduced[1]
		21100					Tested
		21350					Reduced[1]
		20850			1	49	Tested
		21100					Tested
		21350					Tested
		20850				99	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 7 2500-2570 MHz	Top	20850	20 MHz	QPSK	50	25	Reduced[1]
		21100					Tested
		21350					Reduced[1]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[1]
		21100					Tested
		21350					Reduced[1]
		20850				99	Reduced[2]
		21100					Reduced[2]
		21350					Reduced[2]
		20850		16QAM	50	25	Reduced[3]
		21100					Reduced[3]
		21350					Reduced[3]
		20850			100	0	Reduced[1]
		21100					Reduced[1]
		21350					Reduced[1]
		20850			1	49	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		20850				99	Reduced[4]
		21100					Reduced[4]
		21350					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 12 699-716 MHz	Back	23060	10 MHz	QPSK	25	12	Reduced[1]
		23095					Tested
		23130					Reduced[1]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23130					Reduced[1]
		23060			1	24	Reduced[1]
		23095					Tested
		23130					Reduced[1]
		23060				49	Reduced[2]
		23095					Reduced[2]
		23130					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23130					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23130					Reduced[1]
		23060			1	24	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		23060				49	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Left	23060	10 MHz	QPSK	25	12	Tested
		23095					Tested
		23130					Tested
		23060			50	0	Reduced[1]
		23095					Tested
		23130					Reduced[1]
		23060			1	24	Tested
		23095					Tested
		23130					Tested
		23060				49	Reduced[2]
		23095					Reduced[2]
		23130					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23130					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23130					Reduced[1]
		23060			1	24	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		23060				49	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 12 699-716 MHz	Top	23060	10 MHz	QPSK	25	12	Reduced[1]
		23095					Tested
		23130					Reduced[1]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23130					Reduced[1]
		23060			1	24	Reduced[1]
		23095					Tested
		23130					Reduced[1]
		23060				49	Reduced[2]
		23095					Reduced[2]
		23130					Reduced[2]
		23060		16QAM	25	12	Reduced[3]
		23095					Reduced[3]
		23130					Reduced[3]
		23060			50	0	Reduced[1]
		23095					Reduced[1]
		23130					Reduced[1]
		23060			1	24	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		23060				49	Reduced[4]
		23095					Reduced[4]
		23130					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 13 777-787 MHz	Back	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	24	Tested
		23230				49	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	24	Reduced[4]
		23230				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Left	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Tested
		23230			1	24	Tested
		23230				49	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	24	Reduced[4]
		23230				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Top	23230	10 MHz	QPSK	25	12	Tested
		23230			50	0	Reduced[1]
		23230			1	24	Tested
		23230				49	Reduced[2]
		23230		16QAM	25	12	Reduced[3]
		23230			50	0	Reduced[1]
		23230			1	24	Reduced[4]
		23230				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 14 788-798 MHz	Back	23330	10 MHz	QPSK	25	12	Tested
		23330			50	0	Reduced[1]
		23330			1	24	Tested
		23330				49	Reduced[2]
		23330		16QAM	25	12	Reduced[3]
		23330			50	0	Reduced[1]
		23330			1	24	Reduced[4]
		23330				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Left	23330	10 MHz	QPSK	25	12	Tested
		23330			50	0	Tested
		23330			1	24	Tested
		23330				49	Reduced[2]
		23330		16QAM	25	12	Reduced[3]
		23330			50	0	Reduced[1]
		23330			1	24	Reduced[4]
		23330				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Top	23330	10 MHz	QPSK	25	12	Tested
		23330			50	0	Reduced[1]
		23330			1	24	Tested
		23330				49	Reduced[2]
		23330		16QAM	25	12	Reduced[3]
		23330			50	0	Reduced[1]
		23330			1	24	Reduced[4]
		23330				49	Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 25 1850-1915 MHz	Back	26140	20 MHz	QPSK	50	0	Reduced[1]
		26365					Tested
		26590					Reduced[1]
		26140			100	0	Reduced[1]
		26365					Reduced[1]
		26590					Reduced[1]
		26140			1	49	Reduced[2]
		26365					Tested
		26590					Reduced[2]
		26140				99	Reduced[2]
		26365					Reduced[2]
		26590					Reduced[2]
		26140		16QAM	50	25	Reduced[3]
		26365					Reduced[3]
		26590					Reduced[3]
		26140			100	0	Reduced[1]
		26365					Reduced[1]
		26590					Reduced[1]
		26140			1	49	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		26140				99	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	Left	26140	20 MHz	QPSK	50	25	Tested
		26365					Tested
		26590					Tested
		26140			100	0	Reduced[1]
		26365					Tested
		26590					Reduced[1]
		26140			1	49	Tested
		26365					Tested
		26590					Tested
		26140				99	Reduced[2]
		26365					Reduced[2]
		26590					Reduced[2]
		26140		16QAM	50	25	Reduced[3]
		26365					Reduced[3]
		26590					Reduced[3]
		26140			100	0	Reduced[1]
		26365					Reduced[1]
		26590					Reduced[1]
		26140			1	49	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		26140				99	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced

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Band 25 1850-1915 MHz	Top	26140	20 MHz	QPSK	50	25	Reduced[1]
		26365					Tested
		26590					Reduced[1]
		26140			100	0	Reduced[1]
		26365					Reduced[1]
		26590					Reduced[1]
		26140			1	49	Reduced[2]
		26365					Tested
		26590					Reduced[2]
		26140				99	Reduced[2]
		26365					Reduced[2]
		26590					Reduced[2]
		26140		16QAM	50	25	Reduced[3]
		26365					Reduced[3]
		26590					Reduced[3]
		26140			100	0	Reduced[1]
		26365					Reduced[1]
		26590					Reduced[1]
		26140			1	49	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		26140				99	Reduced[4]
		26365					Reduced[4]
		26590					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 26 814-849 MHz	Back	26740	10 MHz	QPSK	25	12	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740			50	0	Reduced[1]
		26865					Reduced[1]
		26990					Reduced[1]
		26740			1	24	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740				49	Reduced[2]
		26865					Reduced[2]
		26990					Reduced[2]
		26740		16QAM	25	12	Reduced[3]
		26865					Reduced[3]
		26990					Reduced[3]
		26740			50	0	Reduced[1]
		26865					Reduced[1]
		26990					Reduced[1]
		26740			1	24	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		26740				49	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]
	Left	26740	10 MHz	QPSK	25	12	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740			50	0	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740			1	24	Tested
		26865					Tested
		26990					Tested
		26740				49	Reduced[2]
		26865					Reduced[2]
		26990					Reduced[2]
		26740		16QAM	25	12	Reduced[3]
		26865					Reduced[3]
		26990					Reduced[3]
		26740			50	0	Reduced[1]
		26865					Reduced[1]
		26990					Reduced[1]
		26740			1	24	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		26740				49	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 26 814-849 MHz	Top	26740	10 MHz	QPSK	25	12	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740			50	0	Reduced[1]
		26865					Reduced[1]
		26990					Reduced[1]
		26740			1	24	Reduced[1]
		26865					Tested
		26990					Reduced[1]
		26740				49	Reduced[2]
		26865					Reduced[2]
		26990					Reduced[2]
		26740		16QAM	25	12	Reduced[3]
		26865					Reduced[3]
		26990					Reduced[3]
		26740			50	0	Reduced[1]
		26865					Reduced[1]
		26990					Reduced[1]
		26740			1	24	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		26740				49	Reduced[4]
		26865					Reduced[4]
		26990					Reduced[4]
		All lower bandwidths (5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 41 2496-2690 MHz	Back	39750	20 MHz	QPSK	50	25	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Reduced[1]
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750				99	Reduced[2]
		40185					Reduced[2]
		40620					Reduced[2]
		41055					Reduced[2]
		41490					Reduced[2]
		39750		16QAM	50	25	Reduced[3]
		40185					Reduced[3]
		40620					Reduced[3]
		41055					Reduced[3]
		41490					Reduced[3]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Reduced[1]
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		39750				99	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 41 2496-2690 MHz	Left	39750	20 MHz	QPSK	50	25	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Tested
		40185					Tested
		40620					Tested
		41055					Tested
		41490					Tested
		39750				99	Reduced[2]
		40185					Reduced[2]
		40620					Reduced[2]
		41055					Reduced[2]
		41490					Reduced[2]
		39750		16QAM	50	25	Reduced[3]
		40185					Reduced[3]
		40620					Reduced[3]
		41055					Reduced[3]
		41490					Reduced[3]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Reduced[1]
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		39750				99	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 41 2496-2690 MHz	Top	39750	20 MHz	QPSK	50	25	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Reduced[1]
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Reduced[1]
		40185					Reduced[1]
		40620					Tested
		41055					Reduced[1]
		41490					Reduced[1]
		39750				99	Reduced[2]
		40185					Reduced[2]
		40620					Reduced[2]
		41055					Reduced[2]
		41490					Reduced[2]
		39750		16QAM	50	25	Reduced[3]
		40185					Reduced[3]
		40620					Reduced[3]
		41055					Reduced[3]
		41490					Reduced[3]
		39750			100	0	Reduced[1]
		40185					Reduced[1]
		40620					Reduced[1]
		41055					Reduced[1]
		41490					Reduced[1]
		39750			1	49	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		39750				99	Reduced[4]
		40185					Reduced[4]
		40620					Reduced[4]
		41055					Reduced[4]
		41490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 42 3400-3600 MHz	Back	41690	20 MHz	QPSK	50	25	Reduced[1]
		42140					Reduced[1]
		42590					Tested
		43040					Reduced[1]
		43490					Reduced[1]
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Reduced[1]
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Reduced[1]
		42140					Reduced[1]
		42590					Tested
		43040					Reduced[1]
		43490					Reduced[1]
		41690				99	Reduced[2]
		42140					Reduced[2]
		42590					Reduced[2]
		43040					Reduced[2]
		43490					Reduced[2]
		41690		16QAM	50	25	Reduced[3]
		42140					Reduced[3]
		42590					Reduced[3]
		43040					Reduced[3]
		43490					Reduced[3]
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Reduced[1]
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		41690				99	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 42 3400-3600 MHz	Left	41690	20 MHz	QPSK	50	25	Tested
		42140					Tested
		42590					Tested
		43040					Tested
		43490					Tested
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Tested
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Tested
		42140					Tested
		42590					Tested
		43040					Tested
		43490					Tested
		41690				99	Reduced[2]
		42140					Reduced[2]
		42590					Reduced[2]
		43040					Reduced[2]
		43490					Reduced[2]
		41690		16QAM	50	25	Reduced[3]
		42140					Reduced[3]
		42590					Reduced[3]
		43040					Reduced[3]
		43490					Reduced[3]
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Reduced[1]
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		41690				99	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 42 3400-3600 MHz	Top	41690	20 MHz	QPSK	50	25	Reduced[1]
		42140					Reduced[1]
		42590					Tested
		43040					Reduced[1]
		43490					Reduced[1]
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Reduced[1]
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Reduced[1]
		42140					Reduced[1]
		42590					Tested
		43040					Reduced[1]
		43490					Reduced[1]
		41690				99	Reduced[2]
		42140					Reduced[2]
		42590					Reduced[2]
		43040					Reduced[2]
		43490					Reduced[2]
		41690		16QAM	50	25	Reduced[3]
		42140					Reduced[3]
		42590					Reduced[3]
		43040					Reduced[3]
		43490					Reduced[3]
		41690			100	0	Reduced[1]
		42140					Reduced[1]
		42590					Reduced[1]
		43040					Reduced[1]
		43490					Reduced[1]
		41690			1	49	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		41690				99	Reduced[4]
		42140					Reduced[4]
		42590					Reduced[4]
		43040					Reduced[4]
		43490					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 48 3550-3700 MHz	Back	55340	20 MHz	QPSK	50	25	Reduced[1]
		55665					Reduced[1]
		55990					Tested
		56315					Reduced[1]
		56640					Reduced[1]
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Reduced[1]
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Reduced[1]
		55665					Reduced[1]
		55990					Tested
		56315					Reduced[1]
		56640					Reduced[1]
		55340				99	Reduced[2]
		55665					Reduced[2]
		55990					Reduced[2]
		56315					Reduced[2]
		56640					Reduced[2]
		55340		16QAM	50	25	Reduced[3]
		55665					Reduced[3]
		55990					Reduced[3]
		56315					Reduced[3]
		56640					Reduced[3]
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Reduced[1]
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		55340				99	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 48 3550-3700 MHz	Left	55340	20 MHz	QPSK	50	25	Tested
		55665					Tested
		55990					Tested
		56315					Tested
		56640					Tested
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Tested
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Tested
		55665					Tested
		55990					Tested
		56315					Tested
		56640					Tested
		55340				99	Reduced[2]
		55665					Reduced[2]
		55990					Reduced[2]
		56315					Reduced[2]
		56640					Reduced[2]
		55340		16QAM	50	25	Reduced[3]
		55665					Reduced[3]
		55990					Reduced[3]
		56315					Reduced[3]
		56640					Reduced[3]
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Reduced[1]
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		55340				99	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 48 3550-3700 MHz	Top	55340	20 MHz	QPSK	50	25	Reduced[1]
		55665					Reduced[1]
		55990					Tested
		56315					Reduced[1]
		56640					Reduced[1]
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Reduced[1]
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Reduced[1]
		55665					Reduced[1]
		55990					Tested
		56315					Reduced[1]
		56640					Reduced[1]
		55340				99	Reduced[2]
		55665					Reduced[2]
		55990					Reduced[2]
		56315					Reduced[2]
		56640					Reduced[2]
		55340		16QAM	50	25	Reduced[3]
		55665					Reduced[3]
		55990					Reduced[3]
		56315					Reduced[3]
		56640					Reduced[3]
		55340			100	0	Reduced[1]
		55665					Reduced[1]
		55990					Reduced[1]
		56315					Reduced[1]
		56640					Reduced[1]
		55340			1	49	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		55340				99	Reduced[4]
		55665					Reduced[4]
		55990					Reduced[4]
		56315					Reduced[4]
		56640					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 66 1710-1780 MHz	Back	132072	20 MHz	QPSK	50	25	Reduced[1]
		132322					Tested
		132572					Reduced[1]
		132072			100	0	Reduced[1]
		132322					Reduced[1]
		132572					Reduced[1]
		132072			1	49	Reduced[1]
		132322					Tested
		132572					Reduced[1]
		132072				99	Reduced[2]
		132322					Reduced[2]
		132572					Reduced[2]
		132072		16QAM	50	25	Reduced[3]
		132322					Reduced[3]
		132572					Reduced[3]
		132072			100	0	Reduced[1]
		132322					Reduced[1]
		132572					Reduced[1]
		132072			1	49	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		132072				99	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]
	Left	132072	20 MHz	QPSK	50	25	Tested
		132322					Tested
		132572					Tested
		132072			100	0	Reduced[1]
		132322					Tested
		132572					Reduced[1]
		132072			1	49	Tested
		132322					Tested
		132572					Tested
		132072				99	Reduced[2]
		132322					Reduced[2]
		132572					Reduced[2]
		132072		16QAM	50	25	Reduced[3]
		132322					Reduced[3]
		132572					Reduced[3]
		132072			100	0	Reduced[1]
		132322					Reduced[1]
		132572					Reduced[1]
		132072			1	49	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		132072				99	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 66 1710-1780 MHz	Top	132072	20 MHz	QPSK	50	25	Reduced[1]
		132322					Tested
		132572					Reduced[1]
		132072			100	0	Reduced[1]
		132322					Reduced[1]
		132572					Reduced[1]
		132072			1	49	Reduced[1]
		132322					Tested
		132572					Reduced[1]
		132072				99	Reduced[2]
		132322					Reduced[2]
		132572					Reduced[2]
		132072		16QAM	50	25	Reduced[3]
		132322					Reduced[3]
		132572					Reduced[3]
		132072			100	0	Reduced[1]
		132322					Reduced[1]
		132572					Reduced[1]
		132072			1	49	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		132072				99	Reduced[4]
		132322					Reduced[4]
		132572					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz, 3 MHz, 1.4 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 71 663-698 MHz	Back	133222	20 MHz	QPSK	50	25	Reduced[1]
		133297					Tested
		133372					Reduced[1]
		133222			100	0	Reduced[1]
		133297					Reduced[1]
		133372					Reduced[1]
		133222			1	49	Reduced[1]
		133297					Tested
		133372					Reduced[1]
		133222				99	Reduced[2]
		133297					Reduced[2]
		133372					Reduced[2]
		133222		16QAM	50	25	Reduced[3]
		133297					Reduced[3]
		133372					Reduced[3]
		133222			100	0	Reduced[1]
		133297					Reduced[1]
		133372					Reduced[1]
		133222			1	49	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		133222				99	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]
	Left	133222	20 MHz	QPSK	50	25	Tested
		133297					Tested
		133372					Tested
		133222			100	0	Reduced[1]
		133297					Tested
		133372					Reduced[1]
		133222			1	49	Tested
		133297					Tested
		133372					Tested
		133222				99	Reduced[2]
		133297					Reduced[2]
		133372					Reduced[2]
		133222		16QAM	50	25	Reduced[3]
		133297					Reduced[3]
		133372					Reduced[3]
		133222			100	0	Reduced[1]
		133297					Reduced[1]
		133372					Reduced[1]
		133222			1	49	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		133222				99	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

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Band/ Frequency (MHz)	Side	Required Test Channel	Bandwidth	Modulation	RB Allocation	RB Offset	Tested/ Reduced
Band 71 663-698 MHz	Top	133222	20 MHz	QPSK	50	25	Reduced[1]
		133297					Tested
		133372					Reduced[1]
		133222			100	0	Reduced[1]
		133297					Reduced[1]
		133372					Reduced[1]
		133222			1	49	Reduced[1]
		133297					Tested
		133372					Reduced[1]
		133222				99	Reduced[2]
		133297					Reduced[2]
		133372					Reduced[2]
		133222		16QAM	50	25	Reduced[3]
		133297					Reduced[3]
		133372					Reduced[3]
		133222			100	0	Reduced[1]
		133297					Reduced[1]
		133372					Reduced[1]
		133222			1	49	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		133222				99	Reduced[4]
		133297					Reduced[4]
		133372					Reduced[4]
		All lower bandwidths (15 MHz, 10 MHz, 5 MHz)					Reduced[5]

Reduced[1] – If the SAR value in the 50% RB testing is less than 1.45 W/kg, the 100% RB testing is reduced per KDB941225 D05 3) A) I) page 4.

Reduced[2] - If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 3) B) I) page 4.

Reduced[3] - If the SAR value in the 50% RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) A) I) page 4.

Reduced[4]- If the SAR value in the 1 RB testing is less than 1.45 W/kg, the remaining channels are reduced per KDB941225 D05 4) B) I) page 5.

Reduced[5]- If the conducted power is within ±0.5 dB, all testing where the SAR value is less than 1.45 W/kg is reduced per KDB941225 D05 5) B) I) page 5.

All remaining sides are reduced based on the calculations in 47 CFR 1307.

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SAR Data Summary – 600 MHz Body – LTE Band 71

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	680.5	133297	20 MHz/QPSK	1	49	0	22.6	0.451	0.50
	-----		680.5	133297	20 MHz/QPSK	50	24	1	21.8	0.371	0.39
	1	Left	673.0	133222	20 MHz/QPSK	1	49	0	23.0	1.05	1.05
	-----		680.5	133297	20 MHz/QPSK	1	49	0	22.6	0.945	1.04
	-----		688.0	133372	20 MHz/QPSK	1	49	0	22.5	0.928	1.04
	-----		673.0	133222	20 MHz/QPSK	50	24	1	21.6	0.916	1.00
	-----		680.5	133297	20 MHz/QPSK	50	24	1	21.8	0.888	0.93
	-----		688.0	133372	20 MHz/QPSK	50	24	1	21.5	0.927	1.04
	-----		673.0	133222	20 MHz/QPSK	100	0	1	21.6	0.734	0.80
	-----	Top	680.5	133297	20 MHz/QPSK	1	49	0	22.6	0.150	0.16
	-----		680.5	133297	20 MHz/QPSK	50	24	1	21.8	0.130	0.14
	-----	Repeat	673.0	133222	20 MHz/QPSK	1	49	0	23.0	1.03	1.03
22 mm	-----	Left	673.0	133222	20 MHz/QPSK	1	49	0	23.4	0.812	0.93

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

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SAR Data Summary – 750 MHz Body – LTE Band 12

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	707.5	23095	10 MHz/QPSK	1	24	0	23.7	0.473	0.51
	-----		707.5	23095	10 MHz/QPSK	25	13	1	22.6	0.375	0.41
	-----	Left	704.0	23060	10 MHz/QPSK	1	24	0	23.6	0.911	1.00
	2		707.5	23095	10 MHz/QPSK	1	24	0	23.7	0.942	1.01
	-----		711.0	23130	10 MHz/QPSK	1	24	0	23.8	0.923	0.97
	-----		704.0	23060	10 MHz/QPSK	25	13	1	22.6	0.746	0.82
	-----		707.5	23095	10 MHz/QPSK	25	13	1	22.6	0.775	0.85
	-----		711.0	23130	10 MHz/QPSK	25	13	1	23.0	0.722	0.72
	-----		707.5	23095	10 MHz/QPSK	50	0	1	22.9	0.692	0.71
	-----	Top	707.5	23095	10 MHz/QPSK	1	24	0	23.7	0.144	0.15
	-----		707.5	23095	10 MHz/QPSK	25	13	1	22.6	0.121	0.13
	-----	Repeat	707.5	23095	10 MHz/QPSK	1	24	0	23.7	0.924	0.99
22 mm	-----	Left	707.5	23095	10 MHz/QPSK	1	24	0	23.7	0.729	0.78

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

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SAR Data Summary – 750 MHz Body – LTE Band 13

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	782.0	23230	10 MHz/QPSK	1	24	0	23.9	0.432	0.44
	-----		782.0	23230	10 MHz/QPSK	25	13	1	22.8	0.345	0.36
	3	Left	782.0	23230	10 MHz/QPSK	1	24	0	23.9	1.07	1.10
	-----		782.0	23230	10 MHz/QPSK	25	13	1	22.8	0.862	0.90
	-----		782.0	23230	10 MHz/QPSK	50	0	1	22.9	0.756	0.77
	-----	Top	782.0	23230	10 MHz/QPSK	1	24	0	23.9	0.112	0.12
	-----		782.0	23230	10 MHz/QPSK	25	13	1	22.8	0.0881	0.09
	-----	Repeat	782.0	23230	10 MHz/QPSK	1	24	0	23.9	1.05	1.07
22 mm	-----	Left	782.0	23230	10 MHz/QPSK	1	24	0	23.9	0.819	0.84

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 750 MHz Body – LTE Band 14

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	793.0	23330	10 MHz/QPSK	1	24	0	23.8	0.433	0.45
	-----		793.0	23330	10 MHz/QPSK	25	13	1	22.6	0.349	0.38
	4	Left	793.0	23330	10 MHz/QPSK	1	24	0	23.8	1.03	1.10
	-----		793.0	23330	10 MHz/QPSK	25	13	1	22.6	0.850	0.93
	-----		793.0	23330	10 MHz/QPSK	50	0	1	22.7	0.786	0.84
	-----	Top	793.0	23330	10 MHz/QPSK	1	24	0	23.8	0.100	0.11
	-----		793.0	23330	10 MHz/QPSK	25	13	1	22.6	0.080	0.09
	-----	Repeat	793.0	23330	10 MHz/QPSK	1	24	0	23.8	1.01	1.06
22 mm	-----	Left	793.0	23330	10 MHz/QPSK	1	24	0	23.8	0.795	0.83

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 835 MHz Body - WCDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency MHz	Frequency Ch.	Modulation	Position	End Power (dBm)	RMC	Test Set Up	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	----	836.6	4183	WCDMA	Back	23.82	12.2 kbps	Test Loop 1	0.414	0.43
	----	826.4	4132	WCDMA	Left	23.72	12.2 kbps	Test Loop 1	1.01	1.08
	5	836.6	4183	WCDMA		23.82	12.2 kbps	Test Loop 1	1.04	1.08
	----	846.4	4233	WCDMA		23.64	12.2 kbps	Test Loop 1	0.982	1.07
	----	836.6	4183	WCDMA	Top	23.82	12.2 kbps	Test Loop 1	0.113	0.12
	----	846.4	4233	WCDMA	Repeat	23.82	12.2 kbps	Test Loop 1	1.02	1.06
22 mm	----	836.6	4183	WCDMA	Left	23.82	12.2 kbps	Test Loop 1	0.852	0.89
						Head 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 835 MHz Body – LTE Band 26

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	831.5	26865	10 MHz/QPSK	1	24	0	23.1	0.450	0.49
	-----		831.5	26865	10 MHz/QPSK	25	13	1	22.3	0.367	0.38
	-----	Left	819.0	26740	10 MHz/QPSK	1	24	0	22.8	0.822	0.97
	6		831.5	26865	10 MHz/QPSK	1	24	0	23.1	0.886	0.97
	-----		844.0	26990	10 MHz/QPSK	1	24	0	22.9	0.842	0.97
	-----		831.5	26865	10 MHz/QPSK	25	13	1	22.3	0.723	0.76
	-----		831.5	26865	10 MHz/QPSK	50	0	1	22.5	0.677	0.68
	-----	Top	831.5	26865	10 MHz/QPSK	1	24	0	23.1	0.0852	0.09
	-----		831.5	26865	10 MHz/QPSK	25	13	1	22.3	0.0693	0.07
	-----	Repeated	831.5	26865	10 MHz/QPSK	1	24	0	23.1	0.871	0.96
22 mm	-----	Left	831.5	26865	10 MHz/QPSK	1	24	0	23.1	0.722	0.79

Head
1.6 W/kg (mW/g) averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

Note: Band 5 LTE is fully within the frequency band of B26. Therefore, Band 5 was not tested for standalone SAR.

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SAR Data Summary – 1750 MHz Body - WCDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency MHz	Frequency Ch.	Rev Level/ Modulation	Position	End Power (dBm)	RMC	Test Set Up	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	----	1732.6	1413	WCDMA	Back	16.74	12.2 kbps	Test Loop 1	0.243	0.26
	----	1712.4	1312	WCDMA	Left	16.67	12.2 kbps	Test Loop 1	0.621	0.67
	----	1732.6	1413	WCDMA		16.74	12.2 kbps	Test Loop 1	0.968	1.03
	7	1752.6	1513	WCDMA		17.00	12.2 kbps	Test Loop 1	1.04	1.04
	----	1732.6	1413	WCDMA	Top	16.74	12.2 kbps	Test Loop 1	0.0864	0.09
	----	1752.6	1513	WCDMA	Repeat	17.00	12.2 kbps	Test Loop 1	1.02	1.02
22 mm	----	1752.6	1513	WCDMA	Left	24.00	12.2 kbps	Test Loop 1	0.867	0.87
						Head 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 1750 MHz Body – LTE Band 66

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	1745.0	132322	20 MHz/QPSK	1	49	0	20.4	0.256	0.26
	-----		1745.0	132322	20 MHz/QPSK	50	24	1	19.2	0.255	0.27
	-----	Left	1720.0	132072	20 MHz/QPSK	1	49	0	20.4	0.895	0.92
	-----		1745.0	132322	20 MHz/QPSK	1	49	0	20.4	1.02	1.04
	8		1780.0	132572	20 MHz/QPSK	1	49	0	20.3	1.08	1.13
	-----		1720.0	132072	20 MHz/QPSK	50	24	1	18.8	0.817	0.96
	-----		1745.0	132322	20 MHz/QPSK	50	24	1	19.2	0.885	0.95
	-----		1780.0	132572	20 MHz/QPSK	50	24	1	19.0	0.856	0.96
	-----		1780.0	132572	20 MHz/QPSK	100	0	1	19.0	0.751	0.84
	-----	Top	1745.0	132322	20 MHz/QPSK	1	49	0	20.4	0.0908	0.09
	-----		1745.0	132322	20 MHz/QPSK	50	24	1	19.2	0.0902	0.10
	-----	Repeated	1780.0	132572	20 MHz/QPSK	1	49	0	20.4	1.06	1.08
22 mm	-----	Left	1780.0	132572	20 MHz/QPSK	1	49	0	22.9	0.872	1.00

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

Note: Band 4 LTE is fully within the frequency band of B66. Therefore, Band 4 was not tested for standalone SAR.

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SAR Data Summary – 1900 MHz Body - WCDMA

MEASUREMENT RESULTS

Gap	Plot	Frequency MHz	Frequency Ch.	Rev Level/ Modulation	Position	End Power (dBm)	RMC	Test Set Up	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	----	1880.0	9400	WCDMA	Back	15.94	12.2 kbps	Test Loop 1	0.128	0.13
	----	1852.4	9262	WCDMA	Left	15.96	12.2 kbps	Test Loop 1	1.08	1.09
	----	1880.0	9400	WCDMA		15.94	12.2 kbps	Test Loop 1	1.07	1.09
	9	1907.6	9538	WCDMA		15.98	12.2 kbps	Test Loop 1	1.09	1.10
	----	1852.4	9262	WCDMA	Top	15.94	12.2 kbps	Test Loop 1	0.0679	0.07
	----	1907.6	9538	WCDMA	Repeat	15.98	12.2 kbps	Test Loop 1	1.07	1.08
22 mm	----	1907.6	9538	WCDMA	Left	23.82	12.2 kbps	Test Loop 1	0.927	0.97

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 1900 MHz Body – LTE Band 25

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	1880.0	18900	20 MHz/QPSK	1	49	0	18.9	0.266	0.27
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	17.4	0.252	0.29
	-----	Left	1860.0	18700	20 MHz/QPSK	1	49	0	18.8	1.01	1.06
	10		1880.0	18900	20 MHz/QPSK	1	49	0	18.9	1.04	1.06
	-----		1900.0	19100	20 MHz/QPSK	1	49	0	18.8	1.01	1.06
	-----		1860.0	18700	20 MHz/QPSK	50	24	1	17.9	0.907	0.93
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	17.4	0.893	1.03
	-----		1900.0	19100	20 MHz/QPSK	50	24	1	17.6	0.897	0.98
	-----		1860.0	18700	20 MHz/QPSK	100	0	1	17.8	0.857	0.90
	-----	Top	1880.0	18900	20 MHz/QPSK	1	49	0	18.9	0.121	0.12
	-----		1880.0	18900	20 MHz/QPSK	50	24	1	17.4	0.120	0.14
	-----	Repeated	1880.0	18900	20 MHz/QPSK	1	49	0	18.9	1.02	1.04
22 mm	-----	Left	1880.0	18900	20 MHz/QPSK	1	49	0	23.0	0.824	0.92

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

Note: Band 2 LTE is fully within the frequency band of B25. Therefore, Band 2 was not tested for standalone SAR.

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SAR Data Summary – 2600 MHz Body – LTE Band 7

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	2560.0	21350	20 MHz/QPSK	1	49	0	17.9	0.216	0.22
	-----		2510.0	20850	20 MHz/QPSK	50	24	1	16.8	0.191	0.20
	-----	Left	2510.0	20850	20 MHz/QPSK	1	49	0	17.8	1.04	1.09
	11		2535.0	21100	20 MHz/QPSK	1	49	0	17.9	1.09	1.12
	-----		2560.0	21350	20 MHz/QPSK	1	49	0	17.8	1.02	1.07
	-----		2510.0	20850	20 MHz/QPSK	50	24	1	17.0	0.957	0.96
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	16.8	0.972	1.02
	-----		2560.0	21350	20 MHz/QPSK	50	24	1	16.7	0.986	1.06
	-----		2535.0	21100	20 MHz/QPSK	100	0	1	16.9	0.901	0.92
	-----	Top	2535.0	21100	20 MHz/QPSK	1	49	0	17.9	0.102	0.10
	-----		2535.0	21100	20 MHz/QPSK	50	24	1	16.8	0.0420	0.04
	-----	Repeat	2535.0	21100	20 MHz/QPSK	1	49	0	17.9	1.07	1.09
22 mm	-----	Left	2535.0	21100	20 MHz/QPSK	1	49	0	22.6	0.922	1.01

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 2550 MHz Body – LTE Band 41

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	2593.0	40620	20 MHz/QPSK	1	49	0	21.6	0.233	0.26
	-----		2593.0	40620	20 MHz/QPSK	50	24	1	20.6	0.152	0.17
	-----	Left	2506.0	39750	20 MHz/QPSK	1	49	0	21.6	0.951	1.04
	-----		2544.5	40135	20 MHz/QPSK	1	49	0	21.8	0.938	0.98
	12		2593.0	40620	20 MHz/QPSK	1	49	0	21.6	1.01	1.11
	-----		2641.5	41105	20 MHz/QPSK	1	49	0	21.8	0.927	0.97
	-----		2680.0	41490	20 MHz/QPSK	1	49	0	21.5	0.894	1.00
	-----		2593.0	40620	20 MHz/QPSK	50	24	1	20.6	0.774	0.85
	-----		2593.0	40620	20 MHz/QPSK	100	0	1	19.9	0.602	0.78
	-----	Top	2593.0	40620	20 MHz/QPSK	1	49	0	21.6	0.107	0.12
	-----		2593.0	40620	20 MHz/QPSK	50	24	1	20.6	0.0784	0.09
	-----	Repeated	2593.0	40620	20 MHz/QPSK	1	49	0	21.6	0.994	1.09
22 mm	-----	Left	2593.0	40620	20 MHz/QPSK	1	49	0	22.8	0.658	0.69

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 3500 MHz Body – LTE Band 42

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	3500.0	42590	20 MHz/QPSK	1	49	0	19.7	0.136	0.15
	-----		3500.0	42590	20 MHz/QPSK	50	24	1	18.7	0.121	0.13
	-----	Left	3410.0	41690	20 MHz/QPSK	1	49	0	19.8	0.952	1.00
	-----		3445.0	42040	20 MHz/QPSK	1	49	0	19.7	0.936	1.00
	13		3500.0	42590	20 MHz/QPSK	1	49	0	19.7	0.999	1.07
	-----		3545.0	43040	20 MHz/QPSK	1	49	0	19.9	0.966	0.99
	-----		3590.0	43490	20 MHz/QPSK	1	49	0	19.9	0.974	1.00
	-----		3410.0	41690	20 MHz/QPSK	50	24	1	18.9	0.792	0.81
	-----		3445.0	42040	20 MHz/QPSK	50	24	1	18.4	0.806	0.93
	-----		3500.0	42590	20 MHz/QPSK	50	24	1	18.7	0.801	0.86
	-----		3545.0	43040	20 MHz/QPSK	50	24	1	18.4	0.819	0.94
	-----		3590.0	43490	20 MHz/QPSK	50	24	1	18.4	0.806	0.93
	-----		3590.0	43490	20 MHz/QPSK	100	0	1	18.9	0.766	0.78
	-----	Top	3500.0	42590	20 MHz/QPSK	1	49	0	19.7	0.217	0.23
	-----		3500.0	42590	20 MHz/QPSK	50	24	1	18.7	0.109	0.12
	-----	Repeated	3500.0	42590	20 MHz/QPSK	1	49	0	19.7	0.981	1.05
22 mm	-----	Left	3500.0	42590	20 MHz/QPSK	1	49	0	22.6	0.624	0.68

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

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SAR Data Summary – 3500 MHz Body – LTE Band 48

MEASUREMENT RESULTS

Gap	Plot	Position	Frequency MHz	Frequency Ch.	BW/ Modulation	RB Size	RB Offset	MPR Target	End Power (dBm)	Measured SAR (W/kg)	Reported SAR (W/kg)
0 mm	-----	Back	3625.0	55990	20 MHz/QPSK	1	49	0	19.9	0.142	0.15
	-----		3625.0	55990	20 MHz/QPSK	50	24	1	19.0	0.0567	0.06
	-----	Left	3560.0	55340	20 MHz/QPSK	1	49	0	19.9	1.06	1.09
	-----		3592.5	55665	20 MHz/QPSK	1	49	0	19.7	1.01	1.08
	14		3625.0	55990	20 MHz/QPSK	1	49	0	19.9	1.08	1.11
	-----		3657.5	56315	20 MHz/QPSK	1	49	0	19.7	1.04	1.11
	-----		3690.0	56640	20 MHz/QPSK	1	49	0	19.9	1.00	1.02
	-----		3560.0	55340	20 MHz/QPSK	50	24	1	18.5	0.941	1.06
	-----		3592.5	55665	20 MHz/QPSK	50	24	1	18.5	0.952	1.07
	-----		3625.0	55990	20 MHz/QPSK	50	24	1	19.0	0.992	0.99
	-----		3657.5	56315	20 MHz/QPSK	50	24	1	18.4	0.906	1.04
	-----		3690.0	56640	20 MHz/QPSK	50	24	1	18.5	0.955	1.07
	-----		3592.5	55665	20 MHz/QPSK	100	0	1	18.8	0.844	0.88
	-----	Top	3625.0	55990	20 MHz/QPSK	1	49	0	19.9	0.107	0.11
	-----		3625.0	55990	20 MHz/QPSK	50	24	1	19.0	0.0416	0.04
	-----	Repeated	3625.0	55990	20 MHz/QPSK	1	49	0	19.9	1.06	1.08
22 mm	-----	Left	3625.0	55990	20 MHz/QPSK	1	49	0	22.8	0.822	0.86

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 2450 MHz Body 802.11b & BT

MEASUREMENT RESULTS									
Plot	Gap	Position	Frequency		Modulation	Antenna	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.			(dBm)		
-----	0 mm	Back	2437	6	DSSS	Primary	14.50	0.198	0.31
-----			2437	6	DSSS	Secondary	14.50	0.126	0.13
-----		Top	2437	6	DSSS	Primary	14.50	0.731	1.16
-----			2462	11	DSSS		14.42	0.762	1.23
-----		Left	2437	6	DSSS	Secondary	14.50	1.05	1.05
15			2462	11	DSSS		14.46	1.08	1.09
-----		Back	2441	39	GMSK	Secondary	11.47	0.0632	0.07
-----		Left	2441	39	GMSK	Secondary	11.47	0.353	0.40
-----		Repeated	2462	11	DSSS	Secondary	14.46	1.06	1.07

Head
1.6 W/kg (mW/g)
averaged over 1 gram

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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SAR Data Summary – 5250 MHz Body 802.11a

MEASUREMENT RESULTS									
Plot	Gap	Position	Frequency		Modulation	Antenna	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.			(dBm)		
-----	0 mm	Back	5300	60	OFDM	Primary	12.75	0.287	0.46
-----			5300	60	OFDM	Secondary	12.75	0.125	0.13
-----		Top	5280	56	OFDM	Primary	12.75	0.685	1.09
-----			5300	60	OFDM		12.75	0.682	1.08
-----		Left	5280	56	OFDM	Secondary	12.75	1.03	1.03
16			5300	60	OFDM		12.75	1.06	1.06
-----		Repeated	5300	60	OFDM	Secondary	12.75	1.04	1.04
					Head 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 5600 MHz Body 802.11a

MEASUREMENT RESULTS									
Plot	**Gap**	**Position**	**Frequency**		**Modulation**	**Antenna**	**End Power**	**Measured SAR**	**Reported SAR**
			MHz	**Ch.**			**(dBm)**	**(W/kg)**	**(W/kg)**
-----	0 mm	Back	5620	124	OFDM	Primary	12.50	0.307	0.43
-----			5620	124	OFDM	Secondary	12.50	0.125	0.13
-----		Top	5580	116	OFDM	Primary	12.50	1.02	1.44
17			5620	124	OFDM		12.50	1.09	1.54
-----		Left	5580	116	OFDM	Secondary	12.50	1.03	1.03
-----			5620	124	OFDM		12.50	1.04	1.04
-----		Repeated	5620	124	OFDM	Primary	12.50	1.07	1.51
					Head 1.6 W/kg (mW/g) averaged over 1 gram				

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

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Vice President

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SAR Data Summary – 5800 MHz Body 802.11a

MEASUREMENT RESULTS									
Plot	Gap	Position	Frequency		Modulation	Antenna	End Power	Measured SAR (W/kg)	Reported SAR (W/kg)
			MHz	Ch.			(dBm)		
-----	0 mm	Back	5785	157	OFDM	Primary	13.00	0.311	0.39
-----			5785	157	OFDM	Secondary	13.00	0.111	0.11
18		Top	5785	157	OFDM	Primary	13.00	1.06	1.33
-----			5825	165	OFDM		13.00	1.03	1.30
-----		Left	5785	157	OFDM	Secondary	13.00	1.01	1.01
-----			5825	165	OFDM		13.00	1.04	1.04
-----		Repeated	5785	157	OFDM	Primary	13.00	1.04	1.31
						Head 1.6 W/kg (mW/g) averaged over 1 gram			

1. Battery is fully charged for all tests.
   Power Measured ☒Conducted ☐ERP ☐EIRP
2. SAR Measurement
   Phantom Configuration ☐Left Head ☒Eli4 ☐Right Head
   SAR Configuration ☐Head ☒Body
3. Test Signal Call Mode ☒Test Code ☐Base Station Simulator
4. Test Configuration ☐With Belt Clip ☐Without Belt Clip ☒N/A
5. Tissue Depth is at least 15.0 cm

Jay M. Moulton
Vice President

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Carrier Aggregation Evaluation

Downlink Only Carrier Aggregation

This device supports LTE Carrier Aggregation (CA) in the downlink. All uplink communications are identical to Release 8 specifications. Per FCC KDB Publication 941225 D05A v01r02 and Fall 2017 TCB Workshop Notes, SAR for LTE CA operations was not needed since the maximum average output power in LTE CA mode was not >0.25 dB higher than the maximum output power when downlink carrier aggregation was inactive.

Conducted power measurements with LTE Carrier Aggregation (CA) (downlink only) active are made in accordance to KDB Publication 941225 D05A v01r02. The RRC connection is only handled by one cell, the primary component carrier (PCC) for downlink and uplink communications. After making a data connection to the PCC, the UE device adds secondary component carrier(s) (SCC) on the downlink only. All uplink communications and acknowledgements remain identical to specifications when downlink carrier aggregation is inactive on the PCC. For every supported combination of downlink only carrier aggregation, additional conducted output power are measured with the downlink carrier aggregation active for the configuration with the highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05A v01r02, no SAR measurements are required for carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25 dB higher than the average output power with the downlink only carrier aggregation inactive.

Uplink Only Carrier Aggregation

This device supports LTE Carrier Aggregation (CA) in the uplink for LTE Band 5, Band 7, Band 41, Band 42, Band 43 and Band 48 with two component carriers in the uplink. SAR measurements and conducted powers were evaluated per 2017 Fall TCB Workshop Notes and 2018 Fall TCB Workshop Notes.

For LTE Band 5, Band 7, Band 41, Band 42, Band 43 and Band 48, per Fall 2018 Workshop Notes, SAR was first measured with only a single carrier active in the uplink (carrier aggregation not active). For each inter-band exposure condition, the single uplink SAR values are provided in table 2 below. If the single uplink 1 gram SAR values for each band are both less than 0.8 W/kg and the algebraic summation of the 1 gram SAR values are less than 1.45 W/kg no additional measurements are required. See table 3 below for results.

MIMO

This device only supports LTE downlink 2x2 MIMO. Per Fall 2017 TCB Workshop Notes, SAR for LTE MIMO operations was not needed since the maximum average output power in LTE MIMO mode was not >0.25 dB higher than the maximum output power when MIMO is inactive. See Appendix H for conducted power data.

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Table 1 – Carrier Aggregation Downlink Combinations

1 Band/2CC	2 Band/2CC
2A-2A	2A-5A
2C	2A-7A
XXXXX	2A-12A
XXXXX	2A-13A
XXXXX	2A-14A
XXXXX	2A-71A
4A-4A	4A-5A
XXXXX	4A-7A
XXXXX	4A-12A
XXXXX	4A-13A
XXXXX	4A-71A
5B	5A-66A
7A-7A	7A-12A
7B	XXXXX
7C	XXXXX
12B	12A-66A
XXXXX	13A-66A
XXXXX	14A-66A
25A-25A	25A-26A
XXXXX	26A-41A
41A-41A	XXXXX
41C	XXXXX
42A	XXXXX
42A	XXXXX
42C43C	XXXXX
48A-48A	XXXXX
48C	XXXXX
66A-66A	66A-71A
66B	XXXXX
66C	XXXXX

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SAR Data Summary – Simultaneous Transmit (WWAN-WLAN Main)

MEASUREMENT RESULTS				
Plot	**Position**	**SAR (W/kg) WLAN**	**SAR (W/kg) WWAN**	**Total SAR (W/kg)**
-----	Back	0.39	0.51	0.82
-----	Top	1.54	0.23	1.77
-----	Left	0.40	1.13	1.53
			Head 1.6 W/kg (mW/g) averaged over 1 gram	

The WLAN Left side SAR value was calculated per KDB447498 D01 v06 section 4.3.2 b) 1). The antenna is more than 50 mm from the left side; therefore, the SAR value is set at 0.4 W/kg.

MEASUREMENT RESULTS – WWAN-WiFi (Main)													
Position	**Frequency**		**Maxima**			**Frequency**		**Maxima**			**SAR_1**	**SAR_2**	**SAR Total**
	MHz	**Ch.**	**X**	**Y**	**Z**	**MHz**	**Ch.**	**X**	**Y**	**Z**			
Top	5620	124	1.35	-19.20	-1.64	3500	42590	14.0	-152.0	1.52	1.54	0.23	1.77
											Head Tissue 1.6 W/kg (mW/g) averaged over 1 gram		

Top – 133.4 mm SPLSR=0.02

Simultaneous Separation Ratio Calculation
$(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04$ rounded to two digits

SAR Data Summary – Simultaneous Transmit (WWAN-WLAN Secondary)

MEASUREMENT RESULTS				
Plot	**Position**	**SAR (W/kg) WLAN**	**SAR (W/kg) WWAN**	**Total SAR (W/kg)**
-----	Back	0.13	0.51	0.64
-----	Top	0.40	0.23	0.63
-----	Left	1.09	1.13	2.22
			Head 1.6 W/kg (mW/g) averaged over 1 gram	

The WLAN Top side SAR value was calculated per KDB447498 D01 v06 section 4.3.2 b) 1). The antenna is more than 50 mm from the top side; therefore, the SAR value is set at 0.4 W/kg.

MEASUREMENT RESULTS – WWAN-WiFi (Main)													
Position	**Frequency**		**Maxima**			**Frequency**		**Maxima**			**SAR_1**	**SAR_2**	**SAR Total**
	MHz	**Ch.**	**X**	**Y**	**Z**	**MHz**	**Ch.**	**X**	**Y**	**Z**			
Left	2462	11	-0.05	-71.97	-1.24	1780	132572	4.00	30.00	-0.06	1.09	1.13	2.22
											Head Tissue 1.6 W/kg (mW/g) averaged over 1 gram		

Left – 102.1 mm SPLSR=0.03

Simultaneous Separation Ratio Calculation
$(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04$ rounded to two digits

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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
ELI4 Flat Phantom	N/A	N/A	1065
ELI5 Flat Phantom	N/A	N/A	2037
Device Holder	N/A	N/A	N/A
Data Acquisition Electronics 4	01/12/2023	01/12/2022	1321
Data Acquisition Electronics 4	04/22/2022	04/22/2021	1416
SPEAG E-Field Probe EX3DV4	01/14/2023	01/14/2022	7530
SPEAG E-Field Probe EX3DV4	04/16/2022	04/16/2021	7531
Speag Validation Dipole D600V3	02/18/2022	02/18/2019	1012
Speag Validation Dipole D750V2	06/04/2022	06/04/2021	1053
Speag Validation Dipole D900V2	06/04/2022	06/04/2021	1d128
Speag Validation Dipole D1750V2	06/03/2022	06/03/2021	1061
Speag Validation Dipole D1900V2	06/04/2022	06/04/2021	5d147
Speag Validation Dipole D2550V2	06/03/2022	06/03/2021	1003
Speag Validation Dipole D3500V2	04/13/2022	04/13/2021	1061
Speag Validation Dipole D3700V2	04/13/2022	04/13/2021	1024
Speag Validation Dipole D2450V2	06/03/2022	06/03/2021	881
Speag Validation Dipole D5GHzV2	06/08/2022	06/08/2021	1119
Agilent N1911A Power Meter	03/16/2022	03/16/2021	GB45100254
Agilent N1922A Power Sensor	03/17/2022	03/17/2021	MY45240464
Agilent (HP) 8561E Spectrum Analyzer	03/15/2022	03/15/2021	31720068
Agilent (HP) 8350B Signal Generator	03/16/2022	03/16/2021	2749A10226
Agilent (HP) 83525A RF Plug-In	03/16/2022	03/16/2021	2647A01172
Agilent (HP) 8753C Vector Network Analyzer	03/15/2022	03/15/2021	3135A01724
Agilent (HP) 85047A S-Parameter Test Set	03/15/2022	03/15/2021	2904A00595
Anritsu MT8820C	04/23/2022	04/23/2021	6201381721
Aprel Dielectric Probe Assembly	N/A	N/A	0011
Head Equivalent Matter (600 MHz)	N/A	N/A	N/A
Head Equivalent Matter (750 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

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12. Conclusion

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the FCC/IC. 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.

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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.

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Appendix A – System Validation Plots and Data

```
************************************************************
Test Result for UIM Dielectric Parameter
Thu 03/Feb/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   42.22  0.91
0.5900        42.77  0.88   42.16  0.92
0.6000        42.72  0.88   42.11  0.92
0.6100        42.67  0.88   42.06  0.93
0.6200        42.62  0.88   42.01  0.93
0.6300        42.56  0.88   41.94  0.93
0.6400        42.51  0.88   41.88  0.93
0.6500        42.46  0.88   41.82  0.93
0.6600        42.41  0.88   41.76  0.94
0.6700        42.36  0.89   41.70  0.94
0.6730        42.345 0.89   41.682 0.94*
0.6800        42.31  0.89   41.64  0.94
0.6805        42.307 0.89   41.637 0.941*
0.6880        42.262 0.89   41.592 0.948*
0.6900        42.25  0.89   41.58  0.95
0.7000        42.20  0.89   41.52  0.95

* value intepolated

************************************************************
Test Result for UIM Dielectric Parameter
Wed 02/Feb/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
0.7000        42.20  0.89   41.76  0.86
0.7040        42.18  0.89   41.732 0.864*
0.7075        42.163 0.89   41.708 0.868*
0.7100        42.15  0.89   41.69  0.87
0.7110        42.145 0.89   41.685 0.871*
0.7200        42.10  0.89   41.64  0.88
0.7300        42.05  0.89   41.57  0.89
0.7400        41.99  0.89   41.51  0.89
0.7500        41.94  0.89   41.46  0.90
0.7600        41.89  0.89   41.40  0.91
0.7700        41.84  0.89   41.34  0.92
0.7800        41.79  0.90   41.28  0.92
0.7820        41.778 0.90   41.268 0.922*
0.7900        41.73  0.90   41.22  0.93
0.7930        41.715 0.90   41.208 0.93*
0.8000        41.68  0.90   41.18  0.93

* value interpolated

************************************************************
Test Result for UIM Dielectric Parameter
Wed 02/Feb/2022
```


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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	41.52	0.89
0.8100	41.63	0.90	41.47	0.90
0.8200	41.58	0.90	41.41	0.91
0.8215	41.573	0.90	41.418	0.91*
0.8264	41.548	0.90	41.442	0.91*
0.8300	41.53	0.90	41.46	0.91
0.8315	41.526	0.902	41.456	0.912*
0.8366	41.51	0.907	41.44	0.917*
0.8400	41.50	0.91	41.43	0.92
0.8415	41.50	0.912	41.427	0.922*
0.8466	41.50	0.917	41.417	0.927*
0.8500	41.50	0.92	41.41	0.93
0.8600	41.50	0.93	41.39	0.94
0.8700	41.50	0.94	41.37	0.95
0.8800	41.50	0.95	41.36	0.96
0.8900	41.50	0.96	41.35	0.97
0.9000	41.50	0.97	41.34	0.98
0.9100	41.50	0.98	41.33	0.99
0.9200	41.49	0.98	41.32	0.99

* value interpolated

****
Test Result for UIM Dielectric Parameter
Mon 31/Jan/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	39.34	1.36
1.7100	40.14	1.35	39.32	1.37
1.7124	40.138	1.35	39.315	1.372*
1.7200	40.13	1.35	39.30	1.38
1.7300	40.11	1.36	39.28	1.38
1.7326	40.105	1.363	39.275	1.383*
1.7400	40.09	1.37	39.26	1.39
1.7450	40.085	1.37	39.25	1.395*
1.7500	40.08	1.37	39.24	1.40
1.7526	40.075	1.373	39.235	1.403*
1.7600	40.06	1.38	39.22	1.41
1.7700	40.05	1.38	39.20	1.42
1.7800	40.03	1.39	39.18	1.42
1.7900	40.02	1.39	39.16	1.43

* value interpolated

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```
************************************************************
Test Result for UIM Dielectric Parameter
Fri 28/Jan/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   39.97  1.37
1.8524        40.00  1.40   39.65  1.372*
1.8600        40.00  1.40   39.95  1.38
1.8700        40.00  1.40   39.93  1.38
1.8800        40.00  1.40   39.91  1.39
1.8825        40.00  1.40   39.905 1.39*
1.8900        40.00  1.40   39.89  1.39
1.9000        40.00  1.40   39.87  1.39
1.9050        40.00  1.40   39.86  1.395*
1.9076        40.00  1.40   39.855 1.398*
1.9100        40.00  1.40   39.85  1.40
1.9200        40.00  1.40   39.84  1.41

* value interpolated
************************************************************
Test Result for UIM Dielectric Parameter
Thu 27/Jan/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   39.09  1.86
2.5000        39.14  1.85   39.07  1.87
2.5060        39.128 1.862  39.052 1.876*
2.5100        39.12  1.87   39.04  1.88
2.5200        39.11  1.88   39.02  1.90
2.5300        39.10  1.89   39.00  1.91
2.5350        39.095 1.895  38.985 1.915*
2.5400        39.09  1.90   38.97  1.92
2.5445        39.081 1.905  38.961 1.929*
2.5500        39.07  1.91   38.95  1.94*
2.5600        39.06  1.92   38.93  1.95
2.5700        39.05  1.93   38.90  1.96
2.5800        39.03  1.94   38.88  1.98
2.5900        39.02  1.95   38.85  1.99
2.5930        39.017 1.953  38.853 1.99*
2.6000        39.01  1.96   38.86  1.99
2.6100        39.00  1.97   38.84  2.00
2.6200        38.98  1.99   38.83  2.01
2.6300        38.97  2.00   38.81  2.02
2.6400        38.96  2.01   38.79  2.03
2.6415        38.959 2.012  38.787 2.032*
2.6500        38.95  2.02   38.77  2.04
2.6600        38.93  2.03   38.76  2.05
2.6700        38.92  2.04   38.74  2.06
2.6800        38.91  2.05   38.72  2.07
2.6900        38.89  2.06   38.70  2.08
2.7000        38.88  2.07   38.69  2.09

* value interpolated
```


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```
************************************************************
Test Result for UIM Dielectric Parameter
Tue 01/Feb/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
3.3800	38.07	2.79	37.25	2.84
3.3900	38.05	2.80	37.23	2.85
3.4000	38.04	2.81	37.21	2.86
3.4100	38.03	2.82	37.19	2.87
3.4200	38.02	2.83	37.18	2.88
3.4300	38.01	2.84	37.16	2.89
3.4400	38.00	2.85	37.14	2.90
3.4550	37.985	2.865	37.11	2.915*
3.4500	37.99	2.86	37.12	2.91
3.4600	37.97	2.87	37.10	2.92
3.4700	37.96	2.88	37.07	2.93
3.4800	37.95	2.89	37.05	2.94
3.4900	37.94	2.90	37.03	2.95
3.5000	37.93	2.91	37.00	2.96
3.5100	37.92	2.92	36.98	2.97
3.5200	37.91	2.93	36.96	2.98
3.5300	37.89	2.94	36.93	2.99
3.5400	37.88	2.95	36.90	3.84
3.5450	37.875	2.955	36.885	3.85*
3.5500	37.87	2.96	36.87	3.86
3.5600	37.86	2.97	36.85	3.88
3.5700	37.85	2.98	36.83	3.91
3.5800	37.84	2.99	36.81	3.93
3.5900	37.83	3.00	36.78	3.95
3.5925	37.825	3.005	36.775	3.955*
3.6000	37.81	3.02	36.76	3.97
3.6100	37.80	3.03	36.74	3.00
3.6200	37.79	3.04	36.73	3.01
3.6250	37.785	3.045	36.715	3.015*
3.6300	37.78	3.05	36.70	3.02
3.6400	37.77	3.06	36.67	3.03
3.6500	37.76	3.07	36.64	3.04
3.6575	37.753	3.078	36.625	3.048*
3.6600	37.75	3.08	36.62	3.05
3.6700	37.73	3.09	36.60	3.06
3.6800	37.72	3.10	36.58	3.07
3.6900	37.71	3.11	36.55	3.08
3.7000	37.70	3.12	36.53	3.09
3.7100	37.69	3.13	36.50	3.10
3.7200	37.68	3.14	36.48	3.11

* value interpolated

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```
************************************************************
Test Result for UIM Dielectric Parameter
Thu 03/Feb/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
2.4100	39.26	1.76	38.44	1.76
2.4120	39.258	1.762	38.436	1.762*
2.4200	39.25	1.77	38.42	1.77
2.4300	39.24	1.78	38.40	1.78
2.4370	39.226	1.787	38.393	1.794*
2.4400	39.22	1.79	38.39	1.80
2.4420	39.216	1.792	38.38	1.802*
2.4500	39.20	1.80	38.34	1.81
2.4600	39.19	1.81	38.34	1.82
2.4620	39.186	1.812	38.336	1.822*
2.4700	39.17	1.82	38.32	1.83
2.4720	39.168	1.822	38.316	1.836*
2.4800	39.16	1.83	38.30	1.86

* value interpolated

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************************************************************
Test Result for UIM Dielectric Parameter
Fri 04/Feb/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
5.1000	36.10	4.55	34.94	4.56
5.1200	36.08	4.57	34.92	4.58
5.1400	36.05	4.59	34.89	4.60
5.1600	36.03	4.61	34.87	4.63
5.1800	36.01	4.63	34.85	4.65
5.2000	35.99	4.65	34.82	4.67
5.2200	35.96	4.68	34.80	4.69
5.2400	35.94	4.70	34.78	4.71
5.2500	35.93	4.71	34.765	4.725*
5.2600	35.92	4.72	34.75	4.74
5.2800	35.89	4.74	34.72	4.76
5.3000	35.87	4.76	34.69	4.78
5.3200	35.85	4.78	34.67	4.80
5.3400	35.83	4.80	34.65	4.83
5.3600	35.80	4.82	34.63	4.85
5.3800	35.78	4.84	34.60	4.87
5.4000	35.76	4.86	34.58	4.89
5.4200	35.73	4.88	34.56	4.92
5.4400	35.71	4.90	34.55	4.94
5.4600	35.69	4.92	34.52	4.96
5.4800	35.67	4.94	34.49	4.98
5.5000	35.64	4.96	34.46	5.00
5.5200	35.62	4.98	34.44	5.02
5.5400	35.60	5.00	34.42	5.04
5.5600	35.57	5.02	34.40	5.07
5.5800	35.55	5.04	34.37	5.09
5.6000	35.53	5.07	34.35	5.11
5.6200	35.51	5.09	34.32	5.13
5.6400	35.48	5.11	34.30	5.16
5.6600	35.46	5.13	34.28	5.18
5.6800	35.44	5.15	34.26	5.20
5.7000	35.41	5.17	34.23	5.22
5.7200	35.39	5.19	34.21	5.25
5.7400	35.37	5.21	34.19	5.27
5.7450	35.365	5.215	34.185	5.275*
5.7500	35.36	5.22	34.18	5.28*
5.7600	35.35	5.23	34.17	5.29
5.7800	35.32	5.25	34.15	5.31
5.7850	35.315	5.255	34.14	5.315*
5.8000	35.30	5.27	34.11	5.33
5.8200	35.28	5.29	34.09	5.36
5.8250	35.273	5.295	34.085	5.365*
5.8400	35.25	5.31	34.07	5.38
5.8600	35.23	5.33	34.05	5.40

* value interpolated

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RF Exposure Lab

Plot 1

DUT: Dipole 600 MHz D600V3; Type: D600V3; Serial: D600V3 - SN:1012

Communication System: CW; Frequency: 600 MHz; Duty Cycle: 1:1
Medium: HSL600; Medium parameters used: f = 600 MHz; σ = 0.92 S/m; ε_r = 42.11; ρ = 1000 kg/m^3
Phantom section: Flat Section

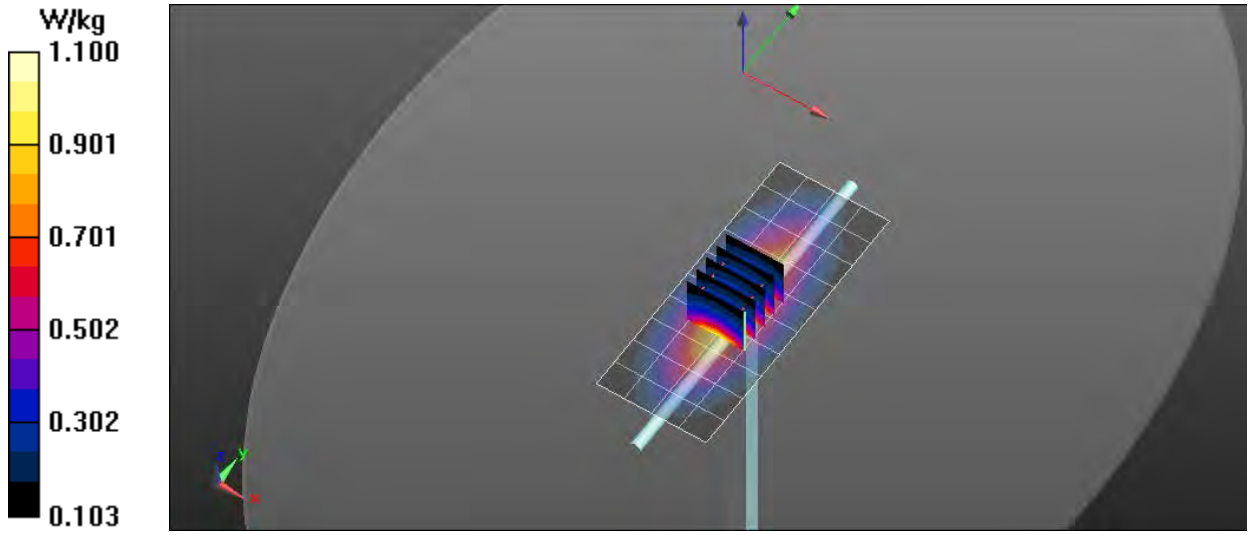
Test Date: Date: 2/3/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C

Probe: EX3DV4 – SN7531; ConvF(10.64, 10.64, 10.64); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

Head Verification/600 MHz/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.04 W/kg

Head Verification/600 MHz//Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.468 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.28 W/kg
P_{in}= 100 mW
SAR(1 g) = 0.656 W/kg; SAR(10 g) = 0.432 W/kg
Maximum value of SAR (measured) = 1.08 W/kg



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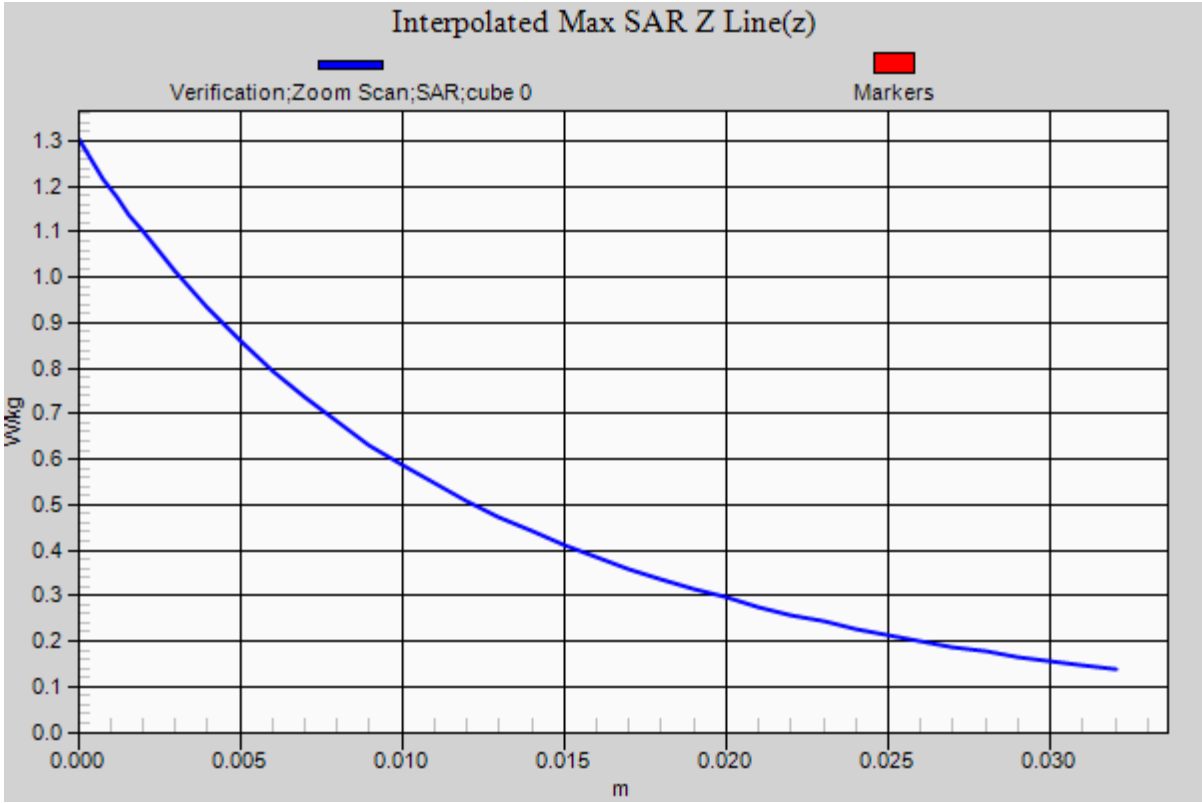

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Plot 2

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

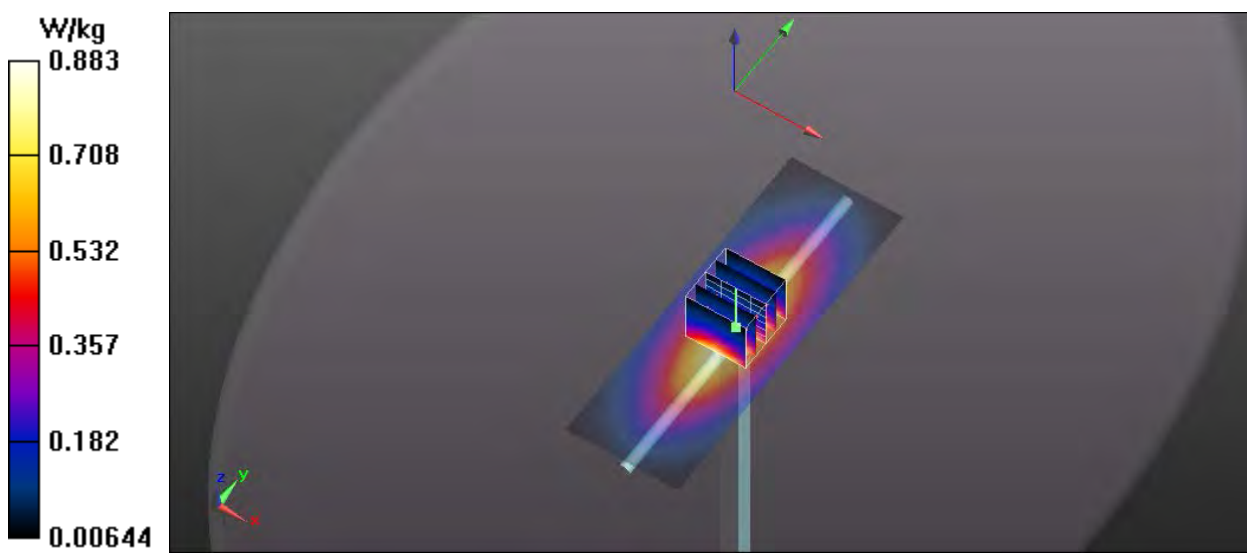
Communication System: CW; Frequency: 750 MHz; Duty Cycle: 1:1
Medium: HSL750; Medium parameters used (interpolated): f = 750 MHz; σ = 0.9 S/m; ε_r = 41.46; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 2/2/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7531; ConvF(10.49, 10.49, 10.49); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
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) = 0.883 W/kg

750 MHz Head/Verification /Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.949 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.691 mW/g
P_{in}= 100 mW
SAR(1 g) = 0.858 mW/g; SAR(10 g) = 0.552 mW/g
Maximum value of SAR (measured) = 0.888 W/kg



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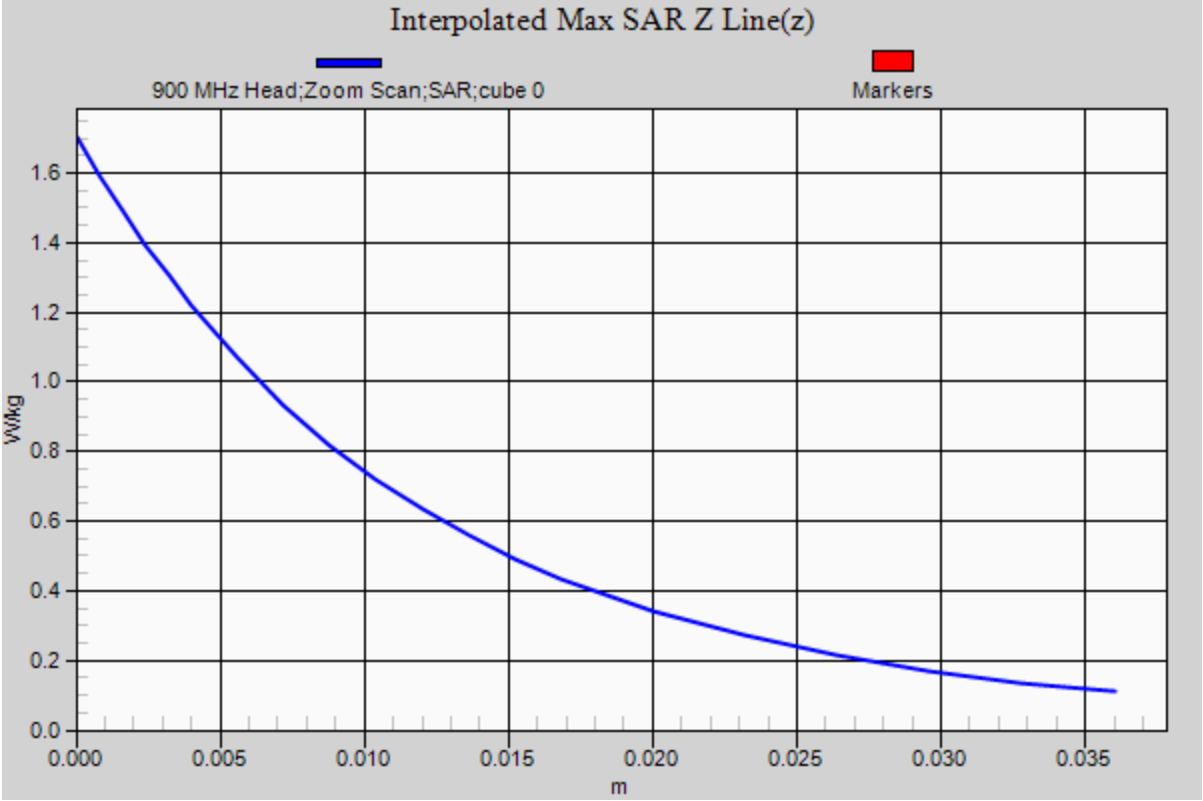

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Plot 3

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

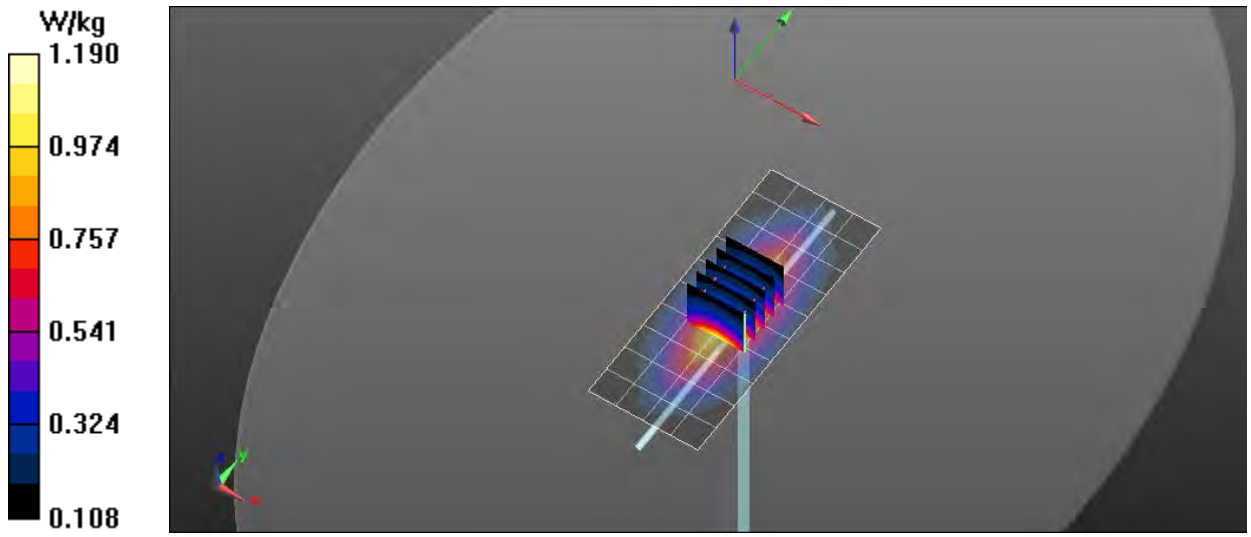
Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:1
Medium: HSL900; Medium parameters used: f = 900 MHz; σ = 0.98 S/m; ε_r = 41.34; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 2/2/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7531; ConvF(10.16, 10.16, 10.16); Calibrated: 4/15/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

900 MHz/Verification/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.19 W/kg

900 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 31.568 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.43 W/kg
P_{in}= 100 mW
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.712 W/kg
Maximum value of SAR (measured) = 1.2 W/kg



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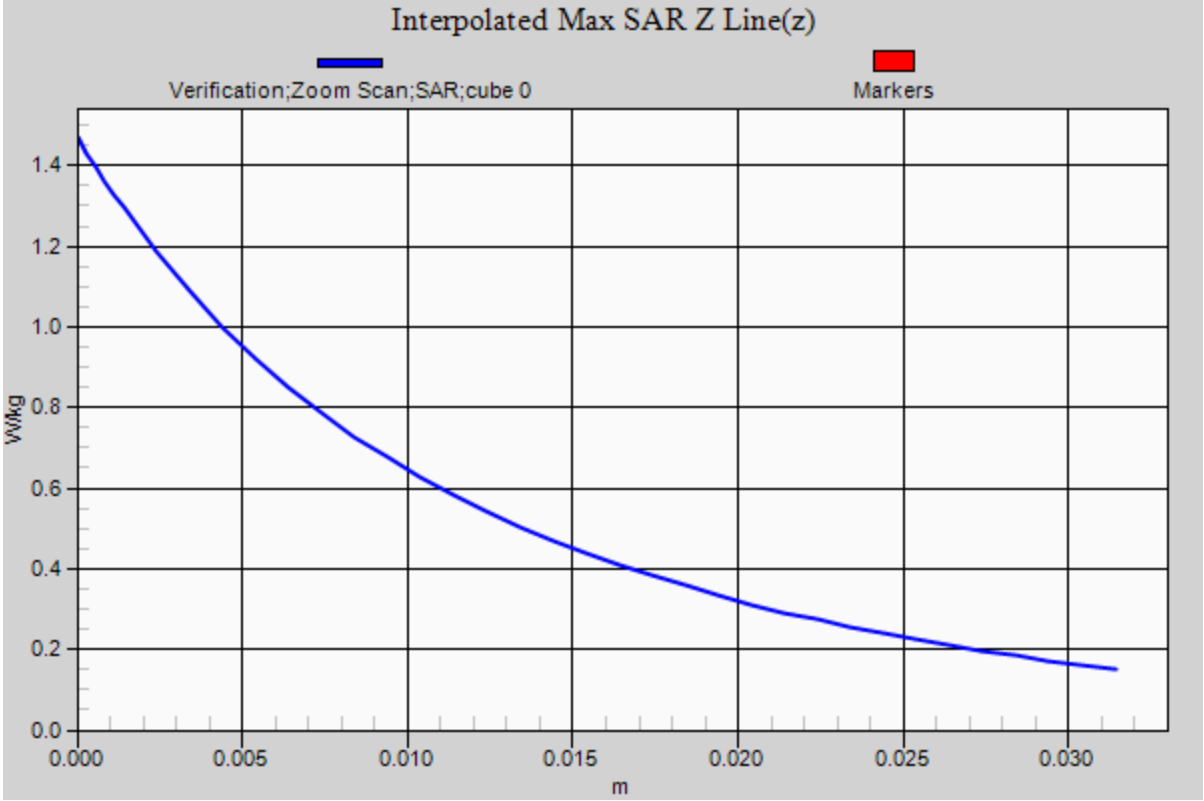

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RF Exposure Lab

Plot 4

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

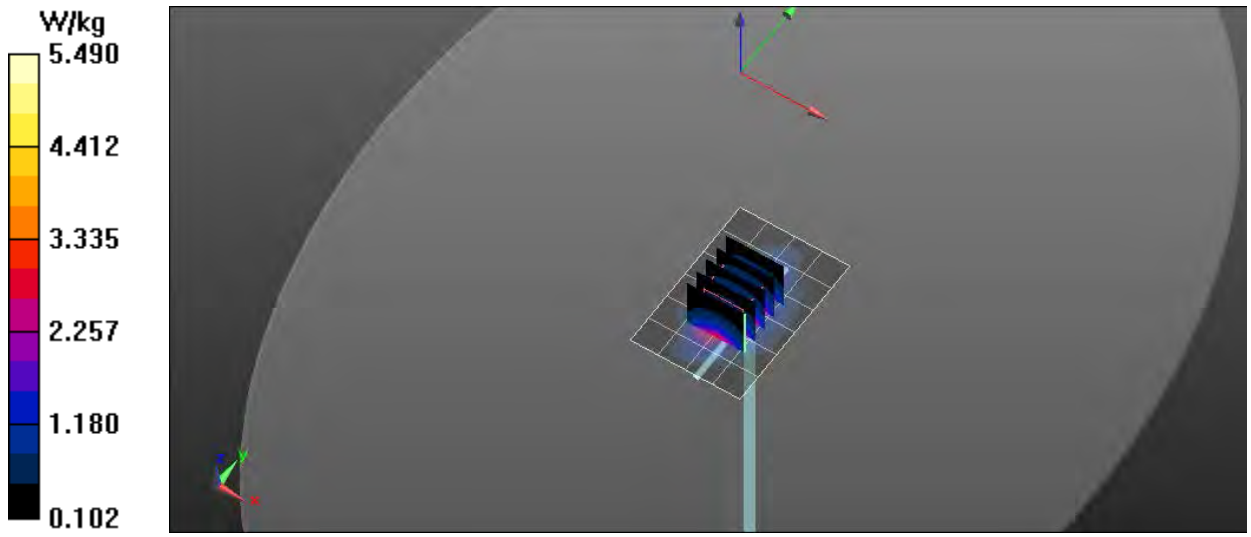
Communication System: CW; Frequency: 1750 MHz; Duty Cycle: 1:1
Medium: HSL1750; Medium parameters used: f = 1750 MHz; σ = 1.4 S/m; ε_r = 39.24; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 1/31/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7531; ConvF(8.57, 8.57, 8.57); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
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) = 5.38 W/kg

1750 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 33.639 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 6.87 W/kg
P_{in}= 100 mW
SAR(1 g) = 3.78 W/kg; SAR(10 g) = 1.97 W/kg
Maximum value of SAR (measured) = 5.47 W/kg



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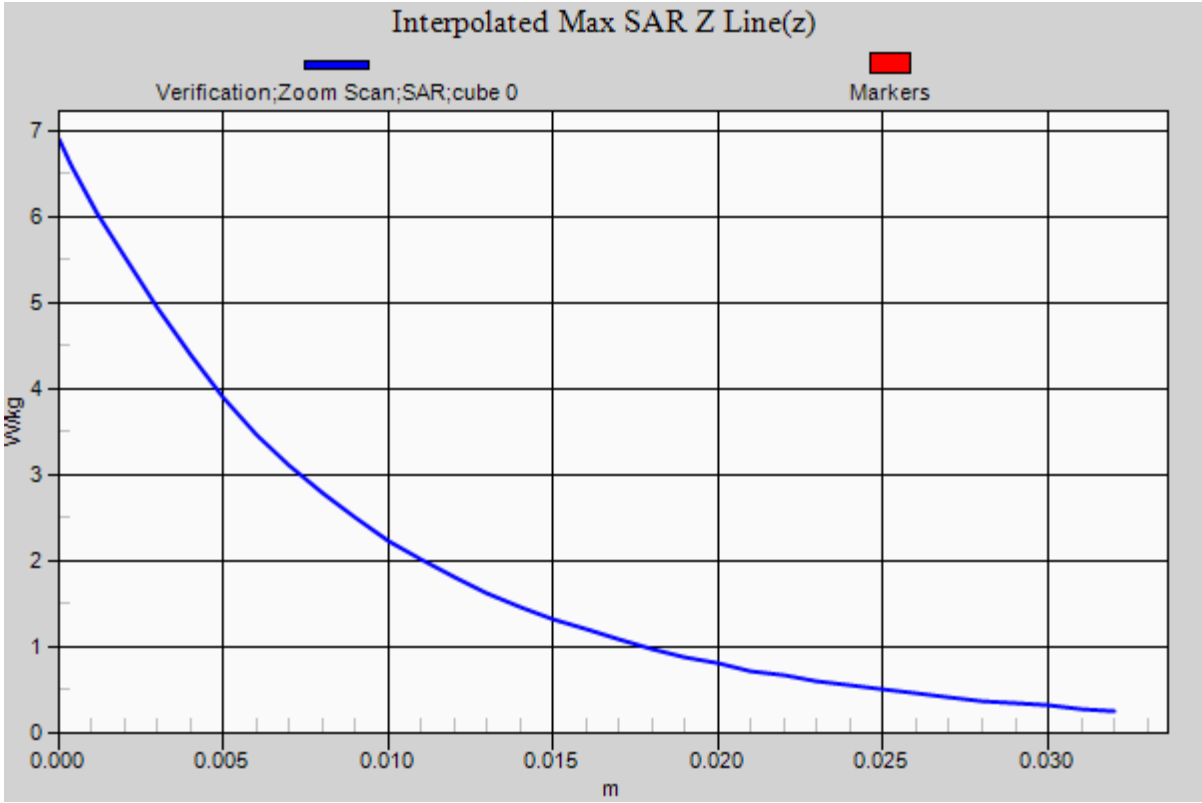

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RF Exposure Lab

Plot 5

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

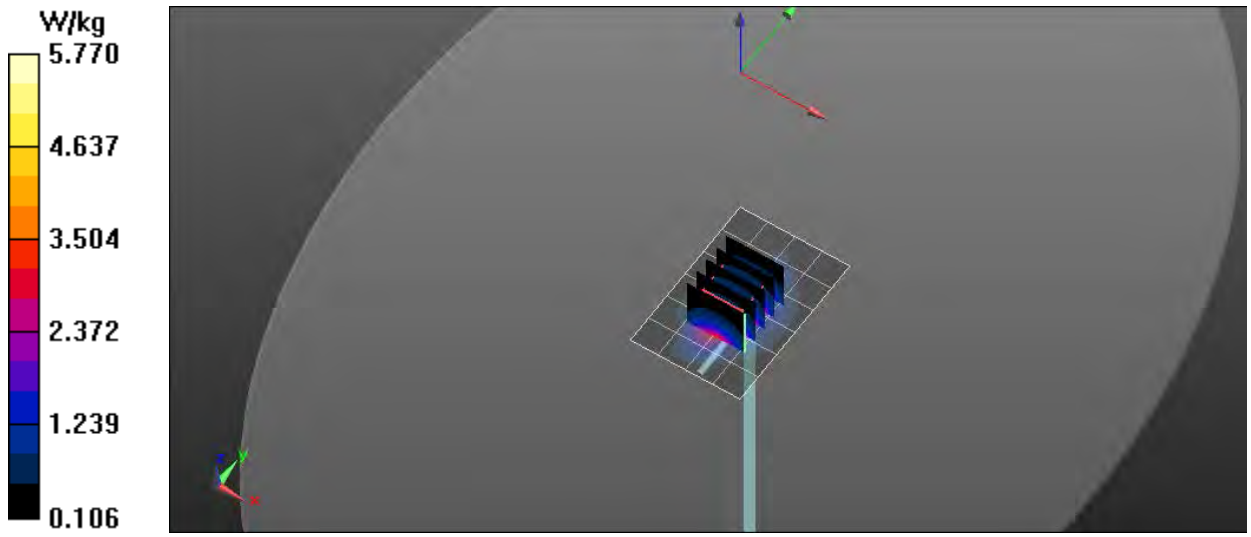
Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1
Medium: HSL1950; Medium parameters used: f = 1900 MHz; σ = 1.39 S/m; ε_r = 39.87; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 1/28/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7531; ConvF(8.05, 8.05, 8.05); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
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 (measured) = 5.52 W/kg

1900 MHz/Verification/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 32.186 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 7.25 W/kg
P_{in}= 100 mW
SAR(1 g) = 4.15 W/kg; SAR(10 g) = 2.16 W/kg
Maximum value of SAR (measured) = 5.79 W/kg



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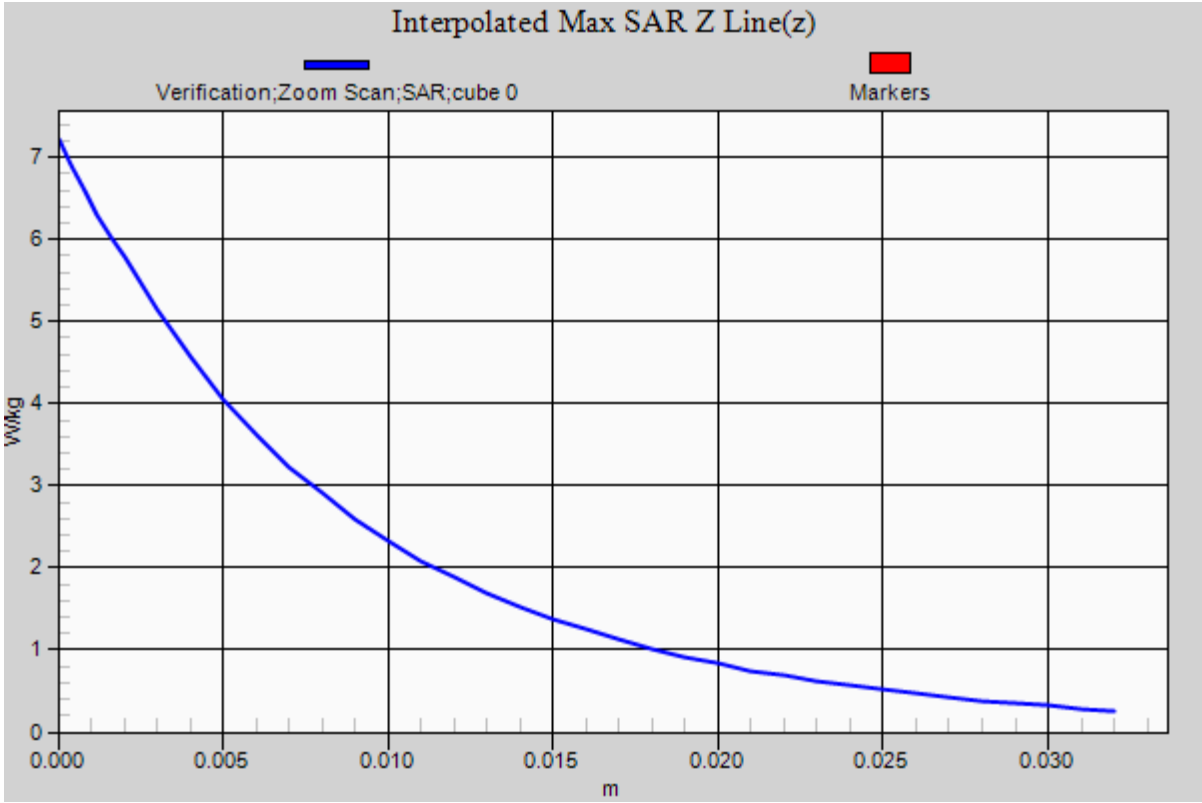

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Plot 6

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

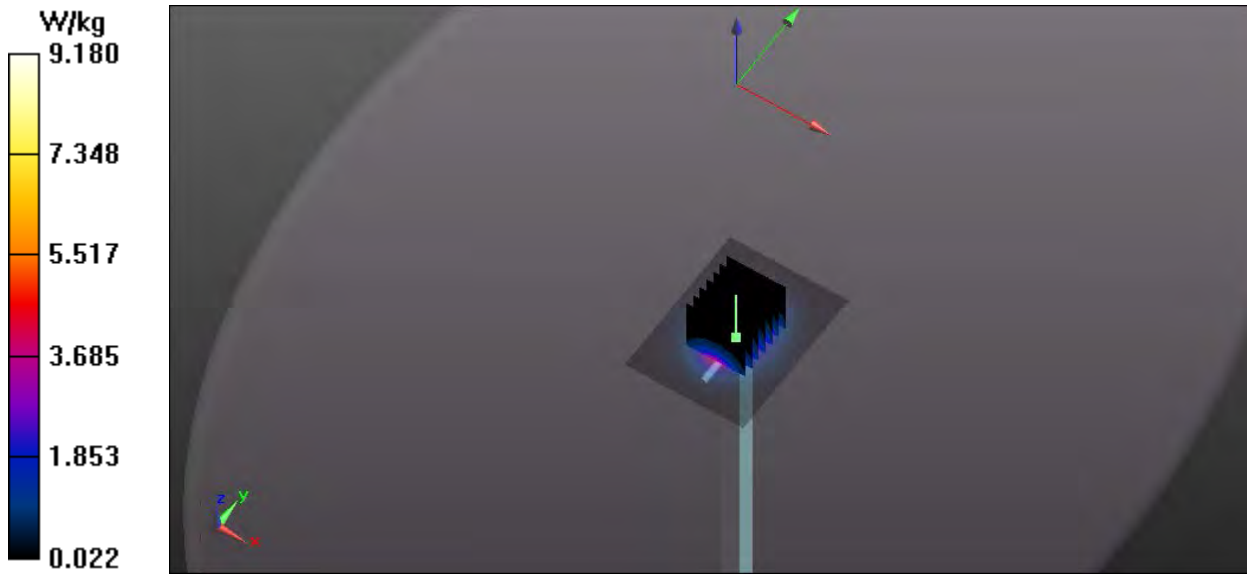
Communication System: CW; Frequency: 2550 MHz; Duty Cycle: 1:1
Medium: HSL2550; Medium parameters used: f = 2550 MHz; σ = 1.94 S/m; ε_r = 38.95; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 1/27/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7531; ConvF(7.3, 7.3, 7.3); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
Measurement SW: DASY52, Version 52.10 (0); SEMCAD X Version 14.6.10 (7417)

Procedure Notes:

2550 MHz Body/Verification/Area Scan (61x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 9.18 W/kg

2550 MHz Body/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 54.541 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 11.5 W/kg
P_{in}= 100 mW
SAR(1 g) = 5.64 W/kg; SAR(10 g) = 2.48 W/kg
Maximum value of SAR (measured) = 8.98 W/kg



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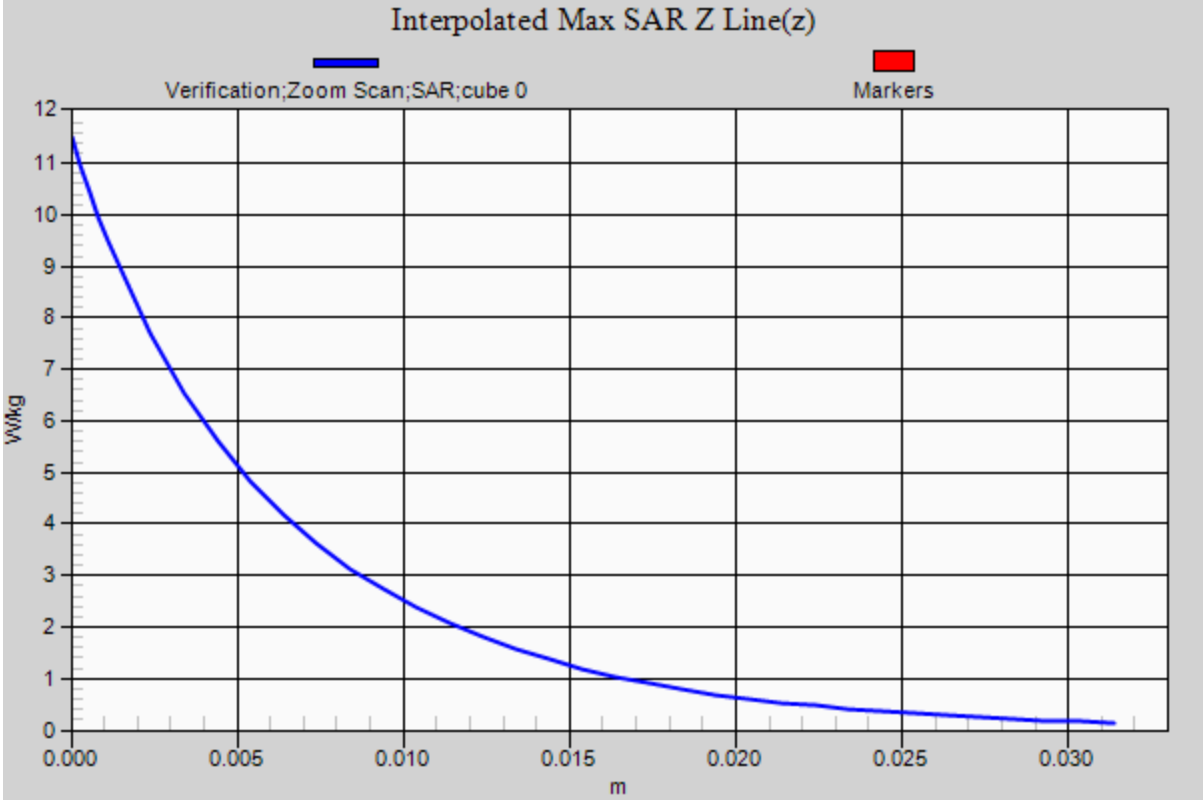

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Plot 7

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

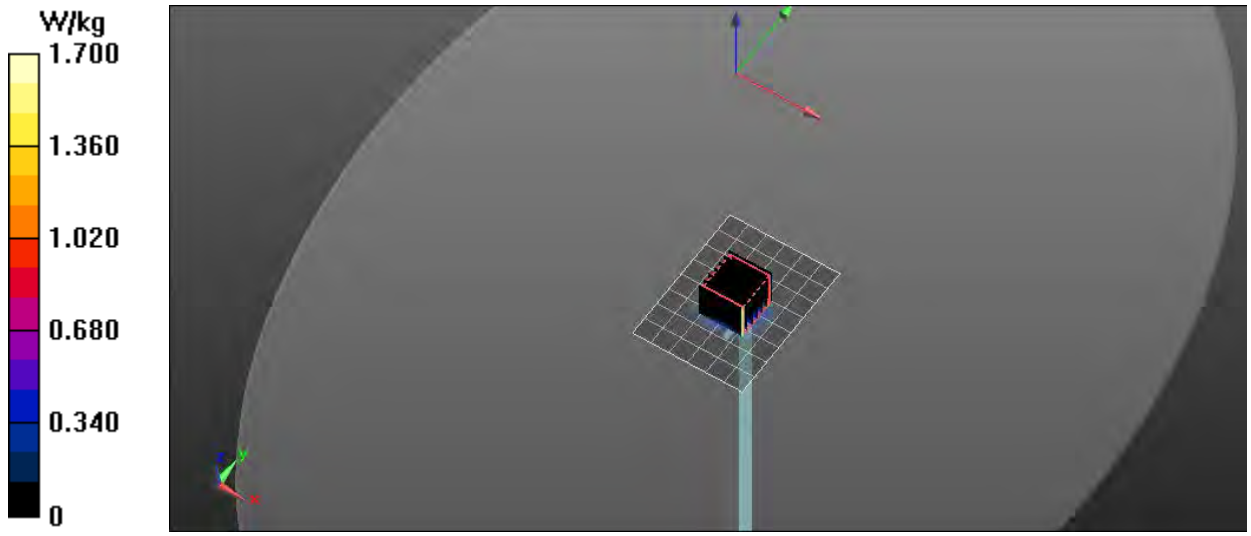
Communication System: CW; Frequency: 3500 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3500 MHz; σ = 2.96 S/m; ε_r = 37; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 2/1/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 - SN7531; ConvF(6.8, 6.8, 6.8); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
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) = 1.62 W/kg

3500 MHz Head/Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=4mm
Reference Value = 52.432 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.64 W/kg
P_{in}= 10 mW
SAR(1 g) = 0.678 W/kg; SAR(10 g) = 0.256 W/kg
Maximum value of SAR (measured) = 1.68 W/kg



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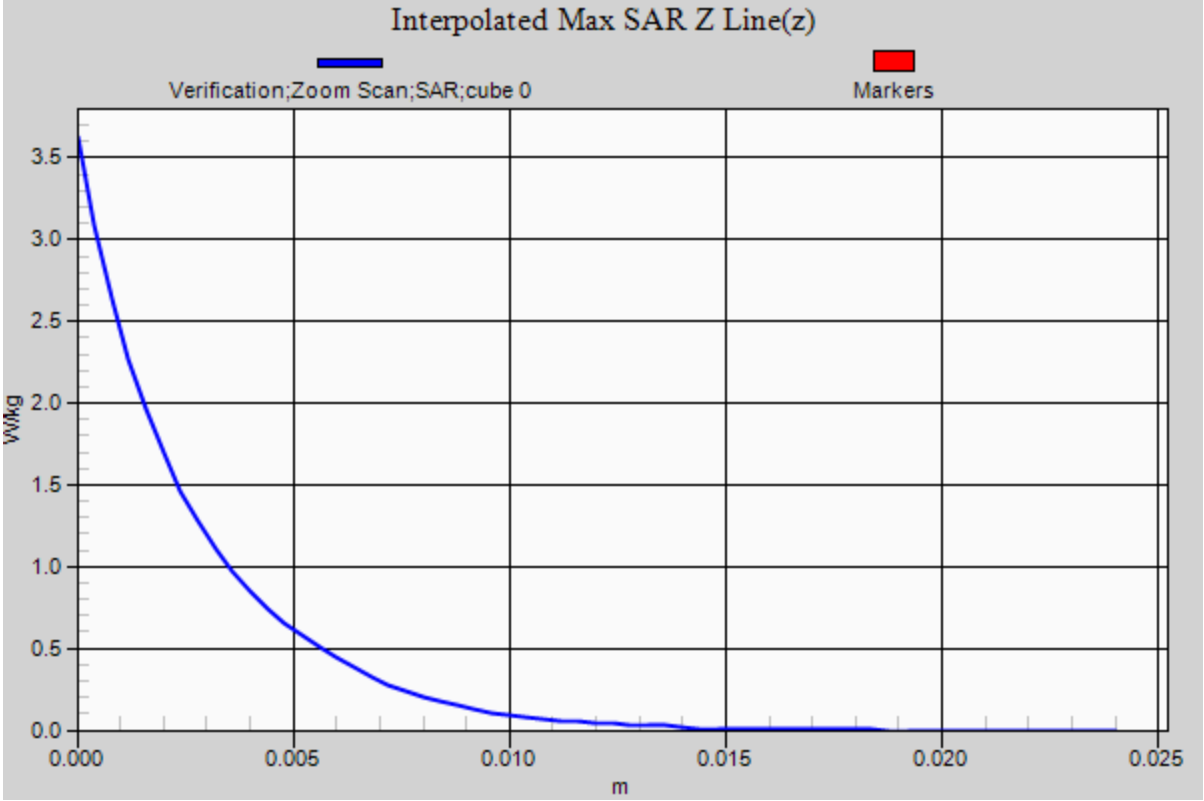

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Plot 8

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

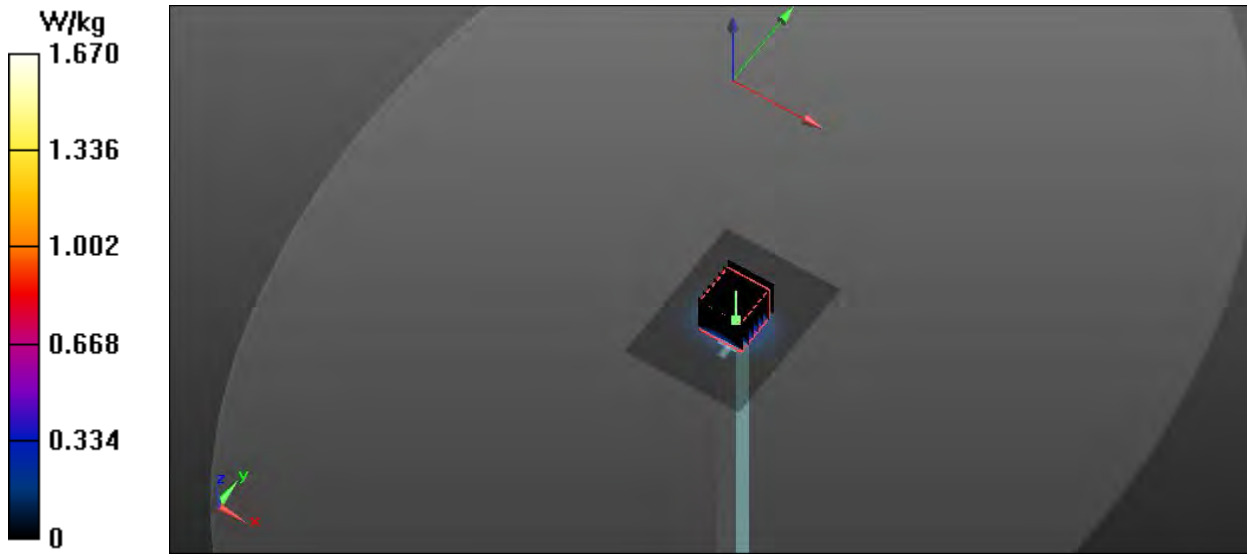
Communication System: CW; Frequency: 3700 MHz; Duty Cycle: 1:1
Medium: HSL 3-6 GHz; Medium parameters used: f = 3700 MHz; σ = 3.09 S/m; ε_r = 36.53; ρ = 1000 kg/m^3
Phantom section: Flat Section

Test Date: Date: 2/1/2022; Ambient Temp: 23 °C; Tissue Temp: 21 °C
Probe: EX3DV4 – SN7531; ConvF(6.4, 6.4, 6.4); Calibrated: 4/16/2021;
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE4 Sn1321; Calibrated: 1/12/2022
Phantom: ELI v4.0; Type: QDOVA001BB; Serial: 1065
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) = 1.63 W/kg

3700 MHz Head/Verification/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 54.976 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 3.35 W/kg
P_{in}= 10 mW
SAR(1 g) = 0.695 W/kg; SAR(10 g) = 0.252 W/kg
Maximum value of SAR (measured) = 1.71 W/kg



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