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SAR TEST REPORT

Applicant Name: **Panasonic Corporation of North America** Two Riverfront Plaza, 9th Floor, Newark, NJ 07102-5490, USA	**Date of Issue:** 12. 13, 2018 **Test Report No.:** HCT-SR-1811-FI001-R1 **Test Site: HCT CO., LTD.**

FCC ID: **ACJ9TGWW18A**

Equipment Type:	**Multi-Band Radio Module**
Application Type:	**Class II Permissive change**
FCC Rule Part(s):	**47CFR §2.1093**
Model Name:	**WW18A** **(Tested inside of Panasonic PC CF-33)**
Date of Test:	**10/01/2018 ~ 10/17/2018**

This device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in FCC KDB procedures and had been tested in accordance with the measurement procedures specified in FCC KDB procedures.

I attest to the accuracy of data. All measurements reported herein were performed by me 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.

Tested By

Parkinho

In-ho, Park
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

DOCUMENT HISTORY

Rev.	DATE	DESCRIPTION
HCT-SR-1811-FI001	11. 29, 2018	First Approval Report
HCT-SR-1811-FI001-R1	12. 13, 2018	Attachment 8 was revised.

Table of Contents

1. ATTESTATION OF TEST RESULT OF DEVICE UNDER TEST

Test Laboratory	
Company Name:	HCT Co., LTD
Address:	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of Korea
Telephone:	+82 31 645 6300
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Attestation of SAR test result	
Applicant Name:	Panasonic Corporation of North America
FCC ID:	ACJ9TGWW18A
Model:	WW18A (Tested inside of Panasonic PC CF-33)
EUT Type:	Multi-Band Radio Module
Application Type:	Class II Permissive change

The Highest Reported SAR

Band	Tx. Frequency (MHz)	Equipment Class	Reported SAR 1g Body SAR (W/Kg)
UMTS 850	826.4 ~ 846.6	PCB	0.90
UMTS 1700	1 712.4 ~ 1 752.6	PCB	1.13
UMTS 1900	1 852.4 ~ 1 907.6	PCB	1.13
LTE Band 2 (PCS)	1 850.7 ~ 1 909.3	PCB	1.21
LTE Band 4	1 710.7 ~ 1754.3	PCB	1.12
LTE Band 5	824.7 ~ 848.3	PCB	1.08
LTE Band 7	2 502.5 ~ 2 567.5	PCB	0.75
LTE Band 12	699.7 ~ 715.3	PCB	0.87
LTE Band 13	779.5 ~ 784.5	PCB	1.00
LTE Band 14	790.5 ~ 795.5	PCB	1.05
LTE Band 26	814.7 ~ 848.3	PCB	0.98
LTE TDD Band 41	2 498.5 ~ 2 687.5	PCB	0.52
LTE Band 66	1 712.5 ~ 1 777.5	PCB	1.28
Simultaneous SAR per KDB 690783 D01v01r03			1.58
Date(s) of Tests:	10/01/2018 ~ 10/17/2018		

2. DEVICE UNDER TEST DESCRIPTION

2.1 Module : WW18A specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
UMTS 850	Voice / Data	826.4 ~ 846.6 MHz
UMTS 1700	Voice / Data	1 712.4 ~ 1 752.6 MHz
UMTS 1900	Voice / Data	1 852.4 ~ 1 907.6 MHz
LTE Band 2 (PCS)	Data	1 850.7 ~ 1 909.3 MHz
LTE Band 4	Data	1 710.7 ~ 1754.3 MHz
LTE Band 5	Data	824.7 ~ 848.3 MHz
LTE Band 7	Data	2 502.5 ~ 2 567.5 MHz
LTE Band 12	Data	699.7 ~ 715.3 MHz
LTE Band 13	Data	779.5 ~ 784.5 MHz
LTE Band 14	Data	790.5 ~ 795.5 MHz
LTE Band 26	Data	814.7 ~ 848.3 MHz
LTE TDD Band 41	Data	2 498.5 ~ 2 687.5 MHz
LTE Band 66 (AWS)	Data	1 712.5 ~ 1 777.5 MHz
WWAN Module	WW18A	
Device Serial Numbers	**Mode**	**Serial Number**
	UMTS 850/ 1700/ 1900 LTE Band 2/ 4/ 5/ 7/ 12/ 13/ 14/ 26/ 41/ 66	#1, #2, #9

Note :
The WLAN/BT SAR testing results were used to perform transmission simultaneous analysis from FCC SAR Test Report, Module model: WL16A with pre-existing FCC ID: ACJ9TGWL16A**,** Report No: 11424282H-A-R2.

2.2 Power Reduction for SAR

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under under some conditions when the device is being used in close proximity to the user's hand. All SAR evaluations for this device were performed at the maximum allowed output power when Proximity sensor is enabled. FCC KDB Publication 616217 D04v01r02 Sec.6 was used as a guideline for selecton SAR test distances for device when being used in Proximity sensor enabled conditions.

The reduced powers for the power reduction mechanisms were conformed via conducted power measurements at the RF Port.

2.3 Nominal and Maximum Output Power Specifications

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB publication 447498 D01v06.

2.3.1 Maximum PCE Output Power

Mode/Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	24.0	23.0	23.0
	Nominal	23.0	22.0	22.0
UMTS Band 4 (1700 MHz)	Maximum	24.0	23.0	23.0
	Nominal	23.0	22.0	22.0
UMTS Band 2 (1900 MHz)	Maximum	24.0	23.0	23.0
	Nominal	23.0	22.0	22.0

Mode / Band		Modulated Average (dBm)
LTE Band 2 (PCS)	Maximum	24.0
	Nominal	23.0
LTE Band 4	Maximum	24.0
	Nominal	23.0
LTE Band 5	Maximum	24.0
	Nominal	23.0
LTE Band 7	Maximum	23.0
	Nominal	22.0
LTE Band 12	Maximum	24.0
	Nominal	23.0
LTE Band 13	Maximum	24.0
	Nominal	23.0
LTE Band 14	Maximum	24.0
	Nominal	23.0
LTE Band 26	Maximum	24.0
	Nominal	23.0
LTE TDD Band 41	Maximum	23.0
	Nominal	22.0
LTE Band 66 (AWS)	Maximum	24.0
	Nominal	23.0

2.3.2 Power Reduction

Mode/Band		Modulated Average (dBm)		
		3GPP WCDMA	3GPP HSDPA	3GPP HSUPA
UMTS Band 5 (850 MHz)	Maximum	18.5	18.5	18.5
	Nominal	17.5	17.5	17.5
UMTS Band 4 (1700 MHz)	Maximum	15.9	15.9	15.9
	Nominal	14.9	14.9	14.9
UMTS Band 2 (1900 MHz)	Maximum	16.4	16.4	16.4
	Nominal	15.4	15.4	15.4

Mode / Band		Modulated Average (dBm)
LTE Band 2 (PCS)	Maximum	17.0
	Nominal	16.0
LTE Band 4	Maximum	16.5
	Nominal	15.5
LTE Band 5	Maximum	18.8
	Nominal	17.8
LTE Band 7	Maximum	14.2
	Nominal	13.2
LTE Band 12	Maximum	21.0
	Nominal	20.0
LTE Band 13	Maximum	19.4
	Nominal	18.4
LTE Band 14	Maximum	19.5
	Nominal	18.5
LTE Band 26	Maximum	18.5
	Nominal	17.5
LTE TDD Band 41	Maximum	16.2
	Nominal	15.2
LTE Band 66 (AWS)	Maximum	16.3
	Nominal	15.3

2.4 LTE information

Item.		Description
Frequency Range	LTE Band 2 (PCS)	1 850.7 ~ 1 909.3 MHz
	LTE Band 4 (AWS)	1 710.7 ~ 1 754.3 MHz
	LTE Band 5 (Cell)	824.7 ~ 848.3 MHz
	LTE Band 7	2 502.5 MHz ~ 2 567.5 MHz
	LTE Band 12	699.7 MHz~ 715.3 MHz
	LTE Band 13	779.5 ~ 784.5 MHz
	LTE Band 14	790.5 MHz ~ 795.5 MHz
	LTE Band 26	814.7 ~ 848.3 MHz
	LTE TDD Band 41	2 498.5 ~ 2 687.5 MHz
	LTE Band 66 (AWS)	1 712.5 ~ 1 777.5 MHz
Channel Bandwidths	LTE Band 2 (PCS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 4 (AWS)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 5 (Cell)	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE Band 7	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 12	1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	LTE Band 13	5 MHz, 10 MHz
	LTE Band 14	5 MHz, 10 MHz
	LTE Band 26	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	LTE TDD Band 41	5 MHz, 10 MHz, 15 MHz, 20 MHz
	LTE Band 66 (AWS)	5 MHz, 10 MHz, 15 MHz, 20 MHz

Channel Numbers & Freq.(MHz)		Low	Mid	High
LTE Band 2	1.4 MHz	1 850.7 (18607)	1 880.0 (18900)	1 909.3 (19193)
	3 MHz	1 851.5 (18615)	1 880.0 (18900)	1 908.5 (19185)
	5 MHz	1 852.5 (18625)	1 880.0 (18900)	1 907.5 (19175)
	10 MHz	1 855.0 (18650)	1 880.0 (18900)	1 905.0 (19150)
	15 MHz	1 857.5 (18675)	1 880.0 (18900)	1 902.5 (19125)
	20 MHz	1 860.0 (18700)	1 880.0 (18900)	1 900.0 (19100)
LTE Band 4	1.4 MHz	1 710.7 (19957)	1 732.5 (20175)	1 754.3 (20393)
	3 MHz	1 711.5 (19965)	1 732.5 (20175)	1 753.5 (20385)
	5 MHz	1 712.5 (19975)	1 732.5 (20175)	1 752.5 (20375)
	10 MHz	1 715.0 (20000)	1 732.5 (20175)	1 750.0 (20350)
	15 MHz	1 717.5 (20025)	1 732.5 (20175)	1 747.5 (20325)
	20 MHz	1 720.0 (20050)	1 732.5 (20175)	1 745.0 (20300)
LTE Band 5	1.4 MHz	824.7 (20407)	836.5 (20525)	848.3 (20643)
	3 MHz	825.5 (20415)	836.5 (20525)	847.5 (20635)
	5 MHz	826.5 (20425)	836.5 (20525)	846.5 (20625)
	10 MHz	829.0 (20450)	836.5 (20525)	844.0 (20600)
LTE Band 7	5 MHz	2 502.5 (20775)	2 535.0 (21100)	2 567.5 (21425)
	10 MHz	2 505.0 (20800)	2 535.0 (21100)	2 565.0 (21400)
	15 MHz	2 507.5 (20825)	2 535.0 (21100)	2 562.5 (21375)
	20 MHz	2 510.0 (20850)	2 535.0 (21100)	2 560.0 (21350)
LTE Band 12	1.4 MHz	699.7 (23017)	707.5 (23095)	715.3 (23173)
	3 MHz	700.5 (23025)	707.5 (23095)	714.5 (23165)
	5 MHz	701.5 (23035)	707.5 (23095)	713.5 (23155)
	10 MHz	704.0 (23060)	707.5 (23095)	711.0 (23130)
LTE Band 13	5 MHz	779.5 (23205)	782.0 (23230)	784.5 (23255)
	10 MHz		782.0 (23230)	
LTE Band 14	5 MHz	790.5(23305)	793.0 (23330)	795.5(23355)
	10 MHz		793.0 (23330)	

Item.		Description				
LTE Band 26	1.4 MHz	814.7 (26697)	831.5 (26865)	848.3 (27033)		
	3 MHz	815.5 (26705)	831.5 (26865)	847.5 (27025)		
	5 MHz	816.5 (26715)	831.5 (26865)	846.5 (27015)		
	10 MHz	820.0 (26750)	831.5 (26865)	844.0 (26990)		
	15 MHz	821.5(26765)	831.5 (26865)	841.5(26965)		
LTE Band 66 (AWS)	5 MHz	1 712.5 (131997)	1 745 (132322)	1 777.5 (132647)		
	10 MHz	1 715.0 (132022)	1 745 (132322)	1 775.0 (132622)		
	15 MHz	1 717.5 (132047)	1 745 (132322)	1 772.5 (132597)		
	20 MHz	1 720.0 (132072)	1 745 (132322)	1 770.0 (132572)		
LTE Band 41	5 MHz	2 498.5 (39675)	2 545.8 (40148)	2 593.0 (40620)	2 640.3 (41093)	2 687.5 (41565)
	10 MHz	2 501.0 (39700)	2 547.0 (40160)	2 593.0 (40620)	2 639.0 (41080)	2 685.0 (41540)
	15 MHz	2 503.5 (39725)	2 548.3 (41073)	2 593.0 (40620)	2 637.8 (41068)	2 682.5 (41515)
	20 MHz	2 506.0 (39750)	2 549.5 (40185)	2 593.0 (40620)	2 636.5 (41055)	2 680.0 (41490)

UE Category	LTE Rel. 13, Category 6
Modulations Supported in UL	QPSK, 16QAM, 64QAM
LTE MPR Permanently implemented per 3GPP TS 36.101 section 6.2.3	Yes
A-MPR disabled for SAR Testing.	Yes
LTE Carrier Aggregation	This device only supports Down-Link Carrier aggregation. Up-link carrier aggregations does not support. Technical document includes all possible carrier aggregation combinations
LTE Release 10 Additional Information	This device does not support full feature on 3GPP Release 10. All uplink communications are identical to the Release 8 specifications. The following LTE release 10 features are not supported: Replay, HetNet, Enhanced MIMO, elCl, WIFI offloading, MDH, eMBHA, Cross-Carrier Scheduling, Enhanced SC-FDMA.

2.5 Test Methodology and Procedures

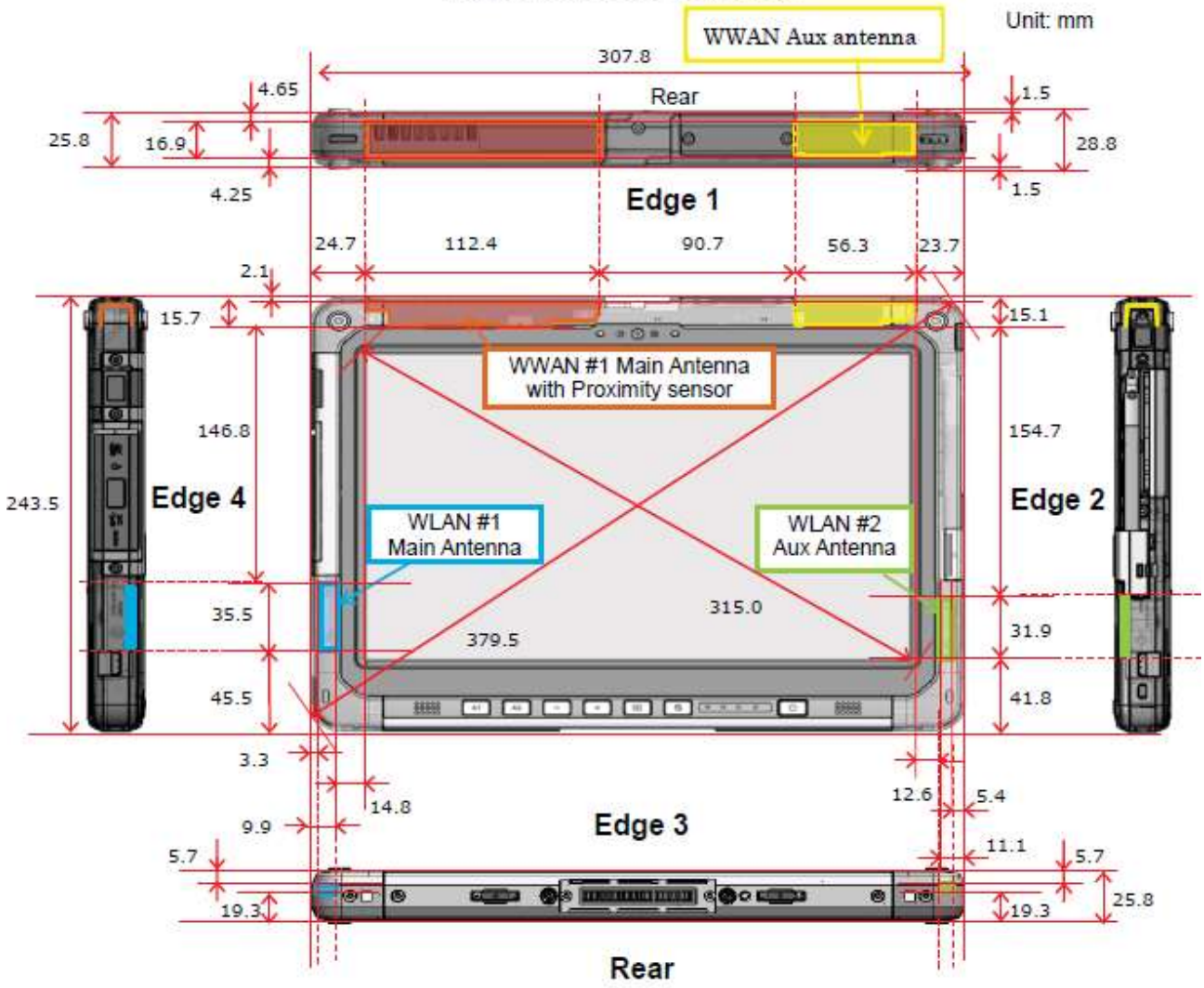
The tests documented in this report were performed in accordance with IEEE Standard 1528-2013 and the following published KDB procedures.

- FCC KDB Publication 941225 D01 3G SAR Procedures v03r01
- FCC KDB Publication 941225 D05 SAR for LTE Devices v02r05
- FCC KDB Publication 941225 D05A LTE Rel.10 KDB Inquiry sheet v01r02
- FCC KDB Publication 616217 D04 SAR for Laptop and tablets v01r02
- FCC KDB Publication 447498 D01 General SAR Guidance v06
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02
- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)

2.6 DUT Antenna Locations

Tablet Mode

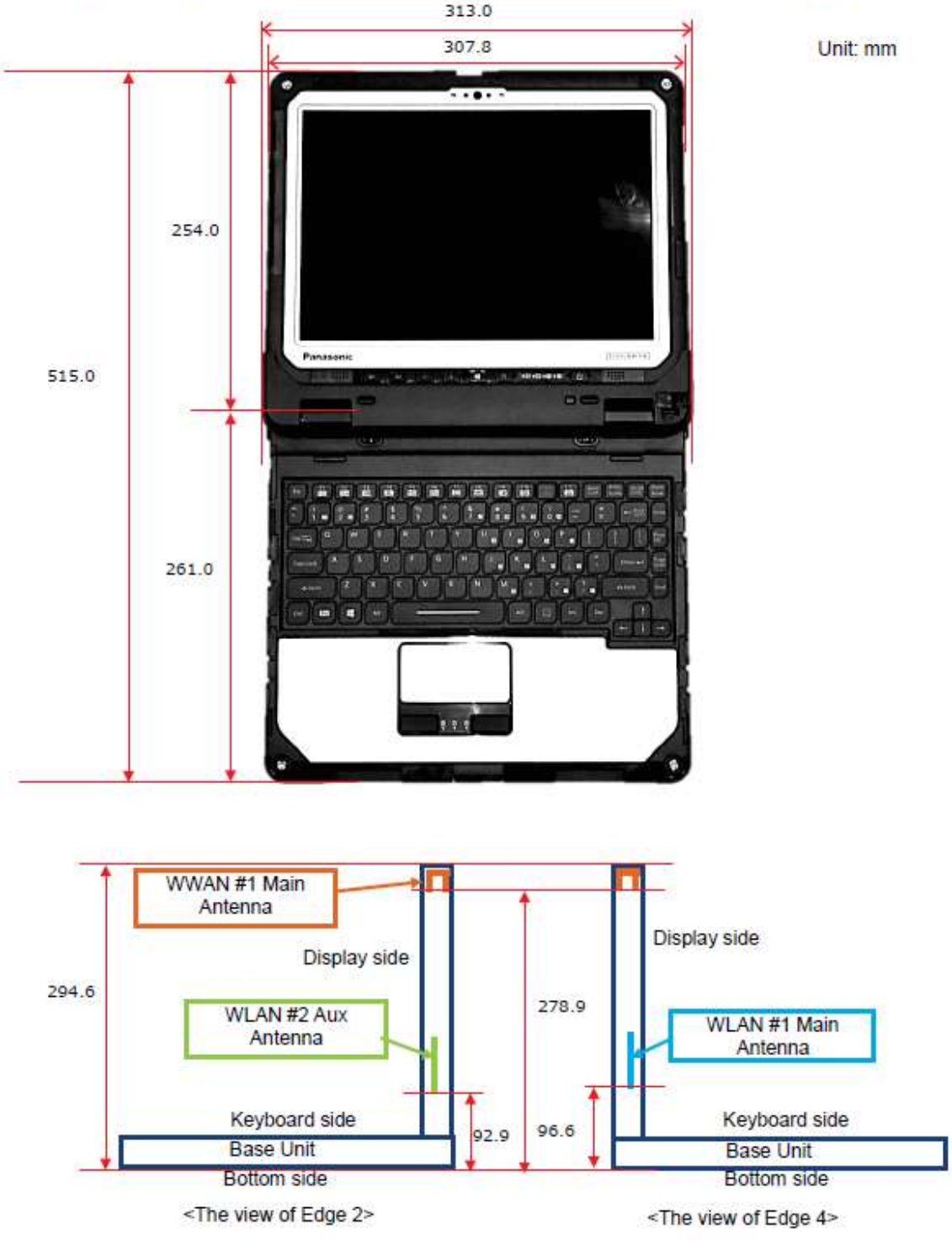
Fig.1 Size of the device (Tablet)



Laptop Mode

Fig.2 Size of the device (Laptop mode)

CF-33 can use laptop computer with the base unit.
The base unit provides keyboard, Input/output interfaces (USB, LAN, SD card, DC-Input and so on)

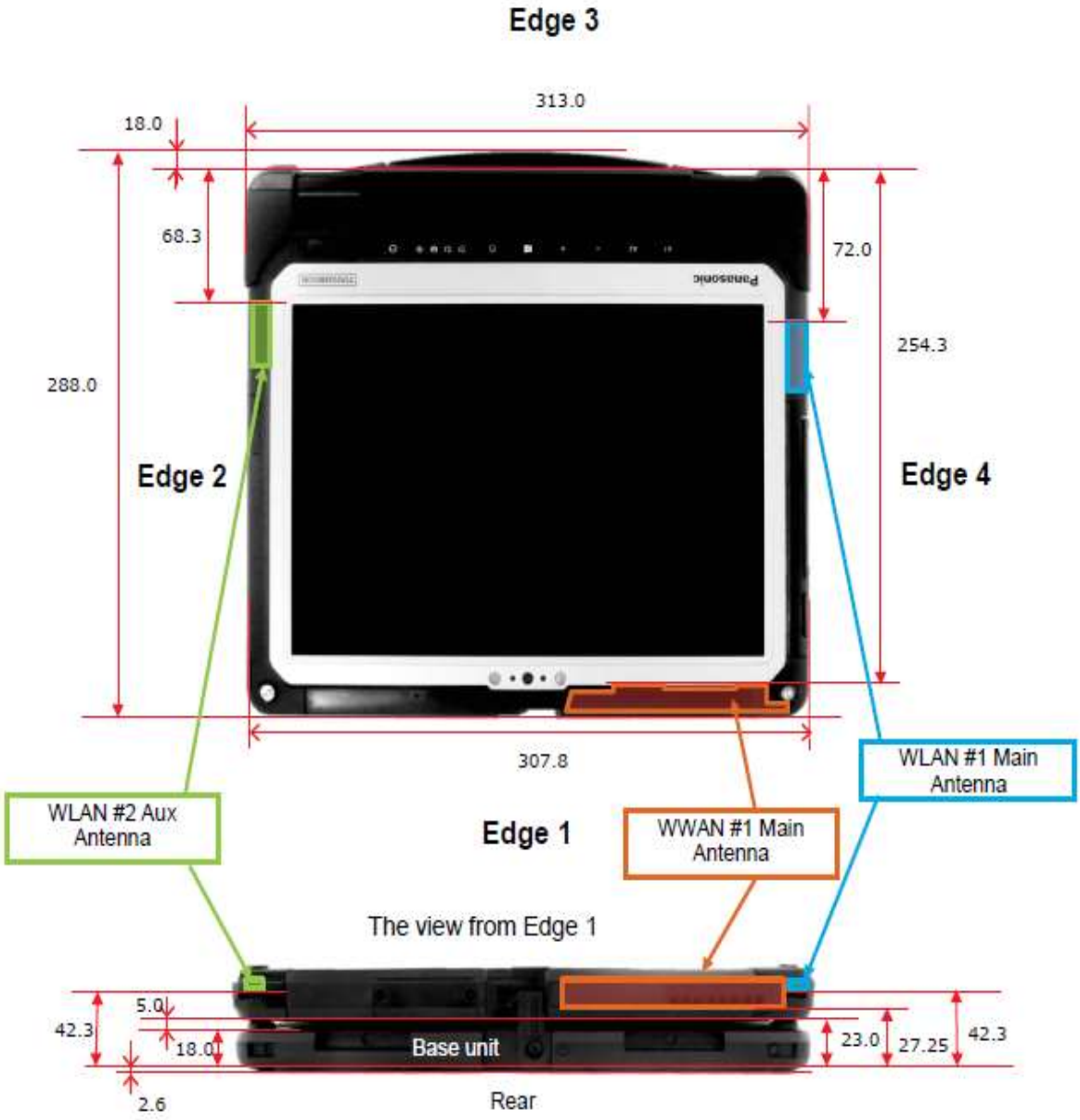


<The view of Edge 2>

<The view of Edge 4>

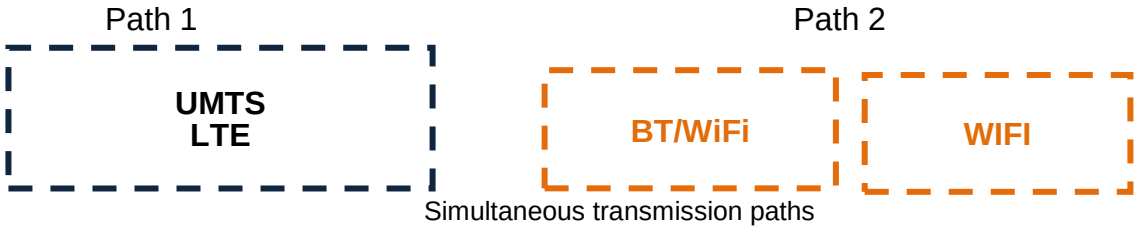
convertible Mode

Fig.3 Size of the device (Convertible mode)



2.7 SAR Summation Scenario

According to FCC KDB 447498 D01v06, transmitters are considered to be transmitting simultaneously when there is overlapping transmission, with the exception of transmissions during network hand-offs with maximum hand-off duration less than 30 seconds. Possible transmission paths for the EUT are shown below paths and are mode in same rectangle to indicate communication modes which share the same path. Modes which share the same transmission path cannot transmit simultaneously with one another.



Simultaneous transmission paths

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according to FCC KDB 447498 D01v06.

Simultaneous Transmission Scenarios	
Applicable Combination	Body Exposure Condition
UMTS + Main 2.4 GHz WiFi	Yes
UMTS + Aux 2.4 GHz WiFi	Yes
UMTS + Main 2.4 GHz WiFi + Aux 2.4 GHz WiFi	Yes
UMTS + Main 2.4 GHz WiFi + 2.4 GHz Bluetooth	Yes
UMTS + Main 5 GHz WiFi	Yes
UMTS + Aux 5 GHz WiFi	Yes
UMTS + Main 5 GHz WiFi + Aux 5 GHz WiFi	Yes
UMTS + Main 5 GHz WiFi + 2.4 GHz Bluetooth	Yes
LTE + Main 2.4 GHz WiFi	Yes
LTE + Aux 2.4 GHz WiFi	Yes
LTE + Main 2.4 GHz WiFi + Aux 2.4 GHz WiFi	Yes
LTE + Main 2.4 GHz WiFi + 2.4 GHz Bluetooth	Yes
LTE + Main 5 GHz WiFi	Yes
LTE + Aux 5 GHz WiFi	Yes
LTE + Main 5 GHz WiFi + Aux 5 GHz WiFi	Yes
LTE + Main 5 GHz WiFi + 2.4 GHz Bluetooth	Yes
UMTS + 2.4 GHz Bluetooth	Yes
LTE + 2.4 GHz Bluetooth	Yes

1. All licensed modes share the same antenna path and cannot transmit simultaneously.
2. The highest reported SAR for each exposure condition is used for SAR summation purpose.

2.8 SAR Test Consideration for Licensed Transmitter(s)

This device is only capable of QPSK HSUPA in the uplink. Therefore, no additional SAR tests are required beyond that described for devices with HSUPA in KDB 941225 D01v03r01.

LTE SAR for the higher modulations and lower bandwidths were not tested since the maximum average output power of all required channels and configurations was not more than 0.5 dB higher than the highest bandwidth; and the reported LTE SAR for the highest bandwidth was less than 1.45 W/kg for all configurations according to FCC KDB 941225 D05v02r05.

This device supports LTE Carrier Aggregation (CA) in the downlink only. All uplink communications are identical to Release 8 specifications. Per FCC KDB publication 941225 D05Av01r02, 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.

This device support both LTE Band 26 and LTE Band 5. Since the supported frequency span for LTE Band 5 involved completely within the supported frequency span for LTE Band 26 for Maximum Power mode, both LTE Bands have the same target power at Maximum Power mode , and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 26 for Maximum Power mode.

This device support both LTE Band 66(AWS) and LTE Band 4 (AWS). Since the supported frequency span for LTE Band 4(AWS) involved completely within the supported frequency span for LTE Band 66(AWS), both LTE Bands have the same target power Maximum Power mode, and both LTE bands share the same transmission path, SAR was only assessed for LTE Band 66(AWS) for Maximum Power mode.

This device supports 64QAM on the uplink for LTE operations. Conducted powers for 64QAM uplink operations were measured per Sec.5.1 of FCC KDB Publication 941225 D05v02r05. SAR was not required for 64QAM since the highest maximum output power for 64QAM is 1/2dB higher than the same configuration in QPSK and the reported SAR for the QPSK configuration is ≤ 1.45W/kg , per Section 5.2.4 of FCC KDB Publication 941225 D05v02r05.

2.9 SAR Test Consideration for Proximity Sensor

The Proximity Sensor is intended to reduce the WWAN output Power when Edge 1 and Rear are brought close to the user .
The default power level for sensor failure and malfunctioning, DUT coms up in low power mode and remains in low power mode until the proximity sensor has toggoled from a proximity detected to proximity not-detected state.
Proximity sensor triggeringdistance were verified for Edge 1 and Rear.
SAR testing of other sides was performed at full power

Please refer to Attachment 5 Verification Power reduction

3. INTRODUCTION

The FCC has adopted the guidelines for evaluating the environmental effects of radio frequency radiation in ET Docket 93-62 on Aug. 6, 1996 to protect the public and workers from the potential hazards of RF emissions due to FCC-regulated portable devices.

The safety limits used for the environmental evaluation measurements are based on the criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate (SAR) in IEEE/ANSI C95.1-1992 Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz. 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York 10017. The measurement procedure described in IEEE/ANSI C95.3-1992 Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave is used for guidance in measuring SAR due to the RF radiation exposure from the Equipment Under Test (EUT). These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields," NCRP Report No. 86 NCRP, 1986, Bethesda, MD 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards.

SAR Definition

Specific Absorption Rate (SAR) is defined as the time derivative of the incremental electromagnetic energy (d*W*) absorbed by (dissipated in) an incremental mass (d*m*) contained in a volume element (d*V*) of a given density (*r*). It is also defined as the rate of RF energy absorption per unit mass at a point in an absorbing body.

$$SAR = \frac{d}{dt}\left(\frac{dU}{dm}\right)$$

Figure 1. SAR Mathematical Equation

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

$$SAR = \sigma E^2 / \rho$$

Where:
σ = conductivity of the tissue-simulant material (S/m)
ρ = mass density of the tissue-simulant material (kg/㎥)
E = Total RMS electric field strength (V/m)

NOTE: The primary factors that control rate of energy absorption were found to be the wavelength of the incident field in relations to the dimensions and geometry of the irradiated organism, the orientation of the organism in relation to the polarity of field vectors, the presence of reflecting surfaces, and whether conductive contact is made by the organism with a ground plane.

4. DESCRIPTION OF TEST EQUIPMENT

4.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Staubli), robot controller, Pentium III 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 Figure.2).

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC with Windows XP or Windows 7 is working with SAR Measurement system DASY4 & DASY5, 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 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.

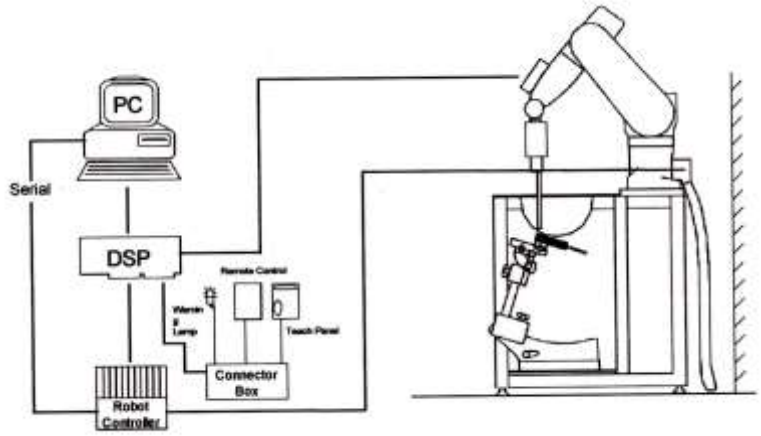


Figure 2. HCT SAR Lab. Test Measurement Set-up

The DAE 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.

5. SAR MEASUREMENT PROCEDURE

The evaluation was performed using the following procedure compliant to FCC KDB Publication 865664 D01v01r04 and IEEE 1528-2013

1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 table 4-1 & IEEE 1528-2013.

2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.

3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)

   a. The data at the surface were extrapolated, since the center of the dipoles is no more than 2.7 mm away from the tip of the probe (it is different from the probe type) and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

   b. The maximum interpolated value was searched with a straight-forward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot" condition (in x, y, and z directions. The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

   c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

4. The SAR reference value, at the same location as step 2, was re-measured after the zoom scan. If the value changed by more than 5 %, the SAR evaluation and drift measurements were repeated.

Area scan and zoom scan resolution setting follow KDB 865664 D01v01r04 quoted below.

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5±1 mm	$\frac{1}{2}\cdot\delta\cdot\ln(2)\pm0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30°±1°	20°±1°
Maximum area scan Spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤15 mm 2-3 GHz: ≤12 mm	3-4 GHz: ≤12 mm 4-6 GHz: ≤10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan Spatial resolution: Δx_{zoom}, Δy_{zoom}			≤ 2 GHz: ≤8mm 2-3 GHz: ≤5mm*	3-4 GHz: ≤5 mm* 4-6 GHz: ≤4 mm*
Maximum zoom scan Spatial resolution normal to phantom surface	uniform grid: $\Delta z_{zoom}(n)$		≤ 5 mm	3-4 GHz: ≤4 mm 4-5 GHz: ≤3 mm 5-6 GHz: ≤2 mm
	graded grid	$\Delta z_{zoom}(1)$: between 1st two Points closest to phantom surface	≤ 4 mm	3-4 GHz: ≤3 mm 4-5 GHz: ≤2.5 mm 5-6 GHz: ≤2 mm
		$\Delta z_{zoom}(n>1)$: between subsequent Points	$\leq 1.5\cdot\Delta z_{zoom}(n-1)$	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3-4 GHz: ≥28 mm 4-5 GHz: ≥25 mm 5-6 GHz: ≥22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details.

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

6. SAR Test Configurations

Note; All test configurations are based on front view.

Full Power Condition: Sensor Inactive

Antenna	Band	Freq. (MHz)	Maximum Power		Separation Distances (mm)					Device Configurations for SAR Testing				
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge4	Rear	Edge 1	Edge 2	Edge 3	Edge4
WWAN Main #1	WCDMA 5	846.6	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	WCDMA 4	1752.6	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	WCDMA 2	1 907.6	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 2	1 909.2	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 66(4)	1770	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 26(5)	848.3	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 7	2560	23	200	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 12	715.3	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 13	784.5	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 14	795.5	24	251	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES
	LTE 41	2 687.5	23	200	4.25	2.1	170.7	227.8	24.7	YES	YES	YES	0.4	YES

Reduced Power Condition: Sensor Active

Antenna	Band	Freq. (MHz)	Maximum Power		Separation Distances (mm)					Device Configurations for SAR Testing				
			dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge4	Rear	Edge 1	Edge 2	Edge 3	Edge4
WWAN Main #1	WCDMA 5	846.6	18.5	71	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	WCDMA 4	1752.6	15.9	39	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	WCDMA 2	1 907.6	16.4	44	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 2	1 909.2	17.0	50	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 66(4)	1770	16.3	43	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 26(5)	848.3	18.8	76	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 7	2560	14.2	26	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 12	715.3	21.0	126	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 13	784.5	19.4	87	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 14	795.5	19.5	89	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A
	LTE 41	2 687.5	16.2	42	4.25	2.1	N/A	N/A	N/A	YES	YES	N/A	N/A	N/A

Antennas <50mm to adjacent edges: According to KDB 447498 D01v06, if the calculated threshold value >3 then SAR test is required.
Antennas >50mm to adjacent edges: According to KDB 447498 D01v06, if the power threshold is less than the output power ,SAR is required.

Per FCC KDB447498 D01 General RF Exposure Guidance v06 Sec 4.3.2 b) When an antenna qualifies for the standalone SAR test exclusion of 4.3.1 and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to the following to determine the simultaneous transmission SAR test exclusion criteria.

1) [(*max. power of channel, including tune-up tolerance, mW*) / (*min. test separation distance, mm*)]·[√f(GHz)/*x*] W/kg, for *test separation distances* ≤ 50 mm;
where *x* = 7.5 for 1-g SAR and *x* = 18.75 for 10-g SAR.
2) 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10-g SAR, when the *test separation distance* is > 50 mm.

Per FCC KDB Publication 616217 D04v01r02, the rear surface and edges of tablet should be tested for SAR compliance with the tablet touching the phantom. The SAR Exclusion Threshold in KDB 447498 D01v06 can be applied to determine SAR test exclusion for adjacent edge configurations. The closet distance from the

antenna to an adjacent tablet edge is used to determine if SAR testing is required for the adjacent edges, with the adjacent edge positioned against the phantom and the edge containing the antenna positioned perpendicular to the phantom.

6.1 Test Configurations for the WWAN Main Antenna, WWAN Modes

Tablet Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	4.25 mm	Yes	A proximity sensor is incorporated at this side that, when triggered, will reduce the transmit power of the WWAN transmitter. As such, two separated sets of evaluations are required for this test position: The test device operating at reduced power level and contact with the phantom. The test device operating at full power level and away 20 mm(below 1GHz Band) or 21 mm (above 1 GHz Band) from the phantom. These separations are 1 mm less than the closest distance to which the test device can transmit at reduced power.
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	2.1 mm	Yes	A proximity sensor is incorporated at this side that, when triggered, will reduce the transmit power of the WWAN transmitter. As such, two separated sets of evaluations are required for this test position: The test device operating at reduced power level and contact with the phantom. The test device operating at full power level and away 37 mm(below 1GHz Band) or 39 mm (above 1 GHz Band) from the phantom. These separations are 1 mm less than the closest distance to which the test device can transmit at reduced power.
Edge 2	170.7 mm	Yes	Due to simultaneous transmission SAR analysis with WLAN, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 3	227.8 mm	No	Due to simultaneous transmission SAR analysis with WLAN, this position was Estimated SAR 0.4 W/kg is applied.
Edge 4	24.7 mm	Yes	-

Laptop Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Bottom Side (Laptop Mode)	278.9 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.

Convertible Mode:

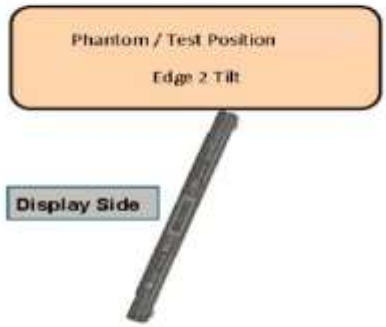
Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	27.25 mm	No	WWAN antenna is farther away from phantom than separation distance of rear full power even though touching to phantom with convertible mode.
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	2.1 mm	No	SAR is not required as this is accounted for by the Edge 1 test position for Tablet mode.
Edge 2	170.7 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 3	254.3 mm	No	SAR is not required as this is accounted for by the Edge 3 test position for Tablet mode.
Edge 4	24.7 mm	No	SAR is not required as this is accounted for by the Edge 4 test position for Tablet mode.

LEGEND:

Edge 1 = Top Edge
Edge 2 = Left Edge
Edge 3 = Bottom Edge
Edge 4 = Right Edge
Rear = Rear of display

6.2 Additional Test Scenarios

Test Configurations	SAR Required	Note
Edge 2 tilt	Yes	Due to simultaneous transmission SAR analysis with WLAN, this position was tested.
Edge 4 tilt	Yes	Due to simultaneous transmission SAR analysis with WLAN, this position was tested.
Edge 1 additional with considering the dent	No	With the result from manufacturer KDB inquiry about the over 5 mm dent in Edge 1, additional test for this side is not needed.



6.3 RF Output Power Measurement

As this device implements proximity sensor-triggered power reduction for SAR compliance, conducted output power was measured for the two different operating power levels. The following serves to clarify and establish the relation between power level and proximity sensor status:
Full Power = Proximity sensor Off
Reduced Power = Proximity sensor On
Each operating power level has its own set of target power and tune-up limit, and the scaling of SAR values is applied according to the corresponding target for the given operating power level.

6.4 Additional Test Positions due to Proximity Conditions

This device uses a sensor to reduce output powers in extremity (hand-held) use conditions.

When the sensor detects a user is touching the device on or near to the antenna the device reduces the maximum allowed output power However, the proximity sensor is not active when the device is moved beyond the sensor triggering distance and the maximum output power is no longer limited. Therefore, an additional exposure condition 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 616217 D04 Section 8 was used as a guideline for selecting SAR test distances for this device at these additional exposure conditions. The smallest separation distance determined by the sensor triggering and sensor coverage for each applicable edge, minus 1 mm. was used as the test separation distance for SAR testing. Sensor triggering distance summary data is included in below table.

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

7. RF EXPOSURE LIMITS

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population	CONTROLLED ENVIRONMENT Occupational
	(W/kg) or (mW/g)	(W/kg) or (mW/g)
The SAR averaged over the whole body mass.	0.08	0.4
The peak spatially-averaged SAR for the head, neck and trunk, averaged over any 1 g of tissue*	1.6	8
The peak spatially-averaged SAR in the limbs, averaged over any 10 g of tissue*	4	20

Table 7.1

SAR Human Exposure Specific in ANSI/IEEE C95.1-1992 and Health Canada Safety Code 6

NOTES:

* Defined as a tissue volume in the shape of a cube.

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 mad 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 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.

8. FCC SAR GENERAL MEASUREMENT PROCEDURES

Power Measurements for licensed transmitters are performed using a base simulator under digital average power.

8.1 Measured and Reported SAR

Per FCC KDB Publication 447498 D01v06, when SAR is not measured at the maximum power level allowed for production units, the results must be scaled to the maximum tune-up tolerance limit according to the power applied to the individual channels tested to determine compliance. For simultaneous transmission, the measured aggregate SAR must be scaled according to the sum of the differences between the maximum tune-up tolerance and actual power used to test each transmitter. When SAR is measured at or scaled to the maximum tune-up tolerance limit, the results are referred to as Reported SAR. The highest reported SAR results are identified on the grant of equipment authorization according to procedures in KDB 690783 D01v01r03.

8.2 SAR Measurement Conditions for UMTS

8.2.1 Output Power Verification

Maximum output power is verified on the High, Middle and Low channels according to the general descriptions in sec. 5.2 of 3GPP TS 34.121, using the appropriate RMC with TPC (transmit power control) set to all “1s” or applying the required inner loop power control procedures to maintain maximum output power while HSUPA is active. Results for all applicable physical channel configurations (DPCCH, DPDCHn and spreading codes, HS-DPCCH etc) are tabulated in this test report. All configurations that are not supported by the DUT or cannot be measured due to technical or equipment limitations are identified.

8.2.2 Head SAR Measurements

SAR for next to the ear head exposure is measured using a 12.2 kbps RMC with TPC bits configured to all “1’s”. The 3G SAR test reduction procedure is applied to AMR configurations with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured for 12.2 kbps AMR in 3.4 kbps SRB (signaling radio bearer) using the highest reported SAR configuration in 12.2 kbps RMC for head exposure.

8.2.3 Body SAR measurements

SAR for body exposure configurations is measured using the 12.2kbps RMC with the TPC bits all “1s”. the 3G SAR test reduction procedure is applied to other spreading codes and multiple DPDCHn configurations supported by the handset with 12.2 kbps RMC as the primary mode. Otherwise, SAR is measured using and applicable RMC configuration with the corresponding spreading code or DPDCHn, for the highest reported SAR configuration in 12.2kbps RMC.

8.2.4 SAR Measurements with Rel. 5 HSDPA

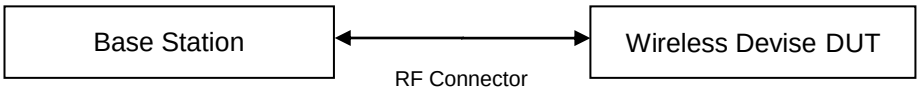
The 3G SAR test reduction procedure is applied to HSDPA body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSDPA is measured using and FRC with H-SET 1 in Sub-test and a 12.2 kbps RMC without HSDPA. Handsets with both HSDPA and HSUPA are tested according to release 6 HSPA test procedures. 8.4.5 SAR Measurement with Rel.6 HSUPA The 3G SAR test Reduction Procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, Using H-Set 1 and QPSK for FRC and a 12.2kbps RMC configured in Test Loop Mode 1 and Power Control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA. When VOIP applies to head exposure, the 3G SAR test reduction procedure is applied with 12.2 kbps RMC as the primary mode; otherwise, the same HSPA configuration used for body SAR measurements are applied to head exposure testing.

8.2.5 SAR Measurements with Rel. 6 HSUPA

The 3G SAR test reduction procedure is applied to HSPA (HSUPA/HSDPA with RMC) body configurations with 12.2 kbps RMC as the primary mode. Otherwise, Body SAR for HSPA is measured with E-DCH Sub-test 5, using H-Set1 and QPSK for FRC and a 12.2 kbps RMC configured in Test Loop Mode 1 and power control algorithm 2, according to the highest reported body SAR configuration in 12.2 kbps RMC without HSPA.

8.2.6 DC-HSDPA

SAR is required for Rel.8 DC-HSDPA when SAR is required for Rel.5 HSDPA; otherwise, the 3G SAR test reduction procedure is applied to DC-HSDPA with 12.2 kbps RMC as the primary mode. Power is measured for DC-HSDPA according to the H-Set 12, FRC configuration in table C.8.1.12 of 3GPP TS34.121-1 to determine SAR test reduction. Primary and secondary serving HS-DSCH Cell are required to perform the power measurement and for the results to be acceptable.



8.3 SAR Measurement Conditions for LTE

LTE modes are tested according to FCC KDB 941225 D05v02r05 publication. Establishing connections with base station simulators ensure a consistent means for testing SAR and are recommended for evaluation SAR [4]. The R&S CMW500 or Anritsu MT8820C simulators are used for LTE output power measurements and SAR testing. Closed loop power control was used so the UE transmits with maximum output power during SAR testing. SAR tests were performed with the same number of RB and RB offsets transmitting on all TTI frames (maximum TTI).

8.3.1 Spectrum Plots for RB Configurations

A properly configured base station simulator was used for SAR tests and power measurements. Therefore, spectrum plots for RB configurations were not required to be included in this report.

8.3.2 MPR

MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to 3GPP TS36. 101 Section 6.2.3 – 6.2.5 under Table 6.2.3-1.

8.3.3 A-MPR

A-MPR (Additional MPR) has been disabled for all SAR tests by setting NS=01 on the base station simulator.

8.3.4 Required RB Size and RB offsets for SAR testing

According to FCC KDB 941225 D05v02r05

a. Per sec 4.2.1, SAR is required for QPSK 1 RB Allocation for the largest bandwidth
   i. The required channel and offset combination with the highest maximum output power is required for SAR.
   ii. When the reported SAR is ≤ 0.8 W/Kg, testing of the remaining RB offset configurations and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the RB offset configuration with highest output power for that channel.
   iii. When the reported SAR for a required test channel is > 1.45 W/kg, SAR is required for all RB offset configurations for that channel.
b. Per Sec 4.2.2, SAR is required for 50% RB allocation using the largest bandwidth following the same procedures outlined in Sec 4.2.1.

c. Per Sec. 4.2.3, QPSK SAR is not required for the 100% all0cation when the highest maximum output power for the 100% allocation is less than the highest maximum output power of the 1 RB and 50% RB allocations and the reported SAR for the 1 RB and 50% RB allocations is < 0.8 W/kg.
d. Per Sec. 4.2.4 and 4.3, SAR test for higher order modulations and lower bandwidths configurations are not required when the conducted power of the required test configurations determined by Sec. 4.2.1

through 4.2.3 is less than or equal to 1/2 dB higher than the equivalent configuration using QPSK modulation and when the QPSK SAR for those configurations is < 1.45 W/Kg.

8.3.5 Downlink Carrier Aggregation

Conducted power measurements with LTE Carrier aggregation (CA) downlink only active are made in accordance to KDB publication 941225 D05Av01r02. 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 (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 Powers are measured with downlink carrier aggregation active for the configuration with highest measured maximum conducted power with the downlink carrier aggregation inactive measured among the channel bandwidth, modulation and RB combinations in each frequency band. Per FCC KDB Publication 941225 D05Av01r02, no SAR measurements are required for carrier aggregation configurations when the average output power with downlink only carrier aggregation active is not more than 0.25dB higher than the average output power with downlink only carrier aggregation inactive.

8.3.6 LTE(TDD) Considerations

According to KDB 941225 D05v02r05, for Time-Division Duplex (TDD) systems, SAR must be tested using a fixed periodic duty factor according to the highest transmission duty factor implemented for the device and supported by the defined 3GPP LTE TDD configurations.

SAR was tested with the highest transmission duty factor (63.33 %) using Uplink-downlink configuration 0 and Special subframe configuration 6.

Table 4.2-1: Configuration of special subframe (lengths of DwPTS/GP/UpPTS)

Special subframe configuration	Normal cyclic prefix in downlink			Extended cyclic prefix in downlink		
	DwPTS	UpPTS		DwPTS	UpPTS	
		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink		Normal cyclic prefix in uplink	Extended cyclic prefix in uplink
0	$6592 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$	$7680 \cdot T_s$	$2192 \cdot T_s$	$2560 \cdot T_s$
1	$19760 \cdot T_s$			$20480 \cdot T_s$		
2	$21952 \cdot T_s$			$23040 \cdot T_s$		
3	$24144 \cdot T_s$			$25600 \cdot T_s$		
4	$26336 \cdot T_s$			$7680 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$
5	$6592 \cdot T_s$	$4384 \cdot T_s$	$5120 \cdot T_s$	$20480 \cdot T_s$		
6	$19760 \cdot T_s$			$23040 \cdot T_s$		
7	$21952 \cdot T_s$			$12800 \cdot T_s$		
8	$24144 \cdot T_s$			-	-	-
9	$13168 \cdot T_s$			-	-	-

LTE TDD Band 41 supports 3GPP TS 36.211 section 4.2 for Type 2 Frame and Table 4.2-2 for uplink-

Table 4.2-2: Uplink-downlink configurations.

Uplink-downlink configuration	Downlink-to-Uplink Switch-point periodicity	Subframe number									
		0	1	2	3	4	5	6	7	8	9
0	5 ms	D	S	U	U	U	D	S	U	U	U
1	5 ms	D	S	U	U	D	D	S	U	U	D
2	5 ms	D	S	U	D	D	D	S	U	D	D
3	10 ms	D	S	U	U	U	D	D	D	D	D
4	10 ms	D	S	U	U	D	D	D	D	D	D
5	10 ms	D	S	U	D	D	D	D	D	D	D
6	5 ms	D	S	U	U	U	D	S	U	U	D

downlink configurations and Table 4.2-1 for Special sub frame configurations.
Calculated Duty Cycle – Extended cyclic prefix in uplink x (T_s) x # of S + # of U
Example for calculated Duty Cycle for Uplink-Downlink Configuration 0:
Calculated Duty Cycle = (5120 x [1/(15000 x 2048)] x 2 + 0.006)/0.01 = 63.33 %
Where
T_s = 1/(15000 x 2048) seconds

9. OUTPUT POWER SPECIFICATIONS

This device operates using the following maximum output power specifications. SAR values were scaled to the maximum allowed power to determine compliance per KDB publication 447498 D01v06.

9.1 UMTS

HSPA+

This DUT is only capable of QPSK HSPA+ in uplink. Therefore, the RF conducted power is not measured according to 941225 D01 3G SAR.

9.1.1 Maximum Conducted Output Power

WCDMA Band 5

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 5[dBm]			
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	3GPP MPR [dB]
99	WCDMA	12.2 kbps RMC	23.28	23.29	23.20	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	22.18	22.17	22.10	0
5		Subtest 2	22.17	22.18	22.10	0
5		Subtest 3	21.69	21.69	21.61	0.5
5		Subtest 4	21.69	21.67	21.60	0.5
6	HSUPA	Subtest 1	22.20	22.17	22.13	0
6		Subtest 2	20.22	20.19	20.15	2
6		Subtest 3	21.16	21.17	21.13	1
6		Subtest 4	20.15	20.18	20.14	2
6		Subtest 5	22.19	22.18	22.12	0
8	DC-HSDPA	Subtest 1	22.30	22.15	22.19	0
8		Subtest 2	22.29	22.15	22.20	0
8		Subtest 3	21.82	21.67	21.72	0.5
8		Subtest 4	21.79	21.67	21.71	0.5

WCDMA Average Conducted output powers

WCDMA Band 4

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 4 [dBm]			
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR [dB]
99	WCDMA	12.2 kbps RMC	23.13	23.32	23.08	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	22.08	22.29	22.06	0
5		Subtest 2	22.09	22.31	22.11	0
5		Subtest 3	21.62	21.79	21.62	0.5
5		Subtest 4	21.60	21.79	21.61	0.5
6	HSUPA	Subtest 1	22.12	22.33	22.14	0
6		Subtest 2	20.15	20.32	20.16	2
6		Subtest 3	21.12	21.35	21.13	1
6		Subtest 4	20.12	20.35	20.12	2
6		Subtest 5	22.13	22.33	20.14	0
8	DC-HSDPA	Subtest 1	22.25	22.42	22.43	0
8		Subtest 2	22.26	22.40	22.46	0
8		Subtest 3	21.79	21.93	21.93	0.5
8		Subtest 4	21.77	21.94	21.95	0.5

WCDMA Average Conducted output powers

WCDMA Band 2

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 2 [dBm]			3GPP MPR
		Subtest	UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	
99	WCDMA	12.2 kbps RMC	23.33	23.41	23.48	-
99	WCDMA	12.2 kbps AMR				
5	HSDPA	Subtest 1	22.32	22.29	22.30	0
5		Subtest 2	22.35	22.27	22.28	0
5		Subtest 3	21.85	21.81	21.77	0.5
5		Subtest 4	21.85	21.80	21.78	0.5
6	HSUPA	Subtest 1	22.35	22.27	22.30	0
6		Subtest 2	20.35	20.30	20.31	2
6		Subtest 3	21.36	21.32	21.28	1
6		Subtest 4	20.35	20.30	20.31	2
6		Subtest 5	22.33	22.30	22.30	0
8	DC-HSDPA	Subtest 1	22.15	22.41	22.53	0
8		Subtest 2	22.15	22.41	22.53	0
8		Subtest 3	21.61	21.89	22.05	0.5
8		Subtest 4	21.65	21.91	22.05	0.5

WCDMA Average Conducted output powers

9.1.2 Reduced Power (Power back-off)

WCDMA Band 5

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 5[dBm]			
		Subtest	UL 4132 DL 4357	UL 4183 DL 4408	UL 4233 DL 4458	3GPP MPR [dB]
99	WCDMA	12.2 kbps RMC	18.25	18.18	18.10	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	17.02	16.92	16.84	0
5		Subtest 2	17.02	16.92	16.84	0
5		Subtest 3	16.52	16.43	16.36	0.5
5		Subtest 4	16.51	16.43	16.36	0.5
6	HSUPA	Subtest 1	17.02	16.97	16.88	0
6		Subtest 2	15.10	14.98	14.99	2
6		Subtest 3	16.07	15.96	15.90	1
6		Subtest 4	15.04	14.94	14.91	2
6		Subtest 5	17.06	16.95	16.88	0
8	DC-HSDPA	Subtest 1	16.85	16.77	16.77	0
8		Subtest 2	16.82	16.77	16.83	0
8		Subtest 3	16.38	16.25	16.30	0.5
8		Subtest 4	16.37	16.28	16.30	0.5

WCDMA Average Conducted output powers

WCDMA Band 4

3GPP Release Version	Mode	3GPP 34.121	WCDMA Band 4 [dBm]			
		Subtest	UL 1312 DL 1537	UL 1412 DL 1637	UL 1513 DL 1738	3GPP MPR [dB]
99	WCDMA	12.2 kbps RMC	15.45	15.52	15.41	-
99		12.2 kbps AMR				
5	HSDPA	Subtest 1	14.23	14.33	14.21	0
5		Subtest 2	14.22	14.31	14.19	0
5		Subtest 3	13.71	13.80	13.67	0.5
5		Subtest 4	13.71	13.80	13.67	0.5
6	HSUPA	Subtest 1	14.26	14.35	14.20	0
6		Subtest 2	12.25	12.35	12.22	2
6		Subtest 3	13.25	13.33	13.22	1
6		Subtest 4	12.23	12.33	12.21	2
6		Subtest 5	14.25	14.35	14.20	0
8	DC-HSDPA	Subtest 1	14.50	14.79	14.60	0
8		Subtest 2	14.54	14.77	14.62	0
8		Subtest 3	14.03	14.28	14.18	0.5
8		Subtest 4	14.03	14.30	14.15	0.5

WCDMA Average Conducted output powers

WCDMA Band 2

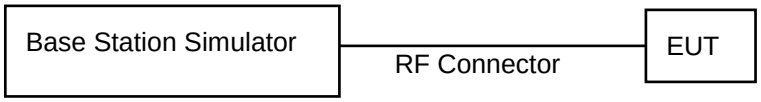
3GPP Release Version	Mode	3GPP 34.121 Subtest	WCDMA Band 2 [dBm] UL 9262 DL 9662	UL 9400 DL 9800	UL 9538 DL 9938	3GPP MPR
99	WCDMA	12.2 kbps RMC	15.96	16.01	16.20	-
99	WCDMA	12.2 kbps AMR				
5	HSDPA	Subtest 1	14.83	14.88	15.08	0
5		Subtest 2	14.80	14.87	15.08	0
5		Subtest 3	14.31	14.35	14.58	0.5
5		Subtest 4	14.30	14.34	14.57	0.5
6	HSUPA	Subtest 1	14.82	14.87	15.11	0
6		Subtest 2	12.86	12.90	13.12	2
6		Subtest 3	13.83	13.88	14.11	1
6		Subtest 4	12.80	12.87	13.11	2
6		Subtest 5	14.82	14.87	15.11	0
8	DC-HSDPA	Subtest 1	15.27	15.28	15.20	0
8		Subtest 2	15.32	15.31	15.18	0
8		Subtest 3	14.80	14.77	14.66	0.5
8		Subtest 4	14.82	14.79	14.69	0.5

WCDMA Average Conducted output powers

DC-HSDPA Configurations

- 3GPP specification TS 34.121-1 Release 8. was used for used for DC-HSDPA guidance.
- H-set 12(QPSK)was conformed to be used during DC-HSDPA measurements.

It is expected by the manufacturer that MPR for some HSPA Subtests may be up to 2 dB more than specified by 3GPP, But also as low as 1 dB according to the chipset implementation in this model to match manufacturer.



9.2 LTE

9.2.1 LTE Maximum Conducted Output Power

- LTE Band 2

LTE Band 2_ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18607	18900	19193	[dB]	[dB]
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	22.86	22.90	23.22	0	0
		1	3	22.92	22.98	23.25	0	0
		1	5	22.88	22.92	23.18	0	0
		3	0	22.90	22.89	23.26	0	0
		3	1	22.94	22.95	23.29	0	0
		3	3	22.94	22.93	23.27	0	0
		6	0	21.88	21.93	22.23	0-1	1
	16QAM	1	0	22.24	22.23	22.50	0-1	1
		1	3	22.22	22.33	22.56	0-1	1
		1	5	22.18	22.13	22.52	0-1	1
		3	0	21.96	22.00	22.31	0-1	1
		3	1	22.05	22.05	22.31	0-1	1
		3	3	22.00	21.86	22.30	0-1	1
		6	0	21.03	20.94	21.35	0-2	2
	64QAM	1	0	21.10	21.04	21.43	0-2	2
		1	3	21.09	21.14	21.47	0-2	2
		1	5	21.06	21.08	21.40	0-2	2
		3	0	21.06	21.06	21.42	0-2	2
		3	1	21.12	21.19	21.43	0-2	2
		3	3	21.10	21.05	21.39	0-2	2
		6	0	19.94	19.88	20.30	0-3	3

LTE Band 2_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18615	18900	19185	[dB]	[dB]
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	22.97	22.95	23.32	0	0
		1	7	23.12	23.03	23.44	0	0
		1	14	22.93	22.97	23.24	0	0
		8	0	21.95	21.96	22.30	0-1	1
		8	3	21.98	21.99	22.32	0-1	1
		8	7	21.99	21.98	22.32	0-1	1
		15	0	22.01	22.00	22.32	0-1	1
	16QAM	1	0	22.29	22.24	22.58	0-1	1
		1	7	22.41	22.33	22.70	0-1	1
		1	14	22.27	22.28	22.53	0-1	1
		8	0	21.03	21.05	21.36	0-2	2
		8	3	21.07	21.06	21.45	0-2	2
		8	7	21.05	21.06	21.36	0-2	2
		15	0	21.00	21.00	21.33	0-2	2
	64QAM	1	0	21.20	21.23	21.50	0-2	2
		1	7	21.24	21.24	21.70	0-2	2
		1	14	21.18	21.15	21.53	0-2	2
		8	0	20.03	20.02	20.41	0-3	3
		8	3	20.03	20.04	20.35	0-3	3
		8	7	20.02	20.01	20.32	0-3	3
		15	0	19.99	20.04	20.33	0-3	3

LTE Band 2_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18625	18900	19175	[dB]	[dB]
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	23.02	23.05	23.39	0	0
		1	12	23.01	23.00	23.33	0	0
		1	24	22.97	23.02	23.32	0	0
		12	0	21.97	22.00	22.35	0-1	1
		12	6	22.00	22.04	22.31	0-1	1
		12	11	21.99	21.99	22.32	0-1	1
		25	0	22.00	21.98	22.32	0-1	1
	16QAM	1	0	22.42	22.37	22.65	0-1	1
		1	12	22.33	22.28	22.65	0-1	1
		1	24	22.26	22.26	22.60	0-1	1
		12	0	21.02	21.05	21.34	0-2	2
		12	6	21.06	21.03	21.40	0-2	2
		12	11	21.02	21.05	21.32	0-2	2
		25	0	21.01	20.95	21.31	0-2	2
	64QAM	1	0	21.20	21.21	21.58	0-2	2
		1	12	21.14	21.22	21.56	0-2	2
		1	24	21.13	21.22	21.40	0-2	2
		12	0	20.08	20.07	20.43	0-3	3
		12	6	20.05	20.07	20.39	0-3	3
		12	11	20.05	20.07	20.39	0-3	3
		25	0	20.03	20.00	20.30	0-3	3

LTE Band 2_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18650	18900	19150	[dB]	[dB]
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	23.28	23.06	23.40	0	0
		1	24	22.99	22.95	23.33	0	0
		1	49	23.14	23.21	23.33	0	0
		25	0	22.08	22.04	22.37	0-1	1
		25	12	22.03	22.02	22.38	0-1	1
		25	24	21.95	22.00	22.31	0-1	1
		50	0	22.00	21.98	22.37	0-1	1
	16QAM	1	0	22.49	22.35	22.56	0-1	1
		1	24	22.26	22.30	22.52	0-1	1
		1	49	22.42	22.54	22.61	0-1	1
		25	0	21.06	21.04	21.36	0-2	2
		25	12	21.06	21.08	21.37	0-2	2
		25	24	21.01	21.02	21.40	0-2	2
		50	0	21.10	21.09	21.37	0-2	2
	64QAM	1	0	21.43	21.41	21.63	0-2	2
		1	24	21.19	21.20	21.55	0-2	2
		1	49	21.27	21.37	21.54	0-2	2
		25	0	20.12	20.06	20.40	0-3	3
		25	12	20.08	20.03	20.36	0-3	3
		25	24	19.97	20.03	20.34	0-3	3
		50	0	20.06	20.03	20.37	0-3	3

LTE Band 2_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18675	18900	19125	[dB]	[dB]
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	23.15	23.12	23.50	0	0
		1	36	22.90	22.97	23.33	0	0
		1	74	22.99	22.93	23.39	0	0
		36	0	22.11	22.01	22.47	0-1	1
		36	18	21.96	21.96	22.38	0-1	1
		36	38	21.97	21.90	22.35	0-1	1
		75	0	21.99	21.97	22.41	0-1	1
	16QAM	1	0	22.49	22.12	22.86	0-1	1
		1	36	22.26	22.28	22.77	0-1	1
		1	74	22.29	22.17	22.64	0-1	1
		36	0	21.12	20.99	21.44	0-2	2
		36	18	20.98	20.97	21.43	0-2	2
		36	38	20.92	20.93	21.36	0-2	2
		75	0	20.99	20.99	21.42	0-2	2
	64QAM	1	0	21.33	21.19	21.77	0-2	2
		1	36	20.95	21.05	21.50	0-2	2
		1	74	21.03	21.21	21.61	0-2	2
		36	0	20.12	20.03	20.48	0-3	3
		36	18	20.00	20.00	20.42	0-3	3
		36	39	20.02	19.97	20.39	0-3	3
		75	0	19.97	20.03	20.38	0-3	3

LTE Band 2_ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				18700	18900	19100	[dB]	[dB]
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	23.39	23.13	**23.48**	0	0
		1	49	22.92	22.95	23.32	0	0
		1	99	22.94	23.13	23.34	0	0
		50	0	22.12	21.99	**22.45**	0-1	1
		50	25	22.00	22.06	22.37	0-1	1
		50	49	22.00	22.03	22.39	0-1	1
		100	0	21.98	22.09	22.43	0-1	1
	16QAM	1	0	22.66	22.38	22.79	0-1	1
		1	49	22.20	22.33	22.52	0-1	1
		1	99	22.27	22.55	22.58	0-1	1
		50	0	21.12	21.04	21.49	0-2	2
		50	25	21.00	21.09	21.40	0-2	2
		50	49	20.96	21.07	21.39	0-2	2
		100	0	21.00	21.05	21.42	0-2	2
	64QAM	1	0	21.54	21.36	21.69	0-2	2
		1	49	21.17	21.17	21.60	0-2	2
		1	99	21.13	21.38	21.64	0-2	2
		50	0	20.16	20.05	20.47	0-3	3
		50	25	20.04	20.10	20.39	0-3	3
		50	49	19.98	20.04	20.36	0-3	3
		100	0	20.02	20.09	20.41	0-3	3

- LTE Band 4

LTE Band 4 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				19957	20175	20393	[dB]	[dB]
				1710.7 MHz	1732.5 MHz	1754.3 MHz		
1.4 MHz	QPSK	1	0	23.10	23.20	22.88	0	0
		1	3	23.20	23.36	22.98	0	0
		1	5	23.14	23.21	22.87	0	0
		3	0	23.16	23.25	22.94	0	0
		3	1	23.18	23.31	23.00	0	0
		3	3	23.18	23.24	22.92	0	0
		6	0	22.19	22.22	21.89	0-1	1
	16QAM	1	0	22.40	22.52	22.18	0-1	1
		1	3	22.41	22.52	22.15	0-1	1
		1	5	22.41	22.64	22.11	0-1	1
		3	0	22.20	22.31	21.97	0-1	1
		3	1	22.15	22.34	22.04	0-1	1
		3	3	22.13	22.24	21.94	0-1	1
		6	0	21.24	21.34	20.96	0-2	2
	64QAM	1	0	21.30	21.40	21.13	0-2	2
		1	3	21.35	21.46	21.11	0-2	2
		1	5	21.24	21.39	21.07	0-2	2
		3	0	21.26	21.37	21.06	0-2	2
		3	1	21.34	21.43	21.08	0-2	2
		3	3	21.29	21.39	21.09	0-2	2
		6	0	20.14	20.25	19.93	0-3	3

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				19965	20175	20385	[dB]	[dB]
				1711.5 MHz	1732.5 MHz	1753.5 MHz		
3 MHz	QPSK	1	0	23.25	23.26	22.99	0	0
		1	7	23.25	23.41	23.04	0	0
		1	14	23.24	23.29	22.96	0	0
		8	0	22.22	22.32	22.00	0-1	1
		8	3	22.27	22.37	21.99	0-1	1
		8	7	22.23	22.31	22.02	0-1	1
		15	0	22.24	22.31	22.03	0-1	1
	16QAM	1	0	22.39	22.62	22.32	0-1	1
		1	7	22.56	22.70	22.40	0-1	1
		1	14	22.47	22.54	22.29	0-1	1
		8	0	21.33	21.39	21.09	0-2	2
		8	3	21.29	21.42	21.08	0-2	2
		8	7	21.31	21.39	21.04	0-2	2
		15	0	21.27	21.35	21.05	0-2	2
	64QAM	1	0	21.40	21.51	21.13	0-2	2
		1	7	21.53	21.55	21.28	0-2	2
		1	14	21.37	21.47	21.19	0-2	2
		8	0	20.31	20.34	20.08	0-3	3
		8	3	20.33	20.41	20.06	0-3	3
		8	7	20.25	20.35	20.09	0-3	3
		15	0	20.26	20.40	20.03	0-3	3

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				19975	20175	20375	[dB]	[dB]
				1712.5 MHz	1732.5 MHz	1752.5 MHz		
5 MHz	QPSK	1	0	23.37	23.35	23.11	0	0
		1	12	23.31	23.32	23.07	0	0
		1	24	23.34	23.34	23.14	0	0
		12	0	22.39	22.38	22.13	0-1	1
		12	6	22.41	22.37	22.13	0-1	1
		12	11	22.36	22.35	22.14	0-1	1
		25	0	22.36	22.36	22.11	0-1	1
	16QAM	1	0	22.68	22.55	22.49	0-1	1
		1	12	22.59	22.67	22.48	0-1	1
		1	24	22.69	22.58	22.38	0-1	1
		12	0	21.39	21.38	21.15	0-2	2
		12	6	21.41	21.41	21.16	0-2	2
		12	11	21.42	21.37	21.15	0-2	2
		25	0	21.41	21.39	21.12	0-2	2
	64QAM	1	0	21.49	21.48	21.32	0-2	2
		1	12	21.53	21.41	21.27	0-2	2
		1	24	21.56	21.53	21.34	0-2	2
		12	0	20.44	20.39	20.18	0-3	3
		12	6	20.45	20.41	20.23	0-3	3
		12	11	20.44	20.37	20.18	0-3	3
		25	0	20.40	20.38	20.14	0-3	3

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20000	20175	20350	[dB]	[dB]
				1715 MHz	1732.5 MHz	1750 MHz		
10 MHz	QPSK	1	0	23.41	23.46	23.31	0	0
		1	24	23.33	23.29	23.09	0	0
		1	49	23.46	23.29	23.07	0	0
		25	0	22.47	22.39	22.31	0-1	1
		25	12	22.46	22.37	22.18	0-1	1
		25	24	22.39	22.37	22.12	0-1	1
		50	0	22.43	22.39	22.18	0-1	1
	16QAM	1	0	22.65	22.83	22.62	0-1	1
		1	24	22.67	22.61	22.37	0-1	1
		1	49	22.79	22.69	22.34	0-1	1
		25	0	21.47	21.42	21.29	0-2	2
		25	12	21.44	21.40	21.20	0-2	2
		25	24	21.45	21.35	21.14	0-2	2
		50	0	21.42	21.41	21.21	0-2	2
	64QAM	1	0	21.64	21.65	21.44	0-2	2
		1	24	21.54	21.51	21.29	0-2	2
		1	49	21.67	21.50	21.27	0-2	2
		25	0	20.44	20.41	20.30	0-3	3
		25	12	20.48	20.42	20.16	0-3	3
		25	24	20.44	20.38	20.14	0-3	3
		50	0	20.42	20.40	20.19	0-3	3

LTE Band 4 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20025	20175	20325	[dB]	[dB]
				1717.5 MHz	1732.5 MHz	1747.5 MHz		
15 MHz	QPSK	1	0	23.41	23.61	23.49	0	0
		1	36	23.26	23.32	23.32	0	0
		1	74	23.44	23.26	23.26	0	0
		36	0	22.39	22.52	22.44	0-1	1
		36	18	22.33	22.40	22.42	0-1	1
		36	39	22.46	22.40	22.27	0-1	1
		75	0	22.38	22.39	22.38	0-1	1
	16QAM	1	0	22.61	22.79	22.84	0-1	1
		1	36	22.60	22.54	22.59	0-1	1
		1	74	22.73	22.63	22.48	0-1	1
		36	0	21.43	21.53	21.40	0-2	2
		36	18	21.39	21.41	21.40	0-2	2
		36	39	21.45	21.41	21.26	0-2	2
		75	0	21.36	21.41	21.39	0-2	2
	64QAM	1	0	21.58	21.79	21.68	0-2	2
		1	36	21.48	21.57	21.58	0-2	2
		1	74	21.67	21.57	21.50	0-2	2
		36	0	20.40	20.58	20.44	0-3	3
		36	18	20.41	20.47	20.47	0-3	3
		36	39	20.45	20.41	20.29	0-3	3
		75	0	20.34	20.41	20.41	0-3	3

LTE Band 4 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				20175	[dB]	[dB]
				1732.5 MHz		
20 MHz	QPSK	1	0	23.57	0	0
		1	49	23.30	0	0
		1	99	23.22	0	0
		50	0	22.52	0-1	1
		50	25	22.40	0-1	1
		50	49	22.40	0-1	1
		100	0	22.41	0-1	1
	16QAM	1	0	22.96	0-1	1
		1	49	22.61	0-1	1
		1	99	22.61	0-1	1
		50	0	21.55	0-2	2
		50	25	21.41	0-2	2
		50	49	21.43	0-2	2
		100	0	21.43	0-2	2
	64QAM	1	0	21.85	0-2	2
		1	49	21.47	0-2	2
		1	99	21.49	0-2	2
		50	0	20.59	0-3	3
		50	25	20.42	0-3	3
		50	49	20.42	0-3	3
		100	0	20.43	0-3	3

Note: LTE Band 4 (AWS) at 20 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 5

LTE Band 5 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20407	20525	20643	[dB]	[dB]
				824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	22.90	23.07	22.88	0	0
		1	3	22.96	23.18	22.92	0	0
		1	5	22.87	23.08	22.83	0	0
		3	0	22.88	23.13	22.90	0	0
		3	1	22.95	23.15	22.97	0	0
		3	3	22.88	23.08	22.89	0	0
		6	0	21.90	22.13	21.92	0-1	1
	16QAM	1	0	22.26	22.39	22.28	0-1	1
		1	3	22.32	22.39	22.21	0-1	1
		1	5	22.17	22.34	22.04	0-1	1
		3	0	21.91	22.16	21.90	0-1	1
		3	1	22.03	22.23	22.03	0-1	1
		3	3	21.88	22.15	21.96	0-1	1
		6	0	21.01	21.22	21.05	0-2	2
	64QAM	1	0	21.05	21.32	21.07	0-2	2
		1	3	21.08	21.31	21.04	0-2	2
		1	5	21.09	21.39	21.09	0-2	2
		3	0	20.95	21.19	20.93	0-2	2
		3	1	21.00	21.25	21.03	0-2	2
		3	3	20.90	21.17	20.96	0-2	2
		6	0	20.52	20.43	20.25	0-3	3

LTE Band 5 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20415	20525	20635	[dB]	[dB]
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	22.99	23.18	23.04	0	0
		1	7	23.10	23.26	23.19	0	0
		1	14	22.94	23.17	23.14	0	0
		8	0	22.01	22.22	21.97	0-1	1
		8	3	22.03	22.22	22.00	0-1	1
		8	7	21.99	22.15	21.99	0-1	1
		15	0	22.00	22.19	22.01	0-1	1
	16QAM	1	0	22.33	22.48	22.37	0-1	1
		1	7	22.34	22.61	22.38	0-1	1
		1	14	22.21	22.48	22.16	0-1	1
		8	0	21.08	21.27	21.07	0-2	2
		8	3	21.08	21.32	21.04	0-2	2
		8	7	21.02	21.26	21.04	0-2	2
		15	0	20.99	21.22	20.98	0-2	2
	64QAM	1	0	21.08	21.31	21.10	0-2	2
		1	7	21.10	21.49	21.31	0-2	2
		1	14	21.09	21.28	21.00	0-2	2
		8	0	20.01	20.17	20.04	0-3	3
		8	3	20.09	20.21	20.07	0-3	3
		8	7	20.04	20.23	20.05	0-3	3
		15	0	20.12	20.18	20.13	0-3	3

LTE Band 5 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR [dB]
				20425	20525	20625	[dB]	[dB]
				826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.14	23.20	22.97	0	0
		1	12	23.08	23.16	23.02	0	0
		1	24	23.13	23.11	22.89	0	0
		12	0	22.10	22.20	22.00	0-1	1
		12	6	22.12	22.24	22.05	0-1	1
		12	11	22.08	22.18	22.01	0-1	1
		25	0	22.11	22.22	21.98	0-1	1
	16QAM	1	0	22.43	22.50	22.30	0-1	1
		1	12	22.33	22.49	22.34	0-1	1
		1	24	22.40	22.43	22.35	0-1	1
		12	0	21.12	21.28	21.07	0-2	2
		12	6	21.11	21.28	21.08	0-2	2
		12	11	21.10	21.23	21.04	0-2	2
		25	0	21.11	21.24	21.04	0-2	2
	64QAM	1	0	21.39	21.43	21.33	0-2	2
		1	12	21.32	21.29	21.27	0-2	2
		1	24	21.39	21.19	21.20	0-2	2
		12	0	20.18	20.33	20.16	0-3	3
		12	6	20.27	20.30	20.15	0-3	3
		12	11	20.13	20.29	20.06	0-3	3
		25	0	20.26	20.27	20.05	0-3	3

LTE Band 5 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				20525	[dB]	[dB]
				836.5 MHz		
10 MHz	QPSK	1	0	23.28	0	0
		1	24	23.18	0	0
		1	49	23.17	0	0
		25	0	22.29	0-1	1
		25	12	22.25	0-1	1
		25	24	22.19	0-1	1
		50	0	22.20	0-1	1
	16QAM	1	0	22.53	0-1	1
		1	24	22.52	0-1	1
		1	49	22.56	0-1	1
		25	0	21.29	0-2	2
		25	12	21.22	0-2	2
		25	24	21.19	0-2	2
		50	0	21.26	0-2	2
	64QAM	1	0	21.52	0-2	2
		1	24	21.45	0-2	2
		1	49	21.40	0-2	2
		25	0	20.39	0-3	3
		25	12	20.23	0-3	3
		25	24	20.19	0-3	3
		50	0	20.30	0-3	3

Note: LTE Band 5 at 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 7

LTE Band 7_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20775	21100	21425	[dB]	[dB]
				2502.5 MHz	2535 MHz	2567.5 MHz		
5 MHz	QPSK	1	0	22.27	22.33	22.50	0	0
		1	12	22.31	22.34	22.45	0	0
		1	24	22.21	22.29	22.42	0	0
		12	0	21.25	21.34	21.45	0-1	1
		12	6	21.28	21.40	21.55	0-1	1
		12	11	21.28	21.36	21.55	0-1	1
		25	0	21.25	21.36	21.52	0-1	1
	16QAM	1	0	21.56	21.53	21.77	0-1	1
		1	12	21.60	21.63	21.76	0-1	1
		1	24	21.51	21.64	21.70	0-1	1
		12	0	20.34	20.37	20.50	0-2	2
		12	6	20.38	20.41	20.53	0-2	2
		12	11	20.31	20.37	20.46	0-2	2
		25	0	20.28	20.38	20.47	0-2	2
	64QAM	1	0	20.57	20.56	20.69	0-2	2
		1	12	20.39	20.56	20.61	0-2	2
		1	24	20.36	20.38	20.73	0-2	2
		12	0	19.26	19.41	19.52	0-3	3
		12	6	19.32	19.42	19.57	0-3	3
		12	11	19.33	19.42	19.55	0-3	3
		25	0	19.32	19.39	19.49	0-3	3

LTE Band 7_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20800	21100	21400	[dB]	[dB]
				2505 MHz	2535 MHz	2565 MHz		
10 MHz	QPSK	1	0	22.29	22.39	22.42	0	0
		1	24	22.25	22.32	22.36	0	0
		1	49	22.33	22.35	22.24	0	0
		25	0	21.28	21.39	21.39	0-1	1
		25	12	21.31	21.38	21.38	0-1	1
		25	24	21.25	21.35	21.35	0-1	1
		50	0	21.27	21.36	21.37	0-1	1
	16QAM	1	0	21.58	21.78	21.69	0-1	1
		1	24	21.50	21.74	21.53	0-1	1
		1	49	21.70	21.76	21.63	0-1	1
		25	0	20.37	20.37	20.39	0-2	2
		25	12	20.35	20.38	20.49	0-2	2
		25	24	20.32	20.38	20.44	0-2	2
		50	0	20.35	20.40	20.44	0-2	2
	64QAM	1	0	20.53	20.60	20.64	0-2	2
		1	24	20.68	20.57	20.54	0-2	2
		1	49	20.64	20.61	20.49	0-2	2
		25	0	19.37	19.39	19.40	0-3	3
		25	12	19.38	19.43	19.45	0-3	3
		25	24	19.32	19.38	19.39	0-3	3
		50	0	19.31	19.46	19.38	0-3	3

LTE Band 7_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20825	21100	21375	[dB]	[dB]
				2507.5 MHz	2535 MHz	2562.5 MHz		
15 MHz	QPSK	1	0	22.33	22.47	22.54	0	0
		1	36	22.21	22.31	22.28	0	0
		1	74	22.35	22.27	22.33	0	0
		36	0	21.33	21.40	21.39	0-1	1
		36	18	21.34	21.41	21.39	0-1	1
		36	38	21.40	21.38	21.30	0-1	1
		75	0	21.35	21.39	21.38	0-1	1
	16QAM	1	0	21.69	21.76	21.87	0-1	1
		1	36	21.56	21.80	21.52	0-1	1
		1	74	21.74	21.57	21.58	0-1	1
		36	0	20.33	20.48	20.40	0-2	2
		36	18	20.36	20.44	20.35	0-2	2
		36	38	20.38	20.43	20.33	0-2	2
		75	0	20.34	20.42	20.36	0-2	2
	64QAM	1	0	20.56	20.62	20.77	0-2	2
		1	36	20.48	20.58	20.46	0-2	2
		1	74	20.66	20.67	20.43	0-2	2
		36	0	19.46	19.48	19.45	0-3	3
		36	18	19.36	19.45	19.38	0-3	3
		36	39	19.43	19.44	19.36	0-3	3
		75	0	19.37	19.47	19.38	0-3	3

LTE Band 7_ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				20850	21100	21350	[dB]	[dB]
				2510 MHz	2535 MHz	2560 MHz		
20 MHz	QPSK	1	0	22.42	22.52	**22.70**	0	0
		1	49	22.45	22.32	22.32	0	0
		1	99	22.39	22.27	22.28	0	0
		50	0	21.36	21.46	**21.55**	0-1	1
		50	25	21.49	21.41	21.37	0-1	1
		50	49	21.41	21.43	21.31	0-1	1
		100	0	21.47	21.43	21.34	0-1	1
	16QAM	1	0	21.61	21.80	21.86	0-1	1
		1	49	21.61	21.69	21.64	0-1	1
		1	99	21.70	21.65	21.51	0-1	1
		50	0	20.40	20.49	20.53	0-2	2
		50	25	20.50	20.42	20.39	0-2	2
		50	49	20.52	20.46	20.33	0-2	2
		100	0	20.53	20.46	20.39	0-2	2
	64QAM	1	0	20.71	20.81	20.85	0-2	2
		1	49	20.67	20.56	20.40	0-2	2
		1	99	20.67	20.59	20.45	0-2	2
		50	0	19.39	19.53	19.58	0-3	3
		50	25	19.49	19.50	19.42	0-3	3
		50	49	19.43	19.47	19.36	0-3	3
		100	0	19.46	19.46	19.42	0-3	3

- LTE Band 12

LTE Band 12 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				23017	23095	23173	[dB]	[dB]
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	23.11	23.10	23.03	0	0
		1	3	23.17	23.18	23.07	0	0
		1	5	23.12	23.03	22.96	0	0
		3	0	23.11	23.10	23.09	0	0
		3	1	23.24	23.08	23.09	0	0
		3	3	23.08	23.03	23.08	0	0
		6	0	22.11	22.08	22.05	0-1	1
	16QAM	1	0	22.27	22.24	22.22	0-1	1
		1	3	22.27	22.22	22.25	0-1	1
		1	5	22.21	22.24	22.21	0-1	1
		3	0	22.18	22.13	22.01	0-1	1
		3	1	22.21	22.13	22.17	0-1	1
		3	3	22.14	22.06	22.08	0-1	1
		6	0	21.25	21.10	21.15	0-2	2
	64QAM	1	0	21.11	21.24	21.18	0-2	2
		1	3	21.25	21.15	21.25	0-2	2
		1	5	21.24	21.17	21.16	0-2	2
		3	0	21.26	21.13	21.12	0-2	2
		3	1	21.30	21.19	21.16	0-2	2
		3	3	21.26	21.11	21.14	0-2	2
		6	0	20.18	20.05	20.03	0-3	3

LTE Band 12 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				23025	23095	23165	[dB]	[dB]
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	23.12	23.06	23.01	0	0
		1	7	23.11	23.15	23.04	0	0
		1	14	23.06	23.10	23.08	0	0
		8	0	22.28	22.09	22.11	0-1	1
		8	3	22.18	22.11	22.19	0-1	1
		8	7	22.17	22.11	22.16	0-1	1
		15	0	22.22	22.14	22.09	0-1	1
	16QAM	1	0	22.22	22.14	22.12	0-1	1
		1	7	22.49	22.23	22.14	0-1	1
		1	14	22.30	22.26	22.17	0-1	1
		8	0	21.38	21.18	21.22	0-2	2
		8	3	21.35	21.25	21.25	0-2	2
		8	7	21.24	21.20	21.22	0-2	2
		15	0	21.32	21.12	21.16	0-2	2
	64QAM	1	0	21.06	21.15	21.33	0-2	2
		1	7	21.41	21.34	21.43	0-2	2
		1	14	21.38	21.16	21.24	0-2	2
		8	0	20.26	20.22	20.19	0-3	3
		8	3	20.28	20.22	20.22	0-3	3
		8	7	20.30	20.06	20.18	0-3	3
		15	0	20.25	20.11	20.15	0-3	3

LTE Band 12 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				23035	23095	23155	[dB]	[dB]
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	23.04	23.04	23.16	0	0
		1	12	23.00	22.98	23.09	0	0
		1	24	23.03	23.05	23.03	0	0
		12	0	22.04	22.04	22.17	0-1	1
		12	6	22.02	22.02	22.14	0-1	1
		12	11	22.10	22.01	22.14	0-1	1
		25	0	22.02	22.04	22.12	0-1	1
	16QAM	1	0	22.24	22.35	22.41	0-1	1
		1	12	22.29	22.32	22.37	0-1	1
		1	24	22.31	22.25	22.42	0-1	1
		12	0	21.12	21.06	21.23	0-2	2
		12	6	21.04	21.12	21.24	0-2	2
		12	11	21.15	21.04	21.17	0-2	2
		25	0	21.03	21.04	21.20	0-2	2
	64QAM	1	0	21.38	21.30	21.30	0-2	2
		1	12	21.24	21.23	21.35	0-2	2
		1	24	21.28	21.29	21.32	0-2	2
		12	0	20.17	20.19	20.28	0-3	3
		12	6	20.11	20.15	20.25	0-3	3
		12	11	20.18	20.05	20.19	0-3	3
		25	0	20.06	20.07	20.21	0-3	3

LTE Band 12 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				23095	[dB]	[dB]
				707.5 MHz		
10 MHz	QPSK	1	0	23.19	0	0
		1	24	22.97	0	0
		1	49	**23.24**	0	0
		25	0	**22.10**	0-1	1
		25	12	22.05	0-1	1
		25	24	22.09	0-1	1
		50	0	22.13	0-1	1
	16QAM	1	0	22.34	0-1	1
		1	24	22.37	0-1	1
		1	49	22.39	0-1	1
		25	0	21.09	0-2	2
		25	12	21.05	0-2	2
		25	24	21.14	0-2	2
		50	0	21.14	0-2	2
	64QAM	1	0	21.30	0-2	2
		1	24	21.26	0-2	2
		1	49	21.36	0-2	2
		25	0	20.19	0-3	3
		25	12	20.15	0-3	3
		25	24	20.15	0-3	3
		50	0	20.23	0-3	3

Note: LTE Band 12 at 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 13

LTE Band 13 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				23230	[dB]	[dB]
				782 MHz		
5 MHz	QPSK	1	0	23.01	0	0
		1	12	22.99	0	0
		1	24	23.00	0	0
		12	0	22.02	0-1	1
		12	6	22.00	0-1	1
		12	11	21.99	0-1	1
		25	0	21.94	0-1	1
	16QAM	1	0	22.28	0-1	1
		1	12	22.22	0-1	1
		1	24	22.26	0-1	1
		12	0	21.07	0-2	2
		12	6	21.01	0-2	2
		12	11	21.00	0-2	2
		25	0	21.03	0-2	2
	64QAM	1	0	21.24	0-2	2
		1	12	21.21	0-2	2
		1	24	21.25	0-2	2
		12	0	20.13	0-3	3
		12	6	20.13	0-3	3
		12	11	20.11	0-3	3
		25	0	20.06	0-3	3

LTE Band 13 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				23230	[dB]	[dB]
				782 MHz		
10 MHz	QPSK	1	0	**23.11**	0	0
		1	24	22.98	0	0
		1	49	22.99	0	0
		25	0	**22.04**	0-1	1
		25	12	22.03	0-1	1
		25	24	21.94	0-1	1
		50	0	21.99	0-1	1
	16QAM	1	0	22.43	0-1	1
		1	24	22.31	0-1	1
		1	49	22.32	0-1	1
		25	0	21.15	0-2	2
		25	12	21.08	0-2	2
		25	24	20.97	0-2	2
		50	0	21.06	0-2	2
	64QAM	1	0	21.33	0-2	2
		1	24	21.22	0-2	2
		1	49	21.23	0-2	2
		25	0	20.13	0-3	3
		25	12	20.17	0-3	3
		25	24	20.04	0-3	3
		50	0	20.06	0-3	3

Note: LTE Band 13 at 5 MHz/ 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 14

LTE Band 14 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				23330	[dB]	[dB]
				793 MHz		
5 MHz	QPSK	1	0	23.20	0	0
		1	12	23.07	0	0
		1	24	23.08	0	0
		12	0	22.14	0-1	1
		12	6	22.20	0-1	1
		12	11	22.13	0-1	1
		25	0	22.15	0-1	1
	16QAM	1	0	22.42	0-1	1
		1	12	22.42	0-1	1
		1	24	22.30	0-1	1
		12	0	21.22	0-2	2
		12	6	21.20	0-2	2
		12	11	21.18	0-2	2
		25	0	21.14	0-2	2
	64QAM	1	0	21.32	0-2	2
		1	12	21.24	0-2	2
		1	24	21.21	0-2	2
		12	0	20.22	0-3	3
		12	6	20.23	0-3	3
		12	11	20.20	0-3	3
		25	0	20.18	0-3	3

LTE Band 14 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				23330	[dB]	[dB]
				793 MHz		
10 MHz	QPSK	1	0	**23.21**	0	0
		1	24	23.10	0	0
		1	49	23.10	0	0
		25	0	22.18	0-1	1
		25	12	**22.19**	0-1	1
		25	24	22.15	0-1	1
		50	0	22.12	0-1	1
	16QAM	1	0	22.51	0-1	1
		1	24	22.38	0-1	1
		1	49	22.37	0-1	1
		25	0	21.23	0-2	2
		25	12	21.18	0-2	2
		25	24	21.14	0-2	2
		50	0	21.20	0-2	2
	64QAM	1	0	21.44	0-2	2
		1	24	21.34	0-2	2
		1	49	21.28	0-2	2
		25	0	20.23	0-3	3
		25	12	20.20	0-3	3
		25	24	20.13	0-3	3
		50	0	20.18	0-3	3

Note: LTE Band 14 at 5 MHz/ 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 26

LTE Band 26_ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				26697	26865	27033	[dB]	[dB]
				814.7 MHz	831.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.09	23.31	23.25	0	0
		1	3	23.18	23.32	23.34	0	0
		1	5	23.08	23.25	23.46	0	0
		3	0	23.16	23.27	23.26	0	0
		3	1	23.16	23.36	23.33	0	0
		3	3	23.11	23.31	23.24	0	0
		6	0	22.10	22.27	22.28	0-1	1
	16QAM	1	0	22.39	22.56	22.53	0-1	1
		1	3	22.47	22.67	22.62	0-1	1
		1	5	22.49	22.60	22.49	0-1	1
		3	0	22.22	22.38	22.26	0-1	1
		3	1	22.24	22.41	22.40	0-1	1
		3	3	22.19	22.33	22.33	0-1	1
		6	0	21.23	21.39	21.33	0-2	2
	64QAM	1	0	21.27	21.54	21.42	0-2	2
		1	3	21.27	21.61	21.64	0-2	2
		1	5	21.27	21.48	21.38	0-2	2
		3	0	21.31	21.50	21.46	0-2	2
		3	1	21.37	21.55	21.50	0-2	2
		3	3	21.28	21.49	21.43	0-2	2
		6	0	20.10	20.36	20.21	0-3	3

LTE Band 26_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				26705	26865	27025	[dB]	[dB]
				815.5 MHz	831.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.22	23.42	23.36	0	0
		1	7	23.25	23.48	23.57	0	0
		1	14	23.21	23.39	23.31	0	0
		8	0	22.20	22.36	22.33	0-1	1
		8	3	22.21	22.37	22.39	0-1	1
		8	7	22.29	22.39	22.34	0-1	1
		15	0	22.19	22.36	22.35	0-1	1
	16QAM	1	0	22.59	22.67	22.70	0-1	1
		1	7	22.53	22.82	22.66	0-1	1
		1	14	22.52	22.75	22.60	0-1	1
		8	0	21.28	21.48	21.47	0-2	2
		8	3	21.24	21.44	21.41	0-2	2
		8	7	21.34	21.42	21.38	0-2	2
		15	0	21.18	21.44	21.39	0-2	2
	64QAM	1	0	21.44	21.60	21.58	0-2	2
		1	7	21.49	21.58	21.57	0-2	2
		1	14	21.51	21.56	21.57	0-2	2
		8	0	20.23	20.43	20.43	0-3	3
		8	3	20.26	20.48	20.40	0-3	3
		8	7	20.30	20.37	20.38	0-3	3
		15	0	20.15	20.40	20.39	0-3	3

LTE Band 26_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				26715	26865	27015	[dB]	[dB]
				816.5 MHz	831.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.10	23.48	23.32	0	0
		1	12	23.14	23.42	23.26	0	0
		1	24	23.16	23.38	23.18	0	0
		12	0	22.09	22.41	22.27	0-1	1
		12	6	22.23	22.41	22.30	0-1	1
		12	11	22.18	22.40	22.26	0-1	1
		25	0	22.17	22.42	22.24	0-1	1
	16QAM	1	0	22.47	22.68	22.63	0-1	1
		1	12	22.60	22.73	22.49	0-1	1
		1	24	22.50	22.54	22.51	0-1	1
		12	0	21.14	21.45	21.30	0-2	2
		12	6	21.23	21.41	21.31	0-2	2
		12	11	21.22	21.41	21.30	0-2	2
		25	0	21.18	21.41	21.26	0-2	2
	64QAM	1	0	21.31	21.62	21.53	0-2	2
		1	12	21.50	21.60	21.47	0-2	2
		1	24	21.38	21.59	21.32	0-2	2
		12	0	20.19	20.45	20.31	0-3	3
		12	6	20.24	20.44	20.32	0-3	3
		12	11	20.24	20.41	20.32	0-3	3
		25	0	20.21	20.41	20.30	0-3	3

LTE Band 26_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				26750	26865	26990	[dB]	[dB]
				820 MHz	831.5 MHz	844 MHz		
10 MHz	QPSK	1	0	23.42	23.35	23.49	0	0
		1	24	23.41	23.40	23.37	0	0
		1	49	23.40	23.46	23.34	0	0
		25	0	22.47	22.44	22.42	0-1	1
		25	12	22.42	22.44	22.42	0-1	1
		25	24	22.43	22.37	22.42	0-1	1
		50	0	22.42	22.41	22.40	0-1	1
	16QAM	1	0	22.64	22.80	22.85	0-1	1
		1	24	22.77	22.73	22.66	0-1	1
		1	49	22.71	22.66	22.67	0-1	1
		25	0	21.48	21.41	21.47	0-2	2
		25	12	21.43	21.42	21.48	0-2	2
		25	24	21.49	21.37	21.42	0-2	2
		50	0	21.42	21.43	21.43	0-2	2
	64QAM	1	0	21.62	21.65	21.68	0-2	2
		1	24	21.56	21.63	21.76	0-2	2
		1	49	21.50	21.60	21.66	0-2	2
		25	0	20.47	20.44	20.46	0-3	3
		25	12	20.48	20.44	20.47	0-3	3
		25	24	20.49	20.40	20.39	0-3	3
		50	0	20.41	20.43	20.42	0-3	3

LTE Band 26_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)	MPR Allowed Per 3GPP	MPR
				26865	[dB]	[dB]
				831.5 MHz		
15 MHz	QPSK	1	0	23.40	0	0
		1	36	**23.42**	0	0
		1	74	23.39	0	0
		36	0	**22.50**	0-1	1
		36	18	22.47	0-1	1
		36	38	22.48	0-1	1
		75	0	22.46	0-1	1
	16QAM	1	0	22.74	0-1	1
		1	36	22.67	0-1	1
		1	74	22.76	0-1	1
		36	0	21.47	0-2	2
		36	18	21.49	0-2	2
		36	38	21.50	0-2	2
		75	0	21.44	0-2	2
	64QAM	1	0	21.55	0-2	2
		1	36	21.65	0-2	2
		1	74	21.75	0-2	2
		36	0	20.47	0-3	3
		36	18	20.52	0-3	3
		36	39	20.51	0-3	3
		75	0	20.45	0-3	3

Note: LTE Band 26 at 15 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE TDD Band 41

LTE Band 41 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR Allowed Per 3GPP	MPR
				39675	40148	40620	41093	41565	[dB]	[dB]
				2498.5 MHz	2545.8 MHz	2593.0 MHz	2640.3 MHz	2687.5 MHz		
5 MHz	QPSK	1	0	21.69	22.36	22.38	22.21	21.78	0	0
		1	12	21.73	22.32	22.31	22.15	21.75	0	0
		1	24	21.73	22.32	22.29	22.05	21.72	0	0
		12	0	20.76	21.41	21.36	21.20	20.79	0-1	1
		12	6	20.82	21.40	21.37	21.22	20.83	0-1	1
		12	11	20.80	21.39	21.33	21.18	20.79	0-1	1
		25	0	20.80	21.39	21.36	21.21	20.81	0-1	1
	16QAM	1	0	21.07	21.76	21.79	21.62	21.20	0-1	1
		1	12	21.11	21.77	21.74	21.59	21.17	0-1	1
		1	24	21.11	21.74	21.72	21.43	21.11	0-1	1
		12	0	19.89	20.49	20.44	20.31	19.89	0-2	2
		12	6	19.97	20.53	20.48	20.31	19.94	0-2	2
		12	11	19.92	20.46	20.41	20.26	19.89	0-2	2
		25	0	19.88	20.45	20.41	20.27	19.85	0-2	2
	64QAM	1	0	19.88	20.50	20.46	20.36	19.92	0-2	2
		1	12	19.93	20.47	20.45	20.28	19.89	0-2	2
		1	24	19.94	20.50	20.43	20.16	19.90	0-2	2
		12	0	18.95	19.52	19.49	19.34	18.93	0-2	2
		12	6	18.97	19.55	19.51	19.32	18.96	0-3	3
		12	11	18.97	19.51	19.50	19.31	18.91	0-3	3
		25	0	18.93	19.48	19.43	19.30	18.90	0-3	3

LTE Band 41 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR Allowed Per 3GPP	MPR
				39700	40160	40620	41080	41540	[dB]	[dB]
				2501.0 MHz	2547.0 MHz	2593.0 MHz	2639.0 MHz	2685.0 MHz		
10 MHz	QPSK	1	0	21.78	22.45	22.47	22.35	21.84	0	0
		1	24	21.76	22.40	22.38	22.25	21.70	0	0
		1	49	21.69	22.37	22.30	22.05	21.70	0	0
		25	0	20.86	21.45	21.44	21.29	20.86	0-1	1
		25	12	20.90	21.42	21.39	21.26	20.84	0-1	1
		25	24	20.89	21.37	21.36	21.19	20.77	0-1	1
		50	0	20.84	21.42	21.37	21.22	20.79	0-1	1
	16QAM	1	0	21.10	21.84	21.82	21.71	21.28	0-1	1
		1	24	21.13	21.80	21.75	21.58	21.18	0-1	1
		1	49	21.10	21.76	21.71	21.40	21.20	0-1	1
		25	0	19.92	20.49	20.46	20.28	19.87	0-2	2
		25	12	19.92	20.49	20.43	20.26	19.85	0-2	2
		25	24	19.92	20.41	20.36	20.20	19.84	0-2	2
		50	0	19.93	20.51	20.43	20.29	19.89	0-2	2
	64QAM	1	0	19.96	20.54	20.54	20.39	20.05	0-2	2
		1	24	19.96	20.50	20.48	20.31	19.90	0-2	2
		1	49	19.92	20.51	20.39	20.15	19.94	0-2	2
		25	0	18.96	19.52	19.52	19.37	18.96	0-2	2
		25	12	19.00	19.57	19.52	19.36	18.94	0-3	3
		25	24	19.00	19.49	19.41	19.24	18.87	0-3	3
		50	0	18.94	19.46	19.41	19.27	18.87	0-3	3

LTE Band 41 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR Allowed Per 3GPP	MPR
				39725	40173	40620	41068	41515	[dB]	[dB]
				2503.5 MHz	2548.3 MHz	2593.0 MHz	2637.8 MHz	2682.5 MHz		
15 MHz	QPSK	1	0	21.85	22.51	22.56	22.40	22.07	0	0
		1	36	21.82	22.40	22.37	22.23	21.80	0	0
		1	74	21.85	22.39	22.34	22.07	21.79	0	0
		36	0	20.90	21.45	21.43	21.28	21.08	0-1	1
		36	18	20.91	21.42	21.41	21.25	20.96	0-1	1
		36	39	20.85	21.36	21.32	21.05	20.89	0-1	1
		75	0	20.91	21.43	21.38	21.23	20.93	0-1	1
	16QAM	1	0	21.20	21.88	21.88	21.77	21.54	0-1	1
		1	36	21.19	21.77	21.78	21.60	21.21	0-1	1
		1	74	21.28	21.71	21.70	21.42	21.19	0-1	1
		36	0	19.94	20.48	20.44	20.32	20.10	0-2	2
		36	18	19.97	20.46	20.41	20.27	19.96	0-2	2
		36	39	19.89	20.41	20.34	20.06	19.89	0-2	2
		75	0	19.99	20.48	20.42	20.26	19.94	0-2	2
	64QAM	1	0	20.05	20.61	20.63	20.46	20.24	0-2	2
		1	36	19.97	20.43	20.40	20.24	20.01	0-2	2
		1	74	20.02	20.45	20.42	20.14	19.97	0-2	2
		36	0	18.94	19.51	19.46	19.27	19.09	0-3	3
		36	18	18.99	19.47	19.43	19.24	18.95	0-3	3
		36	39	18.88	19.41	19.31	19.04	18.89	0-3	3
		75	0	19.04	19.49	19.44	19.30	19.00	0-3	3

LTE Band 41 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)					MPR Allowed Per 3GPP	MPR
				39750	40185	40620	41055	41490	[dB]	[dB]
				2506.0 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2680.0 MHz		
20 MHz	QPSK	1	0	21.95	**22.56**	22.51	22.45	22.21	0	0
		1	49	21.86	22.40	22.26	22.19	21.91	0	0
		1	99	22.04	22.37	22.19	22.02	21.84	0	0
		50	0	20.97	**21.46**	21.44	21.31	21.07	0-1	1
		50	25	20.92	21.46	21.38	21.25	20.92	0-1	1
		50	49	20.96	21.40	21.33	21.18	20.88	0-1	1
		100	0	20.95	21.41	21.39	21.24	20.95	0-1	1
	16QAM	1	0	21.28	21.93	21.93	21.82	21.60	0-1	1
		1	49	21.18	21.77	21.73	21.60	21.28	0-1	1
		1	99	21.39	21.71	21.63	21.36	21.19	0-1	1
		50	0	20.06	20.56	20.53	20.36	20.14	0-2	2
		50	25	20.02	20.53	20.42	20.31	20.11	0-2	2
		50	49	20.04	20.46	20.39	20.23	20.10	0-2	2
		100	0	20.01	20.50	20.45	20.31	20.00	0-2	2
	64QAM	1	0	20.09	20.58	20.59	20.48	20.30	0-2	2
		1	49	19.89	20.39	20.37	20.21	20.00	0-2	2
		1	99	20.12	20.40	20.34	20.04	19.95	0-2	2
		50	0	19.03	19.56	19.52	19.37	19.12	0-3	3
		50	25	18.99	19.49	19.43	19.28	18.98	0-3	3
		50	49	19.00	19.44	19.37	19.18	18.89	0-3	3
		100	0	19.01	19.50	19.45	19.31	18.99	0-3	3

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D01v06.

- LTE Band 66

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				131997	132322	132647	[dB]	[dB]
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	23.20	23.00	22.74	0	0
		1	12	23.15	22.86	22.67	0	0
		1	24	23.16	22.96	22.64	0	0
		12	0	22.15	21.97	21.70	0-1	1
		12	6	22.20	21.98	21.72	0-1	1
		12	11	22.15	21.94	21.72	0-1	1
		25	0	22.18	21.99	21.70	0-1	1
	16QAM	1	0	22.54	22.23	22.04	0-1	1
		1	12	22.54	22.22	22.00	0-1	1
		1	24	22.49	22.19	21.99	0-1	1
		12	0	21.18	21.00	20.73	0-2	2
		12	6	21.25	21.02	20.74	0-2	2
		12	11	21.18	20.96	20.74	0-2	2
		25	0	21.19	20.98	20.74	0-2	2
	64QAM	1	0	21.33	21.17	20.89	0-2	2
		1	12	21.32	21.10	20.78	0-2	2
		1	24	21.35	21.13	20.77	0-2	2
		12	0	20.23	20.03	19.79	0-3	3
		12	6	20.23	20.04	19.76	0-3	3
		12	11	20.22	19.98	19.74	0-3	3
		25	0	20.18	19.97	19.73	0-3	3

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				132022	132322	132622	[dB]	[dB]
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	**23.33**	23.20	22.78	0	0
		1	24	23.26	22.97	22.72	0	0
		1	49	23.28	22.93	22.69	0	0
		25	0	22.35	22.05	21.78	0-1	1
		25	12	22.34	22.02	21.73	0-1	1
		25	24	22.30	21.96	21.73	0-1	1
		50	0	22.30	22.00	21.74	0-1	1
	16QAM	1	0	22.62	22.41	22.04	0-1	1
		1	24	22.54	22.24	21.97	0-1	1
		1	49	22.56	22.30	21.99	0-1	1
		25	0	21.27	21.05	20.76	0-2	2
		25	12	21.32	20.99	20.74	0-2	2
		25	24	21.29	20.96	20.76	0-2	2
		50	0	21.34	21.00	20.77	0-2	2
	64QAM	1	0	21.57	21.39	20.97	0-2	2
		1	24	21.45	21.17	20.82	0-2	2
		1	49	21.45	21.08	20.95	0-2	2
		25	0	20.37	20.08	19.81	0-3	3
		25	12	20.37	20.02	19.74	0-3	3
		25	24	20.30	20.02	19.76	0-3	3
		50	0	20.32	19.99	19.77	0-3	3

LTE Band 66 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				132047	132322	132597	[dB]	[dB]
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	23.37	23.26	22.91	0	0
		1	36	23.25	22.96	22.70	0	0
		1	74	23.30	22.92	22.74	0	0
		36	0	22.36	22.08	21.79	0-1	1
		36	18	22.36	21.99	21.78	0-1	1
		36	38	22.31	21.99	21.78	0-1	1
		75	0	22.32	22.03	21.83	0-1	1
	16QAM	1	0	22.72	22.60	22.22	0-1	1
		1	36	22.62	22.24	22.05	0-1	1
		1	74	22.65	22.27	22.05	0-1	1
		36	0	21.35	21.06	20.87	0-2	2
		36	18	21.32	21.03	20.76	0-2	2
		36	38	21.26	20.98	20.73	0-2	2
		75	0	21.39	21.03	20.79	0-2	2
	64QAM	1	0	21.60	21.39	21.12	0-2	2
		1	36	21.43	21.13	20.88	0-2	2
		1	74	21.50	21.13	20.88	0-2	2
		36	0	20.40	20.06	19.88	0-3	3
		36	18	20.35	20.06	19.77	0-3	3
		36	39	20.29	19.98	19.79	0-3	3
		75	0	20.34	20.02	19.78	0-3	3

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Max. Average Power (dBm)			MPR Allowed Per 3GPP	MPR
				132072	132322	132572	[dB]	[dB]
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	**23.39**	23.29	22.97	0	0
		1	49	23.21	22.92	22.71	0	0
		1	99	23.16	22.92	22.71	0	0
		50	0	**22.28**	22.18	21.86	0-1	1
		50	25	22.22	22.06	21.80	0-1	1
		50	49	22.20	21.97	21.76	0-1	1
		100	0	22.23	22.05	21.82	0-1	1
	16QAM	1	0	22.73	22.57	22.35	0-1	1
		1	49	22.42	22.22	22.07	0-1	1
		1	99	22.47	22.20	22.08	0-1	1
		50	0	21.34	21.23	20.88	0-2	2
		50	25	21.23	21.06	20.80	0-2	2
		50	49	21.21	20.98	20.77	0-2	2
		100	0	21.23	21.05	20.84	0-2	2
	64QAM	1	0	21.56	21.63	21.15	0-2	2
		1	49	21.43	21.08	20.89	0-2	2
		1	99	21.39	21.14	20.86	0-2	2
		50	0	20.34	20.22	19.87	0-3	3
		50	25	20.29	20.04	19.78	0-3	3
		50	49	20.26	19.99	19.79	0-3	3
		100	0	20.27	20.05	19.84	0-3	3

Note; The EUT enables maximum power reduction in accordance with 3GPP 36.101. The MPR settings are configured during the manufacture process and are not configurable by the network, carrier, or end user.

9.2.2 LTE Reduced Power (Power back-off)

- LTE Band 2

LTE Band 2_ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				18607	18900	19193	[dB]
				1850.7 MHz	1880 MHz	1909.3 MHz	
1.4 MHz	QPSK	1	0	15.61	15.60	15.87	0
		1	3	15.62	15.68	15.92	0
		1	5	15.60	15.58	15.85	0
		3	0	15.60	15.64	15.87	0
		3	1	15.60	15.69	15.90	0
		3	3	15.71	15.61	15.87	0
		6	0	15.61	15.67	15.89	0
	16QAM	1	0	15.82	15.80	16.03	0
		1	3	16.04	16.05	16.11	0
		1	5	15.88	15.91	16.08	0
		3	0	15.62	15.71	15.92	0
		3	1	15.72	15.63	15.98	0
		3	3	15.66	15.63	15.92	0
		6	0	15.69	15.70	16.00	0
	64QAM	1	0	15.74	15.76	16.08	0
		1	3	15.82	15.78	16.04	0
		1	5	15.70	15.84	15.97	0
		3	0	15.71	15.75	16.06	0
		3	1	15.76	15.80	16.10	0
		3	3	15.69	15.77	15.96	0
		6	0	15.62	15.68	15.86	0

LTE Band 2_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				18615	18900	19185	[dB]
				1851.5 MHz	1880 MHz	1908.5 MHz	
3 MHz	QPSK	1	0	15.68	15.67	15.93	0
		1	7	15.76	15.78	16.06	0
		1	14	15.62	15.68	15.91	0
		8	0	15.72	15.73	15.96	0
		8	3	15.72	15.74	15.96	0
		8	7	15.68	15.69	15.93	0
		15	0	15.68	15.71	15.98	0
	16QAM	1	0	15.87	15.91	16.05	0
		1	7	16.03	16.04	16.02	0
		1	14	15.96	15.91	16.09	0
		8	0	15.74	15.83	16.00	0
		8	3	15.77	15.82	16.06	0
		8	7	15.78	15.79	16.00	0
		15	0	15.76	15.73	15.99	0
	64QAM	1	0	15.84	15.91	16.07	0
		1	7	15.93	16.02	16.06	0
		1	14	15.82	15.87	16.06	0
		8	0	15.78	15.73	16.00	0
		8	3	15.79	15.80	16.03	0
		8	7	15.70	15.70	16.01	0
		15	0	15.68	15.73	15.98	0

LTE Band 2_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm))			MPR
				18625	18900	19175	[dB]
				1852.5 MHz	1880 MHz	1907.5 MHz	
5 MHz	QPSK	1	0	15.74	15.71	15.98	0
		1	12	15.66	15.71	15.96	0
		1	24	15.69	15.68	15.91	0
		12	0	15.74	15.75	15.99	0
		12	6	15.77	15.73	16.00	0
		12	11	15.75	15.77	15.98	0
		25	0	15.70	15.75	15.99	0
	16QAM	1	0	15.98	15.98	16.04	0
		1	12	15.86	15.99	16.04	0
		1	24	15.94	16.00	16.05	0
		12	0	15.73	15.78	15.98	0
		12	6	15.76	15.79	16.03	0
		12	11	15.75	15.75	16.02	0
		25	0	15.73	15.78	15.97	0
	64QAM	1	0	15.91	15.87	16.09	0
		1	12	15.90	15.87	16.08	0
		1	24	15.84	15.91	16.09	0
		12	0	15.80	15.81	16.01	0
		12	6	15.77	15.79	16.07	0
		12	11	15.77	15.78	16.04	0
		25	0	15.72	15.76	16.03	0

LTE Band 2_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				18650	18900	19150	[dB]
				1855 MHz	1880 MHz	1905 MHz	
10 MHz	QPSK	1	0	15.98	15.99	16.01	0
		1	24	15.68	15.70	15.95	0
		1	49	15.93	15.88	15.95	0
		25	0	15.79	15.78	16.02	0
		25	12	15.76	15.80	15.98	0
		25	24	15.75	15.77	15.96	0
		50	0	15.75	15.76	16.04	0
	16QAM	1	0	16.05	16.07	16.03	0
		1	24	15.88	15.97	16.05	0
		1	49	16.02	16.07	16.06	0
		25	0	15.84	15.82	16.02	0
		25	12	15.81	15.83	16.05	0
		25	24	15.75	15.77	16.05	0
		50	0	15.81	15.81	16.02	0
	64QAM	1	0	16.06	16.02	16.04	0
		1	24	15.85	15.86	16.10	0
		1	49	16.04	16.06	16.11	0
		25	0	15.78	15.79	16.05	0
		25	12	15.78	15.78	16.04	0
		25	24	15.72	15.78	16.03	0
		50	0	15.82	15.75	16.01	0

LTE Band 2_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				18675	18900	19125	[dB]
				1857.5 MHz	1880 MHz	1902.5 MHz	
15 MHz	QPSK	1	0	15.86	15.88	16.09	0
		1	36	15.73	15.67	15.92	0
		1	74	15.70	15.72	16.03	0
		36	0	15.84	15.78	16.10	0
		36	18	15.78	15.81	16.04	0
		36	38	15.79	15.74	16.02	0
		75	0	15.78	15.79	16.05	0
	16QAM	1	0	16.07	16.04	16.09	0
		1	36	15.91	16.02	16.23	0
		1	74	15.90	16.02	16.08	0
		36	0	15.82	15.81	16.08	0
		36	18	15.85	15.82	16.05	0
		36	38	15.78	15.77	16.02	0
		75	0	15.83	15.81	16.04	0
	64QAM	1	0	15.96	16.01	16.12	0
		1	36	15.87	15.84	16.07	0
		1	74	15.85	15.92	16.11	0
		36	0	15.88	15.82	16.13	0
		36	18	15.84	15.78	16.09	0
		36	39	15.85	15.78	16.02	0
		75	0	15.80	15.81	16.02	0

LTE Band 2_ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				18700	18900	19100	[dB]
				1860 MHz	1880 MHz	1900 MHz	
20 MHz	QPSK	1	0	15.98	15.99	**16.13**	0
		1	49	15.69	15.68	15.92	0
		1	99	15.77	15.84	15.89	0
		50	0	15.83	15.87	16.07	0
		50	25	15.78	15.76	16.02	0
		50	49	15.69	15.79	16.02	0
		100	0	15.81	15.81	16.07	0
	16QAM	1	0	16.05	16.11	16.03	0
		1	49	16.01	15.90	16.06	0
		1	99	16.03	16.01	16.11	0
		50	0	15.90	15.85	16.08	0
		50	25	15.85	15.82	16.07	0
		50	49	15.69	15.76	16.01	0
		100	0	15.88	15.82	16.08	0
	64QAM	1	0	16.10	16.06	16.26	0
		1	49	15.89	15.89	16.10	0
		1	99	15.97	15.98	16.10	0
		50	0	15.85	15.87	16.03	0
		50	25	15.83	15.80	16.07	0
		50	49	15.71	15.80	16.04	0
		100	0	15.82	15.81	16.07	0

- LTE Band 4

LTE Band 4 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				19957	20175	20393	[dB]
				1710.7 MHz	1732.5 MHz	1754.3 MHz	
1.4 MHz	QPSK	1	0	15.50	15.75	15.46	0
		1	3	15.61	15.73	15.53	0
		1	5	15.49	15.68	15.44	0
		3	0	15.52	15.70	15.49	0
		3	1	15.59	15.76	15.52	0
		3	3	15.57	15.68	15.47	0
		6	0	15.57	15.71	15.50	0
	16QAM	1	0	15.75	15.92	15.75	0
		1	3	15.79	15.91	15.85	0
		1	5	15.69	15.94	15.72	0
		3	0	15.59	15.75	15.53	0
		3	1	15.60	15.78	15.51	0
		3	3	15.50	15.69	15.50	0
		6	0	15.65	15.78	15.53	0
	64QAM	1	0	15.71	15.88	15.73	0
		1	3	15.75	15.93	15.75	0
		1	5	15.73	15.79	15.72	0
		3	0	15.71	15.81	15.66	0
		3	1	15.76	15.88	15.69	0
		3	3	15.68	15.84	15.68	0
		6	0	15.55	15.69	15.55	0

LTE Band 4 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				19965	20175	20385	[dB]
				1711.5 MHz	1732.5 MHz	1753.5 MHz	
3 MHz	QPSK	1	0	15.55	15.76	15.54	0
		1	7	15.67	15.82	15.65	0
		1	14	15.55	15.72	15.51	0
		8	0	15.65	15.81	15.57	0
		8	3	15.63	15.80	15.59	0
		8	7	15.58	15.78	15.55	0
		15	0	15.61	15.76	15.56	0
	16QAM	1	0	15.85	15.91	15.86	0
		1	7	15.84	15.90	15.91	0
		1	14	15.82	15.89	15.82	0
		8	0	15.71	15.83	15.61	0
		8	3	15.70	15.86	15.65	0
		8	7	15.64	15.79	15.59	0
		15	0	15.63	15.77	15.58	0
	64QAM	1	0	15.81	15.89	15.69	0
		1	7	15.87	15.91	15.82	0
		1	14	15.72	15.85	15.77	0
		8	0	15.71	15.83	15.67	0
		8	3	15.75	15.85	15.68	0
		8	7	15.68	15.87	15.64	0
		15	0	15.68	15.81	15.64	0

LTE Band 4 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				19975	20175	20375	[dB]
				1712.5 MHz	1732.5 MHz	1752.5 MHz	
5 MHz	QPSK	1	0	15.64	15.77	15.62	0
		1	12	15.61	15.73	15.49	0
		1	24	15.68	15.74	15.53	0
		12	0	15.68	15.81	15.58	0
		12	6	15.68	15.81	15.62	0
		12	11	15.64	15.79	15.56	0
		25	0	15.66	15.82	15.60	0
	16QAM	1	0	15.94	15.91	15.82	0
		1	12	15.86	15.92	15.83	0
		1	24	15.95	15.91	15.78	0
		12	0	15.69	15.82	15.62	0
		12	6	15.69	15.80	15.63	0
		12	11	15.68	15.77	15.54	0
		25	0	15.67	15.80	15.63	0
	64QAM	1	0	15.81	15.88	15.80	0
		1	12	15.78	15.83	15.77	0
		1	24	15.84	15.92	15.79	0
		12	0	15.72	15.83	15.68	0
		12	6	15.71	15.86	15.66	0
		12	11	15.70	15.83	15.67	0
		25	0	15.72	15.82	15.64	0

LTE Band 4 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20000	20175	20350	[dB]
				1715 MHz	1732.5 MHz	1750 MHz	
10 MHz	QPSK	1	0	15.71	15.92	15.70	0
		1	24	15.65	15.77	15.55	0
		1	49	15.80	15.74	15.55	0
		25	0	15.71	15.82	15.77	0
		25	12	15.69	15.83	15.59	0
		25	24	15.71	15.77	15.61	0
		50	0	15.70	15.84	15.60	0
	16QAM	1	0	15.93	15.92	15.94	0
		1	24	15.93	15.91	15.82	0
		1	49	15.93	15.90	15.80	0
		25	0	15.72	15.81	15.74	0
		25	12	15.75	15.83	15.63	0
		25	24	15.70	15.81	15.62	0
		50	0	15.73	15.80	15.61	0
	64QAM	1	0	15.91	15.90	15.88	0
		1	24	15.77	15.91	15.69	0
		1	49	15.91	15.91	15.79	0
		25	0	15.74	15.84	15.77	0
		25	12	15.74	15.85	15.69	0
		25	24	15.75	15.82	15.64	0
		50	0	15.74	15.84	15.64	0

LTE Band 4 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20025	20175	20325	[dB]
				1717.5 MHz	1732.5 MHz	1747.5 MHz	
15 MHz	QPSK	1	0	15.78	15.93	15.81	0
		1	36	15.62	15.75	15.63	0
		1	74	15.82	15.71	15.58	0
		36	0	15.74	15.93	15.76	0
		36	18	15.76	15.84	15.74	0
		36	39	15.84	15.81	15.59	0
		75	0	15.76	15.85	15.76	0
	16QAM	1	0	15.94	15.93	15.92	0
		1	36	15.88	15.93	15.93	0
		1	74	15.90	15.91	15.86	0
		36	0	15.77	15.92	15.78	0
		36	18	15.73	15.79	15.71	0
		36	39	15.84	15.81	15.64	0
		75	0	15.75	15.84	15.75	0
	64QAM	1	0	15.91	15.92	15.91	0
		1	36	15.94	15.90	15.88	0
		1	74	15.93	15.91	15.81	0
		36	0	15.84	15.98	15.80	0
		36	18	15.78	15.88	15.78	0
		36	39	15.89	15.83	15.67	0
		75	0	15.78	15.86	15.75	0

LTE Band 4 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				20175	[dB]
				1732.5 MHz	
20 MHz	QPSK	1	0	15.94	0
		1	49	15.74	0
		1	99	15.68	0
		50	0	15.98	0
		50	25	15.84	0
		50	49	15.82	0
		100	0	15.90	0
	16QAM	1	0	15.93	0
		1	49	15.93	0
		1	99	15.93	0
		50	0	15.90	0
		50	25	15.84	0
		50	49	15.81	0
		100	0	15.84	0
	64QAM	1	0	15.93	0
		1	49	15.88	0
		1	99	15.80	0
		50	0	15.94	0
		50	25	15.89	0
		50	49	15.86	0
		100	0	15.89	0

Note: LTE Band 4 (AWS) at 20 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 5

LTE Band 5 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20407	20525	20643	[dB]
				824.7 MHz	836.5 MHz	848.3 MHz	
1.4 MHz	QPSK	1	0	17.85	17.99	17.79	0
		1	3	17.91	18.05	17.82	0
		1	5	17.80	18.01	17.72	0
		3	0	17.87	18.01	17.81	0
		3	1	17.92	18.03	17.81	0
		3	3	17.85	17.97	17.77	0
		6	0	17.88	18.01	17.83	0
	16QAM	1	0	18.14	18.20	18.01	0
		1	3	18.18	18.35	18.13	0
		1	5	18.03	18.24	18.04	0
		3	0	17.89	18.04	17.78	0
		3	1	17.93	18.06	17.82	0
		3	3	17.86	17.94	17.75	0
		6	0	17.96	18.10	17.85	0
	64QAM	1	0	18.00	18.14	17.92	0
		1	3	18.11	18.15	17.99	0
		1	5	18.02	18.11	17.83	0
		3	0	18.00	18.12	17.92	0
		3	1	18.01	18.18	17.94	0
		3	3	18.03	18.11	17.90	0
		6	0	17.91	17.99	17.78	0

LTE Band 5 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20415	20525	20635	[dB]
				825.5 MHz	836.5 MHz	847.5 MHz	
3 MHz	QPSK	1	0	17.95	18.08	17.90	0
		1	7	18.00	18.14	17.95	0
		1	14	17.93	18.01	17.85	0
		8	0	17.99	18.08	17.87	0
		8	3	17.95	18.09	17.88	0
		8	7	17.96	18.05	17.88	0
		15	0	17.94	18.06	17.87	0
	16QAM	1	0	18.13	18.30	18.14	0
		1	7	18.29	18.30	18.24	0
		1	14	18.22	18.31	18.07	0
		8	0	17.99	18.14	17.90	0
		8	3	18.00	18.15	17.95	0
		8	7	17.92	18.12	17.88	0
		15	0	17.93	18.08	17.88	0
	64QAM	1	0	18.17	18.23	18.01	0
		1	7	18.12	18.31	18.14	0
		1	14	18.08	18.20	18.00	0
		8	0	18.02	18.09	17.89	0
		8	3	18.02	18.16	17.87	0
		8	7	17.93	18.05	17.84	0
		15	0	17.97	18.06	17.88	0

LTE Band 5 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR [dB]
				20425	20525	20625	[dB]
				826.5 MHz	836.5 MHz	846.5 MHz	
5 MHz	QPSK	1	0	18.04	18.11	17.89	0
		1	12	17.90	18.05	17.82	0
		1	24	17.97	17.98	17.83	0
		12	0	17.98	18.10	17.93	0
		12	6	17.98	18.08	17.89	0
		12	11	17.98	18.07	17.93	0
		25	0	17.97	18.09	17.88	0
	16QAM	1	0	18.24	18.40	18.03	0
		1	12	18.18	18.41	18.13	0
		1	24	18.24	18.28	18.20	0
		12	0	17.98	18.18	17.87	0
		12	6	17.99	18.12	17.91	0
		12	11	17.91	18.13	17.84	0
		25	0	17.95	18.09	17.88	0
	64QAM	1	0	18.07	18.29	18.06	0
		1	12	18.14	18.26	18.05	0
		1	24	18.12	18.17	17.94	0
		12	0	18.02	18.10	17.95	0
		12	6	18.01	18.14	17.97	0
		12	11	17.98	18.10	17.91	0
		25	0	17.97	18.07	17.89	0

LTE Band 5 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				20525	[dB]
				836.5 MHz	
10 MHz	QPSK	1	0	18.38	0
		1	24	18.12	0
		1	49	18.18	0
		25	0	18.26	0
		25	12	18.25	0
		25	24	18.17	0
		50	0	18.20	0
	16QAM	1	0	**18.45**	0
		1	24	18.35	0
		1	49	18.26	0
		25	0	18.11	0
		25	12	18.12	0
		25	24	18.05	0
		50	0	18.14	0
	64QAM	1	0	18.31	0
		1	24	18.24	0
		1	49	18.22	0
		25	0	18.12	0
		25	12	18.11	0
		25	24	18.07	0
		50	0	18.07	0

Note: LTE Band 5 at 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 7

LTE Band 7_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20775	21100	21425	[dB]
				2502.5 MHz	2535 MHz	2567.5 MHz	
5 MHz	QPSK	1	0	13.07	13.25	13.05	0
		1	12	13.02	13.25	12.99	0
		1	24	12.97	13.24	12.99	0
		12	0	13.11	13.26	13.15	0
		12	6	13.11	13.31	13.12	0
		12	11	13.04	13.25	13.11	0
		25	0	13.06	13.26	13.02	0
	16QAM	1	0	13.26	13.42	13.41	0
		1	12	13.35	13.44	13.33	0
		1	24	13.18	13.46	13.25	0
		12	0	13.09	13.31	13.12	0
		12	6	13.06	13.29	13.13	0
		12	11	13.10	13.27	13.08	0
		25	0	13.06	13.25	13.11	0
	64QAM	1	0	13.29	13.42	13.21	0
		1	12	13.17	13.43	13.24	0
		1	24	13.11	13.39	13.20	0
		12	0	13.12	13.32	13.13	0
		12	6	13.11	13.33	13.14	0
		12	11	13.07	13.28	13.11	0
		25	0	13.05	13.30	13.06	0

LTE Band 7_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20800	21100	21400	[dB]
				2505 MHz	2535 MHz	2565 MHz	
10 MHz	QPSK	1	0	13.08	13.36	13.25	0
		1	24	13.01	13.23	13.16	0
		1	49	12.98	13.12	12.95	0
		25	0	13.14	13.29	13.24	0
		25	12	13.12	13.33	13.20	0
		25	24	13.09	13.27	13.04	0
		50	0	13.07	13.29	13.18	0
	16QAM	1	0	13.33	13.64	13.43	0
		1	24	13.24	13.55	13.36	0
		1	49	13.28	13.43	13.30	0
		25	0	13.10	13.26	13.26	0
		25	12	13.13	13.29	13.28	0
		25	24	13.07	13.27	13.05	0
		50	0	13.11	13.29	13.20	0
	64QAM	1	0	13.28	13.60	13.43	0
		1	24	13.20	13.43	13.35	0
		1	49	13.14	13.37	13.05	0
		25	0	13.11	13.33	13.28	0
		25	12	13.08	13.32	13.25	0
		25	24	13.10	13.30	13.08	0
		50	0	13.09	13.32	13.23	0

LTE Band 7_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20825	21100	21375	[dB]
				2507.5 MHz	2535 MHz	2562.5 MHz	
15 MHz	QPSK	1	0	13.18	13.41	13.31	0
		1	36	13.09	13.24	13.13	0
		1	74	13.09	13.15	12.97	0
		36	0	13.16	13.44	13.32	0
		36	18	13.13	13.31	13.28	0
		36	38	13.10	13.20	13.06	0
		75	0	13.14	13.34	13.25	0
	16QAM	1	0	13.42	13.70	13.63	0
		1	36	13.34	13.46	13.48	0
		1	74	13.41	13.36	13.19	0
		36	0	13.16	13.44	13.28	0
		36	18	13.18	13.33	13.26	0
		36	38	13.10	13.14	13.00	0
		75	0	13.13	13.32	13.28	0
	64QAM	1	0	13.35	13.66	13.45	0
		1	36	13.25	13.44	13.32	0
		1	74	13.27	13.32	13.25	0
		36	0	13.22	13.44	13.37	0
		36	18	13.17	13.36	13.30	0
		36	39	13.13	13.26	13.09	0
		75	0	13.15	13.31	13.23	0

LTE Band 7_ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				20850	21100	21350	[dB]
				2510 MHz	2535 MHz	2560 MHz	
20 MHz	QPSK	1	0	13.26	13.46	13.78	0
		1	49	13.08	13.25	13.16	0
		1	99	13.17	13.11	12.95	0
		50	0	13.21	13.43	13.31	0
		50	25	13.21	13.32	13.23	0
		50	49	13.14	13.30	13.17	0
		100	0	13.18	13.32	13.22	0
	16QAM	1	0	13.59	13.68	13.60	0
		1	49	13.29	13.43	13.45	0
		1	99	13.45	13.44	13.27	0
		50	0	13.23	13.48	13.39	0
		50	25	13.17	13.32	13.21	0
		50	49	13.15	13.33	13.16	0
		100	0	13.16	13.28	13.27	0
	64QAM	1	0	13.43	13.61	13.64	0
		1	49	13.29	13.42	13.36	0
		1	99	13.31	13.31	13.18	0
		50	0	13.24	13.47	13.37	0
		50	25	13.20	13.32	13.31	0
		50	49	13.24	13.33	13.19	0
		100	0	13.17	13.33	13.29	0

- LTE Band 12

LTE Band 12 _ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				23017	23095	23173	[dB]
				699.7 MHz	707.5 MHz	715.3 MHz	
1.4 MHz	QPSK	1	0	20.10	20.07	20.25	0
		1	3	20.17	20.17	20.30	0
		1	5	20.09	20.03	20.16	0
		3	0	20.11	20.11	20.22	0
		3	1	20.16	20.14	20.28	0
		3	3	20.06	20.10	20.25	0
		6	0	20.15	20.13	20.24	0
	16QAM	1	0	20.37	20.29	20.30	0
		1	3	20.29	20.28	20.30	0
		1	5	20.22	20.30	20.31	0
		3	0	20.19	20.17	20.33	0
		3	1	20.24	20.25	20.30	0
		3	3	20.15	20.19	20.25	0
		6	0	20.26	20.21	20.32	0
	64QAM	1	0	20.25	20.32	20.33	0
		1	3	20.34	20.29	20.20	0
		1	5	20.27	20.27	20.26	0
		3	0	20.32	20.30	20.33	0
		3	1	20.33	20.28	20.30	0
		3	3	20.24	20.31	20.26	0
		6	0	19.91	19.97	20.05	0

LTE Band 12 _ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				23025	23095	23165	[dB]
				700.5 MHz	707.5 MHz	714.5 MHz	
3 MHz	QPSK	1	0	20.21	20.20	20.18	0
		1	7	20.24	20.26	20.37	0
		1	14	20.11	20.13	20.22	0
		8	0	20.22	20.20	20.30	0
		8	3	20.17	20.22	20.32	0
		8	7	20.15	20.22	20.32	0
		15	0	20.24	20.17	20.30	0
	16QAM	1	0	20.26	20.27	20.27	0
		1	7	20.24	20.23	20.33	0
		1	14	20.32	20.24	20.25	0
		8	0	20.22	20.28	20.22	0
		8	3	20.32	20.30	20.21	0
		8	7	20.30	20.26	20.20	0
		15	0	20.25	20.20	20.34	0
	64QAM	1	0	20.22	20.24	20.24	0
		1	7	20.27	20.23	20.20	0
		1	14	20.24	20.31	20.33	0
		8	0	20.09	20.07	20.17	0
		8	3	20.03	20.09	20.18	0
		8	7	20.05	20.01	20.18	0
		15	0	19.99	20.06	20.12	0

LTE Band 12 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				23035	23095	23155	[dB]
				701.5 MHz	707.5 MHz	713.5 MHz	
5 MHz	QPSK	1	0	20.26	20.23	20.24	0
		1	12	20.17	20.19	20.17	0
		1	24	20.26	20.21	20.27	0
		12	0	20.28	20.27	20.24	0
		12	6	20.23	20.23	20.28	0
		12	11	20.27	20.23	20.32	0
		25	0	20.18	20.21	20.25	0
	16QAM	1	0	20.24	20.29	20.30	0
		1	12	20.32	20.24	20.27	0
		1	24	20.20	20.30	20.20	0
		12	0	20.30	20.30	20.33	0
		12	6	20.31	20.27	20.34	0
		12	11	20.35	20.24	20.35	0
		25	0	20.25	20.22	20.30	0
	64QAM	1	0	20.30	20.27	20.29	0
		1	12	20.26	20.29	20.22	0
		1	24	20.24	20.27	20.26	0
		12	0	20.12	20.14	20.14	0
		12	6	20.14	20.12	20.13	0
		12	11	20.18	20.07	20.22	0
		25	0	20.06	20.08	20.08	0

LTE Band 12 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				23095	[dB]
				707.5 MHz	
10 MHz	QPSK	1	0	20.35	0
		1	24	20.19	0
		1	49	20.17	0
		25	0	20.29	0
		25	12	20.27	0
		25	24	20.23	0
		50	0	20.24	0
	16QAM	1	0	20.27	0
		1	24	20.29	0
		1	49	20.30	0
		25	0	20.24	0
		25	12	20.28	0
		25	24	20.29	0
		50	0	20.28	0
	64QAM	1	0	20.21	0
		1	24	20.26	0
		1	49	20.27	0
		25	0	20.14	0
		25	12	20.04	0
		25	24	20.09	0
		50	0	20.08	0

Note: LTE Band 12 at 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 13

LTE Band 13 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR Allowed Per 3GPP	MPR
				23230	[dB]	[dB]
				782 MHz		
5 MHz	QPSK	1	0	18.85	0	0
		1	12	18.61	0	0
		1	24	18.57	0	0
		12	0	18.82	0-1	0
		12	6	18.71	0-1	0
		12	11	18.69	0-1	0
		25	0	18.63	0-1	0
	16QAM	1	0	19.06	0-1	0
		1	12	18.86	0-1	0
		1	24	18.92	0-1	0
		12	0	18.84	0-2	0
		12	6	18.73	0-2	0
		12	11	18.67	0-2	0
		25	0	18.69	0-2	0
	64QAM	1	0	18.95	0-2	0
		1	12	18.74	0-2	0
		1	24	18.70	0-2	0
		12	0	18.82	0-3	0
		12	6	18.75	0-3	0
		12	11	18.66	0-3	0
		25	0	18.71	0-3	0

LTE Band 13 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				23230	[dB]
				782 MHz	
10 MHz	QPSK	1	0	18.76	0
		1	24	18.66	0
		1	49	18.73	0
		25	0	18.80	0
		25	12	18.68	0
		25	24	18.59	0
		50	0	18.70	0
	16QAM	1	0	18.71	0
		1	24	18.99	0
		1	49	18.77	0
		25	0	18.71	0
		25	12	18.73	0
		25	24	18.69	0
		50	0	18.74	0
	64QAM	1	0	18.85	0
		1	24	18.82	0
		1	49	18.70	0
		25	0	18.71	0
		25	12	18.74	0
		25	24	18.69	0
		50	0	18.75	0

Note: LTE Band 13 at 5 MHz/ 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 14

LTE Band 14 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				23330	[dB]
				793 MHz	
5 MHz	QPSK	1	0	18.83	0
		1	12	18.74	0
		1	24	18.72	0
		12	0	18.85	0
		12	6	18.83	0
		12	11	18.78	0
		25	0	18.83	0
	16QAM	1	0	19.13	0
		1	12	19.11	0
		1	24	19.05	0
		12	0	18.86	0
		12	6	18.82	0
		12	11	18.83	0
		25	0	18.85	0
	64QAM	1	0	19.07	0
		1	12	18.89	0
		1	24	18.88	0
		12	0	18.90	0
		12	6	18.88	0
		12	11	18.85	0
		25	0	18.85	0

LTE Band 14 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				23330	[dB]
				793 MHz	
10 MHz	QPSK	1	0	18.75	0
		1	24	18.77	0
		1	49	18.78	0
		25	0	18.79	0
		25	12	18.84	0
		25	24	18.78	0
		50	0	18.83	0
	16QAM	1	0	18.88	0
		1	24	19.02	0
		1	49	19.00	0
		25	0	18.76	0
		25	12	18.90	0
		25	24	18.82	0
		50	0	18.86	0
	64QAM	1	0	18.96	0
		1	24	18.96	0
		1	49	19.04	0
		25	0	18.79	0
		25	12	18.88	0
		25	24	18.81	0
		50	0	18.88	0

Note: LTE Band 14 at 5 MHz/ 10 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE Band 26

LTE Band 26_ 1.4 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				26697	26865	27033	[dB]
				814.7 MHz	831.5 MHz	848.3 MHz	
1.4 MHz	QPSK	1	0	17.45	17.53	17.46	0
		1	3	17.52	17.60	17.50	0
		1	5	17.40	17.47	17.41	0
		3	0	17.44	17.51	17.48	0
		3	1	17.47	17.54	17.54	0
		3	3	17.44	17.56	17.46	0
		6	0	17.44	17.54	17.53	0
	16QAM	1	0	17.62	17.80	17.64	0
		1	3	17.80	17.86	17.73	0
		1	5	17.65	17.71	17.78	0
		3	0	17.46	17.50	17.53	0
		3	1	17.53	17.53	17.54	0
		3	3	17.49	17.49	17.49	0
		6	0	17.51	17.56	17.56	0
	64QAM	1	0	17.56	17.72	17.55	0
		1	3	17.66	17.68	17.74	0
		1	5	17.49	17.64	17.57	0
		3	0	17.58	17.66	17.66	0
		3	1	17.70	17.69	17.64	0
		3	3	17.59	17.61	17.60	0
		6	0	17.43	17.53	17.48	0

LTE Band 26_ 3 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				26705	26865	27025	[dB]
				815.5 MHz	831.5 MHz	847.5 MHz	
3 MHz	QPSK	1	0	17.52	17.56	17.49	0
		1	7	17.61	17.61	17.66	0
		1	14	17.57	17.57	17.51	0
		8	0	17.51	17.65	17.47	0
		8	3	17.53	17.61	17.63	0
		8	7	17.59	17.62	17.55	0
		15	0	17.53	17.59	17.56	0
	16QAM	1	0	17.84	17.93	17.67	0
		1	7	17.93	17.93	17.87	0
		1	14	17.86	17.89	17.75	0
		8	0	17.59	17.65	17.55	0
		8	3	17.56	17.67	17.70	0
		8	7	17.69	17.65	17.62	0
		15	0	17.53	17.61	17.56	0
	64QAM	1	0	17.69	17.77	17.60	0
		1	7	17.75	17.83	17.86	0
		1	14	17.77	17.72	17.69	0
		8	0	17.56	17.67	17.53	0
		8	3	17.58	17.65	17.64	0
		8	7	17.62	17.62	17.61	0
		15	0	17.52	17.62	17.57	0

LTE Band 26_ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				26715	26865	27015	[dB]
				816.5 MHz	831.5 MHz	846.5 MHz	
5 MHz	QPSK	1	0	17.54	17.66	17.64	0
		1	12	17.58	17.58	17.48	0
		1	24	17.44	17.57	17.57	0
		12	0	17.54	17.65	17.66	0
		12	6	17.68	17.65	17.55	0
		12	11	17.60	17.63	17.62	0
		25	0	17.61	17.63	17.57	0
	16QAM	1	0	17.88	17.95	17.90	0
		1	12	17.86	17.76	17.75	0
		1	24	17.79	17.77	17.80	0
		12	0	17.60	17.64	17.62	0
		12	6	17.62	17.68	17.54	0
		12	11	17.61	17.65	17.63	0
		25	0	17.60	17.61	17.58	0
	64QAM	1	0	17.78	17.81	17.77	0
		1	12	17.72	17.68	17.65	0
		1	24	17.68	17.67	17.76	0
		12	0	17.62	17.67	17.63	0
		12	6	17.70	17.67	17.55	0
		12	11	17.66	17.65	17.64	0
		25	0	17.61	17.60	17.63	0

LTE Band 26_ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				26750	26865	26990	[dB]
				820 MHz	831.5 MHz	844 MHz	
10 MHz	QPSK	1	0	17.55	17.66	17.69	0
		1	24	17.46	17.57	17.56	0
		1	49	17.58	17.62	17.50	0
		25	0	17.70	17.71	17.67	0
		25	12	17.57	17.68	17.59	0
		25	24	17.57	17.59	17.57	0
		50	0	17.64	17.66	17.67	0
	16QAM	1	0	17.92	17.97	17.95	0
		1	24	17.83	17.87	17.79	0
		1	49	17.95	17.88	17.76	0
		25	0	17.63	17.67	17.64	0
		25	12	17.53	17.66	17.59	0
		25	24	17.61	17.60	17.61	0
		50	0	17.65	17.61	17.61	0
	64QAM	1	0	17.73	17.77	17.83	0
		1	24	17.69	17.70	17.81	0
		1	49	17.72	17.83	17.75	0
		25	0	17.64	17.64	17.70	0
		25	12	17.61	17.63	17.60	0
		25	24	17.62	17.59	17.61	0
		50	0	17.65	17.61	17.66	0

LTE Band 26_ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)	MPR
				26865	[dB]
				831.5 MHz	
15 MHz	QPSK	1	0	17.76	0
		1	36	17.62	0
		1	74	17.56	0
		36	0	17.70	0
		36	18	17.69	0
		36	38	17.69	0
		75	0	17.68	0
	16QAM	1	0	17.88	0
		1	36	17.87	0
		1	74	17.89	0
		36	0	17.68	0
		36	18	17.68	0
		36	38	17.67	0
		75	0	17.66	0
	64QAM	1	0	17.87	0
		1	36	17.84	0
		1	74	17.81	0
		36	0	17.71	0
		36	18	17.71	0
		36	39	17.71	0
		75	0	17.66	0

Note: LTE Band 26 at 15 MHz Bandwidth does not support three non-overlapping channels. Per KDB 941225 D05v02r05, when a device supports overlapping channel assignment in a channel bandwidth configuration, the mid channel of the group of overlapping channels should be selected for testing.

- LTE TDD Band 41

LTE Band 41 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)					MPR
				39675	40148	40620	41093	41565	[dB]
				2498.5 MHz	2545.8 MHz	2593.0 MHz	2640.3 MHz	2687.5 MHz	
5 MHz	QPSK	1	0	14.98	15.14	15.06	15.29	15.12	0
		1	12	14.98	15.11	15.08	15.25	15.10	0
		1	24	14.99	15.06	15.03	15.19	15.07	0
		12	0	15.03	15.16	15.10	15.32	15.11	0
		12	6	15.02	15.17	15.15	15.34	15.12	0
		12	11	15.02	15.15	15.07	15.29	15.13	0
		25	0	15.02	15.12	15.07	15.29	15.12	0
	16QAM	1	0	15.07	15.22	15.13	15.37	15.18	0
		1	12	15.10	15.24	15.18	15.41	15.21	0
		1	24	15.12	15.15	15.08	15.30	15.15	0
		12	0	15.00	15.17	15.09	15.32	15.12	0
		12	6	14.99	15.17	15.12	15.32	15.09	0
		12	11	15.01	15.10	15.06	15.26	15.08	0
		25	0	15.00	15.16	15.11	15.34	15.10	0
	64QAM	1	0	14.68	14.76	14.68	14.94	14.71	0
		1	12	14.69	14.67	14.64	14.86	14.70	0
		1	24	14.69	14.68	14.66	14.89	14.60	0
		12	0	15.00	15.19	15.13	15.33	15.16	0
		12	6	15.04	15.20	15.12	15.37	15.17	0
		12	11	15.00	15.17	15.09	15.34	15.12	0
		25	0	14.95	15.17	15.14	15.32	15.14	0

LTE Band 41 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)					MPR
				39700	40160	40620	41080	41540	[dB]
				2501.0 MHz	2547.0 MHz	2593.0 MHz	2639.0 MHz	2685.0 MHz	
10 MHz	QPSK	1	0	15.05	15.25	15.16	15.38	15.21	0
		1	24	14.99	15.14	15.07	15.22	15.11	0
		1	49	15.03	15.06	15.05	15.18	15.10	0
		25	0	15.02	15.21	15.14	15.34	15.16	0
		25	12	15.05	15.16	15.10	15.33	15.17	0
		25	24	15.02	15.11	15.06	15.28	15.12	0
		50	0	15.03	15.13	15.08	15.31	15.15	0
	16QAM	1	0	15.15	15.34	15.24	15.49	15.34	0
		1	24	15.03	15.22	15.14	15.39	15.21	0
		1	49	15.05	15.14	15.16	15.31	15.22	0
		25	0	15.03	15.21	15.12	15.37	15.16	0
		25	12	15.04	15.20	15.14	15.33	15.13	0
		25	24	15.02	15.11	15.06	15.32	15.10	0
		50	0	15.05	15.23	15.16	15.36	15.18	0
	64QAM	1	0	14.62	14.87	14.71	14.95	14.77	0
		1	24	14.55	14.74	14.61	14.86	14.68	0
		1	49	14.56	14.67	14.62	14.86	14.64	0
		25	0	15.02	15.21	15.14	15.39	15.21	0
		25	12	15.06	15.22	15.17	15.39	15.19	0
		25	24	15.02	15.17	15.10	15.31	15.14	0
		50	0	15.00	15.16	15.12	15.33	15.14	0

LTE Band 41 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)					MPR
				39725	40173	40620	41068	41515	[dB]
				2503.5 MHz	2548.3 MHz	2593.0 MHz	2637.8 MHz	2682.5 MHz	
15 MHz	QPSK	1	0	15.04	15.26	15.20	15.32	15.38	0
		1	36	15.01	15.08	15.00	15.29	15.11	0
		1	74	15.03	15.01	14.94	15.27	15.08	0
		36	0	15.08	15.23	15.16	15.34	15.20	0
		36	18	15.10	15.17	15.11	15.32	15.19	0
		36	39	15.10	15.07	15.04	15.25	15.13	0
		75	0	15.10	15.12	15.10	15.29	15.16	0
	16QAM	1	0	15.18	15.33	15.28	15.45	15.45	0
		1	36	15.13	15.21	15.17	15.35	15.22	0
		1	74	15.15	15.11	15.12	15.28	15.14	0
		36	0	15.06	15.20	15.14	15.35	15.17	0
		36	18	15.06	15.16	15.11	15.33	15.14	0
		36	39	15.06	15.05	15.03	15.26	15.06	0
		75	0	15.10	15.18	15.15	15.34	15.15	0
	64QAM	1	0	14.73	14.90	14.80	15.03	14.93	0
		1	36	14.56	14.69	14.65	14.87	14.65	0
		1	74	14.66	14.60	14.63	14.86	14.62	0
		36	0	15.01	15.20	15.15	15.34	15.17	0
		36	18	15.02	15.15	15.11	15.32	15.15	0
		36	39	15.01	15.05	15.04	15.24	15.05	0
		75	0	15.06	15.17	15.11	15.34	15.15	0

LTE Band 41 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)					MPR
				39750	40185	40620	41055	41490	[dB]
				2506.0 MHz	2549.5 MHz	2593.0 MHz	2636.5 MHz	2680.0 MHz	
20 MHz	QPSK	1	0	15.19	15.28	15.33	15.53	15.34	0
		1	49	15.07	15.05	15.03	15.25	15.09	0
		1	99	15.20	14.92	15.01	15.10	15.00	0
		50	0	15.14	15.25	15.16	15.37	15.32	0
		50	25	15.12	15.15	15.11	15.30	15.14	0
		50	49	15.12	15.07	15.05	15.24	15.09	0
		100	0	15.17	15.14	15.12	15.28	15.17	0
	16QAM	1	0	15.30	15.41	15.46	15.56	15.53	0
		1	49	15.14	15.20	15.10	15.34	15.13	0
		1	99	15.22	15.04	15.10	15.23	15.07	0
		50	0	15.17	15.33	15.23	15.44	15.34	0
		50	25	15.18	15.23	15.15	15.37	15.14	0
		50	49	15.19	15.10	15.11	15.31	15.11	0
		100	0	15.16	15.19	15.17	15.36	15.17	0
	64QAM	1	0	14.74	14.95	14.96	15.13	15.01	0
		1	49	14.66	14.70	14.62	14.87	14.65	0
		1	99	14.78	14.62	14.60	14.81	14.60	0
		50	0	15.12	15.24	15.19	15.38	15.35	0
		50	25	15.13	15.15	15.15	15.32	15.15	0
		50	49	15.14	15.07	15.06	15.25	15.09	0
		100	0	15.14	15.15	15.16	15.31	15.18	0

Note; LTE Band 41 has 5 required test channels per FCC KDB 447498 D01v06.

- LTE Band 66

LTE Band 66 _ 5 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				131997	132322	132647	[dB]
				1712.5 MHz	1745 MHz	1777.5 MHz	
5 MHz	QPSK	1	0	15.68	15.62	15.53	0
		1	12	15.65	15.56	15.50	0
		1	24	15.65	15.53	15.55	0
		12	0	15.67	15.62	15.58	0
		12	6	15.68	15.62	15.58	0
		12	11	15.71	15.61	15.54	0
		25	0	15.70	15.57	15.51	0
	16QAM	1	0	15.97	15.88	15.91	0
		1	12	15.95	15.88	15.84	0
		1	24	15.99	15.75	15.73	0
		12	0	15.68	15.67	15.59	0
		12	6	15.70	15.65	15.62	0
		12	11	15.69	15.62	15.57	0
		25	0	15.69	15.68	15.64	0
	64QAM	1	0	15.83	15.83	15.78	0
		1	12	15.84	15.78	15.63	0
		1	24	15.86	15.68	15.70	0
		12	0	15.70	15.69	15.67	0
		12	6	15.77	15.67	15.64	0
		12	11	15.72	15.69	15.59	0
		25	0	15.72	15.67	15.60	0

LTE Band 66 _ 10 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				132022	132322	132622	[dB]
				1715 MHz	1745 MHz	1775 MHz	
10 MHz	QPSK	1	0	15.72	15.72	15.59	0
		1	24	15.67	15.57	15.50	0
		1	49	15.71	15.57	15.49	0
		25	0	15.77	15.65	15.58	0
		25	12	15.76	15.67	15.55	0
		25	24	15.73	15.62	15.55	0
		50	0	15.71	15.64	15.56	0
	16QAM	1	0	16.02	16.01	15.90	0
		1	24	15.87	15.96	15.83	0
		1	49	15.89	15.85	15.83	0
		25	0	15.74	15.70	15.61	0
		25	12	15.72	15.67	15.60	0
		25	24	15.72	15.63	15.56	0
		50	0	15.76	15.68	15.58	0
	64QAM	1	0	15.98	15.90	15.78	0
		1	24	15.93	15.74	15.65	0
		1	49	15.90	15.77	15.71	0
		25	0	15.79	15.65	15.61	0
		25	12	15.82	15.67	15.64	0
		25	24	15.79	15.63	15.57	0
		50	0	15.79	15.66	15.57	0

LTE Band 66 _ 15 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				132047	132322	132597	[dB]
				1717.5 MHz	1745 MHz	1772.5 MHz	
15 MHz	QPSK	1	0	15.82	15.87	15.64	0
		1	36	15.73	15.61	15.49	0
		1	74	15.83	15.63	15.54	0
		36	0	15.76	15.72	15.62	0
		36	18	15.78	15.66	15.58	0
		36	38	15.76	15.63	15.57	0
		75	0	15.80	15.67	15.59	0
	16QAM	1	0	16.08	16.07	16.01	0
		1	36	15.86	15.90	15.85	0
		1	74	16.09	15.90	15.77	0
		36	0	15.75	15.70	15.62	0
		36	18	15.77	15.72	15.59	0
		36	38	15.79	15.67	15.58	0
		75	0	15.74	15.66	15.60	0
	64QAM	1	0	16.00	16.02	15.89	0
		1	36	15.86	15.75	15.66	0
		1	74	15.92	15.77	15.80	0
		36	0	15.82	15.73	15.65	0
		36	18	15.86	15.73	15.61	0
		36	39	15.81	15.66	15.61	0
		75	0	15.79	15.66	15.60	0

LTE Band 66 _ 20 MHz Bandwidth

Bandwidth	Modulation	RB Size	RB Offset	Back-off Power (dBm)			MPR
				132072	132322	132572	[dB]
				1720 MHz	1745 MHz	1770 MHz	
20 MHz	QPSK	1	0	15.89	15.85	15.67	0
		1	49	15.71	15.57	15.49	0
		1	99	15.76	15.57	15.53	0
		50	0	15.85	15.84	15.65	0
		50	25	15.77	15.68	15.55	0
		50	49	15.80	15.63	15.54	0
		100	0	15.81	15.69	15.58	0
	16QAM	1	0	16.10	16.15	15.88	0
		1	49	15.98	15.85	15.82	0
		1	99	16.06	15.97	15.87	0
		50	0	15.87	15.85	15.68	0
		50	25	15.81	15.69	15.61	0
		50	49	15.83	15.69	15.57	0
		100	0	15.78	15.69	15.61	0
	64QAM	1	0	15.97	16.03	15.91	0
		1	49	15.95	15.73	15.64	0
		1	99	15.95	15.83	15.63	0
		50	0	15.87	15.86	15.68	0
		50	25	15.89	15.71	15.64	0
		50	49	15.83	15.70	15.61	0
		100	0	15.81	15.71	15.61	0

Note; The EUT enables maximum power reduction in accordance with 3GPP 36.101. The MPR settings are configured during the manufacture process and are not configurable by the network, carrier, or end user.

9.2.3 LTE Down-link Carrier Aggregation Conducted Powers

9.2.4 Maximum Conducted Powers

LTE Band 2 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-2A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	23	22.94	22.89
CA_2A-2A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	13	10	5230	751	23	22.95	22.85
CA_2A-2A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	23	22.92	22.92
CA_2A-4A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	23	22.94	22.83
CA_2A-4A-7A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	7	20	3100	2655	23	22.99	22.89
CA_2A-4A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	12	10	5095	737.5	23	22.92	22.94
CA_2A-4A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	23	22.95	22.91
CA_2A-4A-29A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	29	10	9715	722.5	23	22.92	22.93
CA_2A-5A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	23	22.94	22.92
CA_2A-7A-7A	2	20	19100	1900	1100	1980	QPSK	1	0	7	20	2850	2630	7	20	3350	2680	23	22.95	22.92
CA_2A-7A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	7	20	3100	2655	12	10	5095	737.5	23	22.84	22.87
CA_2A-13A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	13	10	5230	751	66	20	66786	2145	23	22.86	22.93
CA_2A-66A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66536	2120	66	20	67036	2170	23	22.92	22.92
CA_2A-66C	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66787	2145.1	66	20	66985	2164.9	23	22.96	22.96

LTE Band 2 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2C	2	20	18700	1860	700	1940	QPSK	1	0	2	20	898	1959.8	23.52	23.24	22.71
CA_2A-2A	2	20	18700	1860	700	1940	QPSK	1	0	2	20	1100	1980	23.52	23.27	22.68
CA_2A-4A	2	20	18700	1860	700	1940	QPSK	1	0	4	20	2175	2132.5	23.52	23.25	22.69
CA_2A-5A	2	20	18700	1860	700	1940	QPSK	1	0	5	10	2525	881.5	23.52	23.27	22.64
CA_2A-12A	2	20	18700	1860	700	1940	QPSK	1	0	12	10	5095	737.5	23.52	23.28	22.65
CA_2A-29A	2	20	18700	1860	700	1940	QPSK	1	0	29	10	9715	722.5	23.52	23.26	22.71
CA_2A-46A	2	20	18700	1860	700	1940	QPSK	1	0	46	20	50690	5540	23.52	23.18	22.66

LTE Band 4 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-5A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.62	23.36	23.21
CA_2A-4A-7A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	7	20	3100	2655	23.62	23.38	23.22
CA_2A-4A-12A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	12	10	5095	737.5	23.62	23.37	23.24
CA_2A-4A-13A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.62	23.36	23.21
CA_2A-4A-29A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	29	10	9715	722.5	23.62	23.48	23.22
CA_4A-4A-5A	4	20	20300	1745	2300	2145	QPSK	1	0	4	20	2050	2120	5	10	2525	881.5	23.62	23.41	23.19
CA_4A-4A-12A	4	20	20300	1745	2300	2145	QPSK	1	0	4	20	2050	2120	12	10	5095	737.5	23.62	23.39	23.2
CA_4A-4A-13A	4	20	20300	1745	2300	2145	QPSK	1	0	4	20	2050	2120	13	10	5230	751	23.62	23.38	23.24
CA_4A-7A-12A	4	20	20300	1745	2300	2145	QPSK	1	0	7	20	3100	2655	12	10	5095	737.5	23.62	23.5	23.21
CA_4A-7A-7A	4	20	20300	1745	2300	2145	QPSK	1	0	7	20	2850	2630	7	20	3350	2680	23.62	23.42	23.23

LTE Band 4 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A	4	20	20300	1745	2300	2145	QPSK	1	0	2	20	900	1960	23.62	23.47	23.11
CA_4A-4A	4	20	20300	1745	2300	2145	QPSK	1	0	4	20	2050	2120	23.62	23.38	23.13
CA_4A-7A	4	20	20300	1745	2300	2145	QPSK	1	0	7	20	3100	2655	23.62	23.39	23.11
CA_4A-12A	4	20	20300	1745	2300	2145	QPSK	1	0	12	10	5095	737.5	23.62	23.43	23.12
CA_4A-13A	4	20	20300	1745	2300	2145	QPSK	1	0	13	10	5230	751	23.62	23.5	23.13
CA_4A-29A	4	20	20300	1745	2300	2145	QPSK	1	0	29	10	9715	722.5	23.62	23.49	23.15
CA_4A-46A	4	20	20300	1745	2300	2145	QPSK	1	0	46	20	50690	5540	23.62	23.4	23.12

LTE Band 5 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	23.28	23.4	23.31
CA_4A-4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	4	20	2300	2145	4	20	2050	2120	23.28	23.36	23.28
CA_2A-2A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	700	1940	2	20	1100	1980	23.28	23.31	23.29
CA_2A-5A-66A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	900	1960	66	20	66786	2145	23.28	23.3	23.27
CA_5A-66A-66A	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66536	2120	66	20	67036	2170	23.28	23.33	23.28
CA_5A-66C	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66787	2145.1	66	20	66985	2164.9	23.28	23.35	23.29

LTE Band 5 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	900	1960	23.31	23.26	23.3
CA_4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	4	20	2175	2132.5	23.31	23.28	23.29
CA_5A-66A	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66786	2145	23.31	23.23	23.28

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	2	20	900	1960	23.28	23.24	23.18
CA_4A-5A	5	10	20525	836.5	2525	881.5	QPSK	1	0	4	20	2175	2132.5	23.28	23.23	23.17
CA_5B	5	5	20478	831.8	2478	876.8	QPSK	1	0	5	10	2550	884	23.28	23.23	23.11
CA_5A-46A	5	10	20525	836.5	2525	881.5	QPSK	1	0	46	20	50690	5540	23.28	23.24	23.19
CA_5A-66A	5	10	20525	836.5	2525	881.5	QPSK	1	0	66	20	66786	2145	23.28	23.21	23.17

LTE Band 7 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	22.70	22.6	22.26
CA_2A-7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	2	20	900	1960	22.70	22.56	22.25
CA_2A-7A-12A	7	20	21350	2560	3350	2680	QPSK	1	0	2	20	900	1960	12	10	5095	737.5	22.70	22.57	22.27
CA_4A-7A-12A	7	20	21350	2560	3350	2680	QPSK	1	0	4	20	2175	2132.5	12	10	5095	737.5	22.70	22.51	22.26
CA_4A-7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	4	20	2175	2132.5	22.70	22.52	22.25

LTE Band 7 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_4A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	4	20	2175	2132.5	22.70	22.58	22.47
CA_7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	22.70	22.51	22.45

LTE Band 12 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-2A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	2	20	700	1940	2	20	1100	1980	23.24	23.31	23.01
CA_2A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	2	20	900	1960	4	20	2175	2132.5	23.24	23.3	23.03
CA_2A-7A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	2	20	900	1960	7	20	3100	2655	23.24	23.29	23.04
CA_4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	4	20	2300	2145	4	20	2050	2120	23.24	23.34	23.04
CA_4A-7A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	4	20	2175	2132.5	7	20	3100	2655	23.24	23.32	23.11

LTE Band 12 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	2	20	900	1960	23.13	23.08	23.04
CA_4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	49	4	20	2175	2132.5	23.13	23.07	23.09
CA_12A-66A	12	10	23095	707.5	5095	737.5	QPSK	1	49	66	20	66786	2145	23.13	23.05	23.05

LTE Band 13 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-2A-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	700	1940	2	20	1100	1980	23.11	23.13	23.01
CA_2A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	23.11	23.12	23.03
CA_2A-13A-66A	13	10	23230	782	5230	751	QPSK	1	0	2	20	900	1960	66	20	66786	2145	23.11	23.1	23.02
CA_4A-4A-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2300	2145	4	20	2050	2120	23.11	23.12	23.02
CA_13A-66A-66A	13	10	23230	782	5230	751	QPSK	1	0	66	20	66536	2120	66	20	67036	2170	23.11	23.17	23.01
CA_13A-66B	13	10	23230	782	5230	751	QPSK	1	0	66	10	66837	2150.1	66	10	66936	2160	23.11	23.16	23.02
CA_13A-66C	13	10	23230	782	5230	751	QPSK	1	0	66	20	66787	2145.1	66	20	66985	2164.9	23.11	23.13	23.03

LTE Band 13 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_4A-13A	13	10	23230	782	5230	751	QPSK	1	0	4	20	2175	2132.5	23.11	23.06	22.98
CA_13A-46A	13	10	23230	782	5230	751	QPSK	1	0	46	20	50690	5540	23.11	23.08	22.97

LTE Band 41 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1 BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_41D	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	41	20	41094	2640.4	23.88	23.67	23.59

LTE Band 41 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1 BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_41C	41	20	41490	2680	41490	2680	QPSK	1	0	41	20	41292	2660.2	23.88	23.72	23.55

LTE Band 66 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-66A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	67036	2170	2	20	900	1960	23.44	23.22	23.11
CA_2A-5A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	23.44	23.22	23.09
CA_2A-13A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	2	20	900	1960	13	10	5230	751	23.44	23.2	23.1
CA_5A-66A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	67036	2170	2	20	900	1960	23.44	23.22	23.13
CA_13A-66A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	67036	2170	13	10	5230	751	23.44	23.22	23.12
CA_13A-66B	66	10	132022	1715	66486	2115	QPSK	1	0	66	10	66585	2124.9	13	10	5230	751	23.23	22.18	23.09
CA_13A-66C	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	66734	2139.8	13	10	5230	751	23.44	23.19	23.08
CA_2A-66C	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	66734	2139.8	2	20	900	1960	23.44	23.17	23.08
CA_5A-66C	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	66734	2139.8	5	10	2525	881.5	23.44	23.1	23.08
CA_66A-66B	66	20	132072	1720	66536	2120	QPSK	1	0	66	10	67187	2185.1	66	10	67286	2195	23.44	23.22	23.07
CA_66A-66C	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	66734	2139.8	66	20	67236	2190	23.44	23.19	23.07

LTE Band 66 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_5A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	5	10	2525	881.5	23.44	23.3	23.18
CA_29A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	29	10	9715	722.5	23.44	23.34	23.17
CA_12A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	12	10	5095	737.5	23.44	23.35	23.2
CA_66A-66A	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	67036	2170	23.44	23.33	23.21
CA_66B	66	10	132022	1715	66486	2115	QPSK	1	0	66	10	66585	2124.9	23.23	23.31	23.12
CA_66C	66	20	132072	1720	66536	2120	QPSK	1	0	66	20	66734	2139.8	23.44	23.34	23.15

9.2.5 Reduced Conducted Powers

LTE Band 2 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(d	2x2 DL MIMO Tx Power
CA_2A-2A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	12	10	5095	737.5	16.13	15.83	15.7
CA_2A-2A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	13	10	5230	751	16.13	15.92	15.77
CA_2A-2A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	5	10	2525	881.5	16.13	15.84	15.73
CA_2A-4A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	5	10	2525	881.5	16.13	15.81	15.85
CA_2A-4A-7A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	7	20	3100	2655	16.13	15.87	15.75
CA_2A-4A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	12	10	5095	737.5	16.13	15.79	15.73
CA_2A-4A-13A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	13	10	5230	751	16.13	15.91	15.87
CA_2A-5A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	66	20	66786	2145	16.13	15.9	15.86
CA_2A-7A-7A	2	20	19100	1900	1100	1980	QPSK	1	0	7	20	2850	2630	7	20	3350	2680	16.13	15.94	15.84
CA_2A-7A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	7	20	3100	2655	12	10	5095	737.5	16.13	15.84	15.75
CA_2A-13A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	13	10	5230	751	66	20	66786	2145	16.13	15.87	15.86
CA_2A-66A-66A	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66536	2120	66	20	67036	2170	16.13	15.8	15.82
CA_2A-66C	2	20	19100	1900	1100	1980	QPSK	1	0	66	20	66787	2145.1	66	20	66985	2164.9	16.13	15.89	15.86

LTE Band 2 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA	2x2 DL MIMO Tx Power
CA_2C	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	898	1959.8	16.13	15.85	15.9
CA_2A-2A	2	20	19100	1900	1100	1980	QPSK	1	0	2	20	700	1940	16.13	15.88	15.95
CA_2A-4A	2	20	19100	1900	1100	1980	QPSK	1	0	4	20	2175	2132.5	16.13	15.93	15.99
CA_2A-5A	2	20	19100	1900	1100	1980	QPSK	1	0	5	10	2525	881.5	16.13	15.82	15.81
CA_2A-12A	2	20	19100	1900	1100	1980	QPSK	1	0	12	10	5095	737.5	16.13	15.97	15.87
CA_2A-29A	2	20	19100	1900	1100	1980	QPSK	1	0	29	10	9715	722.5	16.13	15.88	15.82
CA_2A-46A	2	20	19100	1900	1100	1980	QPSK	1	0	46	20	50690	5540	16.13	15.88	15.92

LTE Band 4 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-5A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	2	20	900	1960	5	10	2525	881.5	15.94	15.96	15.85
CA_2A-4A-7A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	2	20	900	1960	7	20	3100	2655	15.94	15.97	15.83
CA_2A-4A-12A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	2	20	900	1960	12	10	5095	737.5	15.94	15.98	15.81
CA_2A-4A-13A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	2	20	900	1960	13	10	5230	751	15.94	15.87	15.84
CA_4A-4A-5A	4	20	20175	1732.5	2300	2132.5	QPSK	1	0	4	20	2050	2120	5	10	2525	881.5	15.94	15.93	15.92
CA_4A-4A-12A	4	20	20175	1732.5	2300	2132.5	QPSK	1	0	4	20	2050	2120	12	10	5095	737.5	15.94	15.97	15.94
CA_4A-4A-13A	4	20	20175	1732.5	2300	2132.5	QPSK	1	0	4	20	2050	2120	13	10	5230	751	15.94	15.83	15.87
CA_4A-7A-12A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	7	20	3100	2655	12	10	5095	737.5	15.94	15.84	15.94
CA_4A-7A-7A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	7	20	2850	2630	7	20	3350	2680	15.94	15.86	15.79

LTE Band 4 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	2	20	900	1960	15.94	15.89	15.93
CA_4A-4A	4	20	20050	1732.5	2050	2120	QPSK	1	0	4	20	2300	2145	15.94	15.95	15.79
CA_4A-7A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	7	20	3100	2655	15.94	15.96	15.85
CA_4A-12A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	12	10	5095	737.5	15.94	15.81	15.79
CA_4A-13A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	13	10	5230	751	15.94	15.86	15.89
CA_4A-29A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	29	10	9715	722.5	15.94	15.95	15.78
CA_4A-46A	4	20	20175	1732.5	2175	2132.5	QPSK	1	0	46	20	50690	5540	15.94	15.95	15.76

LTE Band 5 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-5A	5	10	20525	836.5	2525	881.5	16QAM	1	0	2	20	900	1960	4	20	2175	2132.5	18.45	18.29	18.37
CA_4A-4A-5A	5	10	20525	836.5	2525	881.5	16QAM	1	0	4	20	2300	2145	4	20	2050	2120	18.45	18.4	18.34
CA_2A-2A-5A	5	10	20525	836.5	2525	881.5	16QAM	1	0	2	20	700	1940	2	20	1100	1980	18.45	18.31	18.19
CA_2A-5A-66A	5	10	20525	836.5	2525	881.5	16QAM	1	0	2	20	900	1960	66	20	66786	2145	18.45	18.3	18.27
CA_5A-66A-66A	5	10	20525	836.5	2525	881.5	16QAM	1	0	66	20	66536	2120	66	20	67036	2170	18.45	18.42	18.25
CA_5A-66C	5	10	20525	836.5	2525	881.5	16QAM	1	0	66	20	66787	2145.1	66	20	66985	2164.9	18.45	18.28	18.2

LTE Band 5 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-5A	5	10	20525	836.5	2525	881.5	16QAM	1	0	2	20	900	1960	18.45	18.22	18.28
CA_4A-5A	5	10	20525	836.5	2525	881.5	16QAM	1	0	4	20	2175	2132.5	18.45	18.33	18.14
CA_5B	5	5	20478	831.8	2478	876.8	16QAM	1	0	5	10	2550	884	18.45	18.35	18.28
CA_5A-46A	5	10	20525	836.5	2525	881.5	16QAM	1	0	46	20	50690	5540	18.45	18.23	18.17
CA_5A-66A	5	10	20525	836.5	2525	881.5	16QAM	1	0	66	20	66786	2145	18.45	18.27	18.28

LTE Band 7 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-4A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	13.78	13.61	13.57
CA_2A-7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	2	20	900	1960	13.78	13.59	13.63
CA_2A-7A-12A	7	20	21350	2560	3350	2680	QPSK	1	0	2	20	900	1960	12	10	5095	737.5	13.78	13.75	13.66
CA_4A-7A-12A	7	20	21350	2560	3350	2680	QPSK	1	0	4	20	2175	2132.5	12	10	5095	737.5	13.78	13.74	13.56
CA_4A-7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	4	20	2175	2132.5	13.78	13.74	13.58

LTE Band 7 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_4A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	4	20	2175	2132.5	13.78	13.56	13.69
CA_7A-7A	7	20	21350	2560	3350	2680	QPSK	1	0	7	20	2850	2630	13.78	13.69	13.52

LTE Band 12 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-2A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	700	1940	2	20	1100	1980	20.35	20.32	20.31
CA_2A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	4	20	2175	2132.5	20.35	20.25	20.24
CA_2A-7A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	7	20	3100	2655	20.35	20.28	20.37
CA_4A-4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	4	20	2300	2145	4	20	2050	2120	20.35	20.31	20.38
CA_4A-7A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	4	20	2175	2132.5	7	20	3100	2655	20.35	20.16	20.27

LTE Band 12 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	2	20	900	1960	20.35	20.14	20.2
CA_4A-12A	12	10	23095	707.5	5095	737.5	QPSK	1	0	4	20	2175	2132.5	20.35	20.3	20.24

LTE Band 13Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_2A-2A-13A	13	5	23230	782	5230	751	16QAM	1	0	2	20	700	1940	2	20	1100	1980	19.06	18.69	18.88
CA_2A-4A-13A	13	5	23230	782	5230	751	16QAM	1	0	2	20	900	1960	4	20	2175	2132.5	19.06	18.8	18.71
CA_2A-13A-66A	13	5	23230	782	5230	751	16QAM	1	0	2	20	900	1960	66	20	66786	2145	19.06	18.73	18.74
CA_4A-4A-13A	13	5	23230	782	5230	751	16QAM	1	0	4	20	2300	2145	4	20	2050	2120	19.06	18.74	18.82
CA_13A-66A-66A	13	5	23230	782	5230	751	16QAM	1	0	66	20	66536	2120	66	20	67036	2170	19.06	18.72	18.76
CA_13A-66B	13	5	23230	782	5230	751	16QAM	1	0	66	10	66837	2150.1	66	10	66936	2160	19.06	18.74	18.7

LTE Band 13 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_4A-13A	13	5	23230	782	5230	751	16QAM	1	0	4	20	2175	2132.5	19.06	18.92	18.89
CA_13A-46A	13	5	23230	782	5230	751	16QAM	1	0	46	20	50690	5540	19.06	18.9	18.88

LTE Band 66 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_5A-66A	66	20	132322	1745	66786	2145	16QAM	1	0	5	10	2525	881.5	16.15	15.86	15.96
CA_29A-66A	66	20	132322	1745	66786	2145	16QAM	1	0	29	10	9715	722.5	16.15	16.06	16.07
CA_12A-66A	66	20	132322	1745	66786	2145	16QAM	1	0	12	10	5095	737.5	16.15	16.01	15.88
CA_66A-66A	66	20	132322	1745	66786	2145	16QAM	1	0	66	20	67036	2170	16.15	15.98	15.92
CA_66B	66	10	132022	1715	66486	2115	16QAM	1	0	66	10	66585	2124.9	16.02	15.94	15.89
CA_66C	66	20	132322	1745	66786	2145	16QAM	1	0	66	20	66984	2164.8	16.15	16.05	15.95

LTE Band 41 Tree component Carrier Conducted Power

Combination	PCC									SCC 1				SCC 2				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1 BW	SCC1 DL Channel	SCC1 DL Frequency	SCC2 Band	SCC2 BW	SCC2 DL Channel	SCC2 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_41D	41	20	41055	2636.5	41055	2636.5	16QAM	1	0	41	20	41253	2656.3	41	20	41451	2676.1	15.56	15.52	15.51

LTE Band 41 Two component Carrier Conducted Power

Combination	PCC									SCC 1				Tx Power		
	Band	BW	PCC UL Channel	PCC UL Frequency	PCC DL Channel	PCC DL Frequency	Modulation	RB	offset	SCC1 Band	SCC 1 BW	SCC1 DL Channel	SCC1 DL Frequency	LTE Sigle carrier Tx Power(dBm)	LTE Tx Power with DL CA enabled(dBm)	2x2 DL MIMO Tx Power
CA_41C	41	20	41055	2636.5	41055	2636.5	16QAM	1	0	41	20	41253	2656.3	15.56	15.53	15.52

Notes :

1. This device only supports downlink carrier aggregation. Uplink carrier aggregation is not supported. For every supported combination of downlink carrier aggregation, power measurements were performed with the downlink carrier aggregation active for the configuration with highest measured maximum conducted power with downlink carrier aggregation inactive measured among the channel bandwidth, modulation, and RB combinations in each frequency band.
2. All control and acknowledge data is sent on uplink channels that operate identical to specifications when downlink carrier aggregation is inactive.
3. Per FCC KDB publication 941225 D05A v01r02, Section C)3)b)ii), PCC uplink channel was selected at downlink carrier aggregation combinations. The downlink PCC channel was paired with the selected PCC uplink channel according to normal configurations without carrier aggregation.
4. For Inter-band carrier aggregation, the SCC downlink channels were selected near the middle of their transmission bands.
5. For continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to multiple of 300kHz less than the nominal channel spacing defined in section 5.4.1A of 3GPP TS 36.521.
6. For non-continuous intra-band carrier aggregation, the downlink channel spacing between the component carriers was set to be larger than the nominal channel spacing and provided maximum separation between the component carriers.
7. All selected downlink channels remained fully within the downlink transmission band of the respective component carrier.

Power Measurement setup

10. SYSTEM VERIFICATION

10.1 Tissue Verification

The body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity.

Table for Body Tissue Verification

Date of Tests	Tissue Temp. (°C)	Tissue Type	Freq. (MHz)	Measured Conductivity σ (S/m)	Measured Dielectric Constant, ε	Target Conductivity σ (S/m)	Target Dielectric Constant, ε	% dev σ	% dev ε
10/11/2018	19.5	750B (L12)	705	0.914	55.755	0.959	55.710	-4.69%	0.08%
			710	0.919	55.710	0.960	55.690	-4.27%	0.04%
			750	0.957	55.311	0.963	55.530	-0.62%	-0.39%
10/12/2018	19.4	750B (L13)	750	0.958	55.266	0.963	55.530	-0.52%	-0.48%
			775	0.981	55.034	0.965	55.435	1.66%	-0.72%
			790	0.996	54.928	0.966	55.378	3.11%	-0.81%
10/15/2018	20.2	750B (L14)	700	0.919	55.800	0.959	55.730	-4.17%	0.13%
			750	0.959	55.291	0.963	55.530	-0.42%	-0.43%
			800	1.008	54.749	0.967	55.340	4.24%	-1.07%
10/17/2018	20.5	835B (W5)	820	0.941	56.491	0.969	55.260	-2.89%	2.23%
			835	0.954	56.368	0.970	55.200	-1.65%	2.12%
			850	0.973	56.232	0.988	55.150	-1.52%	1.96%
10/16/2018	20.6	835B (L5)	820	0.974	54.226	0.969	55.260	0.52%	-1.87%
			835	0.983	54.120	0.970	55.200	1.34%	-1.96%
			850	0.996	54.101	0.988	55.150	0.81%	-1.90%
10/16/2018	20.6	835B (L26)	820	0.940	56.571	0.969	55.260	-2.99%	2.37%
			835	0.955	56.424	0.970	55.200	-1.55%	2.22%
			850	0.970	56.259	0.988	55.150	-1.82%	2.01%
10/05/2018	20.5	1800B (W4)	1710	1.502	53.336	1.463	53.534	2.67%	-0.37%
			1750	1.540	53.229	1.488	53.430	3.49%	-0.38%
			1800	1.594	53.027	1.520	53.300	4.87%	-0.51%
10/04/2018	20.6	1800B (L4)	1710	1.452	52.848	1.463	53.534	-0.75%	-1.28%
			1750	1.491	52.756	1.488	53.430	0.20%	-1.26%
			1800	1.539	52.543	1.520	53.300	1.25%	-1.42%
10/04/2018	20.6	1800B (L66)	1710	1.447	52.964	1.463	53.534	-1.09%	-1.06%
			1750	1.473	52.848	1.488	53.430	-1.01%	-1.09%
			1800	1.529	52.656	1.520	53.300	0.59%	-1.21%
10/01/2018	21.1	1900B (W2)	1850	1.484	55.099	1.520	53.300	-2.37%	3.38%
			1900	1.544	54.953	1.520	53.300	1.58%	3.10%
			1910	1.551	54.948	1.520	53.300	2.04%	3.09%
10/02/2018	20.8	1900B (L2)	1850	1.487	52.177	1.520	53.300	-2.17%	-2.11%
			1900	1.530	52.041	1.520	53.300	0.66%	-2.36%
			1910	1.539	51.983	1.520	53.300	1.25%	-2.47%
10/08/2018	18.9	2600B (L7)	2500	2.069	51.755	2.021	52.64	2.38%	-1.68%
			2600	2.214	51.432	2.163	52.51	2.36%	-2.05%
			2700	2.363	51.524	2.305	52.38	2.52%	-1.63%
10/10/2018	18.3	2600B (L41)	2500	2.034	52.372	2.021	52.64	0.64%	-0.51%
			2600	2.182	52.01	2.163	52.51	0.88%	-0.95%
			2700	2.327	51.848	2.305	52.38	0.95%	-1.02%

Note:
All Frequencies were measured to be within ± 5% of targets in listed in IEC 62209-1(Head) and RSS102 Annex D(Body). Per Notice 2012-DRS0529, since the dielectric properties of the tissue simulating are all equal or less 5% of target values, SAR was not scaled. The measurement uncertainty 5% for deviation of conductivity and liquid permittivity from the target was added to the uncertainty table.

10.2 System Check

Prior to assessment, the system is verified to the ± 10 % of the specifications at 750 MHz/ 835 MHz/ 1800 MHz/ 1 900 MHz/ 2 600 MHz by using the system Check kit. (Graphic Plots Attached)

Prior the SAR assessment, the system is verified using the procedures and dipole sources as defined by IEC 62209-1 and IEC 62209-2.

The system is verified to ±10 % of the SAR measurement on the reference dipole at the time of calibration by the calibration facility.

Freq.	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp.	Liquid Temp.	1 W Target SAR_{1g} (SPEAG)	Measured SAR_{1g}	1 W Normalized SAR_{1g}	Deviation	Limit [%]
[MHz]					[°C]	[°C]	[W/kg]	[W/kg]	[W/kg]	[%]	[%]
750	10/11/2018	3863	1014	Body	19.5	19.5	8.58	0.422	8.44	- 1.63	± 10
750	10/12/2018	3863	1014	Body	19.4	19.4	8.58	0.425	8.50	- 0.93	± 10
750	10/15/2018	3863	1014	Body	20.2	20.2	8.58	0.425	8.50	- 0.93	± 10
835	10/17/2018	3863	4d165	Body	20.5	20.5	9.50	0.445	8.90	- 6.32	± 10
835	10/16/2018	3903	4d165	Body	20.7	20.6	9.50	0.460	9.2	- 3.16	± 10
835	10/16/2018	3863	4d165	Body	20.7	20.6	9.50	0.444	8.88	- 6.53	± 10
1 800	10/05/2018	3863	2d006	Body	20.6	20.5	38.9	2.02	40.4	+ 3.86	± 10
1 800	10/04/2018	3903	2d006	Body	20.7	20.6	38.9	1.88	37.6	- 3.34	± 10
1 800	10/04/2018	3863	2d006	Body	20.7	20.6	38.9	1.93	38.6	- 0.77	± 10
1 900	10/01/2018	3863	5d061	Body	21.3	21.1	39.6	2.07	41.4	+ 4.55	± 10
1 900	10/02/2018	3863	5d061	Body	21.0	20.8	39.6	2.05	41.0	+ 3.54	± 10
2 600	10/08/2018	3903	1106	Body	18.9	18.9	54.6	2.85	57.0	+ 4.40	± 10
2 600	10/10/2018	3903	1106	Body	18.3	18.3	54.6	2.79	55.8	+ 2.20	± 10

11. SAR TEST DATA SUMMARY

11.1 Body SAR Measurement Results

UMTS 850 Body SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
836.6	4183	RMC	18.5	18.18	-0.12	Rear	Active	1:1	0	0.405	1.076	0.436	-
826.4	4132	RMC	18.5	18.25	-0.03	Edge 1	Active	1:1	0	0.809	1.059	0.857	-
836.6	4183	RMC	18.5	18.18	-0.01	Edge 1	Active	1:1	0	**0.827**	1.076	0.890	1
846.6	4233	RMC	18.5	18.10	-0.08	Edge 1	Active	1:1	0	0.822	1.096	**0.901**	2
836.6	4183	RMC	24.0	23.29	-0.19	Rear	Inactive	1:1	20	0.297	1.178	0.350	-
836.6	4183	RMC	24.0	23.29	-0.04	Edge 1	Inactive	1:1	37	0.182	1.178	0.214	-
836.6	4183	RMC	24.0	23.29	-0.17	Edge 2	Inactive	1:1	0	0.00193	1.178	0.002	-
836.6	4183	RMC	24.0	23.29	0.15	Edge 2 Tilt	Inactive	1:1	0	0.011	1.178	0.013	-
836.6	4183	RMC	24.0	23.29	-0.01	Edge 4	Inactive	1:1	0	0.107	1.178	0.126	-
836.6	4183	RMC	24.0	23.29	-0.07	Edge 4 Tilt	Inactive	1:1	0	0.132	1.178	0.155	-
836.6	4183	RMC	18.5	18.18	-0.11	Edge 1	Active	1:1	0	0.825	1.076	0.888	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram							

Note:**Data entry indicate Variability measurement.

UMTS 1700 Body SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 732.4	1412	RMC	15.9	15.52	-0.17	Rear	Active	1:1	0	0.614	1.091	0.670	-
1 712.4	1312	RMC	15.9	15.45	-0.18	Edge 1	Active	1:1	0	1.02	1.109	**1.131**	3
1 732.4	1412	RMC	15.9	15.52	-0.04	Edge 1	Active	1:1	0	1.01	1.091	1.102	-
1 752.6	1513	RMC	15.9	15.41	-0.16	Edge 1	Active	1:1	0	0.998	1.119	1.117	-
1 732.4	1412	RMC	24.0	23.32	-0.17	Rear	Inactive	1:1	21	0.452	1.169	0.528	-
1 732.4	1412	RMC	24.0	23.32	-0.12	Edge 1	Inactive	1:1	39	0.196	1.169	0.229	-
1 732.4	1412	RMC	24.0	23.32	-0.13	Edge 2	Inactive	1:1	0	0.00824	1.169	0.010	-
1 732.4	1412	RMC	24.0	23.32	-0.15	Edge 2 Tilt	Inactive	1:1	0	0.00811	1.169	0.009	-
1 732.4	1412	RMC	24.0	23.32	-0.04	Edge 4	Inactive	1:1	0	0.243	1.169	0.284	-
1 732.4	1412	RMC	24.0	23.32	-0.10	Edge 4 Tilt	Inactive	1:1	0	0.187	1.169	0.219	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram							

UMTS 1900 Body SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dB)	(dB)	(dB)				(mm)	(W/kg)		(W/kg)	
1 880	9400	RMC	16.4	16.01	-0.06	Rear	Active	1:1	0	0.568	1.094	0.621	-
1 852.4	9262	RMC	16.4	15.96	-0.03	Edge 1	Active	1:1	0	0.994	1.107	1.100	-
1 880	9400	RMC	16.4	16.01	-0.05	Edge 1	Active	1:1	0	1.03	1.094	**1.127**	4
1 907.6	9538	RMC	16.4	16.20	-0.14	Edge 1	Active	1:1	0	0.943	1.047	0.987	-
1 880	9400	RMC	24.0	23.41	-0.14	Rear	Inactive	1:1	21	0.348	1.146	0.399	-
1 880	9400	RMC	24.0	23.41	-0.09	Edge 1	Inactive	1:1	39	0.133	1.146	0.152	-
1 880	9400	RMC	24.0	23.41	-0.12	Edge 2	Inactive	1:1	0	0.019	1.146	0.022	-
1 880	9400	RMC	24.0	23.41	-0.10	Edge 2 Tilt	Inactive	1:1	0	0.020	1.146	0.023	-
1 880	9400	RMC	24.0	23.41	-0.15	Edge 4	Inactive	1:1	0	0.596	1.146	0.683	-
1 880	9400	RMC	24.0	23.41	-0.19	Edge 4 Tilt	Inactive	1:1	0	0.582	1.146	0.667	-
1 880	9400	RMC	16.4	16.01	-0.10	Edge 1	Active	1:1	0	1.00	1.094	1.094	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram							

Note:**Data entry indicate Variability measurement.

LTE Band 2 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 900	19100	QPSK	20	17.0	16.13	-0.05	Rear	Active	0	1	0	1:1	0	0.579	1.222	0.708	-
1 900	19100	QPSK	20	17.0	16.07	-0.10	Rear	Active	0	50	0	1:1	0	0.571	1.239	0.707	-
1 860	18700	QPSK	20	17.0	16.13	-0.19	Edge 1	Active	0	1	0	1:1	0	0.916	1.222	1.119	-
1 860	18700	QPSK	20	17.0	15.83	-0.11	Edge 1	Active	0	50	0	1:1	0	0.926	1.309	**1.212**	5
1 880	18900	QPSK	20	17.0	16.13	-0.12	Edge 1	Active	0	1	0	1:1	0	0.879	1.222	1.074	-
1 880	18900	QPSK	20	17.0	15.87	-0.07	Edge 1	Active	0	50	0	1:1	0	0.898	1.297	1.165	-
1 900	19100	QPSK	20	17.0	16.13	-0.18	Edge 1	Active	0	1	0	1:1	0	**0.968**	1.222	1.183	6
1 900	19100	QPSK	20	17.0	16.07	-0.13	Edge 1	Active	0	50	0	1:1	0	0.968	1.239	1.199	-
1 900	19100	QPSK	20	17.0	16.07	-0.04	Edge 1	Active	0	100	0	1:1	0	0.931	1.239	1.154	-
1 900	19100	QPSK	20	24.0	23.48	-0.14	Rear	Inactive	0	1	0	1:1	21	0.347	1.127	0.391	-
1 900	19100	QPSK	20	23.0	22.45	-0.11	Rear	Inactive	1	50	0	1:1	21	0.276	1.135	0.313	-
1 900	19100	QPSK	20	24.0	23.48	-0.16	Edge 1	Inactive	0	1	0	1:1	39	0.103	1.127	0.116	-
1 900	19100	QPSK	20	23.0	22.45	-0.10	Edge 1	Inactive	1	50	0	1:1	39	0.089	1.135	0.101	-
1 900	19100	QPSK	20	24.0	23.48	-0.16	Edge 2	Inactive	0	1	0	1:1	0	0.021	1.127	0.024	-
1 900	19100	QPSK	20	23.0	22.45	-0.10	Edge 2	Inactive	1	50	0	1:1	0	0.019	1.135	0.022	-
1 900	19100	QPSK	20	24.0	23.48	-0.18	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.021	1.127	0.024	-
1 900	19100	QPSK	20	23.0	22.45	-0.19	Edge 2 Tilt	Inactive	1	50	0	1:1	0	0.020	1.135	0.023	-
1 900	19100	QPSK	20	24.0	23.48	-0.11	Edge 4	Inactive	0	1	0	1:1	0	0.658	1.127	0.742	-
1 900	19100	QPSK	20	23.0	22.45	-0.19	Edge 4	Inactive	1	50	0	1:1	0	0.587	1.135	0.666	-
1 900	19100	QPSK	20	24.0	23.48	0.01	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.657	1.127	0.740	-
1 900	19100	QPSK	20	23.0	22.45	0.08	Edge 4 Tilt	Inactive	1	50	0	1:1	0	0.538	1.135	0.611	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE Band 4 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 732.5	20175	QPSK	20	16.5	15.94	0.10	Rear	Active	0	1	0	1:1	0	0.681	1.138	0.775	-
1 732.5	20175	QPSK	20	16.5	15.98	-0.17	Rear	Active	0	50	0	1:1	0	0.680	1.127	0.766	-
1 732.5	20175	QPSK	20	16.5	15.94	-0.10	Edge 1	Active	0	1	0	1:1	0	0.962	1.138	1.095	-
1 732.5	20175	QPSK	20	16.5	15.98	0.03	Edge 1	Active	0	50	0	1:1	0	0.951	1.127	1.072	-
1 732.5	20175	QPSK	20	16.5	15.90	0.07	Edge 1	Active	0	100	0	1:1	0	0.972	1.148	**1.116**	7
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

SAR For Full power (Sensor Inactive mode) fo LTE band 4 (Frequency Range : 1 710.7 ~ 1 754.3 MHz) is coverd by LTE Band 66 (Frequency range : 1 712.5 ~ 1 777.5 MHz) due to overlapping frequency range, same maximum tune-up limit.

LTE Band 5 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
836.5	20525	QPSK	10	18.8	18.38	-0.15	Rear	Active	0	1	0	1:1	0	0.370	1.102	0.408	-
836.5	20525	QPSK	10	18.8	18.26	-0.11	Rear	Active	0	25	0	1:1	0	0.380	1.132	0.430	-
836.5	20525	QPSK	10	18.8	18.38	-0.17	Edge 1	Active	0	1	0	1:1	0	0.911	1.102	1.004	-
836.5	20525	QPSK	10	18.8	18.26	0.02	Edge 1	Active	0	25	0	1:1	0	0.952	1.132	1.078	8
836.5	20525	QPSK	10	18.8	18.20	0.02	Edge 1	Active	0	50	0	1:1	0	0.941	1.148	**1.080**	9
836.5	20525	QPSK	10	18.8	18.26	-0.03	Edge 1	Active	0	25	0	1:1	0	0.950	1.132	1.075	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

SAR For Full power (Sensor Inactive mode) fo LTE band 5 (Frequency Range :824 ~849MHz) is coverd by LTE Band 26 (Frequency range :814 ~849MHz) due to overlapping frequency range, same maximum tune-up limit.

Note:**Data entry indicate Variability measurement.

LTE Band 7 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
2 560	21350	QPSK	20	14.2	13.78	0.03	Rear	Active	0	1	0	1:1	0	0.388	1.102	0.428	-
2 535	21100	QPSK	20	14.2	13.43	0.18	Rear	Active	0	50	0	1:1	0	0.448	1.194	0.535	-
2 560	21350	QPSK	20	14.2	13.78	0.15	Edge 1	Active	0	1	0	1:1	0	**0.658**	1.102	0.725	10
2 535	21100	QPSK	20	14.2	13.43	0.11	Edge 1	Active	0	50	0	1:1	0	0.631	1.194	**0.753**	11
2 560	21350	QPSK	20	23.0	22.70	0.12	Rear	Inactive	0	1	0	1:1	21	0.560	1.072	0.600	-
2 560	21350	QPSK	20	22.0	21.55	0.08	Rear	Inactive	1	50	0	1:1	21	0.435	1.109	0.482	-
2 560	21350	QPSK	20	23.0	22.70	0.16	Edge 1	Inactive	0	1	0	1:1	39	0.520	1.072	0.557	-
2 560	21350	QPSK	20	22.0	21.55	0.14	Edge 1	Inactive	1	50	0	1:1	39	0.392	1.109	0.435	-
2 560	21350	QPSK	20	23.0	22.70	-0.16	Edge 2	Inactive	0	1	0	1:1	0	0.032	1.072	0.034	-
2 560	21350	QPSK	20	22.0	21.55	-0.10	Edge 2	Inactive	1	50	0	1:1	0	0.025	1.109	0.028	-
2 560	21350	QPSK	20	23.0	22.70	0.15	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.038	1.072	0.041	-
2 560	21350	QPSK	20	22.0	21.55	-0.03	Edge 2 Tilt	Inactive	1	50	0	1:1	0	0.021	1.109	0.023	-
2 560	21350	QPSK	20	23.0	22.70	0.17	Edge 4	Inactive	0	1	0	1:1	0	0.286	1.072	0.307	-
2 560	21350	QPSK	20	22.0	21.55	0.07	Edge 4	Inactive	1	50	0	1:1	0	0.309	1.109	0.343	-
2 560	21350	QPSK	20	23.0	22.70	0.10	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.288	1.072	0.309	-
2 560	21350	QPSK	20	22.0	21.55	0.13	Edge 4 Tilt	Inactive	1	50	0	1:1	0	0.217	1.109	0.241	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE Band 12 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
707.5	23095	QPSK	10	21.0	20.35	-0.16	Rear	Active	0	1	0	1:1	0	0.394	1.161	0.457	-
707.5	23095	QPSK	10	21.0	20.29	-0.11	Rear	Active	0	25	0	1:1	0	0.406	1.178	0.478	-
707.5	23095	QPSK	10	21.0	20.35	-0.01	Edge 1	Active	0	1	0	1:1	0	0.708	1.161	0.822	-
707.5	23095	QPSK	10	21.0	20.29	-0.01	Edge 1	Active	0	25	0	1:1	0	**0.733**	1.178	0.863	12
707.5	23095	QPSK	10	21.0	20.24	-0.02	Edge 1	Active	0	50	0	1:1	0	0.730	1.191	**0.869**	13
707.5	23095	QPSK	10	24.0	23.24	-0.13	Rear	Inactive	0	1	49	1:1	20	0.189	1.191	0.225	-
707.5	23095	QPSK	10	23.0	22.10	-0.13	Rear	Inactive	1	25	0	1:1	20	0.153	1.230	0.188	-
707.5	23095	QPSK	10	24.0	23.24	-0.14	Edge 1	Inactive	0	1	49	1:1	37	0.042	1.191	0.050	-
707.5	23095	QPSK	10	23.0	22.10	-0.14	Edge 1	Inactive	1	25	0	1:1	37	0.035	1.230	0.043	-
707.5	23095	QPSK	10	24.0	23.24	-0.14	Edge 2	Inactive	0	1	49	1:1	0	0.017	1.191	0.020	-
707.5	23095	QPSK	10	23.0	22.10	-0.11	Edge 2	Inactive	1	25	0	1:1	0	0.013	1.230	0.016	-
707.5	23095	QPSK	10	24.0	23.24	-0.09	Edge 2 Tilt	Inactive	0	1	49	1:1	0	0.013	1.191	0.015	-
707.5	23095	QPSK	10	23.0	22.10	-0.19	Edge 2 Tilt	Inactive	1	25	0	1:1	0	0.010	1.230	0.012	-
707.5	23095	QPSK	10	24.0	23.24	0.05	Edge 4	Inactive	0	1	49	1:1	0	0.057	1.191	0.068	-
707.5	23095	QPSK	10	23.0	22.10	0.07	Edge 4	Inactive	1	25	0	1:1	0	0.046	1.230	0.057	-
707.5	23095	QPSK	10	24.0	23.24	-0.17	Edge 4 Tilt	Inactive	0	1	49	1:1	0	0.069	1.191	0.082	-
707.5	23095	QPSK	10	23.0	22.10	0.07	Edge 4 Tilt	Inactive	1	25	0	1:1	0	0.058	1.230	0.071	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE Band 13 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
782	23230	QPSK	10	19.4	18.76	-0.17	Rear	Active	0	1	0	1:1	0	0.415	1.159	0.481	-
782	23230	QPSK	10	19.4	18.80	-0.10	Rear	Active	0	25	0	1:1	0	0.427	1.148	0.490	-
782	23230	QPSK	10	19.4	18.76	-0.02	Edge 1	Active	0	1	0	1:1	0	0.815	1.159	0.945	-
782	23230	QPSK	10	19.4	18.80	-0.01	Edge 1	Active	0	25	0	1:1	0	0.848	1.148	0.974	-
782	23230	QPSK	10	19.4	18.70	-0.03	Edge 1	Active	0	50	0	1:1	0	0.849	1.175	**0.998**	14
782	23230	QPSK	10	24.0	23.11	-0.15	Rear	Inactive	0	1	0	1:1	20	0.248	1.227	0.304	-
782	23230	QPSK	10	23.0	22.04	-0.16	Rear	Inactive	1	25	0	1:1	20	0.204	1.247	0.254	-
782	23230	QPSK	10	24.0	23.11	-0.14	Edge 1	Inactive	0	1	0	1:1	37	0.152	1.227	0.187	-
782	23230	QPSK	10	23.0	22.04	-0.16	Edge 1	Inactive	1	25	0	1:1	37	0.124	1.247	0.155	-
782	23230	QPSK	10	24.0	23.11	-0.11	Edge 2	Inactive	0	1	0	1:1	0	0.014	1.227	0.017	-
782	23230	QPSK	10	23.0	22.04	-0.16	Edge 2	Inactive	1	25	0	1:1	0	0.012	1.247	0.015	-
782	23230	QPSK	10	24.0	23.11	0.03	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.00867	1.227	0.011	-
782	23230	QPSK	10	23.0	22.04	-0.18	Edge 2 Tilt	Inactive	1	25	0	1:1	0	0.00652	1.247	0.008	-
782	23230	QPSK	10	24.0	23.11	-0.02	Edge 4	Inactive	0	1	0	1:1	0	0.112	1.227	0.137	-
782	23230	QPSK	10	23.0	22.04	0.01	Edge 4	Inactive	1	25	0	1:1	0	0.092	1.247	0.115	-
782	23230	QPSK	10	24.0	23.11	0.02	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.142	1.227	0.174	-
782	23230	QPSK	10	23.0	22.04	0.12	Edge 4 Tilt	Inactive	1	25	0	1:1	0	0.115	1.247	0.143	-
782	23230	QPSK	10	19.4	18.70	-0.01	Edge 1	Active	1	50	0	1:1	0	0.842	1.175	0.989	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE Band 14 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
793	23330	QPSK	10	19.5	18.78	-0.13	Rear	Active	0	1	49	1:1	0	0.414	1.180	0.489	-
793	23330	QPSK	10	19.5	18.84	-0.15	Rear	Active	0	25	12	1:1	0	0.427	1.164	0.497	-
793	23330	QPSK	10	19.5	18.78	-0.01	Edge 1	Active	0	1	49	1:1	0	0.857	1.180	1.011	-
793	23330	QPSK	10	19.5	18.84	0.04	Edge 1	Active	0	25	12	1:1	0	0.901	1.164	**1.049**	15
793	23330	QPSK	10	19.5	18.83	0.01	Edge 1	Active	0	50	0	1:1	0	0.892	1.167	1.041	-
793	23330	QPSK	10	24.0	23.21	-0.10	Rear	Inactive	0	1	0	1:1	20	0.258	1.199	0.309	-
793	23330	QPSK	10	23.0	22.19	-0.16	Rear	Inactive	1	25	12	1:1	20	0.209	1.205	0.252	-
793	23330	QPSK	10	24.0	23.21	-0.01	Edge 1	Inactive	0	1	0	1:1	37	0.179	1.199	0.215	-
793	23330	QPSK	10	23.0	22.19	-0.06	Edge 1	Inactive	1	25	12	1:1	37	0.153	1.205	0.184	-
793	23330	QPSK	10	24.0	23.21	-0.12	Edge 2	Inactive	0	1	0	1:1	0	0.020	1.199	0.024	-
793	23330	QPSK	10	23.0	22.19	-0.17	Edge 2	Inactive	1	25	12	1:1	0	0.015	1.205	0.018	-
793	23330	QPSK	10	24.0	23.21	-0.17	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.016	1.199	0.019	-
793	23330	QPSK	10	23.0	22.19	-0.11	Edge 2 Tilt	Inactive	1	25	12	1:1	0	0.012	1.205	0.014	-
793	23330	QPSK	10	24.0	23.21	0.01	Edge 4	Inactive	0	1	0	1:1	0	0.109	1.199	0.131	-
793	23330	QPSK	10	23.0	22.19	-0.10	Edge 4	Inactive	1	25	12	1:1	0	0.086	1.205	0.104	-
793	23330	QPSK	10	24.0	23.21	0.19	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.133	1.199	0.159	-
793	23330	QPSK	10	23.0	22.19	0.01	Edge 4 Tilt	Inactive	1	25	12	1:1	0	0.105	1.205	0.127	-
793	23330	QPSK	10	19.5	18.84	0.01	Edge 1	Active	1	25	12	1:1	0	0.900	1.164	1.048	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

Note:**Data entry indicate Variability measurement.

LTE Band 26 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
831.5	26865	QPSK	15	18.5	17.76	-0.16	Rear	Active	0	1	0	1:1	0	0.340	1.186	0.403	-
831.5	26865	QPSK	15	18.5	17.70	-0.17	Rear	Active	0	36	0	1:1	0	0.345	1.202	0.415	-
831.5	26865	QPSK	15	18.5	17.76	0.03	Edge 1	Active	0	1	0	1:1	0	0.793	1.186	0.940	-
831.5	26865	QPSK	15	18.5	17.70	-0.09	Edge 1	Active	0	36	0	1:1	0	0.813	1.202	**0.977**	16
831.5	26865	QPSK	15	18.5	17.68	-0.05	Edge 1	Active	0	75	0	1:1	0	0.797	1.208	0.963	-
831.5	26865	QPSK	15	24.0	23.42	-0.16	Rear	Inactive	0	1	36	1:1	20	0.269	1.143	0.307	-
831.5	26865	QPSK	15	23.0	22.50	-0.13	Rear	Inactive	1	36	0	1:1	20	0.220	1.122	0.247	-
831.5	26865	QPSK	15	24.0	23.42	0.08	Edge 1	Inactive	0	1	36	1:1	37	0.180	1.143	0.206	-
831.5	26865	QPSK	15	23.0	22.50	-0.16	Edge 1	Inactive	1	36	0	1:1	37	0.145	1.122	0.163	-
831.5	26865	QPSK	15	24.0	23.42	-0.18	Edge 2	Inactive	0	1	36	1:1	0	0.016	1.143	0.018	-
831.5	26865	QPSK	15	23.0	22.50	-0.14	Edge 2	Inactive	1	36	0	1:1	0	0.012	1.122	0.013	-
831.5	26865	QPSK	15	24.0	23.42	-0.14	Edge 2 Tilt	Inactive	0	1	36	1:1	0	0.021	1.143	0.024	-
831.5	26865	QPSK	15	23.0	22.50	-0.10	Edge 2 Tilt	Inactive	1	36	0	1:1	0	0.015	1.122	0.017	-
831.5	26865	QPSK	15	24.0	23.42	-0.10	Edge 4	Inactive	0	1	36	1:1	0	0.096	1.143	0.110	-
831.5	26865	QPSK	15	23.0	22.50	-0.16	Edge 4	Inactive	1	36	0	1:1	0	0.079	1.122	0.089	-
831.5	26865	QPSK	15	24.0	23.42	-0.12	Edge 4 Tilt	Inactive	0	1	36	1:1	0	0.135	1.143	0.154	-
831.5	26865	QPSK	15	23.0	22.50	-0.09	Edge 4 Tilt	Inactive	1	36	0	1:1	0	0.103	1.122	0.116	-
831.5	26865	QPSK	15	18.5	17.70	0.04	Edge 1	Active	1	36	0	1:1	0	0.804	1.202	0.966	*
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE TDD Band 41 Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
2 636.5	41055	QPSK	20	16.2	15.53	0.07	Rear	Active	0	1	0	1:1	0	0.257	1.167	0.300	-
2 636.5	41055	QPSK	20	16.2	15.37	-0.11	Rear	Active	0	50	0	1:1	0	0.254	1.211	0.308	-
2 636.5	41055	QPSK	20	16.2	15.53	0.08	Edge 1	Active	0	1	0	1:1	0	**0.429**	1.167	0.501	17
2 636.5	41055	QPSK	20	16.2	15.37	-0.11	Edge 1	Active	0	50	0	1:1	0	0.428	1.211	**0.518**	18
2 549.5	40185	QPSK	20	23.0	22.56	-0.16	Rear	Inactive	0	1	0	1:1	21	0.141	1.107	0.156	-
2 549.5	40185	QPSK	20	22.0	21.46	0.16	Rear	Inactive	1	50	0	1:1	21	0.108	1.132	0.122	-
2 549.5	40185	QPSK	20	23.0	22.56	0.17	Edge 1	Inactive	0	1	0	1:1	39	0.114	1.107	0.126	-
2 549.5	40185	QPSK	20	22.0	21.46	-0.07	Edge 1	Inactive	1	50	0	1:1	39	0.086	1.132	0.097	-
2 549.5	40185	QPSK	20	23.0	22.56	-0.16	Edge 2	Inactive	0	1	0	1:1	0	0.00444	1.107	0.005	-
2 549.5	40185	QPSK	20	22.0	21.46	-0.11	Edge 2	Inactive	1	50	0	1:1	0	0.00425	1.132	0.005	-
2 549.5	40185	QPSK	20	23.0	22.56	-0.16	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.00399	1.107	0.004	-
2 549.5	40185	QPSK	20	22.0	21.46	-0.19	Edge 2 Tilt	Inactive	1	50	0	1:1	0	0.00384	1.132	0.004	-
2 549.5	40185	QPSK	20	23.0	22.56	0.19	Edge 4	Inactive	0	1	0	1:1	0	0.069	1.107	0.076	-
2 549.5	40185	QPSK	20	22.0	21.46	-0.07	Edge 4	Inactive	1	50	0	1:1	0	0.067	1.132	0.076	-
2 549.5	40185	QPSK	20	23.0	22.56	0.18	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.062	1.107	0.069	-
2 549.5	40185	QPSK	20	22.0	21.46	0.07	Edge 4 Tilt	Inactive	1	50	0	1:1	0	0.048	1.132	0.054	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

LTE Band 66 (AWS) Body SAR																	
Frequency		Mode	Band width	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Sensor	MPR	RB Size	RB offset	Duty Cycle	Distance	Meas. SAR	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(MHz)	(dBm)	(dBm)	(dB)			(dB)				(mm)	(W/kg)		(W/kg)	
1 720	132072	QPSK	20	16.3	15.89	-0.18	Rear	Active	0	1	0	1:1	0	0.710	1.099	0.780	-
1 720	132072	QPSK	20	16.3	15.85	-0.14	Rear	Active	0	50	0	1:1	0	0.699	1.109	0.775	-
1 720	132072	QPSK	20	16.3	15.89	-0.10	Edge 1	Active	0	1	0	1:1	0	1.13	1.099	1.242	-
1 720	132072	QPSK	20	16.3	15.85	-0.10	Edge 1	Active	0	50	0	1:1	0	1.15	1.109	**1.275**	19
1 745	132322	QPSK	20	16.3	15.85	-0.11	Edge 1	Active	0	1	0	1:1	0	1.06	1.109	1.176	-
1 745	132322	QPSK	20	16.3	15.84	-0.16	Edge 1	Active	0	50	0	1:1	0	1.07	1.112	1.190	-
1 770	132572	QPSK	20	16.3	15.67	-0.15	Edge 1	Active	0	1	0	1:1	0	1.03	1.156	1.191	-
1 770	132572	QPSK	20	16.3	15.65	-0.13	Edge 1	Active	0	50	0	1:1	0	1.03	1.161	1.196	-
1 720	132072	QPSK	20	16.3	15.81	-0.04	Edge 1	Active	0	100	0	1:1	0	1.12	1.119	1.253	-
1 720	132072	QPSK	20	24.0	23.39	-0.19	Rear	Inactive	0	1	0	1:1	21	0.370	1.151	0.426	-
1 720	132072	QPSK	20	23.0	22.28	-0.10	Rear	Inactive	1	50	0	1:1	21	0.299	1.180	0.353	-
1 720	132072	QPSK	20	24.0	23.39	-0.11	Edge 1	Inactive	0	1	0	1:1	39	0.190	1.151	0.219	-
1 720	132072	QPSK	20	23.0	22.28	-0.17	Edge 1	Inactive	1	50	0	1:1	39	0.145	1.180	0.171	-
1 720	132072	QPSK	20	24.0	23.39	-0.19	Edge 2	Inactive	0	1	0	1:1	0	0.00749	1.151	0.009	-
1 720	132072	QPSK	20	23.0	22.28	-0.19	Edge 2	Inactive	1	50	0	1:1	0	0.0065	1.180	0.008	-
1 720	132072	QPSK	20	24.0	23.39	-0.17	Edge 2 Tilt	Inactive	0	1	0	1:1	0	0.00986	1.151	0.011	-
1 720	132072	QPSK	20	23.0	22.28	-0.13	Edge 2 Tilt	Inactive	1	50	0	1:1	0	0.00946	1.180	0.011	-
1 720	132072	QPSK	20	24.0	23.39	-0.17	Edge 4	Inactive	0	1	0	1:1	0	0.287	1.151	0.330	-
1 720	132072	QPSK	20	23.0	22.28	-0.17	Edge 4	Inactive	1	50	0	1:1	0	0.244	1.180	0.288	-
1 720	132072	QPSK	20	24.0	23.39	-0.03	Edge 4 Tilt	Inactive	0	1	0	1:1	0	0.233	1.151	0.268	-
1 720	132072	QPSK	20	23.0	22.28	-0.07	Edge 4 Tilt	Inactive	1	50	0	1:1	0	0.190	1.180	0.224	-
1 720	132072	QPSK	20	16.3	15.85	-0.12	Edge 1	Active	0	50	0	1:1	0	1.14	1.109	1.264	**
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population							Body 1.6 W/kg (mW/g) Averaged over 1 gram										

Note:**Data entry indicate Variability measurement.

11.2 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in IEC62209-1 :2016, IEEE1528:2013 and FCC KDB Publication 447498D01v06.
2. Batteries are fully charged at the beginning of the SAR measurements.
3. Liquid tissue depth was at least 15.0 cm for all frequencies.
4. The manufacturer has confirmed that the device(s) tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
5. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB 447498 D01v06..
6. All Frequencies were measured to be within ± 5% of targets in listed in IEC 62209-1(Head) and RSS102 Annex D(Body). Per Notice 2012-DRS0529, since the dielectric properties of the tissue simulating are all equal or less 5% of target values, SAR was not scaled. The measurement uncertainty 5% for deviation of conductivity and liquid permittivity from the target was added to the uncertainty table.
7. Per RSS-102, Issue 5, SAR evaluations were made in accordance with the latest version of IEEE1528 and/or IEC62209. FCC KDB Publications listed in RSS-102 were used to supplement the limited technology specific testing protocols described in the international standard.
8. Per IEC 62209-1 and ISED guidance, UMTS, LTE SAR testing was performed using probe calibrated for the modulation specific signal. GSM modes was not evaluated with modulated parameters because the expanded uncertainty using CW calibration is <30%.
9. This device utilizes power reduction for some wireless mode and technologies, as outlined in sec. 2.3 and sec.9. The maximum output power allowed for each transmitter and exposure condition was evaluated for SAR compliance based on expected use conditions and simultaneous scenarios.

UMTS Notes:

1. The 12.2 kbps RMC mode is the primary mode per KDB 941225 D01v03r01.
2. UMTS SAR was tested under RMC 12.2 kbps with HSPA inactive per KDB publication 941225 D01v03r01. AMR and HSPA SAR was not required per the 3G Test Reduction Procedure in KDB Publication 941225 D01v03r01.
3. Per FCC KDB 447498 D01v06, if the reported (scaled) SAR measured at the middle channel or highest output power channel for each test configuration is ≤ 0.8 W/kg then testing at the other channels is not required for such test configuration(s). When the maximum output power variation across the channel highest output power channel was used.

LTE Notes:

1. LTE Considerations: LTE test configurations are determined according to SAR Evaluation Consideration for LTE Devices in FCC KDB 941225 D05v02r05.
2. According to FCC KDB 941225 D05v02r05:
   When the reported SAR is ≤ 0.8 W/kg, testing of the 100% RB allocation and required test channels is not required. Otherwise, SAR is required for the remaining required test channels using the 1RB, 50%RB and 100%RB allocation with highest output power for that channel.
   Only one channel, and as reported SAR values for 1RB allocation and 50%RB allocation were less than 1.45W/Kg only the highest power RB offset for each allocation was required.
3. MPR is permanently implemented for this device by the manufacturer. The specific manufacturer target MPR is indicated alongside the SAR results. MPR is enabled for this device, according to target MPR is indicated alongside the SAR results.
4. A-MPR was disabled for all SAR tests by setting NS=01 on the base station simulator.
5. Per FCC KDB Publication 447498 D01v06, if the reported (scaled) LTE TDD Band 41 SAR measured at the highest output power channel for each test configuration is ≤ 0.6 W/kg then testing at the other channels is not required for such test configurations.
6. TDD LTE was tested using UL-DL configuration 0 with 6 UL sub frames and 2S subframes using extended cyclic prefix only and special sub frame configuration 6. SAR tests were performed at maximum output power and worst-case transmission duty factor in extended cyclic prefix. Per 3GPP 36.211 Sec. 4**,** the duty factor using extended cyclic prefix is 0.633(cf=1.58).
7. Per KDB 941225 D05Av01r02, SAR for LTE Carrier Aggregation operations was not needed because the maximum average output power in LTE CA mode was not > 0.25 dB higher than the maximum output power when downlink CA was not activated.
8. SAR test reduction is applied using the following criteria:
   Start with the largest channel bandwidth and measure SAR for QPSK with 1 RB, and 50% RB allocation, using the RB offset and required test channel combination with the highest maximum output power among RB offsets at the upper edge, middle and lower edge of each required test channel. When the reported SAR is >0.8 W/kg, testing for other Channels is performed at the highest output power level for 1RB, and 50% RB configuration for that channel. Testing for 100% RB configuration is performed at the highest output power level for 100% RB configuration across the Low, Mid and High Channel when the highest reported SAR for 1 RB and 50% RB are >0.8 W/kg, testing for the remaining required channels is not needed because the reported SAR for 100% RB Allocation <1.45 W/kg. Testing for 16-QAM modulation is not required because the reported SAR for QPSK is <1.45 W/kg and its output power is not more than 0.5 dB higher than that a QPSK. Testing for the other channel bandwidths is not required because the reported SAR for the highest channel bandwidth is <1.45 W/kg and its output power is not more than 0.5 dB higher than that of the highest channel bandwidth.
9. When LTE power reduction is applied, LTE MPR =0.

12. SIMULTANEOUS SAR ANALYSIS

12.1 Simultaneous Transmission Summation for Body

The highest reported SAR for each exposure condition is used for SAR summation purpose. The WLAN/BT SAR testing results were used to perform transmission simultaneous analysis from FCC SAR Test Report, Module model: WL16A with pre-existing FCC ID: ACJ9TGWL16A**,** Report No: 11424282H-A-R2.

		Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN							
Band	Configuration	WWAN SAR 1	2.4 GHz Main WLAN 2	2.4 GHz Aux WLAN 3	2.4 GHz BT 4	∑ 1-g SAR 1+2	∑ 1-g SAR 1+3	∑ 1-g SAR 1+2+3	∑ 1-g SAR 1+2+4
		(W/kg)	SAR (W/kg)	SAR (W/kg)	SAR (W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)
UMTS 850	Rear	0.436	0.105	0.169	0.044	0.541	0.605	0.710	0.585
	Edge 1	0.901	0.018	0.020	0.00488	0.919	0.921	0.939	0.924
	Edge 2	0.013		0.776	0.181	0.013	0.789	0.789	0.194
	Edge 2 Tilt	0.126		0.859	0.211	0.452	0.985	0.985	0.337
	Edge 3	0.4	0.052	0.062	0.019	0.126	0.462	0.514	0.471
	Edge 4	0.155	0.793			0.948	0.155	0.948	0.948
	Edge 4 Tilt	0.013	0.789			0.802	0.013	0.802	0.802
UMTS 1700	Rear	0.670	0.105	0.169	0.044	0.775	0.839	0.944	0.819
	Edge 1	1.131	0.018	0.020	0.00488	1.149	1.151	1.169	1.154
	Edge 2	0.010		0.776	0.181	0.010	0.786	0.786	0.191
	Edge 2 Tilt	0.009		0.859	0.211	0.009	0.868	0.868	0.220
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.284	0.793			1.077	0.284	1.077	1.077
	Edge 4 Tilt	0.219	0.789			1.008	0.219	1.008	1.008
UMTS 1900	Rear	0.621	0.105	0.169	0.044	0.726	0.790	0.895	0.770
	Edge 1	1.127	0.018	0.020	0.00488	1.145	1.147	1.165	1.150
	Edge 2	0.022		0.776	0.181	0.022	0.798	0.798	0.203
	Edge 2 Tilt	0.023		0.859	0.211	0.023	0.882	0.882	0.234
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.683	0.793			1.476	0.683	1.476	1.476
	Edge 4 Tilt	0.667	0.789			1.456	0.667	1.456	1.456
LTE Band 2	Rear	0.708	0.105	0.169	0.044	0.813	0.877	0.982	0.857
	Edge 1	1.212	0.018	0.020	0.00488	1.230	1.232	1.250	1.235
	Edge 2	0.024		0.776	0.181	0.024	0.800	0.800	0.205
	Edge 2 Tilt	0.024		0.859	0.211	0.024	0.883	0.883	0.235
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.742	0.793			**1.535**	0.742	1.535	1.535
	Edge 4 Tilt	0.740	0.789			1.529	0.740	1.529	1.529
LTE Band 4	Rear	0.775	0.105	0.169	0.044	0.880	0.944	1.049	0.924
	Edge 1	1.116	0.018	0.020	0.00488	1.134	1.136	1.154	1.139
	Edge 2			0.776	0.181		0.776	0.776	0.181
	Edge 2 Tilt			0.859	0.211		0.859	0.859	0.211
	Edge 3		0.052	0.062	0.019	0.052	0.062	0.114	0.071
	Edge 4		0.793			0.793		0.793	0.793
	Edge 4 Tilt		0.789			0.789		0.789	0.789
LTE Band 5	Rear	0.430	0.105	0.169	0.044	0.535	0.599	0.704	0.579
	Edge 1	1.080	0.018	0.020	0.00488	1.098	1.100	1.118	1.103
	Edge 2			0.776	0.181	0.000	0.776	0.776	0.181
	Edge 2 Tilt			0.859	0.211	0.000	0.859	0.859	0.211
	Edge 3		0.052	0.062	0.019	0.052	0.062	0.114	0.071
	Edge 4		0.793			0.793		0.793	0.793
	Edge 4 Tilt		0.789			0.789		0.789	0.789

Simultaneous Transmission Summation Scenario with 2.4 GHz WLAN									
Band	Configuration	WWAN SAR 1	2.4 GHz Main WLAN 2	2.4 GHz Aux WLAN 3	2.4 GHz BT 4	∑ 1-g SAR 1+2	∑ 1-g SAR 1+3	∑ 1-g SAR 1+2+3	∑ 1-g SAR 1+2+4
		(W/kg)	SAR (W/kg)	SAR (W/kg)	SAR (W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)
LTE Band 7	Rear	0.600	0.105	0.169	0.044	0.705	0.769	0.874	0.749
	Edge 1	0.753	0.018	0.020	0.00488	0.771	0.773	0.791	0.776
	Edge 2	0.034		0.776	0.181	0.034	0.810	0.810	0.215
	Edge 2 Tilt	0.041		0.859	0.211	0.041	0.900	0.900	0.252
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.343	0.793	0.062		1.136	0.405	0.457	1.136
	Edge 4 Tilt	0.309	0.789			1.098	0.309	1.098	1.098
LTE Band 12	Rear	0.478	0.105	0.169	0.044	0.583	0.647	0.752	0.627
	Edge 1	0.869	0.018	0.020	0.00488	0.887	0.889	0.907	0.892
	Edge 2	0.020		0.776	0.181	0.020	0.796	0.796	0.201
	Edge 2 Tilt	0.015		0.859	0.211	0.015	0.874	0.874	0.226
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.068	0.793			0.861	0.068	0.861	0.861
	Edge 4 Tilt	0.082	0.789			0.871	0.082	0.871	0.871
LTE Band 13	Rear	0.490	0.105	0.169	0.044	0.595	0.659	0.764	0.639
	Edge 1	0.998	0.018	0.020	0.00488	1.016	1.018	1.036	1.021
	Edge 2	0.017		0.776	0.181	0.017	0.793	0.793	0.198
	Edge 2 Tilt	0.011		0.859	0.211	0.011	0.870	0.870	0.222
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.137	0.793			0.930	0.137	0.93	0.930
	Edge 4 Tilt	0.174	0.789			0.963	0.174	0.963	0.963
LTE Band 14	Rear	0.497	0.105	0.169	0.044	0.602	0.666	0.771	0.646
	Edge 1	1.049	0.018	0.020	0.00488	1.067	1.069	1.087	1.072
	Edge 2	0.024		0.776	0.181	0.024	0.800	0.800	0.205
	Edge 2 Tilt	0.019		0.859	0.211	0.019	0.878	0.878	0.230
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.131	0.793			0.924	0.131	0.924	0.924
	Edge 4 Tilt	0.159	0.789			0.948	0.159	0.948	0.948
LTE Band 26	Rear	0.415	0.105	0.169	0.044	0.52	0.584	0.689	0.564
	Edge 1	0.977	0.018	0.020	0.00488	0.995	0.997	1.015	1.000
	Edge 2	0.018		0.776	0.181	0.018	0.794	0.794	0.199
	Edge 2 Tilt	0.024		0.859	0.211	0.024	0.883	0.883	0.235
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.110	0.793			0.903	0.110	0.903	0.903
	Edge 4 Tilt	0.154	0.789			0.943	0.154	0.943	0.943
LTE Band 41	Rear	0.308	0.105	0.169	0.044	0.413	0.477	0.582	0.457
	Edge 1	0.518	0.018	0.020	0.00488	0.536	0.538	0.556	0.541
	Edge 2	0.005		0.776	0.181	0.005	0.781	0.781	0.186
	Edge 2 Tilt	0.004		0.859	0.211	0.004	0.863	0.863	0.215
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.076	0.793			0.869	0.076	0.869	0.869
	Edge 4 Tilt	0.069	0.789			0.858	0.069	0.858	0.858
LTE Band 66	Rear	0.780	0.105	0.169	0.044	0.885	0.949	1.054	0.929
	Edge 1	1.275	0.018	0.020	0.00488	1.293	1.295	1.313	1.298
	Edge 2	0.009		0.776	0.181	0.009	0.785	0.785	0.190
	Edge 2 Tilt	0.011		0.859	0.211	0.011	0.87	0.87	0.222
	Edge 3	0.4	0.052	0.062	0.019	0.452	0.462	0.514	0.471
	Edge 4	0.330	0.793			1.123	0.33	1.123	1.123
	Edge 4 Tilt	0.268	0.789			1.057	0.268	1.057	1.057

Simultaneous Transmission Summation Scenario with 5 GHz WLAN									
Band	Configuration	WWAN SAR 1	5 GHz Main WLAN 2	5 GHz Aux WLAN 3	2.4 GHz BT 4	∑ 1-g SAR 1+2	∑ 1-g SAR 1+3	∑ 1-g SAR 1+2+3	∑ 1-g SAR 1+2+4
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)
UMTS 850	Rear	0.436	0.110	0.115	0.044	0.546	0.551	0.661	0.590
	Edge 1	0.901	0.059	0.019	0.00488	0.960	0.920	0.979	0.965
	Edge 2	0.013		1.036	0.181	0.013	1.049	1.049	0.194
	Edge 2 Tilt	0.126		1.263	0.211	0.126	1.389	1.389	0.337
	Edge 3	0.4	0.021	0.087	0.019	0.421	0.487	0.508	0.440
	Edge 4	0.155	0.690			0.845	0.155	0.845	0.845
	Edge 4 Tilt	0.013	0.837			0.850	0.013	0.850	0.850
UMTS 1700	Rear	0.670	0.112	0.115	0.044	0.782	0.785	0.897	0.826
	Edge 1	1.131	0.059	0.019	0.00488	1.190	1.150	1.209	1.195
	Edge 2	0.010		1.036	0.181	0.010	1.046	1.046	0.191
	Edge 2 Tilt	0.009		1.263	0.211	0.009	1.272	1.272	0.220
	Edge 3	0.4		0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.284	0.690			0.974	0.284	0.974	0.974
	Edge 4 Tilt	0.219	0.837			1.056	0.219	1.056	1.056
UMTS 1900	Rear	0.621	0.112	0.115	0.044	0.733	0.736	0.848	0.777
	Edge 1	1.127	0.059	0.019	0.00488	1.186	1.146	1.205	1.191
	Edge 2	0.022		1.036	0.181	0.022	1.058	1.058	0.203
	Edge 2 Tilt	0.023		1.263	0.211	0.023	1.286	1.286	0.234
	Edge 3	0.4		0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.683	0.690			1.373	0.683	1.373	1.373
	Edge 4 Tilt	0.667	0.837			1.504	0.667	1.504	1.504
LTE Band 2	Rear	0.708	0.112	0.115	0.044	0.820	0.823	0.935	0.864
	Edge 1	1.212	0.059	0.019	0.00488	1.271	1.231	1.290	1.276
	Edge 2	0.024		1.036	0.181	0.024	1.060	1.060	0.205
	Edge 2 Tilt	0.024		1.263	0.211	0.024	1.287	1.287	0.235
	Edge 3	0.4		0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.742	0.690			1.432	0.742	1.432	1.432
	Edge 4 Tilt	0.740	0.837			**1.577**	0.740	1.577	1.577
LTE Band 4	Rear	0.775	0.112	0.115	0.044	0.887	0.890	1.002	0.931
	Edge 1	1.116	0.059	0.019	0.00488	1.175	1.135	1.194	1.180
	Edge 2			1.036	0.181		1.036	1.036	0.181
	Edge 2 Tilt			1.263	0.211		1.263	1.263	0.211
	Edge 3			0.087	0.019	0.000	0.087	0.087	0.019
	Edge 4		0.690			0.690		0.690	0.690
	Edge 4 Tilt		0.837			0.837		0.837	0.837
LTE Band 5	Rear	0.430	0.112	0.115	0.044	0.542	0.545	0.657	0.586
	Edge 1	1.080	0.059	0.019	0.00488	1.139	1.099	1.158	1.144
	Edge 2			1.036	0.181		1.036	1.036	0.181
	Edge 2 Tilt			1.263	0.211		1.263	1.263	0.211
	Edge 3			0.087	0.019		0.087	0.087	0.019
	Edge 4		0.690			0.690		0.690	0.690
	Edge 4 Tilt		0.837			0.837		0.837	0.837

Simultaneous Transmission Summation Scenario with 5 GHz WLAN									
Band	Configuration	WWAN SAR 1	5 GHz Main WLAN 2	5 GHz Aux WLAN 3	2.4 GHz BT 4	∑ 1-g SAR 1+2	∑ 1-g SAR 1+3	∑ 1-g SAR 1+2+3	∑ 1-g SAR 1+2+4
		(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)
LTE Band 7	Rear	0.600	0.112	0.115	0.044	0.712	0.715	0.827	0.756
	Edge 1	0.753	0.059	0.019	0.00488	0.812	0.772	0.831	0.817
	Edge 2	0.034		1.036	0.181	0.034	1.070	1.070	0.215
	Edge 2 Tilt	0.041		1.263	0.211	0.041	1.304	1.304	0.252
	Edge 3	0.4		0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.343	0.690			1.033	0.343	1.033	1.033
	Edge 4 Tilt	0.309	0.837			1.146	0.309	1.146	1.146
LTE Band 12	Rear	0.478	0.112	0.115	0.044	0.590	0.593	0.705	0.634
	Edge 1	0.869	0.059	0.019	0.00488	0.928	0.888	0.947	0.933
	Edge 2	0.020		1.036	0.181	0.020	1.056	1.056	0.201
	Edge 2 Tilt	0.015		1.263	0.211	0.015	1.278	1.278	0.226
	Edge 3	0.4		0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.068	0.690			0.758	0.068	0.758	0.758
	Edge 4 Tilt	0.082	0.837			0.919	0.082	0.919	0.919
LTE Band 13	Rear	0.490	0.110	0.115	0.044	0.600	0.605	0.715	0.644
	Edge 1	0.998	0.059	0.019	0.00488	1.057	1.017	1.076	1.062
	Edge 2	0.017		1.036	0.181	0.017	1.053	1.053	0.198
	Edge 2 Tilt	0.011		1.263	0.211	0.011	1.274	1.274	0.222
	Edge 3	0.4	0.021	0.087	0.019	0.421	0.487	0.508	0.440
	Edge 4	0.137	0.690			0.827	0.137	0.827	0.827
	Edge 4 Tilt	0.174	0.837			1.011	0.174	1.011	1.011
LTE Band 14	Rear	0.497	0.110	0.115	0.044	0.609	0.612	0.724	0.653
	Edge 1	1.049	0.059	0.019	0.00488	1.108	1.068	1.127	1.113
	Edge 2	0.024		1.036	0.181	0.024	1.060	1.060	0.205
	Edge 2 Tilt	0.019		1.263	0.211	0.019	1.282	1.282	0.230
	Edge 3	0.4	0.021	0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.131	0.690			0.821	0.131	0.821	0.821
	Edge 4 Tilt	0.159	0.837			0.996	0.159	0.996	0.996
LTE Band 26	Rear	0.415	0.110	0.115	0.044	0.527	0.530	0.642	0.571
	Edge 1	0.977	0.059	0.019	0.00488	1.036	0.996	1.055	1.041
	Edge 2	0.018		1.036	0.181	0.018	1.054	1.054	0.199
	Edge 2 Tilt	0.024		1.263	0.211	0.024	1.287	1.287	0.235
	Edge 3	0.4	0.021	0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.110	0.690			0.800	0.110	0.800	0.800
	Edge 4 Tilt	0.154	0.837			0.991	0.154	0.991	0.991
LTE Band 41	Rear	0.308	0.110	0.115	0.044	0.420	0.423	0.535	0.464
	Edge 1	0.518	0.059	0.019	0.00488	0.577	0.537	0.596	0.582
	Edge 2	0.005		1.036	0.181	0.005	1.041	1.041	0.186
	Edge 2 Tilt	0.004		1.263	0.211	0.004	1.267	1.267	0.215
	Edge 3	0.4	0.021	0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.076	0.690			0.766	0.076	0.766	0.766
	Edge 4 Tilt	0.069	0.837			0.906	0.069	0.906	0.906
LTE Band 66	Rear	0.780	0.110	0.115	0.044	0.892	0.895	1.007	0.936
	Edge 1	1.275	0.059	0.019	0.00488	1.334	1.294	1.353	1.339
	Edge 2	0.009		1.036	0.181	0.009	1.045	1.045	0.190
	Edge 2 Tilt	0.011		1.263	0.211	0.011	1.274	1.274	0.222
	Edge 3	0.4	0.021	0.087	0.019	0.400	0.487	0.487	0.419
	Edge 4	0.330	0.690			1.020	0.330	1.020	1.020
	Edge 4 Tilt	0.268	0.837			1.105	0.268	1.105	1.105

Band	Configuration	WWAN SAR (W/kg)	Bluetooth SAR (W/kg)	∑ 1-g SAR (W/kg)
UMTS 850	Rear	0.436	0.044	0.480
	Edge 1	0.901	0.00488	0.906
	Edge 2	0.013	0.181	0.194
	Edge 2 Tilt	0.126	0.211	0.337
	Edge 3	0.4	0.019	0.419
	Edge 4	0.155		0.155
	Edge 4 Tilt	0.013		0.013
UMTS 1700	Rear	0.670	0.044	0.714
	Edge 1	1.131	0.00488	1.136
	Edge 2	0.010	0.181	0.191
	Edge 2 Tilt	0.009	0.211	0.220
	Edge 3	0.4	0.019	0.419
	Edge 4	0.284		0.284
	Edge 4 Tilt	0.219		0.219
UMTS 1900	Rear	0.621	0.044	0.665
	Edge 1	1.127	0.00488	1.132
	Edge 2	0.022	0.181	0.203
	Edge 2 Tilt	0.023	0.211	0.234
	Edge 4	0.683	0.019	0.702
	Edge 4 Tilt	0.667		0.667
LTE Band 2	Rear	0.708	0.044	0.752
	Edge 1	1.212	0.00488	1.217
	Edge 2	0.024	0.181	0.205
	Edge 2 Tilt	0.024	0.211	0.235
	Edge 3	0.4	0.019	0.419
	Edge 4	0.742		0.742
	Edge 4 Tilt	0.740		0.740
LTE Band 4	Rear	0.775	0.044	0.819
	Edge 1	1.116	0.00488	1.121
	Edge 2		0.181	0.181
	Edge 2 Tilt		0.211	0.211
	Edge 3		0.019	0.019
	Edge 4			
	Edge 4 Tilt			
LTE Band 5	Rear	0.430	0.044	0.474
	Edge 1	1.080	0.00488	1.085
	Edge 2		0.181	0.181
	Edge 2 Tilt		0.211	0.211
	Edge 3		0.019	0.019
	Edge 4			
	Edge 4 Tilt			

Band	Configuration	WWAN SAR (W/kg)	Bluetooth SAR (W/kg)	∑ 1-g SAR (W/kg)
LTE Band 7	Rear	0.600	0.044	0.644
	Edge 1	0.753	0.00488	0.758
	Edge 2	0.034	0.181	0.215
	Edge 2 Tilt	0.041	0.211	0.252
	Edge 4	0.343	0.019	0.362
	Edge 4 Tilt	0.309		0.309
LTE Band 12	Rear	0.478	0.044	0.522
	Edge 1	0.869	0.00488	0.874
	Edge 2	0.020	0.181	0.201
	Edge 2 Tilt	0.015	0.211	0.226
	Edge 3	0.400	0.019	0.419
	Edge 4	0.068		0.068
	Edge 4 Tilt	0.082		0.082
LTE Band 13	Rear	0.490	0.044	0.534
	Edge 1	0.998	0.00488	1.003
	Edge 2	0.017	0.181	0.198
	Edge 2 Tilt	0.011	0.211	0.222
	Edge 3	0.400	0.019	0.419
	Edge 4	0.137		0.137
	Edge 4 Tilt	0.174		0.174
LTE Band 14	Rear	0.497	0.044	0.541
	Edge 1	1.049	0.00488	1.054
	Edge 2	0.024	0.181	0.205
	Edge 2 Tilt	0.019	0.211	0.230
	Edge 3	0.400	0.019	0.419
	Edge 4	0.131		0.131
	Edge 4 Tilt	0.159		0.159
LTE Band 26	Rear	0.415	0.044	0.459
	Edge 1	0.977	0.00488	0.982
	Edge 2	0.018	0.181	0.199
	Edge 2 Tilt	0.024	0.211	0.235
	Edge 3	0.400	0.019	0.419
	Edge 4	0.110		0.110
	Edge 4 Tilt	0.154		0.154
LTE Band 41	Rear	0.308	0.044	0.352
	Edge 1	0.518	0.00488	0.523
	Edge 2	0.005	0.181	0.186
	Edge 2 Tilt	0.004	0.211	0.215
	Edge 3	0.400	0.019	0.419
	Edge 4	0.076		0.076
	Edge 4 Tilt	0.069		0.069
LTE Band 66	Rear	0.780	0.044	0.824
	Edge 1	1.275	0.00488	1.280
	Edge 2	0.009	0.181	0.190
	Edge 2 Tilt	0.011	0.211	0.222
	Edge 3	0.400	0.019	0.419
	Edge 4	0.330		0.330
	Edge 4 Tilt	0.268		0.268

12.2 Simultaneous Transmission Conclusion

The above numerical summed SAR Results are sufficient to determine that simultaneous transmission cases will not exceed the SAR Limit and therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE1528-2013.

13. SAR MEASUREMENT VARIABILITY AND UNCERTAINTY

In accordance with KDB procedure 865664 D01v01r04 SAR measurement 100 MHz to 6 GHz, SAR additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

SAR Measurement variability was assessed using the following procedures for each frequency band:

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg for 1g SAR or < 2.0 W/kg for 10g SAR; steps 2) through 4) do not apply.

2) When the original highest measured 1g SAR is ≥ 0.80 W/kg or 10g SAR ≥ 2.0W/kg, repeat that measurement once.

3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg for 1g SAR or ≥ 3.625 W/kg for 10g SAR (~ 10% from the 1-g SAR limit).

4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg for 1g SAR or ≥3.75 W/kg for 10g SAR and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Body SAR measurement variability Results

Frequency		Mode/Band	Configuration	Sensor	Measured SAR	Repeated SAR	SAR Ratio
MHz	Channel				(W/kg)	(W/kg)	
1 880	9400	UMTS 1900	Edge 1	Active	1.03	1.00	1.03
836.5	20525	LTE Band 5	Edge 1	Active	0.952	0.950	1.00
793	23330	LTE Band 14	Edge 1 (25RB, 12 offset)	Active	0.901	0.900	1.00
1 720	132072	LTE Band 66	Edge 1 (50RB, 0 offset)	Active	1.15	1.14	1.01

14. MEASUREMENT UNCERTAINTY

Measurement Uncertainty for DUT SAR test

According to IEC 62209-2
(30MHz - 6 GHz range)

a	*b*	*c*	*d*	*e*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Source of uncertainty	**Description**	**Uncertainty ± %**	**Probability distribution**	**Div.**	**c_i**	**c_i**	**Standard Uncertainty**	**Standard Uncertainty**	**v_i or v_{eff}**
					(1 g)	**(10 g)**	**± % (1 g)**	**± % (10 g)**	
Measurement system									
Probe calibration	7.2.2.1	6.65	N	1	1	1	6.65	6.65	∞
Axial isotropy	7.2.2.2	4.70	R	1.73	0.71	0.71	1.92	1.92	∞
Hemispherical isotropy	7.2.2.2	9.60	R	1.73	0.71	0.71	3.92	3.92	∞
Boundary effect	7.2.2.6	2.00	R	1.73	1	1	1.15	1.15	∞
Linearity	7.2.2.3	4.70	R	1.73	1	1	2.71	2.71	∞
Detection limits	7.2.2.5	1.00	R	1.73	1	1	0.58	0.58	∞
Modulation response	7.2.2.4	2.40	R	1.73	1	1	1.39	1.39	∞
Readout electronics	7.2.2.7	0.30	N	1	1	1	0.30	0.30	∞
Response time	7.2.2.8	0.80	R	1.73	1	1	0.46	0.46	∞
Integration time	7.2.2.9	2.60	R	1.73	1	1	1.50	1.50	∞
RF ambient conditions - noise	7.2.4.5	3.00	R	1.73	1	1	1.73	1.73	∞
RF ambient conditions - reflections	7.2.4.5	3.00	R	1.73	1	1	1.73	1.73	∞
Probe positioner mechanical tolerance	7.2.3.1	0.80	R	1.73	1	1	0.46	0.46	∞
Probe positioning with respect to phantom shell	7.2.3.3	6.70	R	1.73	1	1	3.87	3.87	∞
Post-processing	7.2.5	4.00	R	1.73	1	1	2.31	2.31	∞
Test sample related									
Test sample positioning	7.2.3.4.3	5.51	N	1	1	1	5.51	5.51	47
Device holder uncertainity	7.2.3.4.2	2.99	N	1	1	1	2.99	2.99	5
SAR drift measurement	7.2.2.10	5.00	R	1.73	1	1	2.89	2.89	∞
SAR scaling	L.3	0.00	R	1.73	1	1	0.00	0.00	∞
Phantom and set-up									
Phantom uncertainty (shape and thickness uncertainty)	7.2.3.2	7.60	R	1.73	1	1	4.39	4.39	∞
Uncertainty in SAR correction for deviations in permittivity and conductivity	7.2.4.3	1.20	N	1	1	0.81	1.20	0.97	∞
Liquid conductivity (temperature uncert	7.2.4.4	2.93	R	1.73	0.78	0.71	1.32	1.20	∞
Liquid conductivity (measured)	7.2.4.3	1.54	N	1	0.78	0.71	1.20	1.09	∞
Liquid permittivity (temperature uncerta	7.2.4.4	0.95	R	1.73	0.23	0.26	0.13	0.14	∞
Liquid permittivity (measured)	7.2.4.3	1.17	N	1	0.23	0.26	0.27	0.30	∞
Combined standard uncertainty			RSS				13.22	13.19	∞
Expanded uncertainty (95% confidence interval)			*k = 2*				**26.44**	**26.38**	

15. SAR TEST EQUIPMENT

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	Triple Modular Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	TX60 Lspeag	F10/5D1CA1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F17/59RAA1/A/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX60	F10/5D1CA1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/59RAA1/C/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	S-0123	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
SPEAG	DAE4	1225	12/14/2017	Annual	12/14/2018
SPEAG	DAE4	869	09/19/2018	Annual	09/19/2019
SPEAG	E-Field Probe EX3DV4	3863	04/25/2018	Annual	04/25/2019
SPEAG	E-Field Probe EX3DV4	3903	09/24/2018	Annual	09/24/2019
SPEAG	Dipole D750V3	1014	08/14/2018	Annual	08/14/2019
SPEAG	Dipole D835V2	4d165	09/18/2018	Annual	09/18/2019
SPEAG	Dipole D1800V2	2d006	11/15/2017	Annual	11/15/2018
SPEAG	Dipole D1900V2	5d061	03/15/2018	Annual	03/15/2019
SPEAG	Dipole D2600V2	1106	12/15/2017	Annual	12/15/2018
Agilent	Power Meter E4419B	MY40511244	04/25/2018	Annual	04/25/2019
Agilent	Power Meter E4419B	MY40511243	03/30/2018	Annual	03/30/2019
Agilent	Power Sensor 8481A	SG1091286	10/11/2018	Annual	10/11/2019
Agilent	Power Sensor 8481A	MY41090873	10/11/2018	Annual	10/11/2019
SPEAG	DAKS 3.5	1038	05/29/2018	Annual	05/29/2019
SPEAG	VNA-R140	0141013	05/29/2018	Annual	05/29/2019
Agilent	Base Station E5515C	GB44400269	02/02/2018	Annual	02/02/2019
HP	Signal Generator E4433B	US40052109	03/06/2018	Annual	03/06/2019
HP	11636B/Power Divider	58698	03/06/2018	Annual	03/06/2019
TESTO	175-H1/Thermometer	40331936309	02/06/2018	Annual	02/06/2019
TESTO	175-H1/Thermometer	40331922309	02/06/2018	Annual	02/06/2019
EMPOWER	RF Power Amplifier	1084	06/11/2018	Annual	06/11/2019
MICRO LAB	LP Filter / LA-15N	10453	10/11/2018	Annual	10/11/2019
MICRO LAB	LP Filter / LA-30N	-	10/11/2018	Annual	10/11/2019
Apitech	Attenuator (3dB) 18B-03	1	06/07/2018	Annual	06/07/2019
Agilent	Attenuator (20dB) 33340C	13311	05/10/2018	Annual	05/10/2019
HP	Dielectric Probe Kit 85070C	00721521	N/A	N/A	N/A
Agilent	Directional Bridge	3140A03878	06/11/2018	Annual	06/11/2019
Agilent	Signal Analyzer N9020A	MY50510407	11/02/2017	Annual	11/02/2018
R&S	Wideband Radio Communication Tester CMW500	100990	11/16/2017	Annual	11/16/2018
Anritsu	Radio Communication Tester MT8820C	6200628628	07/19/2018	Annual	07/19/2019
Anritsu	Radio Communication Tester MT8821C	6201502997	08/13/2018	Annual	08/13/2019

1. The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by
HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAKS 3.5 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.

16. CONCLUSION

The SAR measurement indicates that the EUT complies with the RF radiation exposure limits of the ANSI/ IEEE C95.1 - 2005.

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.

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Attachment 1. − SAR Test Plots

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.5 ℃
Ambient Temperature:	20.5 ℃
Test Date:	10/17/2018
Plot No.:	1

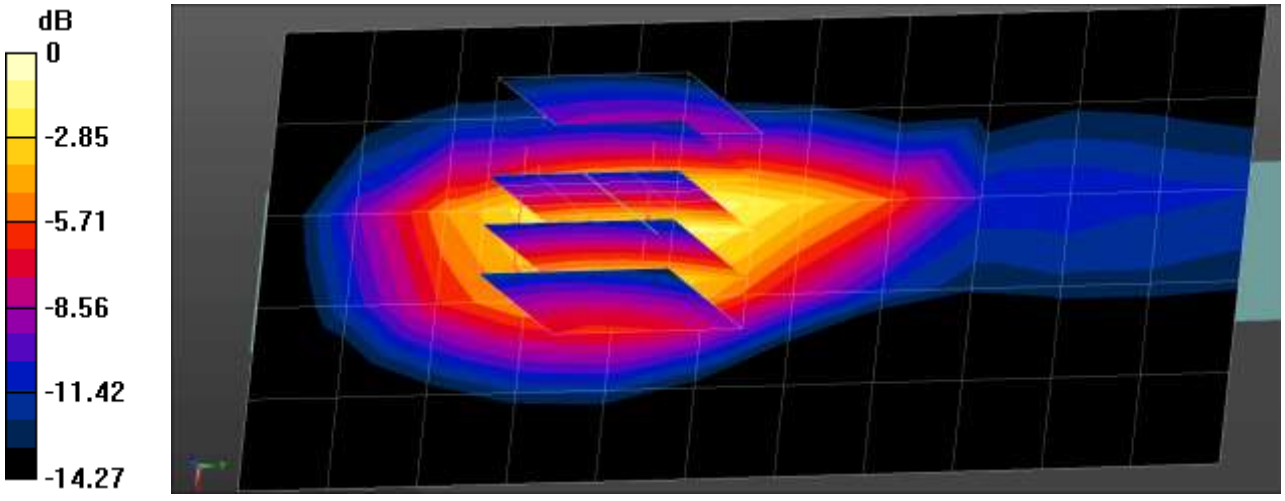
Communication System: UID 0, WCDMA850 (0); Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.956 S/m; ε_r = 56.353; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(9.66, 9.66, 9.66); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

WCDMA Band 5 Body Edge 1 Power-back off 0mm 4183ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.03 W/kg

WCDMA Band 5 Body Edge 1 Power-back off 0mm 4183ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.50 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.827 W/kg; SAR(10 g) = 0.466 W/kg
Maximum value of SAR (measured) = 1.28 W/kg



0 dB = 1.28 W/kg = 1.07 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.5 ℃
Ambient Temperature:	20.5 ℃
Test Date:	10/17/2018
Plot No.:	2

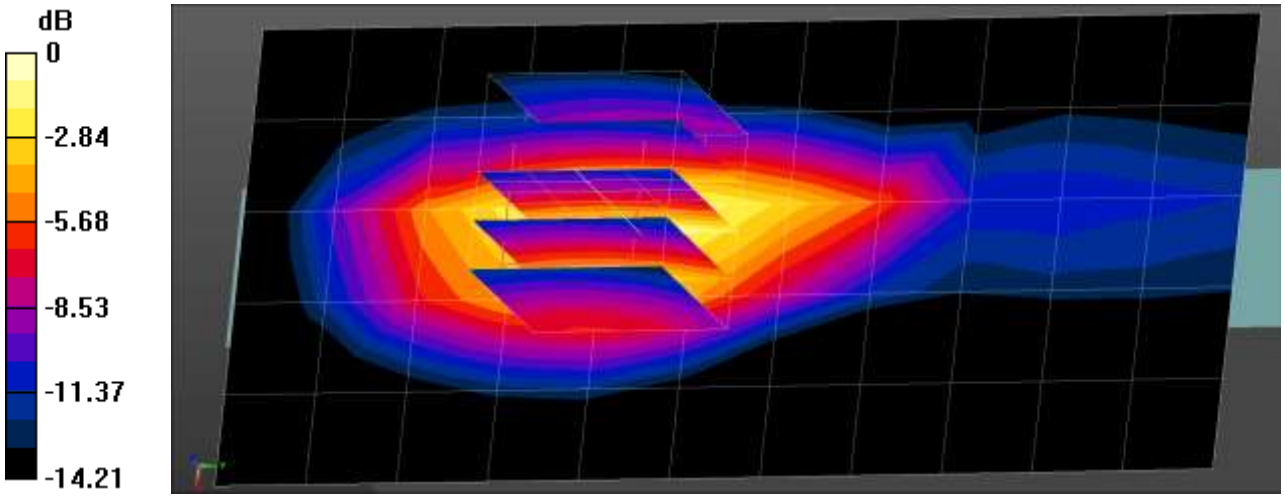
Communication System: UID 0, WCDMA850 (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 846.6 MHz; σ = 0.969 S/m; ε_r = 56.262; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(9.66, 9.66, 9.66); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

WCDMA Band 5 Body Edge 1 Power-back off 0mm 4233ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.02 W/kg

WCDMA Band 5 Body Edge 1 Power-back off 0mm 4233ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.54 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 0.822 W/kg; SAR(10 g) = 0.463 W/kg
Maximum value of SAR (measured) = 1.26 W/kg



0 dB = 1.26 W/kg = 1.00 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.5 ℃
Ambient Temperature:	20.6 ℃
Test Date:	10/05/2018
Plot No.:	3

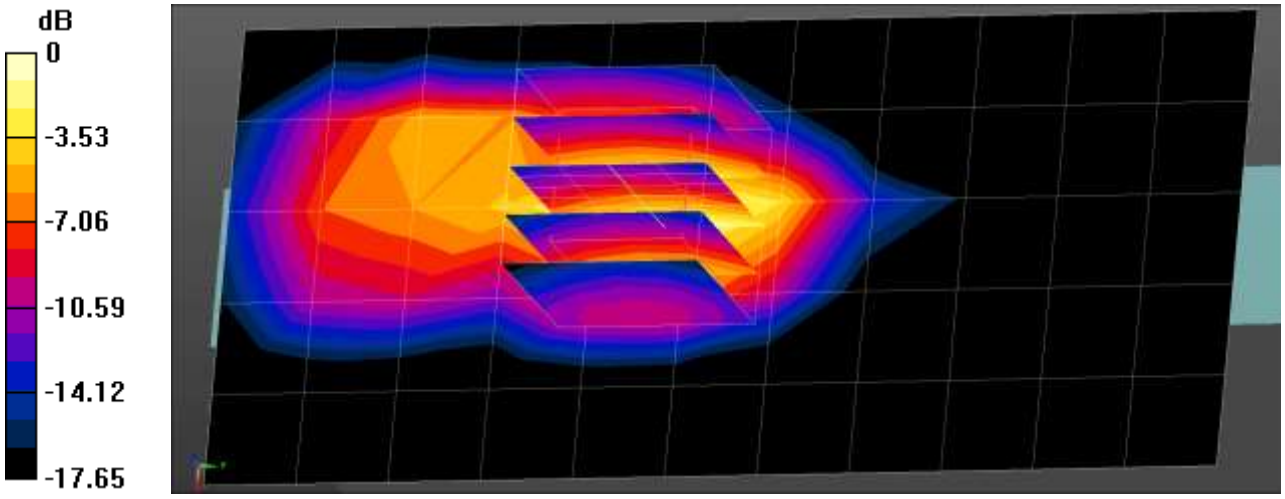
Communication System: UID 0, WCDMA1700 (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1712.4 MHz; σ = 1.508 S/m; ε_r = 53.336; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.18, 8.18, 8.18); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

WCDMA Band 4 Edge 1 Power Back-off 0mm 1312ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.42 W/kg

WCDMA Band 4 Edge 1 Power Back-off 0mm 1312ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.496 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 1.02 W/kg; SAR(10 g) = 0.538 W/kg
Maximum value of SAR (measured) = 1.56 W/kg



0 dB = 1.56 W/kg = 1.93 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	21.1 ℃
Ambient Temperature:	21.3 ℃
Test Date:	10/01/2018
Plot No.:	4

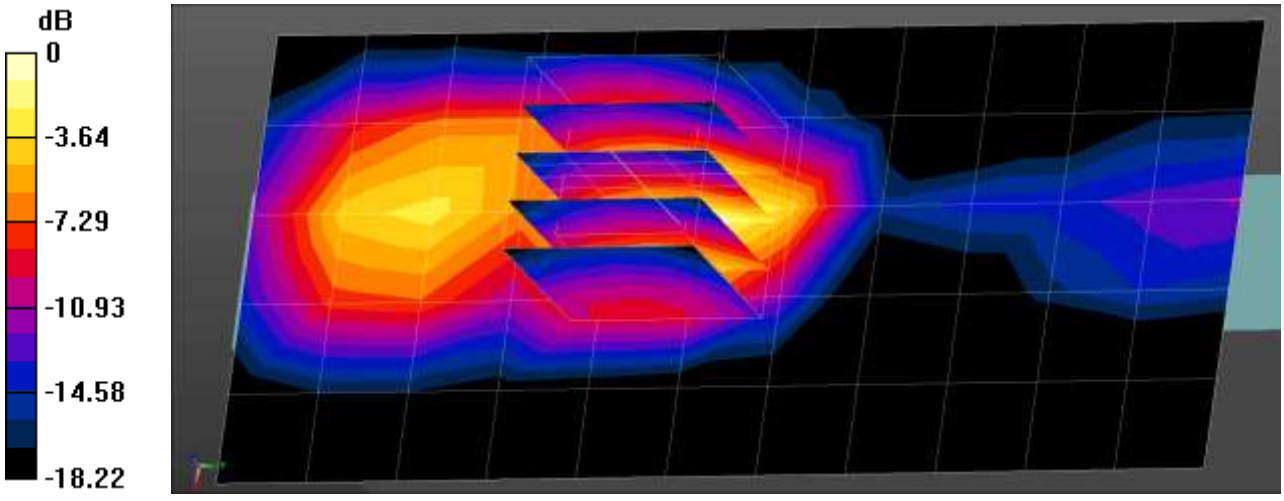
Communication System: UID 0, WCDMA Band 2 (0); Frequency: 1880 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1880 MHz; σ = 1.526 S/m; ε_r = 54.984; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(7.84, 7.84, 7.84); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

WCDMA Band 2 Edge 1 Power Back-off 0mm 9400ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.50 W/kg

WCDMA Band 2 Edge 1 Power Back-off 0mm 9400ch/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.846 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.06 W/kg
SAR(1 g) = 1.03 W/kg; SAR(10 g) = 0.519 W/kg
Maximum value of SAR (measured) = 1.65 W/kg



0 dB = 1.65 W/kg = 2.17 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.8 ℃
Ambient Temperature:	21.0 ℃
Test Date:	10/02/2018
Plot No.:	5

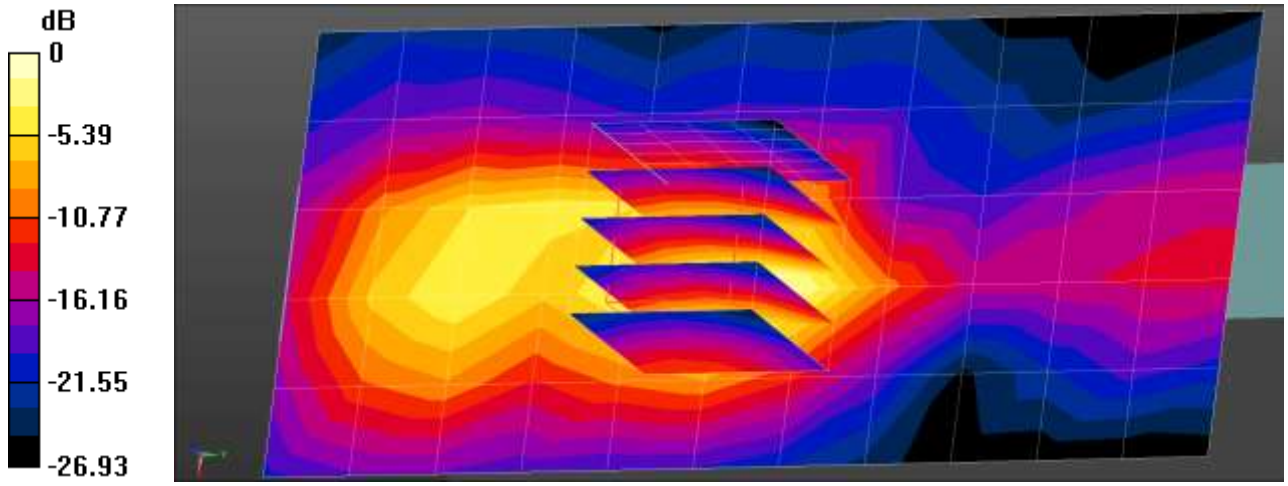
Communication System: UID 0, LTE bands (0); Frequency: 1860 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1860 MHz; σ = 1.494 S/m; ε_r = 52.108; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(7.84, 7.84, 7.84); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 2 50RB 0offset Edge 1 Power Back-off 0mm 18700 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.48 W/kg

LTE Band 2 50RB 0offset Edge 1 Power Back-off 0mm 18700 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.814 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 1.88 W/kg
SAR(1 g) = 0.926 W/kg; SAR(10 g) = 0.468 W/kg



0 dB = 1.48 W/kg = 1.70 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.8 ℃
Ambient Temperature:	21.0 ℃
Test Date:	10/02/2018
Plot No.:	6

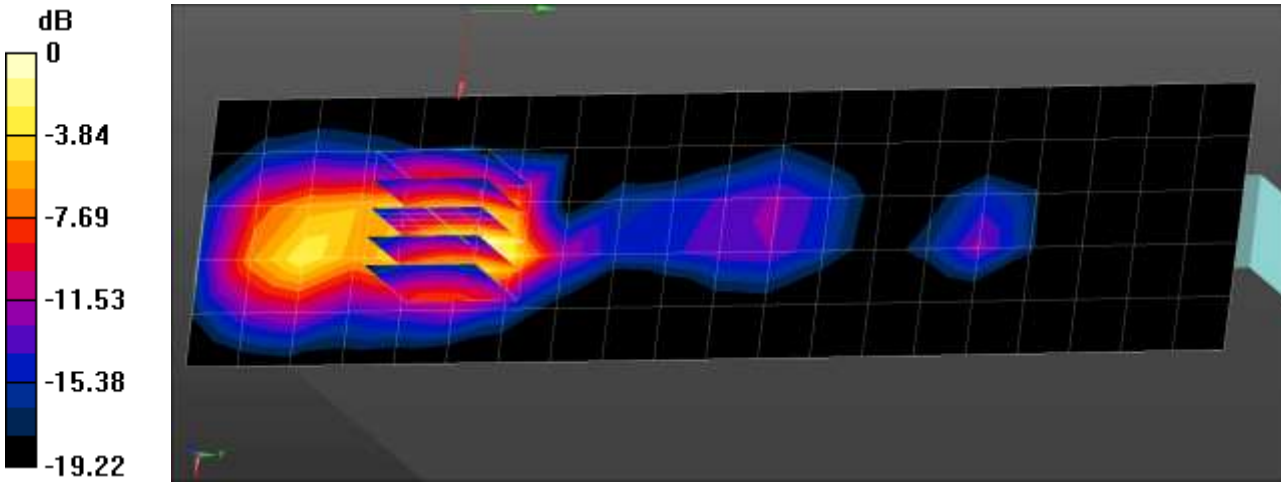
Communication System: UID 0, LTE bands (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.53 S/m; ε_r = 52.041; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(7.84, 7.84, 7.84); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 2 1 RB 0offset Edge 1 Power Back-off 0mm 19100ch 2 2/Area Scan (21x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.43 W/kg

LTE Band 2 1 RB 0offset Edge 1 Power Back-off 0mm 19100ch 2 2/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.615 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 1.91 W/kg
SAR(1 g) = 0.968 W/kg; SAR(10 g) = 0.479 W/kg
Maximum value of SAR (measured) = 1.50 W/kg



0 dB = 1.50 W/kg = 1.76 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	10/04/2018
Plot No.:	7

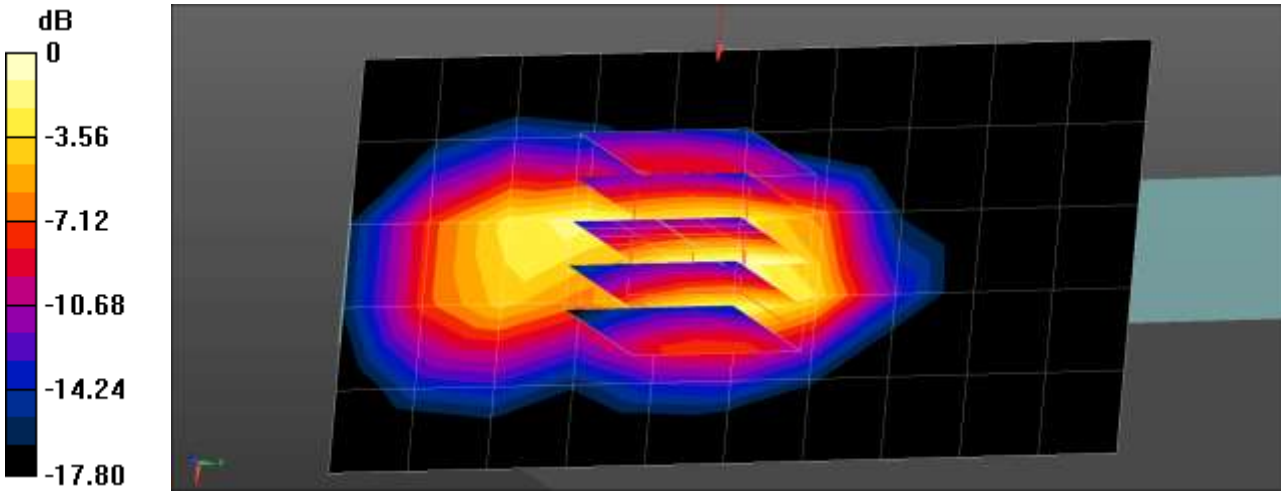
Communication System: UID 0, LTE Band 4 (0); Frequency: 1732.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.474 S/m; ε_r = 52.813; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.34, 8.34, 8.34); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 4 100RB 0offset Rear Power back-off 0mm 20175ch/Area Scan (11x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.24 W/kg

LTE Band 4 100RB 0offset Rear Power back-off 0mm 20175ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.143 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.521 W/kg
Maximum value of SAR (measured) = 1.38 W/kg



0 dB = 1.38 W/kg = 1.40 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	10/16/2018
Plot No.:	8

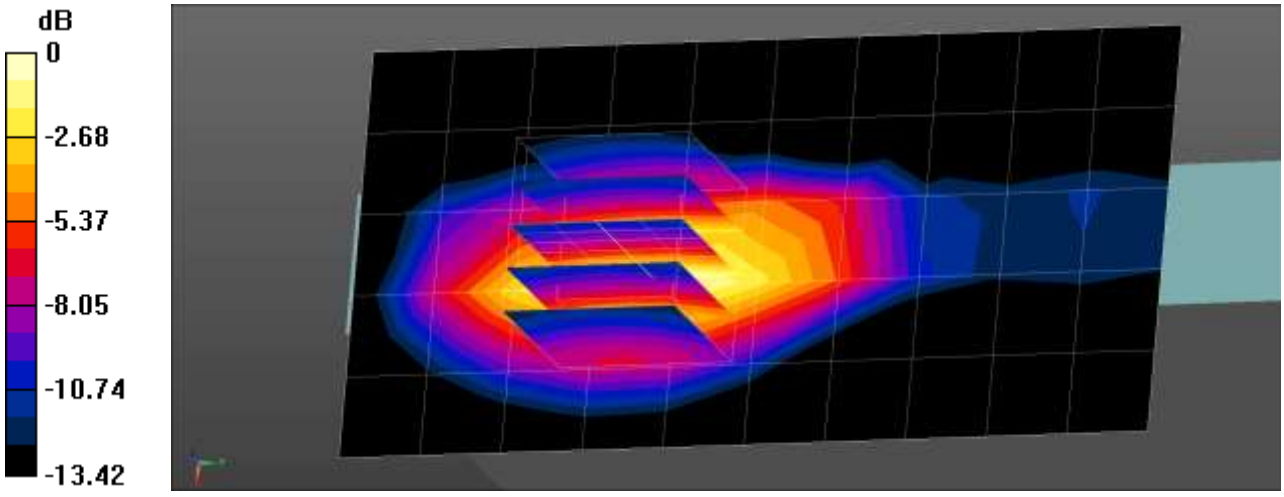
Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.985 S/m; ε_r = 54.117; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(10, 10, 10); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 5 10MHz 25RB 0offset Rear Power back-off 0mm 20525ch/Area Scan (11x6x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.31 W/kg

LTE Band 5 10MHz 25RB 0offset Rear Power back-off 0mm 20525ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.39 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.71 W/kg
SAR(1 g) = 0.952 W/kg; SAR(10 g) = 0.531 W/kg
Maximum value of SAR (measured) = 1.41 W/kg



0 dB = 1.41 W/kg = 1.49 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	10/16/2018
Plot No.:	9

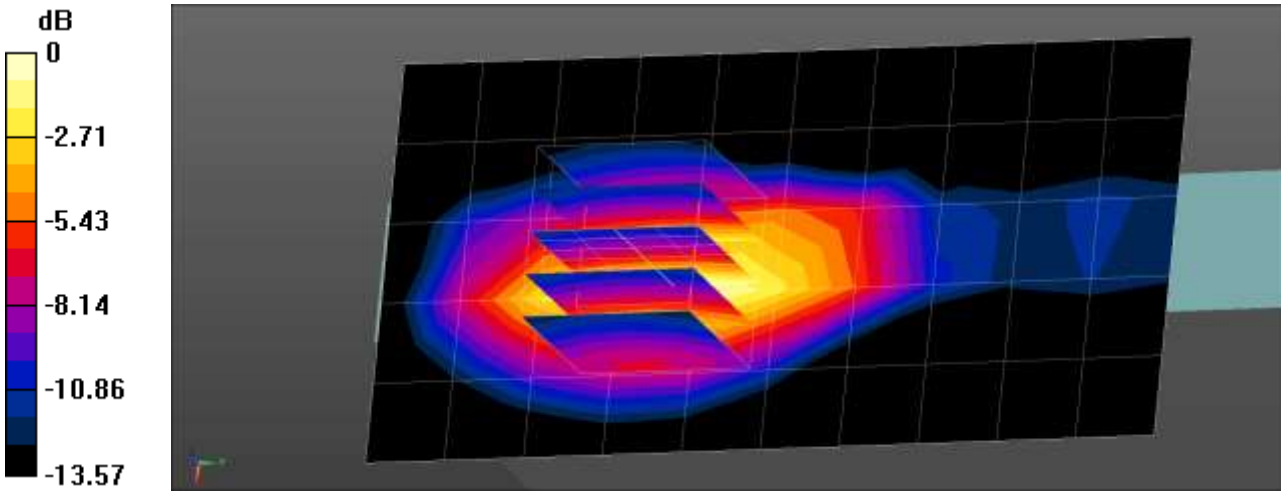
Communication System: UID 0, LTE Band 5 (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.985 S/m; ε_r = 54.117; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(10, 10, 10); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 5 10MHz 50RB 0offset Rear Power back-off 0mm 20525ch/Area Scan (11x6x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.30 W/kg

LTE Band 5 10MHz 50RB 0offset Rear Power back-off 0mm 20525ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.47 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 1.70 W/kg
SAR(1 g) = 0.941 W/kg; SAR(10 g) = 0.523 W/kg
Maximum value of SAR (measured) = 1.40 W/kg



0 dB = 1.40 W/kg = 1.46 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	18.9 ℃
Ambient Temperature:	18.9 ℃
Test Date:	10/08/2018
Plot No.:	10

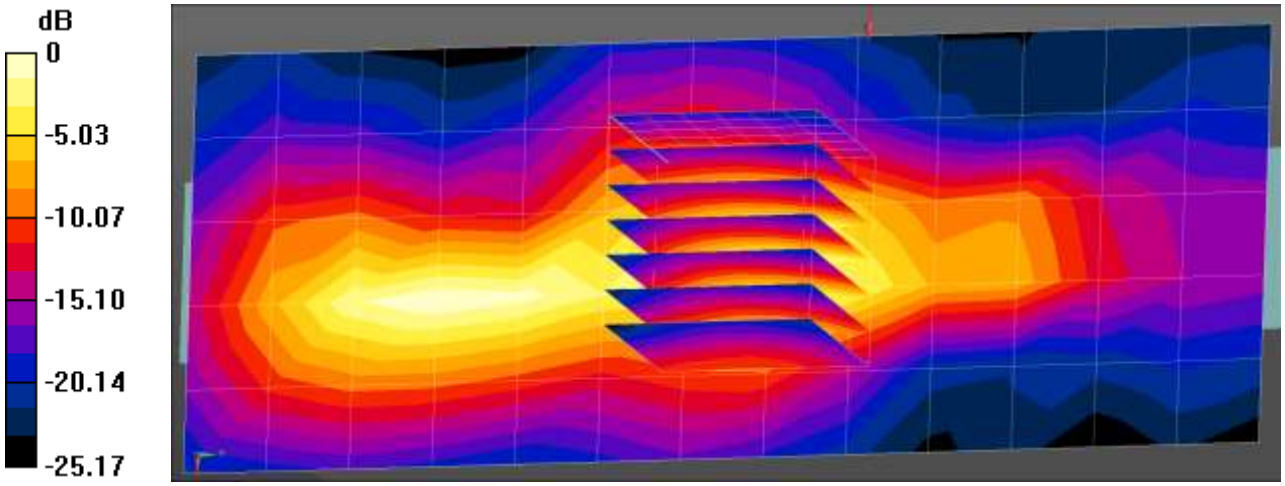
Communication System: UID 0, LTE Band 7 (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2560 MHz; σ = 2.163 S/m; ε_r = 51.678; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 7 1 RB 0offset Rear Power back-off 0mm 21350ch/Area Scan (14x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.01 W/kg

LTE Band 7 1 RB 0offset Rear Power back-off 0mm 21350ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.729 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.658 W/kg; SAR(10 g) = 0.271 W/kg
Maximum value of SAR (measured) = 1.12 W/kg



0 dB = 1.01 W/kg = 0.05 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	18.9 ℃
Ambient Temperature:	18.9 ℃
Test Date:	10/08/2018
Plot No.:	11

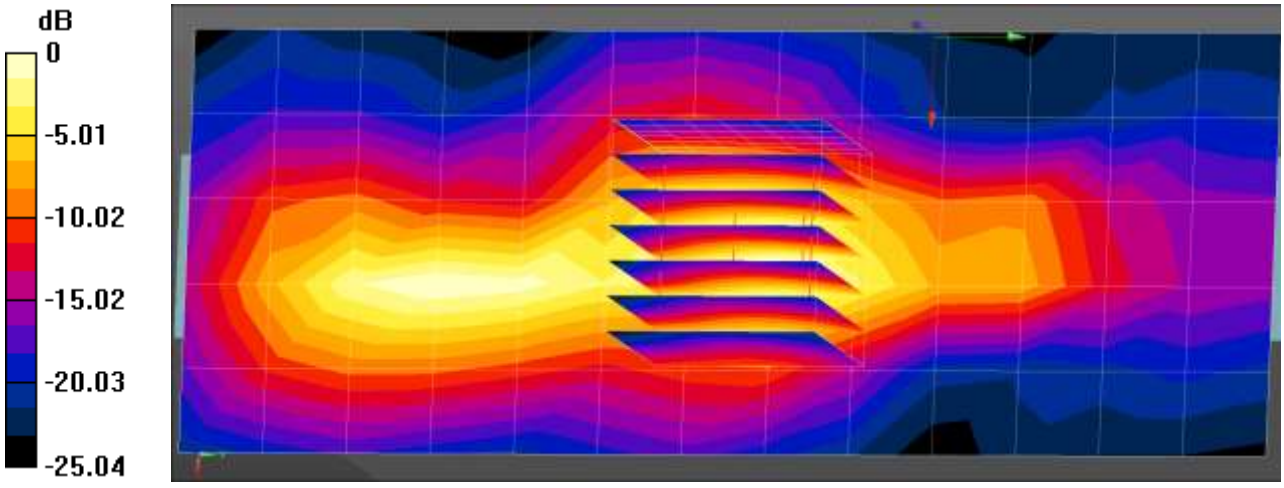
Communication System: UID 0, LTE Band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2535 MHz; σ = 2.106 S/m; ε_r = 51.608; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 7 50RB 0offset Rear Power back-off 0mm 21100ch/Area Scan (14x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.981 W/kg

LTE Band 7 50RB 0offset Rear Power back-off 0mm 21100ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.573 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 1.38 W/kg
SAR(1 g) = 0.631 W/kg; SAR(10 g) = 0.259 W/kg
Maximum value of SAR (measured) = 1.09 W/kg



0 dB = 0.981 W/kg = -0.08 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	19.5 ℃
Ambient Temperature:	19.5 ℃
Test Date:	10/11/2018
Plot No.:	12

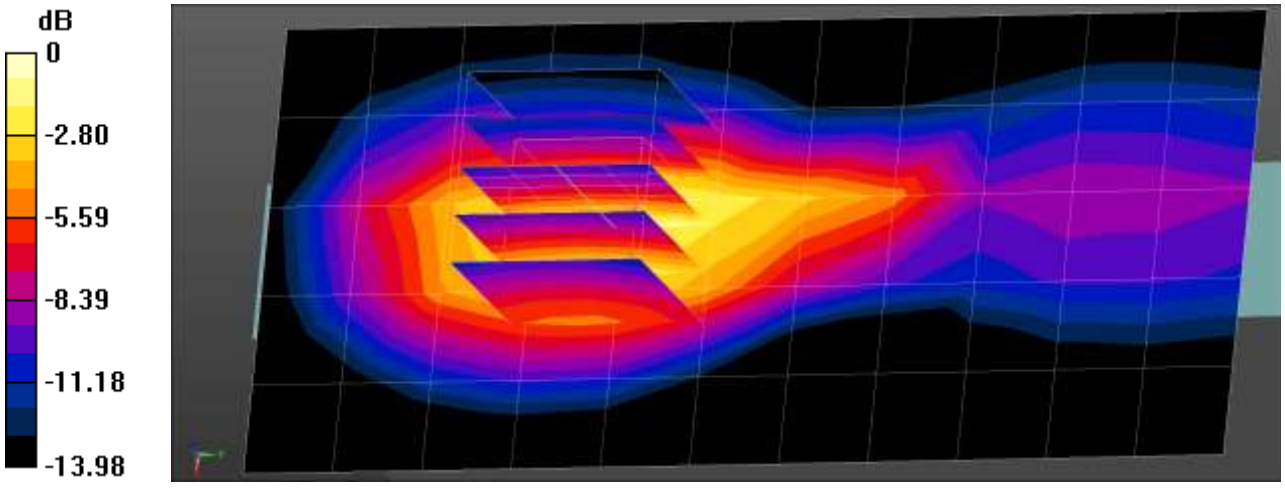
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.918 S/m; ε_r = 55.733; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 12 25RB 0offset Edge 1 Power Back-off 0mm 23095 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.874 W/kg

LTE Band 12 25RB 0offset Edge 1 Power Back-off 0mm 23095 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.00 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 1.32 W/kg
SAR(1 g) = 0.733 W/kg; SAR(10 g) = 0.427 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	19.5 ℃
Ambient Temperature:	19.5 ℃
Test Date:	10/11/2018
Plot No.:	13

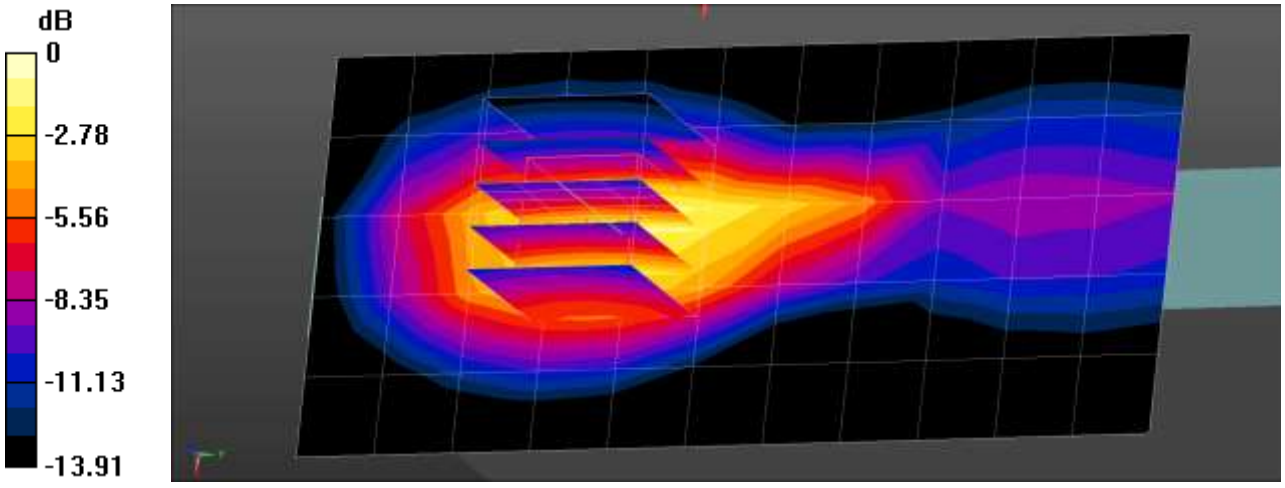
Communication System: UID 0, LTE 12 (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 707.5 MHz; σ = 0.918 S/m; ε_r = 55.733; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 12 50RB 0offset Edge 1 Power Back-off 0mm 23095 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.871 W/kg

LTE Band 12 50RB 0offset Edge 1 Power Back-off 0mm 23095 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 12.88 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.730 W/kg; SAR(10 g) = 0.425 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	19.4 ℃
Ambient Temperature:	19.4 ℃
Test Date:	10/12/2018
Plot No.:	14

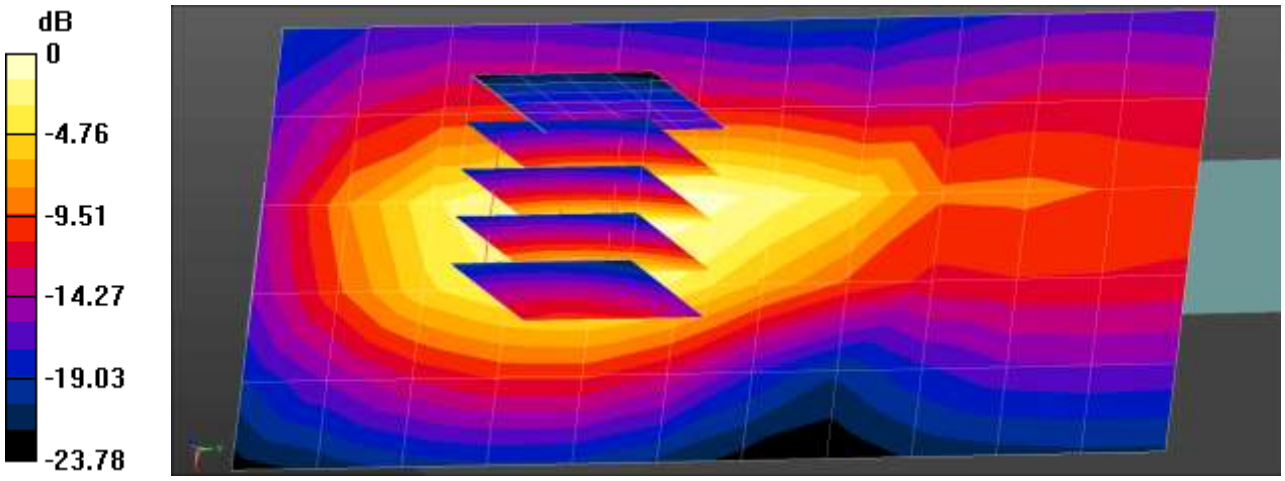
Communication System: UID 0, LTE 700MHz (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 782 MHz; σ = 0.989 S/m; ε_r = 54.988; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 13 50RB 0offset Edge 1 Power Back-off 0mm 23230 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.05 W/kg

LTE Band 13 50RB 0offset Edge 1 Power Back-off 0mm 23230 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.00 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.849 W/kg; SAR(10 g) = 0.487 W/kg
Maximum value of SAR (measured) = 1.29 W/kg



0 dB = 1.05 W/kg = 0.21 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.2 ℃
Ambient Temperature:	20.2 ℃
Test Date:	10/15/2018
Plot No.:	15

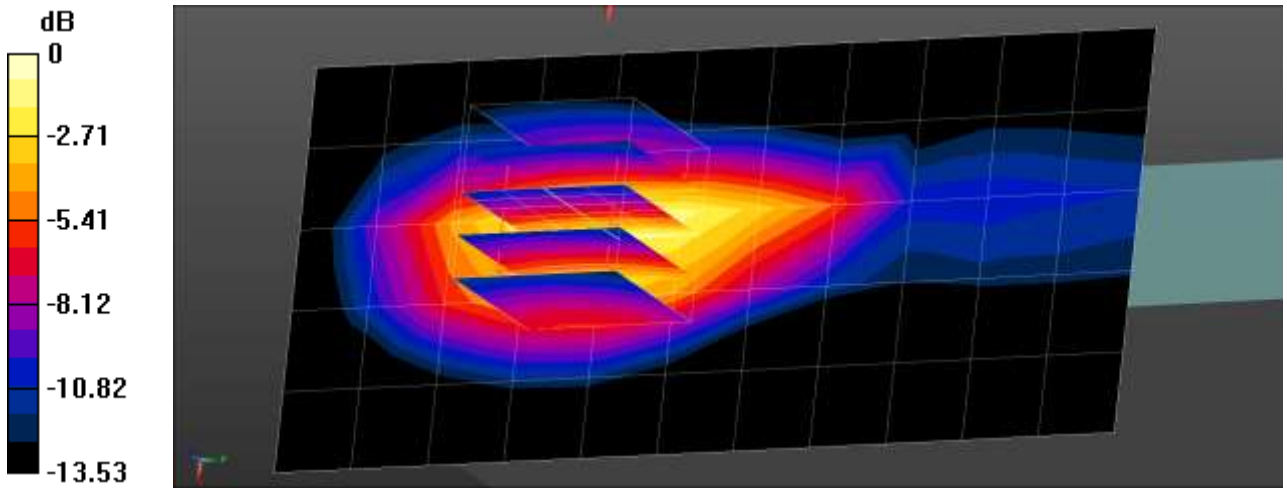
Communication System: UID 0, LTE 14 (0); Frequency: 793 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 793 MHz; σ = 1.001 S/m; ε_r = 54.864; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 14 25RB 12offset Edge 1 Power Back-off 0mm 23330 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.14 W/kg

LTE Band 14 25RB 12offset Edge 1 Power Back-off 0mm 23330 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.12 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.67 W/kg
SAR(1 g) = 0.901 W/kg; SAR(10 g) = 0.518 W/kg
Maximum value of SAR (measured) = 1.37 W/kg



0 dB = 1.37 W/kg = 1.37 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	10/16/2018
Plot No.:	16

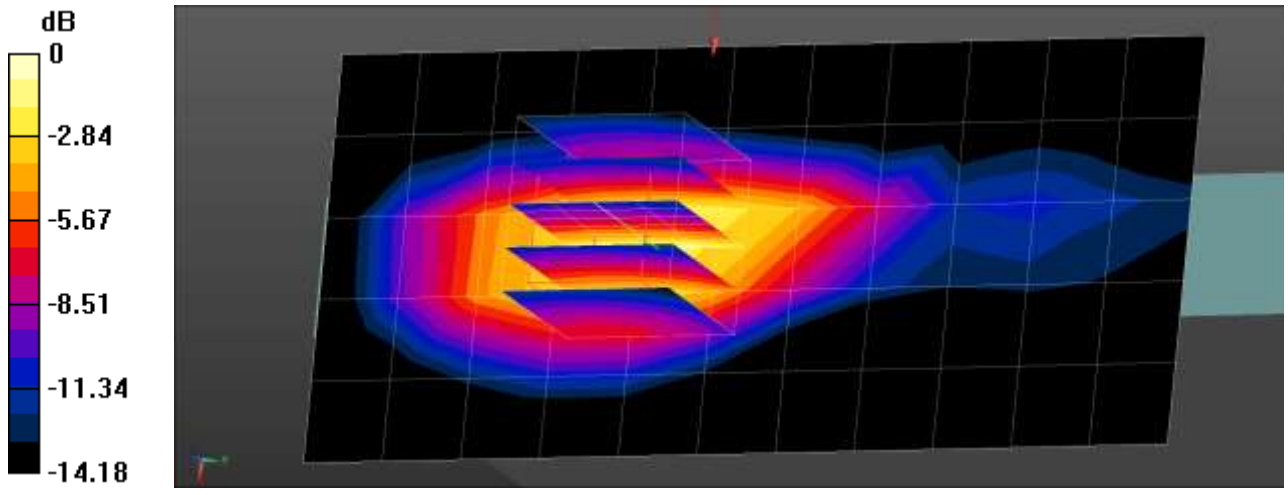
Communication System: UID 0, LTE 26 (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 831.5 MHz; σ = 0.949 S/m; ε_r = 56.477; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(9.66, 9.66, 9.66); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 26 36RB 0offset Edge 1 Power Back-off 0mm 26865 ch/Area Scan (12x6x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.828 W/kg

LTE Band 26 36RB 0offset Edge 1 Power Back-off 0mm 26865 ch/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.475 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 0.813 W/kg; SAR(10 g) = 0.456 W/kg.
Maximum value of SAR (measured) = 1.25 W/kg



0 dB = 1.25 W/kg = 0.97 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	18.3 ℃
Ambient Temperature:	18.3 ℃
Test Date:	10/10/2018
Plot No.:	17

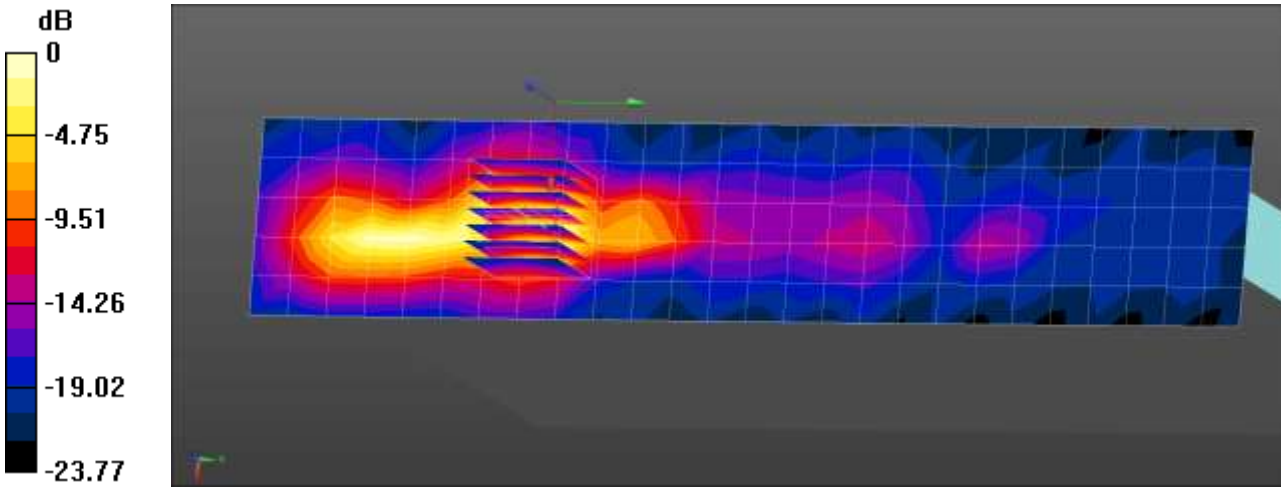
Communication System: UID 0, LTE Band 41 (0); Frequency: 2636.5 MHz;Duty Cycle: 1:1.58016
Medium parameters used (interpolated): f = 2636.5 MHz; σ = 2.276 S/m; ε_r = 51.837; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 41 1RB 0offset Rear Power back-off 0mm 41055ch/Area Scan (27x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.639 W/kg

LTE Band 41 1RB 0offset Rear Power back-off 0mm 41055ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.600 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.933 W/kg
SAR(1 g) = 0.429 W/kg; SAR(10 g) = 0.176 W/kg
Maximum value of SAR (measured) = 0.745 W/kg



0 dB = 0.745 W/kg = -1.28 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	18.3 ℃
Ambient Temperature:	18.3 ℃
Test Date:	10/10/2018
Plot No.:	18

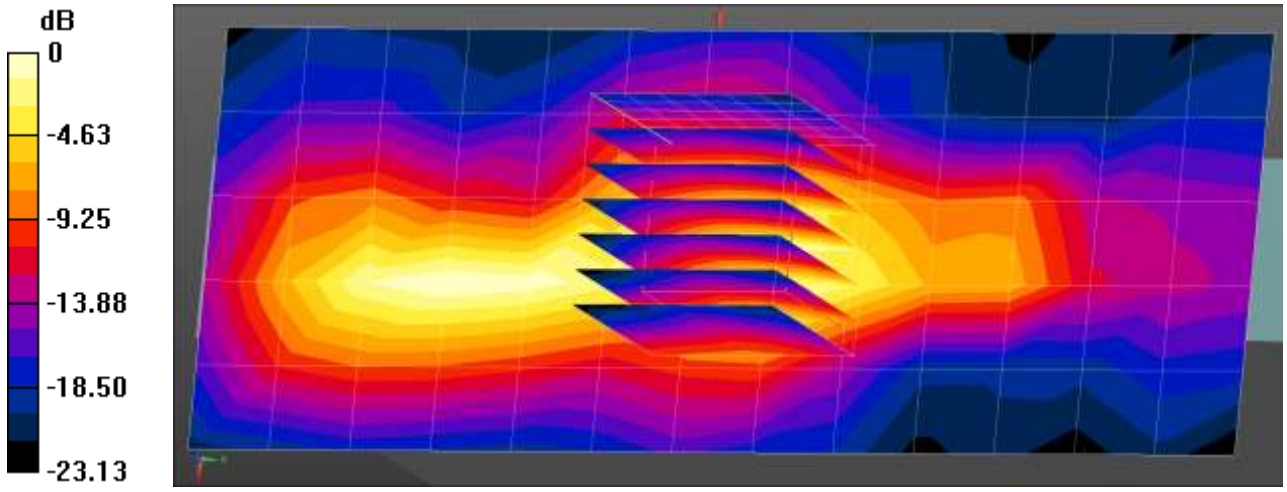
Communication System: UID 0, LTE Band 41 (0); Frequency: 2636.5 MHz;Duty Cycle: 1:1.58016
Medium parameters used (interpolated): f = 2636.5 MHz; σ = 2.276 S/m; ε_r = 51.837; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 41 50RB 0offset Rear Power back-off 0mm 41055ch/Area Scan (14x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.662 W/kg

LTE Band 41 50RB 0offset Rear Power back-off 0mm 41055ch/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.606 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.946 W/kg
SAR(1 g) = 0.428 W/kg; SAR(10 g) = 0.175 W/kg
Maximum value of SAR (measured) = 0.740 W/kg



0 dB = 0.662 W/kg = -1.79 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Multi-Band Radio Module
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	10/04/2018
Plot No.:	19

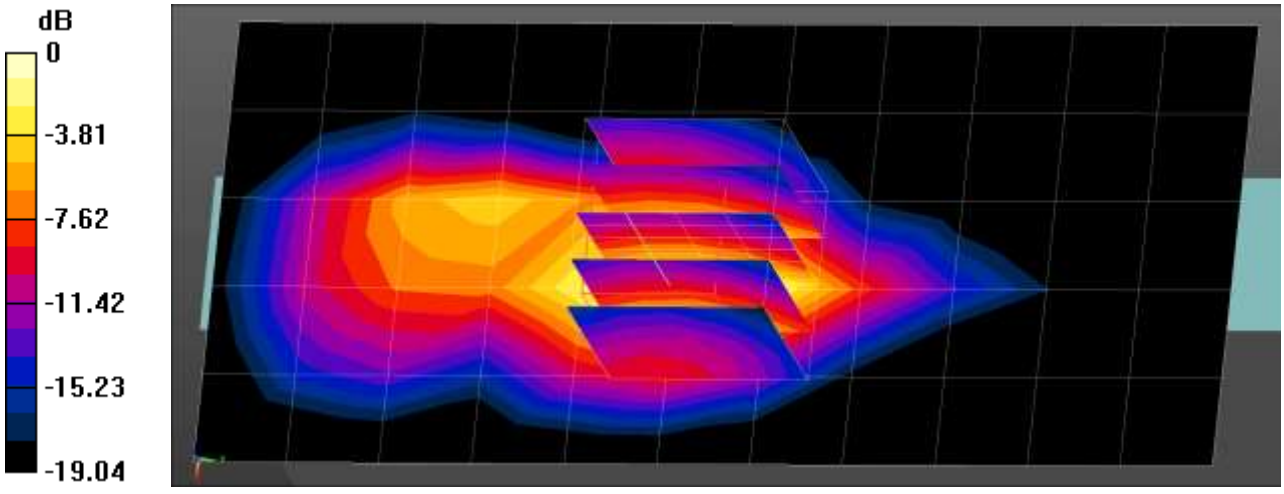
Communication System: UID 0, LTE Band 66 (0); Frequency: 1720 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1720 MHz; σ = 1.459 S/m; ε_r = 52.892; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.18, 8.18, 8.18); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

LTE Band 66 50RB 0offset Edge 1 Power Back-off 0mm 132072 ch 2/Area Scan (12x6x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.80 W/kg

LTE Band 66 50RB 0offset Edge 1 Power Back-off 0mm 132072 ch 2/Zoom Scan (5x5x7)/Cube 0:
Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.852 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 2.22 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.599 W/kg
Maximum value of SAR (measured) = 1.78 W/kg



0 dB = 1.78 W/kg = 2.50 dBW/kg

Attachment 2. − Dipole Verification Plots

■ Verification Data (750 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.5 ℃
Test Date:	10/11/2018

DUT: Dipole 750 MHz; Type: D750V3

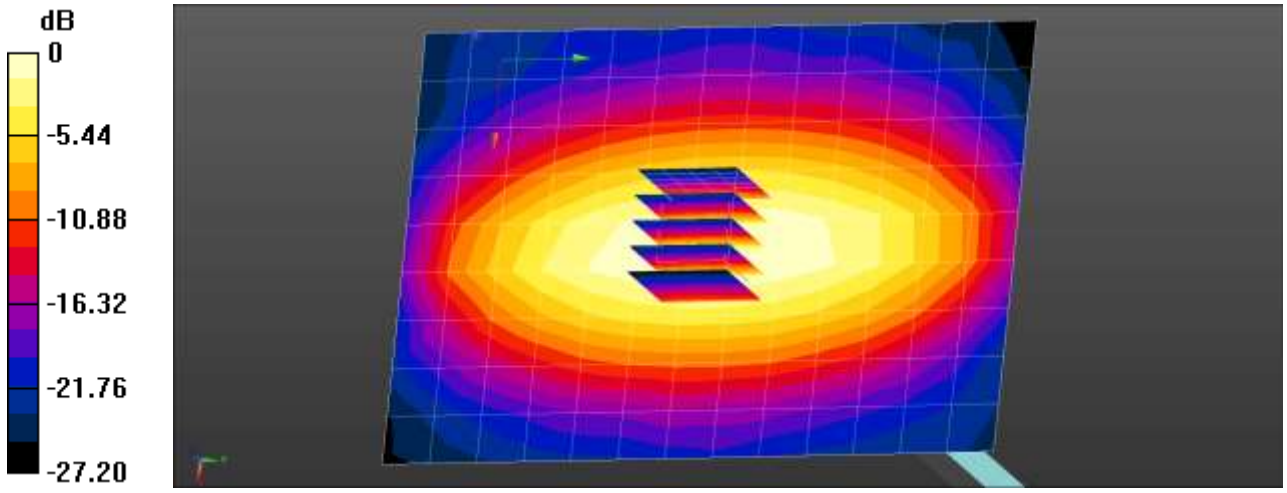
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.957 S/m; ε_r = 55.311; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 750MHz Body/Area Scan (14x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.495 W/kg

Verification 750MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.92 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.642 W/kg
SAR(1 g) = 0.422 W/kg; SAR(10 g) = 0.288 W/kg
Maximum value of SAR (measured) = 0.558 W/kg



0 dB = 0.495 W/kg = -3.05 dBW/kg

■ Verification Data (750 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.4 ℃
Test Date:	10/12/2018

DUT: Dipole 750 MHz; Type: D750V3

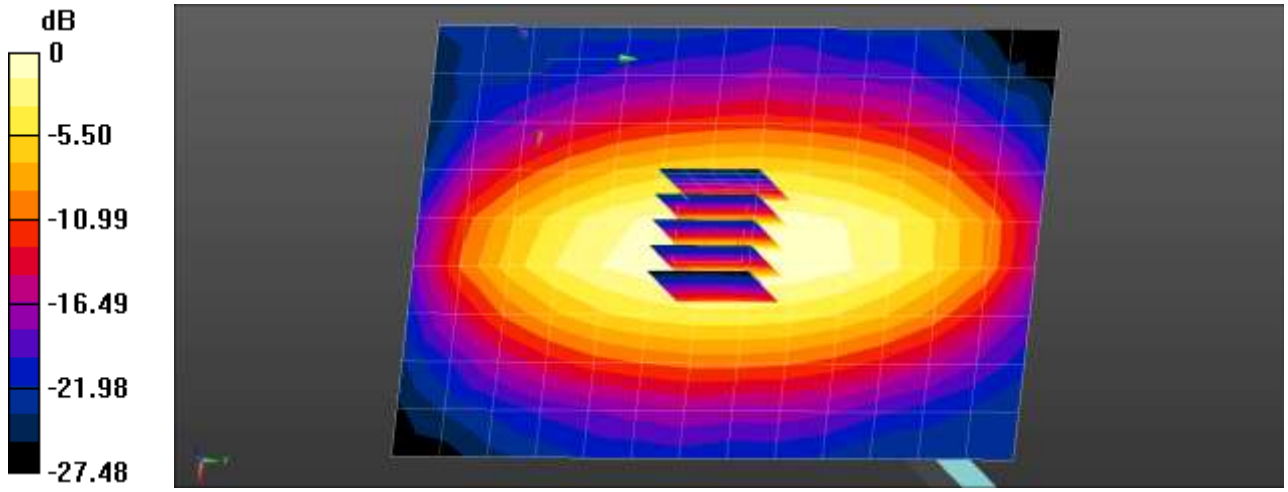
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.958 S/m; ε_r = 55.266; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 750MHz Body/Area Scan (14x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.501 W/kg

Verification 750MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.13 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.650 W/kg
SAR(1 g) = 0.425 W/kg; SAR(10 g) = 0.289 W/kg
Maximum value of SAR (measured) = 0.567 W/kg



0 dB = 0.501 W/kg = -3.01 dBW/kg

■ Verification Data (750 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.2 ℃
Test Date:	10/15/2018

DUT: Dipole 750 MHz; Type: D750V3

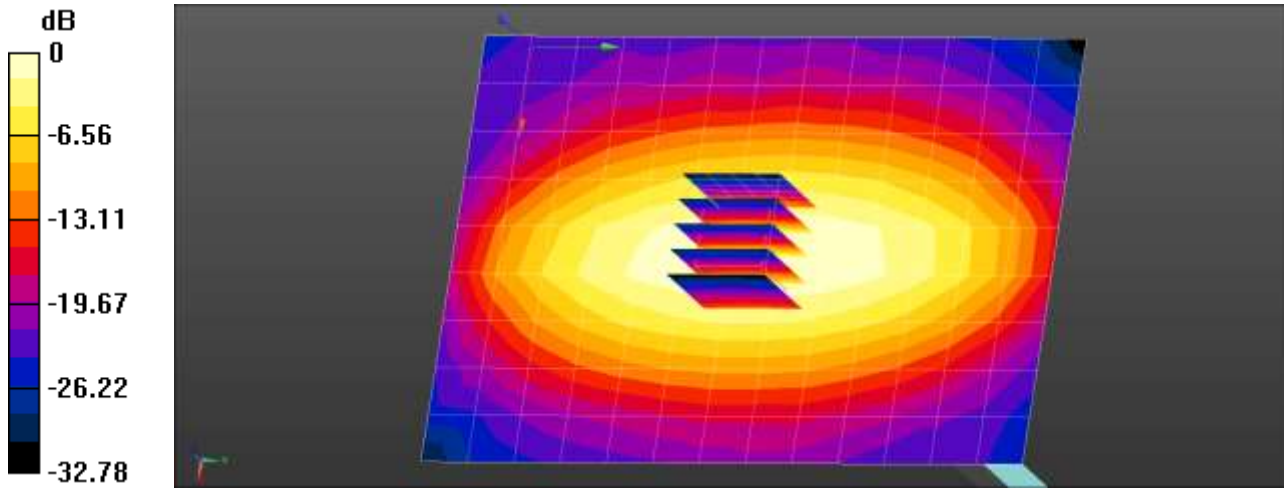
Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 750 MHz; σ = 0.959 S/m; ε_r = 55.291; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(10.02, 10.02, 10.02); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 750MHz Body/Area Scan (14x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.502 W/kg

Verification 750MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.17 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.653 W/kg
SAR(1 g) = 0.425 W/kg; SAR(10 g) = 0.289 W/kg
Maximum value of SAR (measured) = 0.568 W/kg



0 dB = 0.502 W/kg = -2.99 dBW/kg

■ Verification Data (835 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.5 ℃
Test Date:	10/17/2018

DUT: Dipole 835 MHz; Type: D835V2

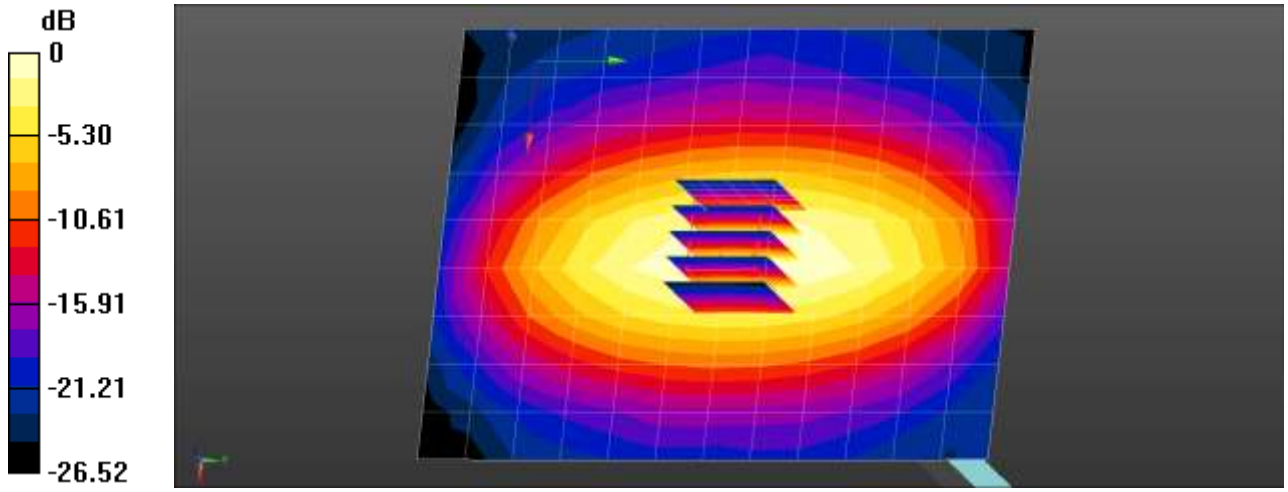
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.954 S/m; ε_r = 56.368; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(9.66, 9.66, 9.66); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 835MHz Body/Area Scan (13x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.549 W/kg

Verification 835MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.97 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.656 W/kg
SAR(1 g) = 0.445 W/kg; SAR(10 g) = 0.299 W/kg
Maximum value of SAR (measured) = 0.579 W/kg



0 dB = 0.549 W/kg = -2.60 dBW/kg

■ Verification Data (835 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	10/16/2018

DUT: Dipole 850 MHz ; Type: D850V2

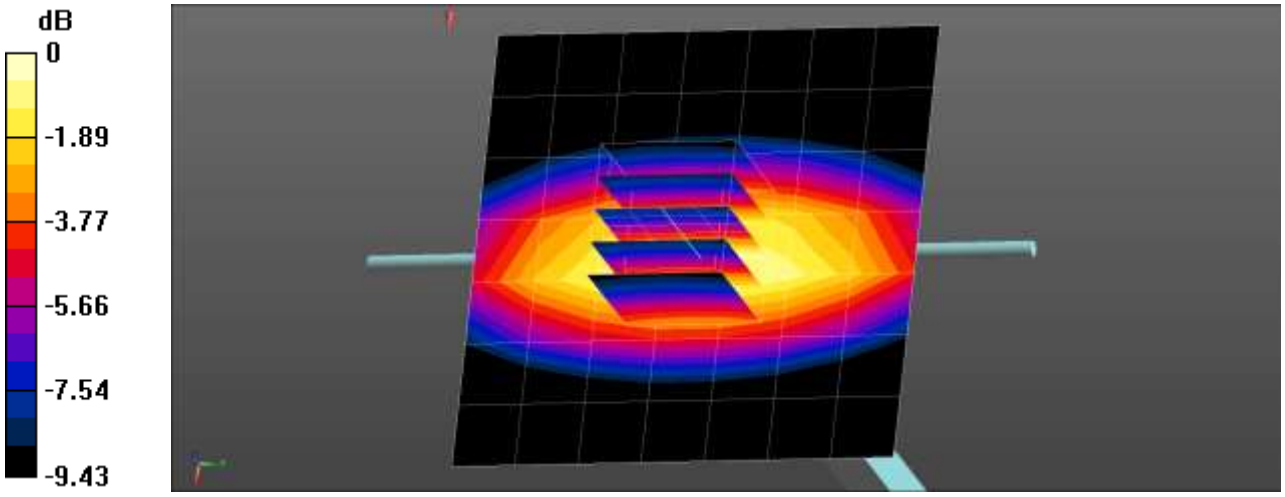
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.983 S/m; ε_r = 54.12; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(10, 10, 10); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 835MHz Body/Area Scan (8x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.551 W/kg

Verification 835MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 25.60 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.659 W/kg
SAR(1 g) = 0.460 W/kg; SAR(10 g) = 0.307 W/kg
Maximum value of SAR (measured) = 0.595 W/kg



0 dB = 0.595 W/kg = −2.25 dBW/kg

■ Verification Data (835 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	10/16/2018

DUT: Dipole 835 MHz; Type: D835V2

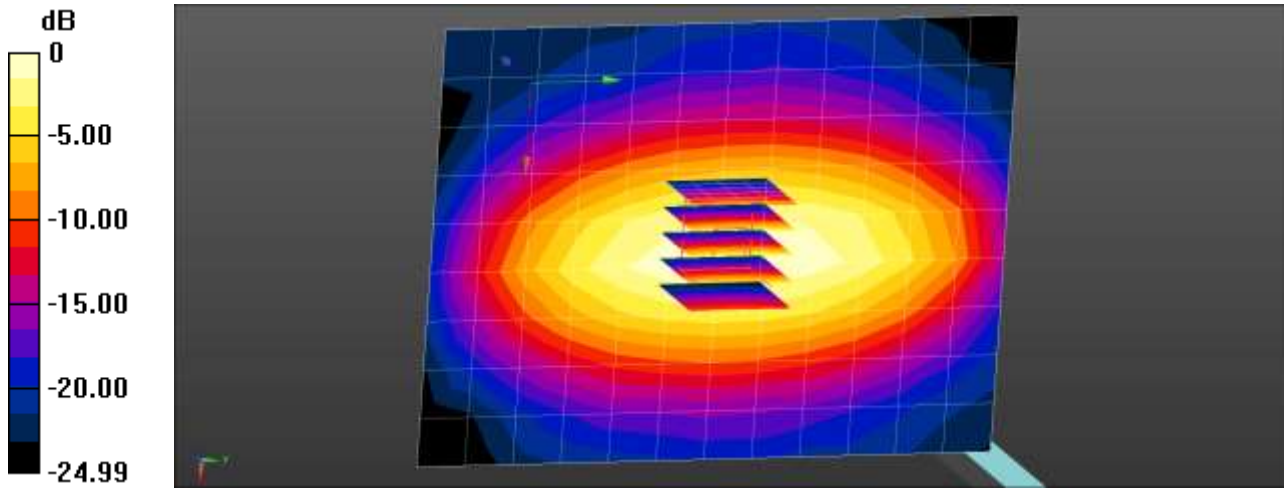
Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 835 MHz; σ = 0.955 S/m; ε_r = 56.424; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(9.66, 9.66, 9.66); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 835MHz Body/Area Scan (13x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.547 W/kg

Verification 835MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.94 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.657 W/kg
SAR(1 g) = 0.444 W/kg; SAR(10 g) = 0.298 W/kg
Maximum value of SAR (measured) = 0.580 W/kg



0 dB = 0.547 W/kg = -2.62 dBW/kg

■ Verification Data (1 800 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.5 ℃
Test Date:	10/05/2018

DUT: Dipole 1800 MHz; Type: D1800V2

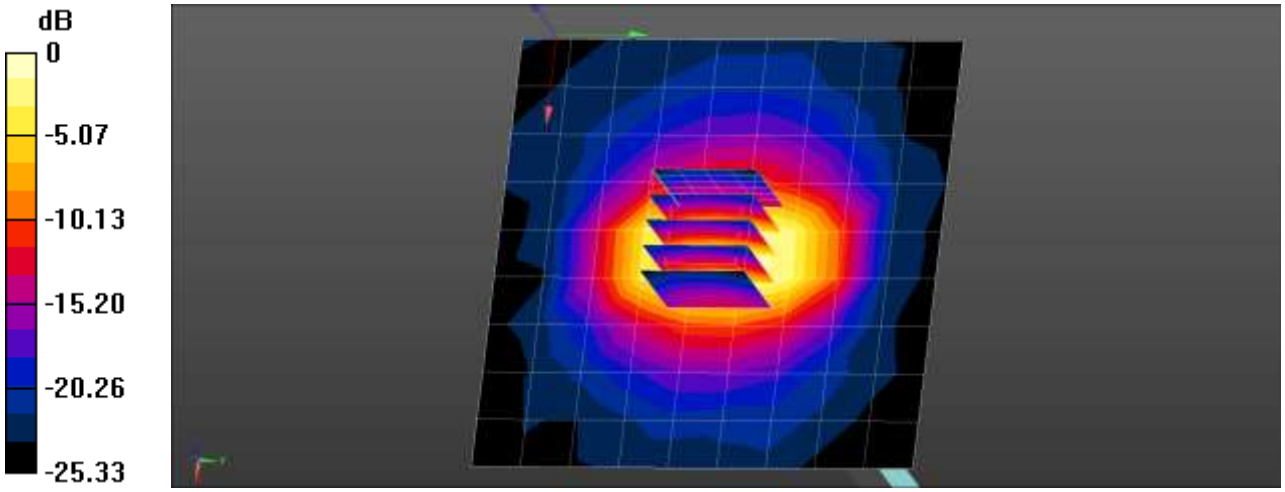
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.594 S/m; ε_r = 53.027; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.18, 8.18, 8.18); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 1800MHz Body/Area Scan (10x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.89 W/kg

Verification 1800MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 45.07 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.02 W/kg; SAR(10 g) = 1.1 W/kg
Maximum value of SAR (measured) = 3.03 W/kg



0 dB = 1.89 W/kg = 2.77 dBW/kg

■ Verification Data (1 800 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	10/04/2018

DUT: Dipole 1800 MHz ; Type: D1800V2

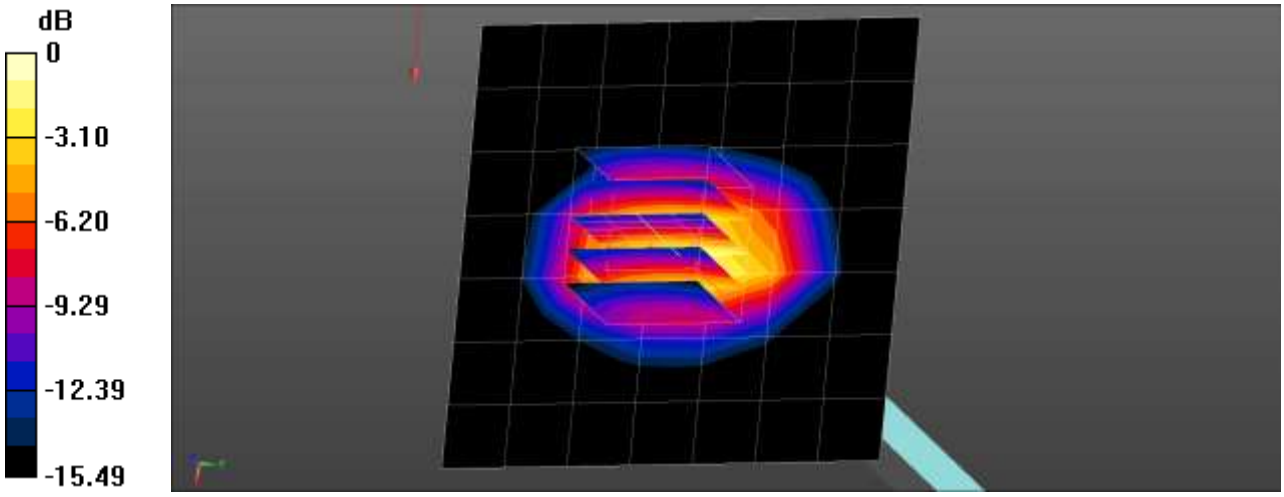
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.539 S/m; ε_r = 52.543; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(8.34, 8.34, 8.34); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 1800MHz Body/Area Scan (8x8x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.05 W/kg

Verification 1800MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 43.27 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 3.17 W/kg
SAR(1 g) = 1.88 W/kg; SAR(10 g) = 1.03 W/kg
Maximum value of SAR (measured) = 2.76 W/kg



0 dB = 2.76 W/kg = 4.41 dBW/kg

■ Verification Data (1 800 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	10/04/2018

DUT: Dipole 1800 MHz; Type: D1800V2

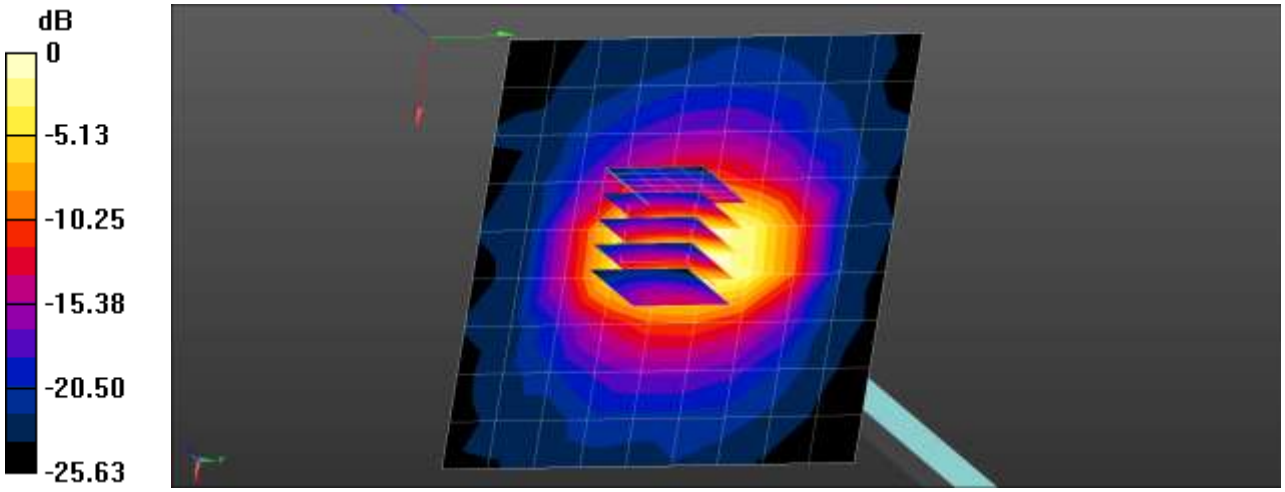
Communication System: UID 0, CW (0); Frequency: 1800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1800 MHz; σ = 1.529 S/m; ε_r = 52.656; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(8.18, 8.18, 8.18); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 1800MHz Body/Area Scan (10x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 1.82 W/kg

Verification 1800MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.88 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.44 W/kg
SAR(1 g) = 1.93 W/kg; SAR(10 g) = 1.04 W/kg
Maximum value of SAR (measured) = 2.92 W/kg



0 dB = 1.82 W/kg = 2.61 dBW/kg

■ Verification Data (1 900 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.1 ℃
Test Date:	10/01/2018

DUT: Dipole 1900 MHz D1900V2; Type: D1900V2

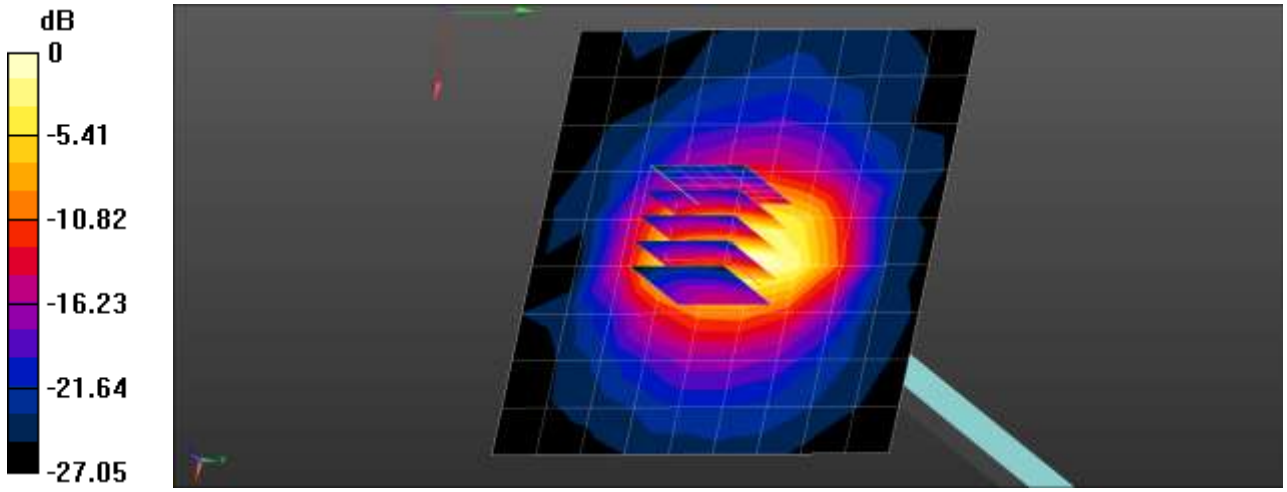
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.544 S/m; ε_r = 54.953; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(7.84, 7.84, 7.84); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 1900MHz Body/Area Scan (10x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.42 W/kg

Verification 1900MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.72 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.70 W/kg
SAR(1 g) = 2.07 W/kg; SAR(10 g) = 1.11 W/kg
Maximum value of SAR (measured) = 3.10 W/kg



0 dB = 2.42 W/kg = 3.84 dBW/kg

■ Verification Data (1 900 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.8 ℃
Test Date:	10/02/2018

DUT: Dipole 1900 MHz; Type: D1900V2

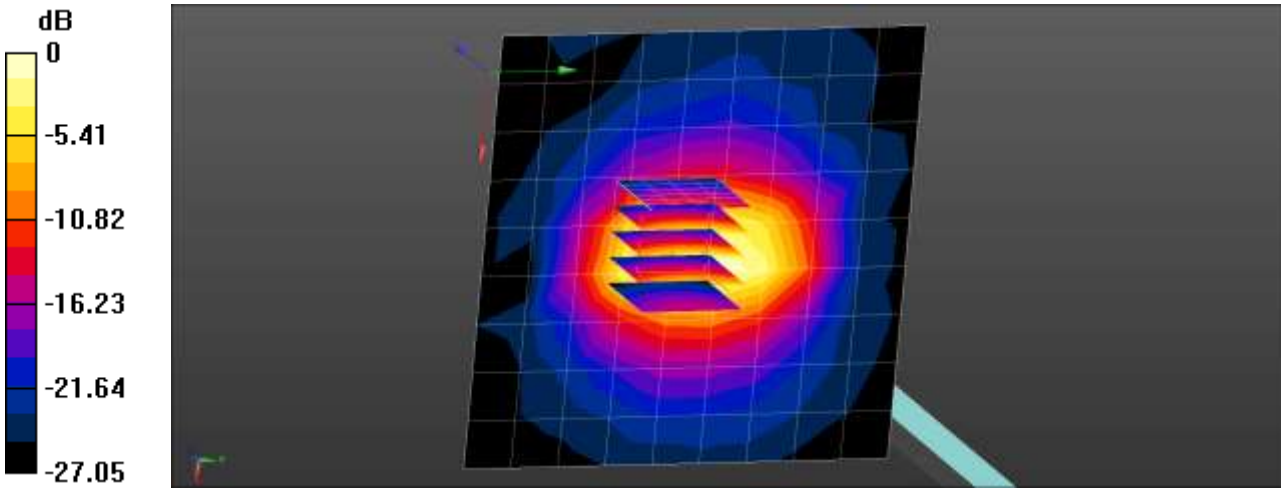
Communication System: UID 0, CW (0); Frequency: 1900 MHz;Duty Cycle: 1:1
Medium parameters used: f = 1900 MHz; σ = 1.53 S/m; ε_r = 52.041; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3863; ConvF(7.84, 7.84, 7.84); Calibrated: 2018-04-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2017-12-14
- Phantom: ELI V6.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 1900MHz Body/Area Scan (10x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.40 W/kg

Verification 1900MHz Body/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 44.72 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 3.66 W/kg
SAR(1 g) = 2.05 W/kg; SAR(10 g) = 1.1 W/kg
Maximum value of SAR (measured) = 3.07 W/kg



0 dB = 2.40 W/kg = 3.80 dBW/kg

■ Verification Data (2 600 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	18.9 ℃
Test Date:	10/08/2018

DUT: Dipole 2600 MHz; Type: D2600V2

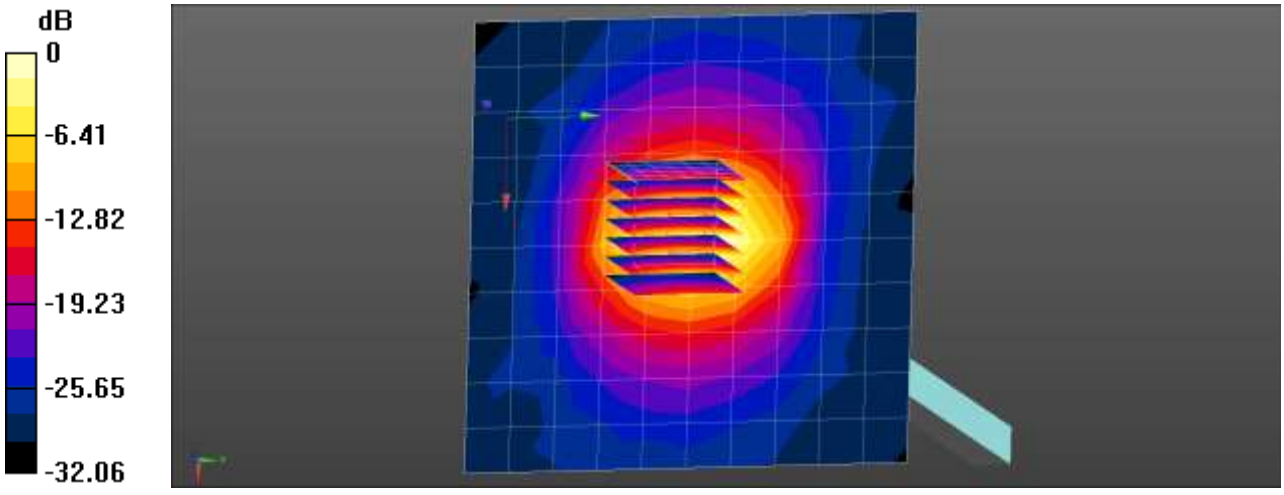
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.214 S/m; ε_r = 51.432; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 2600MHz Body/Area Scan (11x11x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.76 W/kg

Verification 2600MHz Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.90 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 6.05 W/kg
SAR(1 g) = 2.85 W/kg; SAR(10 g) = 1.28 W/kg
Maximum value of SAR (measured) = 4.83 W/kg



0 dB = 4.76 W/kg = 6.78 dBW/kg

■ Verification Data (2 600 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	18.3 ℃
Test Date:	10/10/2018

DUT: Dipole 2600 MHz; Type: D2600V2

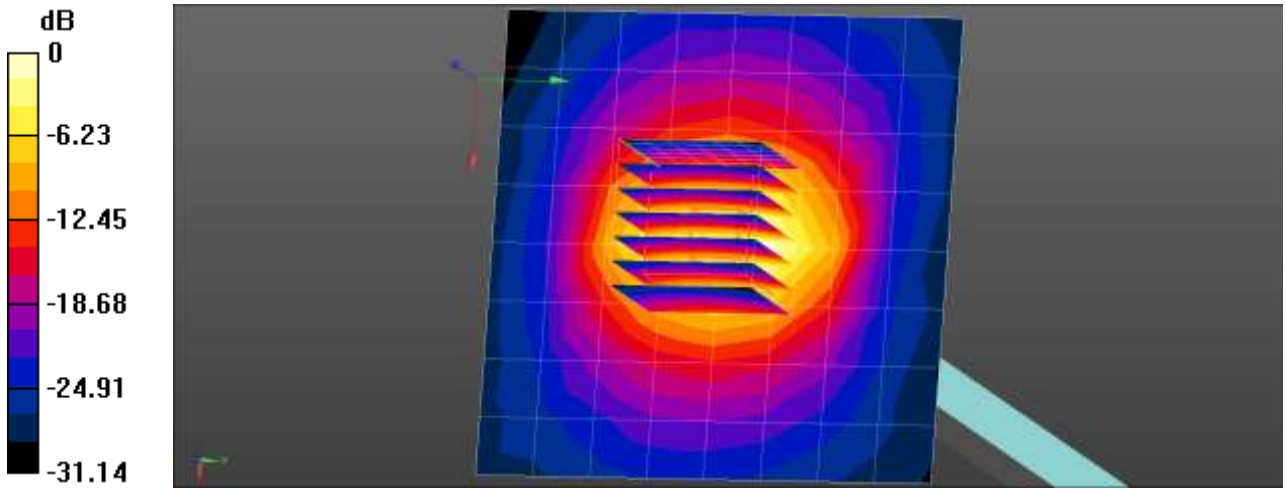
Communication System: UID 0, CW (0); Frequency: 2600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2600 MHz; σ = 2.182 S/m; ε_r = 52.01; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3903; ConvF(7.38, 7.38, 7.38); Calibrated: 2018-09-24;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2018-09-19
- Phantom: ELI v4.0
- Measurement SW: DASY52, Version 52.8 (8);

Verification 2600MHz Body/Area Scan (9x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 4.58 W/kg

Verification 2600MHz Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 46.85 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 5.98 W/kg
SAR(1 g) = 2.79 W/kg; SAR(10 g) = 1.25 W/kg
Maximum value of SAR (measured) = 4.79 W/kg



0 dB = 4.58 W/kg = 6.61 dBW/kg

Attachment 3. − SAR Tissue Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 3.1). Preservation with a bacteriacide is added and visual inspection is made to make sure air bubbles are not trapped during the mixing process. The mixture is calibrated to obtain proper dielectric constant (permittivity) and conductivity of the desired tissue. The mixture characterizations used for the brain and muscle tissue simulating liquids are according to the data by C. Gabriel and G. Harts grove.

Ingredients (% by weight)	Frequency (MHz)				
	750	835	1 750	1 900	2 450 – 2 700
Tissue Type	Body	Body	Body	Body	Body
Water	51.7	53.06	68.8	70.17	73.2
Salt (NaCl)	0.9	0.94	0.2	0.39	0.1
Sugar	47.2	44.9	0.0	0	0.0
HEC	0	1.0	0.0	0	0.0
Bactericide	0.1	0.1	0.0	0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0
DGBE	0.0	0.0	31	29.44	26.7
Diethylene glycol hexyl ether	-	-	-	-	-

Salt:	99 % Pure Sodium Chloride	Sugar:	98 % Pure Sucrose
Water:	De-ionized, 16M resistivity	HEC:	Hydroxyethyl Cellulose
DGBE:	99 % Di(ethylene glycol) butyl ether,[2-(2-butoxyethoxy) ethanol]		
Triton X-100(ultra-pure):	Polyethylene glycol mono[4-(1,1,3,3-tetramethylbutyl)phenyl] ether		

Composition of the Tissue Equivalent Matter

Attachment 4. − SAR SYSTEM VALIDATION

Per FCC KCB 865664 D02v01r02, SAR system validation status should be document to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles were used with the required tissue- equivalent media for system validation, according to the procedures outlined in IEEE 1528-2013 and FCC KDB 865664 D01v01r04. Since SAR probe calibrations are frequency dependent, each probe calibration point was validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

SAR System No.	Probe	Probe Type	Probe Calibration Point		Dipole	Date	Dielectric Parameters		CW Validation			Modulation Validation		
							Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotropy	MOD. Type	Duty Factor	PAR
1	3863	EX3DV4	Body	750	1014	2018-08-24	55.7	0.97	PASS	PASS	PASS	N/A	N/A	N/A
1	3863	EX3DV4	Body	835	4d165	2018-09-28	55.4	0.97	PASS	PASS	PASS	N/A	N/A	N/A
5	3903	EX3DV4	Body	835	4d165	2018-10-03	55.4	0.98	PASS	PASS	PASS	N/A	N/A	N/A
1	3863	EX3DV4	Body	835	4d165	2018-09-28	55.4	0.97	PASS	PASS	PASS	GMSK	PASS	N/A
1	3863	EX3DV4	Body	1750	2d006	2018-05-14	53.7	1.51	PASS	PASS	PASS	N/A	N/A	N/A
5	3903	EX3DV4	Body	1750	2d006	2018-10-03	53.3	1.50	PASS	PASS	PASS	N/A	N/A	N/A
1	3863	EX3DV4	Body	1750	2d006	2018-05-14	53.7	1.51	PASS	PASS	PASS	GMSK	PASS	N/A
1	3863	EX3DV4	Body	1900	5d061	2018-05-14	53.5	1.52	PASS	PASS	PASS	GMSK	PASS	N/A
1	3863	EX3DV4	Body	1900	5d061	2018-05-14	53.5	1.52	PASS	PASS	PASS	N/A	N/A	N/A
5	3903	EX3DV4	Body	2600	1106	2018-10-03	52.2	2.15	PASS	PASS	PASS	N/A	N/A	N/A
5	3903	EX3DV4	Body	2600	1106	2018-10-03	52.2	2.15	PASS	PASS	PASS	TDD	PASS	N/A

SAR System Validation Summary 1g

Note;

All measurement were performed using probes calibrated for CW signal only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication 865664 D01v01r04. SAR system were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to KDB 865664 D01v01r04.

Attachment 5. − The Verification of Power reduction

Per the May 2017 TCBC Workshop notes, demonstration of proper functioning of the power reduction mechanism is required to support the corresponding SAR Configurations. The verification process was divided into two parts:
1). Evaluation of output power levels for individual triggering mechanism
2) Evaluation of the triggering distances for proximity-based sensors.

1. Power Reduction Verification for WWAN Main Antenna

This device utilizes a power reduction mechanism for some wireless modes and bands for SAR compliance under some conditions when the device is being used in close proximity to the user's hand. All SAR evaluations for this device were performed at the maximum allowed output Power when Proximity Sensor is activated. FCC KDB Publication 616217D04v01r02 section 6 was used as a guideline for selection SAR test distances for this device when being used in proximity senor used conditions. For detailed measurement conducted power results, please refer to the Section .9

1.1. Power Verification Procedure for WWAN Main Ant

The Power verification was performed according to the following procedure:

1. A base station simulator was used to establish a conducted RF connection and output power was monitored. The Power measurements were conformed to be within expected tolerances for all states before and after a power reduction mechanism was triggered.
2. Step 1 was repeated for all relevant modes and frequency bands for the mechanism being investigated.

Power Reduction Verification for Main Bands

Mechanism(s)	Mode/Band	Conducted Power (dBm)	
		Un-triggered (Max Power)	Triggered (Reduced Power)
Grip On	WCDMA Band 5	23.0	17.5
Grip On	WCDMA Band 4	22.0	14.9
Grip On	WCDMA Band 2	22.0	15.4
Grip On	LTE Band 2	23.0	16.0
Grip On	LTE Band 4	23.0	15.5
Grip On	LTE Band 5	23.0	17.8
Grip On	LTE Band 7	22.0	13.2
Grip On	LTE Band 12	23.0	20.0
Grip On	LTE Band 13	23.0	18.4
Grip On	LTE Band 14	23.0	18.5
Grip On	LTE Band 26	23.0	17.5
Grip On	LTE Band 41	22.0	15.2
Grip On	LTE Band 66	23.0	15.3

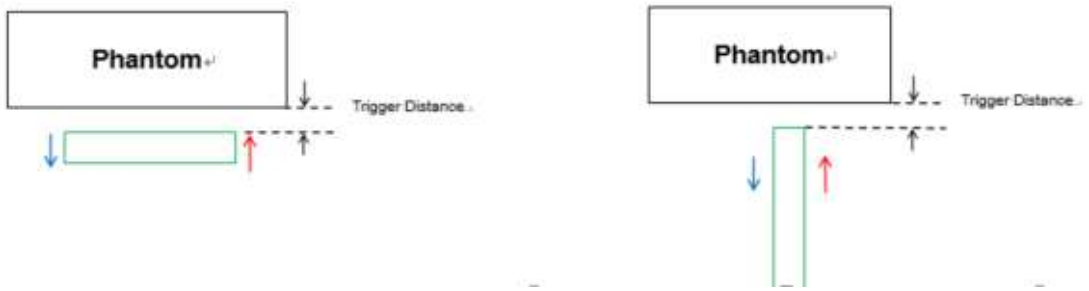
1.2. Procedures for determining proximity sensor triggering distances

(KDB 616217 D04v01r02 §6.2)

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

1. 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.
2. 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 .Each applicable test position was evaluated. The distance were conformed to be the same or larger (more conservative) than the minimum distances provided by the manufacturer.
3. Step 1 and 2 were repeated for the relevant modes, as appropriate
4. Steps1 through 3 were repeated for all distance-based power reduction mechanisms.

For detailed measurement conducted power results, please refer to the Section .9



Proximity Sensor Trigger Distance Assessment KDB 616217 D04 §6.2 (Rear/Edge 1)

LEGEND

→ Direction of DUT travel for determination of power reduction triggering point

→ Direction of DUT travel for determination of full power resumption triggering point

Tissue simulating liquid	Trigger distance - Rear		Trigger distance – Edge 1	
	Moving toward phantom	Moving from phantom	Moving toward phantom	Moving from phantom
750MHz Muscle	21	28	38	45
835Mhz Muscle	21	28	38	45
1800Mhz Muscle	22	29	40	48
1900Mhz Muscle	22	29	40	48
2600Mhz Muscle	22	29	40	48

Distance Measurement verification for Proximity sensor

Rear side – EUT Moving toward (trigger) to the Phantom

Distance	Distance to DUT Output power (dBm)									
	26	25	24	23	22	21	20	19	18	17
WCDMA 5	23.34	23.05	23.30	23.28	23.19	18.13	18.17	18.09	18.09	18.15
LTE Band 5	23.19	23.10	23.02	23.02	23.10	17.95	18.04	17.90	17.94	17.88
LTE Band 12	23.26	23.20	23.15	23.16	23.07	20.14	20.18	20.14	20.10	20.01
LTE Band 13	23.17	23.09	23.13	23.03	23.11	18.82	18.77	18.71	18.69	18.78
LTE Band 14	23.16	23.04	23.10	23.24	23.26	18.85	18.78	18.84	18.65	18.65
LTE Band 26	23.31	23.24	23.24	23.26	23.42	17.76	17.70	17.68	17.65	17.61

Distance	Distance to DUT Output power (dBm)									
	27	26	25	24	23	22	21	20	19	18	17
WCDMA 2	23.32	23.45	23.4	23.26	23.26	15.94	15.92	16.03	16.03	15.96	15.99
WCDMA 4	23.2	23.22	23.18	23.26	23.11	15.49	15.43	15.52	15.5	15.44	15.46
LTE Band 2	23.2	23.22	23.29	23.26	23.32	16.07	16.08	16.07	16.05	16.08	16.02
LTE Band 4	23.37	23.43	23.41	23.47	23.43	15.96	15.88	15.85	15.98	15.95	15.81
LTE Band 66	23.17	23.16	23.2	23.22	23.17	15.77	15.86	15.72	15.73	15.81	15.81
LTE Band 7	22.57	22.74	22.67	22.68	22.66	13.6	13.52	13.52	13.54	13.68	13.63
LTE Band 41	22.41	22.47	22.47	22.35	22.34	13.52	13.44	13.53	13.43	13.48	13.46

Rear side – EUT Moving away (Release) from the Phantom

Distance	Distance to DUT Output power (dBm)									
	24	25	26	27	28	29	30	31	32	33
WCDMA 5	14.92	14.87	15.06	15.08	15.04	22.42	22.29	22.37	22.44	22.4
LTE Band 5	17.98	17.96	18.05	18.12	18.04	23.2	23.24	23.19	23.19	23.16
LTE Band 12	20.17	20.23	20.07	20.09	20.03	23.23	23.17	23.15	23.15	20.23
LTE Band 13	18.79	18.68	18.62	18.68	18.68	23.09	23.01	23.11	23.16	23.15
LTE Band 14	18.87	18.69	18.62	18.64	18.72	23.1	23.13	23.13	23.15	23.21
LTE Band 26	17.68	17.61	17.60	17.57	17.76	23.46	23.32	23.32	23.38	23.28

Distance	Distance to DUT Output power (dBm)									
	25	26	27	28	29	30	31	32	33	34
WCDMA 2	15.94	15.96	15.93	16.06	16	23.37	23.42	23.43	23.28	23.36
WCDMA 4	15.56	15.39	15.42	15.52	15.5	23.21	23.21	23.19	23.1	23.16
LTE Band 2	15.97	16.07	15.92	15.97	16.01	23.17	23.25	23.23	23.33	23.2
LTE Band 4	15.88	15.86	15.99	15.96	15.84	23.45	23.43	23.47	23.28	23.35
LTE Band 66	15.89	15.83	15.71	15.85	15.88	23.13	23.24	23.24	23.16	23.24
LTE Band 7	13.57	13.57	13.64	13.61	13.67	22.74	22.7	22.74	22.66	22.56
LTE Band 41	13.51	13.57	13.47	13.43	13.53	22.45	22.47	22.43	22.29	22.31

Edge 1 side – EUT Moving toward (trigger) to the Phantom

Distance	Distance to DUT Output power (dBm)									
	43	42	41	40	39	38	37	36	35	34
WCDMA 5	23.29	23.29	23.19	23.26	23.25	18.25	18.24	18.15	18.22	18.18
LTE Band 5	23.27	23.26	23.18	23.11	23.19	18.12	17.93	17.97	18.02	17.94
LTE Band 12	23.22	23.17	23.3	23.14	23.3	20.16	20.22	20.27	20.17	20.15
LTE Band 13	23.17	23.1	23.13	23.06	23.19	18.83	18.87	18.74	18.73	18.7
LTE Band 14	23.07	23.17	23.13	23.18	23.19	18.71	18.73	18.69	18.75	18.7
LTE Band 26	23.31	23.39	23.37	23.35	23.31	17.63	17.58	17.74	17.72	17.6

Distance	Distance to DUT Output power (dBm)									
	45	44	43	42	41	40	39	38	37	36
WCDMA 2	23.25	23.31	23.45	23.43	23.34	15.94	16.08	16.01	15.97	15.97
WCDMA 4	23.29	23.17	23.3	23.22	23.28	15.48	15.54	15.54	15.39	15.57
LTE Band 2	23.3	23.15	23.22	23.21	23.35	15.96	16.01	16.05	15.93	15.98
LTE Band 4	23.48	23.43	23.31	23.45	23.39	15.94	15.93	15.87	15.96	15.89
LTE Band 66	23.26	23.22	23.26	23.14	23.25	15.87	15.76	15.78	15.86	15.8
LTE Band 7	22.65	22.63	22.57	22.63	22.73	13.52	13.66	13.58	13.6	13.61
LTE Band 41	22.28	22.46	22.29	22.3	22.34	13.51	13.55	13.45	13.46	13.53

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Edge 1 side – EUT Moving away (Release) from the Phantom

Distance	Distance to DUT Output power (dBm)									
	41	42	43	44	45	46	47	48	49	50
WCDMA 5	18.19	18.14	18.25	18.07	18.24	23.33	23.25	23.29	23.2	23.24
LTE Band 5	17.93	18.01	18.03	17.98	17.95	23.22	23.15	23.25	23.28	23.1
LTE Band 12	20.11	20.28	20.23	20.13	20.28	23.1	23.17	23.1	23.27	23.2
LTE Band 13	18.78	18.73	18.75	18.8	18.75	23.11	23	23.05	23.15	23.04
LTE Band 14	18.83	18.75	18.75	18.8	18.75	23.1	23.22	23.19	23.21	23.07
LTE Band 26	17.73	17.76	17.63	17.78	17.6	23.32	23.33	23.34	23.43	23.28

Distance	Distance to DUT Output power (dBm)									
	44	45	46	47	48	49	50	51	52	53
WCDMA 2	16.07	16.02	16.05	16.08	15.99	23.27	23.25	23.28	23.27	23.39
WCDMA 4	15.43	15.43	15.39	15.53	15.46	23.26	23.13	23.2	23.21	23.17
LTE Band 2	16.08	15.98	15.98	15.95	16.06	23.28	23.18	23.16	23.28	23.3
LTE Band 4	15.85	15.95	15.83	15.89	15.81	23.46	23.29	23.38	23.35	23.44
LTE Band 66	15.71	15.89	15.81	15.73	15.83	23.09	23.09	23.27	23.07	23.1
LTE Band 7	13.6	13.56	13.54	13.54	13.53	22.66	22.68	22.55	22.72	22.64
LTE Band 41	13.45	13.51	13.45	13.53	13.58	22.29	22.45	22.36	22.29	22.39

1.3 Proximity Sensor Coverage for SAR measurements

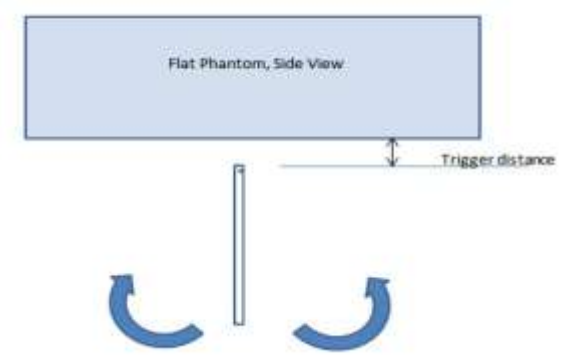
(KDB 616217 D04v01r02 §6.3)

As there is no spatial offset between the antenna and the proximity sensor element, proximity sensor coverage did not need to be assessed.

1.4 Proximity Sensor Tilt Angle Assessment

(KDB 616217 D04v01r02 §6.4)

The DUT was positioned directly below the flat phantom at the minimum measured trigger distance with Bottom side parallel to the base of the flat phantom for each band.
The EUT was rotated about Bottom side for angles up to ±45°. If the output power increased during the rotation the DUT was moved 1mm toward the phantom and the rotation repeated. This procedure was repeated until the power remained reduced for all angles up ±45°.



Proximity sensor tilt angle assessment (Bottom side) KDB 616217 §6.4

Summary of Tablet Tilt Angle influence to Proximity Sensor Triggering (Edge 1 side)

Band (MHz)	Minimum distance at which power reduction was maintained over-45°	Power reduction status										
		-45°	-40°	-30°	-20°	-10°	0°	10°	20°	30°	40°	45°
750MHz Muscle	38 mm	On	On	On	On	On	On	On	On	On	On	On
835Mhz Muscle	38 mm	On	On	On	On	On	On	On	On	On	On	On
1800 MHz Muscle	40 mm	On	On	On	On	On	On	On	On	On	On	On
1900 MHz Muscle	40 mm	On	On	On	On	On	On	On	On	On	On	On
2600 MHz Muscle	40 mm	On	On	On	On	On	On	On	On	On	On	On

1.5 Resulting test positions for Tablet SAR measurements

Wireless technologies	Position	§6.2 Triggering Distance	§6.3 Coverage	§6.4 Tilt Angle	Worst case distance forTablet SAR
WWAN (WCDMA B5/ LTE B5/B12/B13/B14/B26)	Rear	21	N/A	N/A	20
	Edge 1	38	N/A	N/A	37
WWAN (WCDMA B52/B4/ LTE B2/B4/B7B41/B66)	Rear	22	N/A	N/A	21
	Edge 1	40	N/A	N/A	39

Note: FCC KDB Publication 616217 D04v01r02 Section 6 was used as a guideline for selecting SAR test distances for this device when being used in proximity use conditions

Attachment 6. − Probe Calibration Data

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

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

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

Accreditation No.: **SCS 0108**

Client **HCT (Dymstec)** Certificate No: **EX3-3863_Apr18**

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3863

Calibration procedure(s) QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: April 25, 2018

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-18 (No. 217-02672/02673)	Apr-19
Power sensor NRP-Z91	SN: 103244	04-Apr-18 (No. 217-02672)	Apr-19
Power sensor NRP-Z91	SN: 103245	04-Apr-18 (No. 217-02673)	Apr-19
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-18 (No. 217-02682)	Apr-19
Reference Probe ES3DV2	SN: 3013	30-Dec-17 (No. ES3-3013_Dec17)	Dec-18
DAE4	SN: 660	21-Dec-17 (No. DAE4-660_Dec17)	Dec-18
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-16)	In house check: Jun-18
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-16)	In house check: Jun-18
Network Analyzer HP 8753E	SN: US37390585	18-Oct-01 (in house check Oct-17)	In house check: Oct-18

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 26, 2018

결재	담당자	확인자
	2018. 05. 11 GW 강희준	2018. 5. 11 KJ 허용정

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

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

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

Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, ", "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "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
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

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

Probe EX3DV4

SN:3863

Manufactured: February 2, 2012
Calibrated: April 25, 2018

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3863

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.35	0.34	0.45	± 10.1 %
DCP (mV)[B]	99.7	103.9	103.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	151.1	±3.5 %
		Y	0.0	0.0	1.0		153.4	
		Z	0.0	0.0	1.0		149.6	

Note: For details on UID parameters see Appendix.

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms.V^{-2}$	T2 $ms.V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
X	35.70	266.3	35.57	18.74	0.500	5.000	0.445	0.515	1.000
Y	23.67	174.6	34.99	6.322	0.441	5.000	1.481	0.043	1.003
Z	41.62	317.3	36.81	8.754	0.711	5.047	0.519	0.469	1.008

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

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3863

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
150	52.3	0.76	12.22	12.22	12.22	0.00	1.00	± 13.3 %
450	43.5	0.87	10.92	10.92	10.92	0.14	1.20	± 13.3 %
750	41.9	0.89	10.20	10.20	10.20	0.61	0.80	± 12.0 %
835	41.5	0.90	9.95	9.95	9.95	0.50	0.80	± 12.0 %
900	41.5	0.97	9.67	9.67	9.67	0.32	1.07	± 12.0 %
1450	40.5	1.20	8.78	8.78	8.78	0.34	0.80	± 12.0 %
1750	40.1	1.37	8.45	8.45	8.45	0.42	0.80	± 12.0 %
1900	40.0	1.40	8.19	8.19	8.19	0.36	0.80	± 12.0 %
2300	39.5	1.67	7.77	7.77	7.77	0.34	0.86	± 12.0 %
2450	39.2	1.80	7.62	7.62	7.62	0.36	0.85	± 12.0 %
2600	39.0	1.96	7.19	7.19	7.19	0.36	0.93	± 12.0 %
5250	35.9	4.71	5.04	5.04	5.04	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.68	4.68	4.68	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.08	5.08	5.08	0.40	1.80	± 13.1 %

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

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

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3863

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
150	61.9	0.80	11.86	11.86	11.86	0.00	1.00	± 13.3 %
450	56.7	0.94	10.78	10.78	10.78	0.08	1.20	± 13.3 %
750	55.5	0.96	10.02	10.02	10.02	0.37	0.89	± 12.0 %
835	55.2	0.97	9.66	9.66	9.66	0.42	0.91	± 12.0 %
1750	53.4	1.49	8.18	8.18	8.18	0.40	0.80	± 12.0 %
1900	53.3	1.52	7.84	7.84	7.84	0.34	0.80	± 12.0 %
2300	52.9	1.81	7.68	7.68	7.68	0.29	0.90	± 12.0 %
2450	52.7	1.95	7.48	7.48	7.48	0.27	0.97	± 12.0 %
2600	52.5	2.16	7.27	7.27	7.27	0.17	1.05	± 12.0 %
5250	48.9	5.36	4.41	4.41	4.41	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.88	3.88	3.88	0.50	1.90	± 13.1 %
5750	48.3	5.94	4.21	4.21	4.21	0.50	1.90	± 13.1 %

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

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

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

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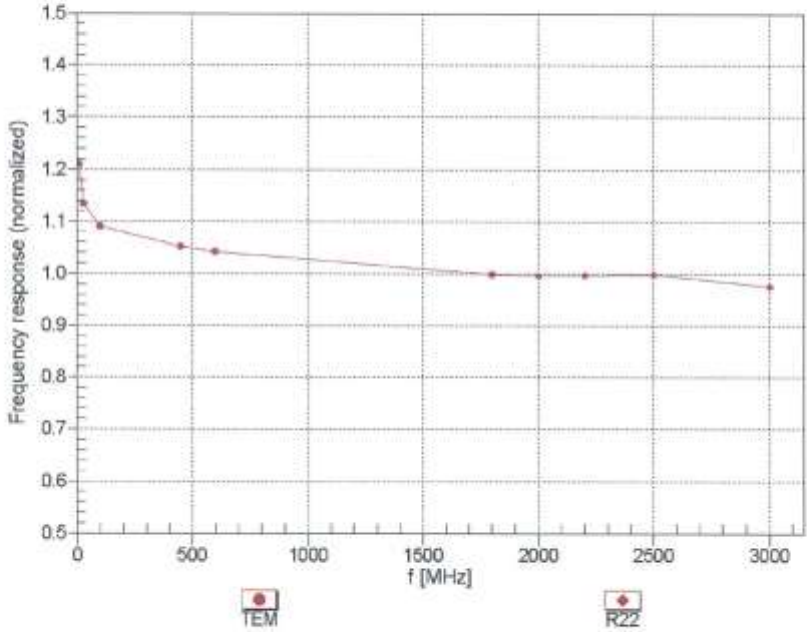
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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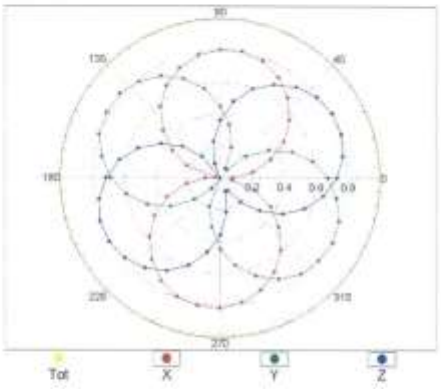
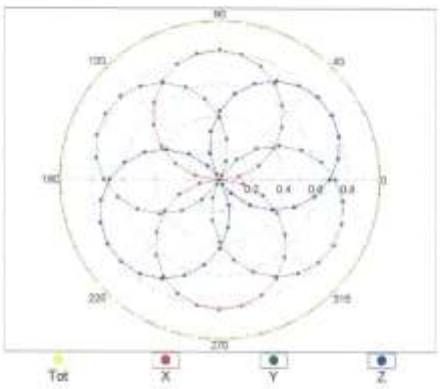
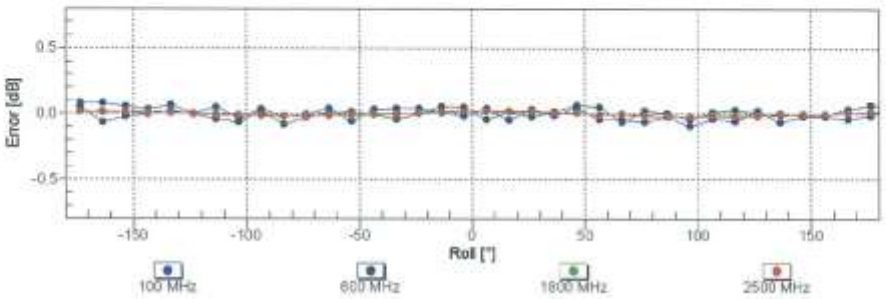
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





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

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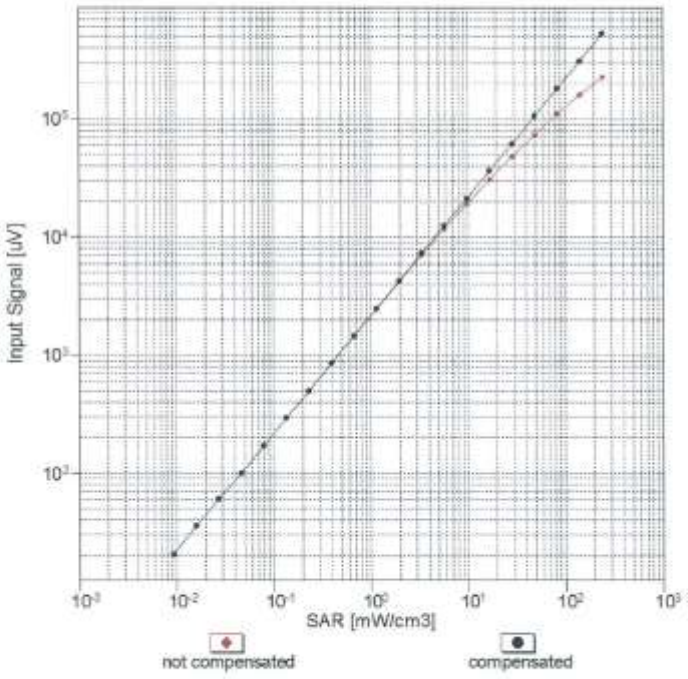
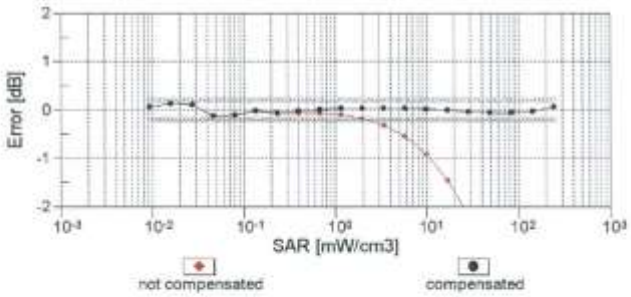
Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)





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

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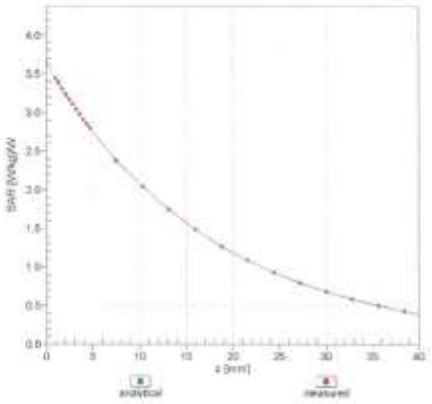
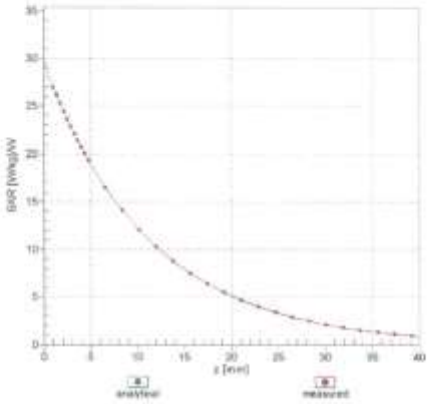
Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

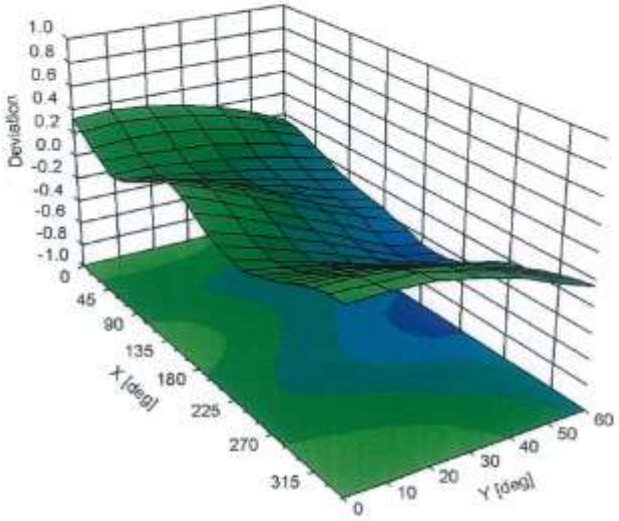


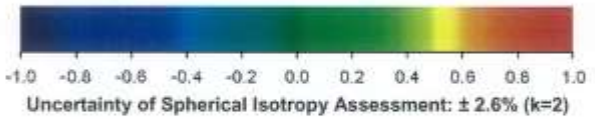
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3863

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	106.5
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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Appendix: Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max Unc[e] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	151.1	± 3.5 %
		Y	0.00	0.00	1.00		153.4	
		Z	0.00	0.00	1.00		149.6	
10010-CAA	SAR Validation (Square, 100ms, 10ms)	X	11.00	70.00	30.00	10.00	20.0	± 9.6 %
		Y	1.74	62.86	8.09		20.0	
		Z	2.07	64.28	9.36		20.0	
10011-CAB	UMTS-FDD (WCDMA)	X	0.92	66.96	14.69	0.00	150.0	± 9.6 %
		Y	1.23	73.72	17.72		150.0	
		Z	0.82	64.81	13.15		150.0	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	1.13	63.96	15.00	0.41	150.0	± 9.6 %
		Y	1.12	65.21	15.97		150.0	
		Z	1.04	62.64	14.13		150.0	
10013-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	X	4.66	66.70	16.87	1.46	150.0	± 9.6 %
		Y	4.41	67.26	17.07		150.0	
		Z	4.70	66.40	16.80		150.0	
10021-DAC	GSM-FDD (TDMA, GMSK)	X	9.09	79.88	16.40	9.39	50.0	± 9.6 %
		Y	45.23	97.58	21.17		50.0	
		Z	100.00	110.54	25.67		50.0	
10023-DAC	GPRS-FDD (TDMA, GMSK, TN 0)	X	6.78	76.49	15.24	9.57	50.0	± 9.6 %
		Y	9.44	80.59	16.39		50.0	
		Z	67.36	105.58	24.50		50.0	
10024-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	X	11.10	81.88	15.87	6.56	60.0	± 9.6 %
		Y	100.00	103.67	20.95		60.0	
		Z	100.00	108.28	23.45		60.0	
10025-DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	X	3.31	63.37	21.37	12.57	50.0	± 9.6 %
		Y	4.23	71.81	26.71		50.0	
		Z	3.77	66.74	23.69		50.0	
10026-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	X	9.84	92.28	31.76	9.56	60.0	± 9.6 %
		Y	5.95	83.99	29.74		60.0	
		Z	7.19	86.26	30.24		60.0	
10027-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	X	100.00	101.03	19.83	4.80	80.0	± 9.6 %
		Y	100.00	103.59	20.13		80.0	
		Z	100.00	106.91	22.02		80.0	
10028-DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	X	100.00	100.43	19.05	3.55	100.0	± 9.6 %
		Y	100.00	104.67	19.92		100.0	
		Z	100.00	105.33	20.65		100.0	
10029-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	X	6.41	82.79	27.10	7.80	80.0	± 9.6 %
		Y	4.05	75.66	25.13		80.0	
		Z	4.75	77.36	25.50		80.0	
10030-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	X	5.28	74.89	13.09	5.30	70.0	± 9.6 %
		Y	100.00	100.23	18.93		70.0	
		Z	100.00	105.72	21.80		70.0	
10031-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	X	4.88	76.31	11.58	1.88	100.0	± 9.6 %
		Y	0.28	61.23	5.16		100.0	
		Z	0.39	62.06	6.02		100.0	

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10032-CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	X	99.99	93.80	14.65	1.17	100.0	± 9.6 %
		Y	0.14	60.00	3.64		100.0	
		Z	0.18	60.00	3.83		100.0	
10033-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	X	6.63	80.89	18.62	5.30	70.0	± 9.6 %
		Y	3.59	74.26	15.11		70.0	
		Z	6.50	84.64	21.35		70.0	
10034-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	X	2.35	71.30	13.76	1.88	100.0	± 9.6 %
		Y	0.91	63.27	8.38		100.0	
		Z	1.79	70.18	14.28		100.0	
10035-CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	X	1.70	69.13	12.72	1.17	100.0	± 9.6 %
		Y	0.67	61.91	7.34		100.0	
		Z	1.29	67.25	12.66		100.0	
10036-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	X	8.29	83.97	19.70	5.30	70.0	± 9.6 %
		Y	4.28	76.54	16.01		70.0	
		Z	8.57	88.94	22.82		70.0	
10037-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	X	2.17	70.51	13.42	1.88	100.0	± 9.6 %
		Y	0.85	62.76	8.13		100.0	
		Z	1.68	69.54	13.98		100.0	
10038-CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	X	1.73	69.53	13.00	1.17	100.0	± 9.6 %
		Y	0.68	62.14	7.59		100.0	
		Z	1.29	67.51	12.89		100.0	
10039-CAB	CDMA2000 (1xRTT, RC1)	X	1.20	68.00	12.32	0.00	150.0	± 9.6 %
		Y	0.40	60.00	5.73		150.0	
		Z	1.08	65.78	11.49		150.0	
10042-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	X	3.96	71.13	12.28	7.78	50.0	± 9.6 %
		Y	4.33	73.40	12.83		50.0	
		Z	20.63	89.92	18.82		50.0	
10044-CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	X	0.03	118.44	11.49	0.00	150.0	± 9.6 %
		Y	0.03	123.41	0.47		150.0	
		Z	0.10	121.86	6.25		150.0	
10048-CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	X	4.53	70.04	14.07	13.80	25.0	± 9.6 %
		Y	4.85	69.08	13.50		25.0	
		Z	9.31	78.44	18.09		25.0	
10049-CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	X	5.00	72.36	13.87	10.79	40.0	± 9.6 %
		Y	4.95	72.19	13.60		40.0	
		Z	10.49	82.35	18.31		40.0	
10056-CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	X	9.88	83.19	19.98	9.03	50.0	± 9.6 %
		Y	7.80	79.96	18.01		50.0	
		Z	13.55	90.17	23.36		50.0	
10058-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	X	4.96	77.96	24.46	6.55	100.0	± 9.6 %
		Y	3.33	72.13	22.83		100.0	
		Z	3.78	73.24	22.95		100.0	
10059-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	X	1.19	65.20	15.58	0.61	110.0	± 9.6 %
		Y	1.14	66.22	16.48		110.0	
		Z	1.06	63.47	14.60		110.0	
10060-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	X	18.28	106.21	26.40	1.30	110.0	± 9.6 %
		Y	100.00	142.43	36.78		110.0	
		Z	2.86	84.70	20.89		110.0	

10061-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	X	3.45	81.46	21.39	2.04	110.0	± 9.6 %
		Y	2.51	81.17	22.36		110.0	
		Z	1.97	74.69	19.49		110.0	
10062-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	X	4.45	66.68	16.34	0.49	100.0	± 9.6 %
		Y	4.22	67.27	16.54		100.0	
		Z	4.49	66.34	16.21		100.0	
10063-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	X	4.47	66.76	16.42	0.72	100.0	± 9.6 %
		Y	4.23	67.37	16.64		100.0	
		Z	4.51	66.43	16.31		100.0	
10064-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	X	4.71	66.95	16.61	0.86	100.0	± 9.6 %
		Y	4.42	67.49	16.78		100.0	
		Z	4.77	66.69	16.54		100.0	
10065-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	X	4.59	66.82	16.68	1.21	100.0	± 9.6 %
		Y	4.30	67.26	16.81		100.0	
		Z	4.65	66.56	16.62		100.0	
10066-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	X	4.60	66.82	16.82	1.46	100.0	± 9.6 %
		Y	4.29	67.17	16.89		100.0	
		Z	4.66	66.58	16.78		100.0	
10067-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	X	4.89	67.08	17.27	2.04	100.0	± 9.6 %
		Y	4.52	67.29	17.26		100.0	
		Z	4.96	66.83	17.27		100.0	
10068-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	X	4.93	67.01	17.42	2.55	100.0	± 9.6 %
		Y	4.61	67.41	17.54		100.0	
		Z	5.00	66.81	17.45		100.0	
10069-CAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	X	4.99	67.04	17.61	2.67	100.0	± 9.6 %
		Y	4.63	67.31	17.64		100.0	
		Z	5.07	66.84	17.65		100.0	
10071-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	X	4.76	66.78	17.15	1.99	100.0	± 9.6 %
		Y	4.51	67.31	17.34		100.0	
		Z	4.79	66.48	17.11		100.0	
10072-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	X	4.72	67.04	17.33	2.30	100.0	± 9.6 %
		Y	4.43	67.41	17.46		100.0	
		Z	4.76	66.75	17.30		100.0	
10073-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	X	4.80	67.25	17.65	2.83	100.0	± 9.6 %
		Y	4.51	67.66	17.82		100.0	
		Z	4.82	66.92	17.62		100.0	
10074-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	X	4.81	67.22	17.80	3.30	100.0	± 9.6 %
		Y	4.56	67.77	18.04		100.0	
		Z	4.81	66.83	17.77		100.0	
10075-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	X	4.84	67.27	18.05	3.82	90.0	± 9.6 %
		Y	4.60	67.82	18.29		90.0	
		Z	4.85	66.90	18.05		90.0	
10076-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	X	4.88	67.16	18.22	4.15	90.0	± 9.6 %
		Y	4.64	67.67	18.44		90.0	
		Z	4.88	66.75	18.20		90.0	
10077-CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	X	4.92	67.26	18.33	4.30	90.0	± 9.6 %
		Y	4.68	67.80	18.58		90.0	
		Z	4.90	66.83	18.30		90.0	

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10081-CAB	CDMA2000 (1xRTT, RC3)	X	0.57	63.24	9.45	0.00	150.0	± 9.6 %
		Y	0.29	60.00	5.08		150.0	
		Z	0.55	61.98	8.86		150.0	
10082-CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	X	0.85	60.00	4.39	4.77	80.0	± 9.6 %
		Y	0.61	60.00	3.29		80.0	
		Z	0.85	61.10	4.43		80.0	
10090-DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	X	11.01	81.80	15.86	6.56	60.0	± 9.6 %
		Y	100.00	103.71	20.98		60.0	
		Z	100.00	108.37	23.51		60.0	
10097-CAB	UMTS-FDD (HSDPA)	X	1.75	68.14	15.41	0.00	150.0	± 9.6 %
		Y	2.15	73.36	17.10		150.0	
		Z	1.61	66.21	14.35		150.0	
10098-CAB	UMTS-FDD (HSUPA, Subtest 2)	X	1.71	68.07	15.37	0.00	150.0	± 9.6 %
		Y	2.11	73.35	17.12		150.0	
		Z	1.57	66.13	14.31		150.0	
10099-DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	X	9.91	92.40	31.80	9.56	60.0	± 9.6 %
		Y	6.00	84.12	29.79		60.0	
		Z	7.24	86.38	30.27		60.0	
10100-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	2.91	69.93	16.52	0.00	150.0	± 9.6 %
		Y	2.94	71.66	17.64		150.0	
		Z	2.79	68.74	15.72		150.0	
10101-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	3.05	67.27	15.75	0.00	150.0	± 9.6 %
		Y	2.96	68.14	16.32		150.0	
		Z	3.02	66.65	15.31		150.0	
10102-CAD	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	3.16	67.31	15.88	0.00	150.0	± 9.6 %
		Y	3.06	68.19	16.41		150.0	
		Z	3.13	66.69	15.44		150.0	
10103-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	6.17	75.27	19.83	3.98	65.0	± 9.6 %
		Y	5.02	74.56	20.07		65.0	
		Z	5.58	74.23	19.78		65.0	
10104-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	X	6.38	74.05	20.09	3.98	65.0	± 9.6 %
		Y	4.96	71.85	19.45		65.0	
		Z	5.51	71.89	19.54		65.0	
10105-CAD	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	X	5.67	71.78	19.42	3.98	65.0	± 9.6 %
		Y	4.68	70.50	19.12		65.0	
		Z	5.40	71.34	19.60		65.0	
10108-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	2.50	69.27	16.35	0.00	150.0	± 9.6 %
		Y	2.53	71.57	17.63		150.0	
		Z	2.41	68.02	15.51		150.0	
10109-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	2.70	67.24	15.61	0.00	150.0	± 9.6 %
		Y	2.63	68.68	16.24		150.0	
		Z	2.66	66.45	15.11		150.0	
10110-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	1.99	68.44	15.79	0.00	150.0	± 9.6 %
		Y	2.06	71.55	17.06		150.0	
		Z	1.92	67.04	14.92		150.0	
10111-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	2.45	68.57	15.90	0.00	150.0	± 9.6 %
		Y	2.57	71.53	16.67		150.0	
		Z	2.35	67.12	15.16		150.0	

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10112-CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	2.83	67.33	15.71	0.00	150.0	± 9.6 %
		Y	2.76	66.82	16.33		150.0	
		Z	2.79	66.53	15.22		150.0	
10113-CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	2.60	68.79	16.07	0.00	150.0	± 9.6 %
		Y	2.70	71.55	16.71		150.0	
		Z	2.50	67.36	15.35		150.0	
10114-CAC	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	X	4.91	67.08	16.35	0.00	150.0	± 9.6 %
		Y	4.70	67.41	16.61		150.0	
		Z	4.96	66.85	16.19		150.0	
10115-CAC	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	X	5.16	67.16	16.39	0.00	150.0	± 9.6 %
		Y	4.93	67.53	16.63		150.0	
		Z	5.21	66.93	16.24		150.0	
10116-CAC	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	X	5.00	67.28	16.38	0.00	150.0	± 9.6 %
		Y	4.76	67.61	16.63		150.0	
		Z	5.04	67.03	16.21		150.0	
10117-CAC	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	X	4.91	67.04	16.35	0.00	150.0	± 9.6 %
		Y	4.68	67.32	16.58		150.0	
		Z	4.93	66.73	16.15		150.0	
10118-CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	X	5.23	67.34	16.49	0.00	150.0	± 9.6 %
		Y	4.94	67.52	16.63		150.0	
		Z	5.30	67.14	16.35		150.0	
10119-CAC	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	X	4.99	67.27	16.39	0.00	150.0	± 9.6 %
		Y	4.77	67.61	16.64		150.0	
		Z	5.03	67.00	16.20		150.0	
10140-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	3.18	67.31	15.78	0.00	150.0	± 9.6 %
		Y	3.06	68.22	16.30		150.0	
		Z	3.16	66.70	15.36		150.0	
10141-CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	3.31	67.51	16.00	0.00	150.0	± 9.6 %
		Y	3.20	68.53	16.55		150.0	
		Z	3.29	66.86	15.57		150.0	
10142-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	1.75	68.36	15.09	0.00	150.0	± 9.6 %
		Y	1.78	71.06	15.42		150.0	
		Z	1.66	66.67	14.20		150.0	
10143-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	2.25	68.96	15.03	0.00	150.0	± 9.6 %
		Y	1.94	68.81	13.51		150.0	
		Z	2.12	67.21	14.32		150.0	
10144-CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	1.90	65.74	12.89	0.00	150.0	± 9.6 %
		Y	1.39	63.90	10.43		150.0	
		Z	1.92	65.05	12.71		150.0	
10145-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	0.74	61.13	7.80	0.00	150.0	± 9.6 %
		Y	0.44	60.00	4.49		150.0	
		Z	0.83	61.47	8.46		150.0	
10146-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	0.98	60.10	6.33	0.00	150.0	± 9.6 %
		Y	0.63	60.00	3.77		150.0	
		Z	1.32	62.30	8.56		150.0	
10147-CAE	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	1.02	60.37	6.56	0.00	150.0	± 9.6 %
		Y	0.63	60.00	3.82		150.0	
		Z	1.41	62.99	9.03		150.0	

10149-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	2.71	67.32	15.67	0.00	150.0	± 9.6 %
		Y	2.64	68.79	16.31		150.0	
		Z	2.67	66.51	15.16		150.0	
10150-CAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	2.84	67.40	15.76	0.00	150.0	± 9.6 %
		Y	2.77	68.91	16.39		150.0	
		Z	2.80	66.59	15.26		150.0	
10151-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	7.05	79.01	21.24	3.98	65.0	± 9.6 %
		Y	5.45	78.07	21.33		65.0	
		Z	5.61	76.01	20.56		65.0	
10152-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	X	5.87	73.86	19.52	3.98	65.0	± 9.6 %
		Y	4.45	71.66	18.62		65.0	
		Z	5.02	71.71	19.09		65.0	
10153-CAD	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	X	6.39	75.31	20.54	3.98	65.0	± 9.6 %
		Y	4.89	73.20	19.71		65.0	
		Z	5.39	72.79	19.96		65.0	
10154-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	2.04	68.90	16.07	0.00	150.0	± 9.6 %
		Y	2.13	72.17	17.39		150.0	
		Z	1.95	67.39	15.15		150.0	
10155-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	2.46	68.61	15.94	0.00	150.0	± 9.6 %
		Y	2.59	71.66	16.74		150.0	
		Z	2.35	67.14	15.18		150.0	
10156-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	1.56	68.06	14.48	0.00	150.0	± 9.6 %
		Y	1.39	68.73	13.43		150.0	
		Z	1.48	66.30	13.62		150.0	
10157-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	1.70	65.86	12.52	0.00	150.0	± 9.6 %
		Y	1.07	62.55	8.97		150.0	
		Z	1.71	65.08	12.35		150.0	
10158-CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	2.62	68.90	16.14	0.00	150.0	± 9.6 %
		Y	2.73	71.76	16.82		150.0	
		Z	2.51	67.43	15.40		150.0	
10159-CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	1.78	66.23	12.74	0.00	150.0	± 9.6 %
		Y	1.10	62.56	8.97		150.0	
		Z	1.78	65.42	12.58		150.0	
10160-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	2.55	68.64	16.16	0.00	150.0	± 9.6 %
		Y	2.51	70.60	17.09		150.0	
		Z	2.49	67.55	15.47		150.0	
10161-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	2.73	67.38	15.64	0.00	150.0	± 9.6 %
		Y	2.66	68.98	16.16		150.0	
		Z	2.69	66.51	15.14		150.0	
10162-CAD	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	2.84	67.62	15.79	0.00	150.0	± 9.6 %
		Y	2.77	69.32	16.34		150.0	
		Z	2.80	66.72	15.29		150.0	
10166-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	3.17	68.43	18.19	3.01	150.0	± 9.6 %
		Y	2.74	68.67	18.97		150.0	
		Z	3.37	69.16	18.82		150.0	
10167-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	3.80	70.92	18.39	3.01	150.0	± 9.6 %
		Y	3.27	72.46	19.76		150.0	
		Z	4.11	71.94	19.16		150.0	

10168-CAE	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	4.33	73.72	20.04	3.01	150.0	± 9.6 %
		Y	3.93	76.52	22.01		150.0	
		Z	4.68	74.75	20.78		150.0	
10169-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	2.69	67.32	17.58	3.01	150.0	± 9.6 %
		Y	2.43	68.05	18.61		150.0	
		Z	2.79	68.16	18.34		150.0	
10170-CAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	3.59	72.54	19.67	3.01	150.0	± 9.6 %
		Y	3.51	76.45	22.16		150.0	
		Z	3.83	74.10	20.71		150.0	
10171-AAD	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	2.93	68.40	16.78	3.01	150.0	± 9.6 %
		Y	2.63	70.44	18.33		150.0	
		Z	3.08	69.59	17.69		150.0	
10172-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	4.62	78.65	22.60	6.02	65.0	± 9.6 %
		Y	2.94	76.24	23.12		65.0	
		Z	6.04	85.62	26.43		65.0	
10173-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	X	7.73	84.08	22.65	6.02	65.0	± 9.6 %
		Y	6.63	89.25	25.64		65.0	
		Z	9.82	91.06	26.34		65.0	
10174-CAD	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	X	3.91	73.33	18.34	6.02	65.0	± 9.6 %
		Y	5.35	84.73	23.41		65.0	
		Z	6.55	83.31	23.20		65.0	
10175-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	2.66	67.02	17.32	3.01	150.0	± 9.6 %
		Y	2.39	67.72	18.33		150.0	
		Z	2.76	67.84	18.07		150.0	
10176-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	3.60	72.56	19.68	3.01	150.0	± 9.6 %
		Y	3.51	76.48	22.17		150.0	
		Z	3.84	74.12	20.72		150.0	
10177-CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	2.67	67.15	17.41	3.01	150.0	± 9.6 %
		Y	2.41	67.82	18.40		150.0	
		Z	2.78	67.99	18.17		150.0	
10178-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	3.57	72.39	19.58	3.01	150.0	± 9.6 %
		Y	3.49	76.32	22.09		150.0	
		Z	3.80	73.91	20.61		150.0	
10179-CAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	3.21	70.22	18.03	3.01	150.0	± 9.6 %
		Y	3.01	73.21	20.07		150.0	
		Z	3.41	71.63	19.02		150.0	
10180-CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	2.92	68.36	16.75	3.01	150.0	± 9.6 %
		Y	2.63	70.42	18.31		150.0	
		Z	3.08	69.53	17.64		150.0	
10181-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	2.67	67.13	17.40	3.01	150.0	± 9.6 %
		Y	2.40	67.81	18.39		150.0	
		Z	2.78	67.97	18.16		150.0	
10182-CAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	3.57	72.37	19.57	3.01	150.0	± 9.6 %
		Y	3.48	76.29	22.07		150.0	
		Z	3.79	73.88	20.60		150.0	
10183-AAC	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	2.92	68.34	16.74	3.01	150.0	± 9.6 %
		Y	2.63	70.39	18.30		150.0	
		Z	3.07	69.51	17.63		150.0	

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10184-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	2.68	67.17	17.42	3.01	150.0	± 9.6 %
		Y	2.41	67.84	18.41		150.0	
		Z	2.79	68.01	18.18		150.0	
10185-CAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	3.58	72.44	19.61	3.01	150.0	± 9.6 %
		Y	3.50	76.39	22.12		150.0	
		Z	3.81	73.96	20.64		150.0	
10186-AAD	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	2.93	68.39	16.77	3.01	150.0	± 9.6 %
		Y	2.64	70.46	18.34		150.0	
		Z	3.09	69.57	17.67		150.0	
10187-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	2.69	67.25	17.51	3.01	150.0	± 9.6 %
		Y	2.43	67.98	18.53		150.0	
		Z	2.80	68.08	18.26		150.0	
10188-CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	3.69	73.08	19.99	3.01	150.0	± 9.6 %
		Y	3.64	77.24	22.59		150.0	
		Z	3.94	74.67	21.05		150.0	
10189-AAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	2.99	68.75	17.02	3.01	150.0	± 9.6 %
		Y	2.71	70.95	18.66		150.0	
		Z	3.15	69.99	17.95		150.0	
10193-CAC	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	X	4.32	66.74	16.06	0.00	150.0	± 9.6 %
		Y	4.14	67.59	16.37		150.0	
		Z	4.34	66.29	15.83		150.0	
10194-CAC	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	X	4.46	66.98	16.19	0.00	150.0	± 9.6 %
		Y	4.24	67.67	16.48		150.0	
		Z	4.50	66.57	15.96		150.0	
10195-CAC	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	X	4.50	66.99	16.21	0.00	150.0	± 9.6 %
		Y	4.25	67.61	16.46		150.0	
		Z	4.54	66.61	15.99		150.0	
10196-CAC	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	X	4.31	66.74	16.05	0.00	150.0	± 9.6 %
		Y	4.11	67.51	16.32		150.0	
		Z	4.34	66.32	15.83		150.0	
10197-CAC	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	X	4.47	66.98	16.20	0.00	150.0	± 9.6 %
		Y	4.24	67.66	16.48		150.0	
		Z	4.51	66.59	15.97		150.0	
10198-CAC	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	X	4.49	66.99	16.21	0.00	150.0	± 9.6 %
		Y	4.24	67.60	16.45		150.0	
		Z	4.53	66.62	15.99		150.0	
10219-CAC	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	X	4.26	66.77	16.02	0.00	150.0	± 9.6 %
		Y	4.07	67.62	16.34		150.0	
		Z	4.28	66.34	15.79		150.0	
10220-CAC	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	X	4.47	66.94	16.18	0.00	150.0	± 9.6 %
		Y	4.23	67.62	16.46		150.0	
		Z	4.50	66.55	15.96		150.0	
10221-CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	X	4.51	66.94	16.20	0.00	150.0	± 9.6 %
		Y	4.26	67.58	16.45		150.0	
		Z	4.55	66.56	15.98		150.0	
10222-CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	X	4.88	67.02	16.33	0.00	150.0	± 9.6 %
		Y	4.67	67.32	16.57		150.0	
		Z	4.90	66.72	16.13		150.0	

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10223-CAC	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	X	5.15	67.21	16.44	0.00	150.0	± 9.6 %
		Y	4.85	67.37	16.57		150.0	
		Z	5.20	66.97	16.28		150.0	
10224-CAC	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	X	4.92	67.13	16.32	0.00	150.0	± 9.6 %
		Y	4.70	67.49	16.58		150.0	
		Z	4.94	66.83	16.11		150.0	
10225-CAB	UMTS-FDD (HSPA+)	X	2.60	66.16	14.83	0.00	150.0	± 9.6 %
		Y	2.41	67.00	14.35		150.0	
		Z	2.59	65.42	14.54		150.0	
10226-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	X	8.23	85.19	23.12	6.02	65.0	± 9.6 %
		Y	7.42	91.37	26.44		65.0	
		Z	10.58	92.51	26.91		65.0	
10227-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	X	7.55	82.84	21.72	6.02	65.0	± 9.6 %
		Y	6.51	87.87	24.49		65.0	
		Z	10.25	90.62	25.65		65.0	
10228-CAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	X	6.67	85.48	25.12	6.02	65.0	± 9.6 %
		Y	3.69	80.81	24.99		65.0	
		Z	6.44	87.27	27.13		65.0	
10229-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	X	7.78	84.18	22.69	6.02	65.0	± 9.6 %
		Y	6.69	89.39	25.70		65.0	
		Z	9.90	91.18	26.39		65.0	
10230-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	X	7.14	81.92	21.34	6.02	65.0	± 9.6 %
		Y	5.85	86.04	23.80		65.0	
		Z	9.54	89.32	25.15		65.0	
10231-CAB	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	X	6.36	84.50	24.69	6.02	65.0	± 9.6 %
		Y	3.53	79.82	24.51		65.0	
		Z	6.16	86.30	26.70		65.0	
10232-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	X	7.77	84.16	22.68	6.02	65.0	± 9.6 %
		Y	6.68	89.37	25.69		65.0	
		Z	9.88	91.16	26.38		65.0	
10233-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	X	7.13	81.90	21.33	6.02	65.0	± 9.6 %
		Y	5.83	85.99	23.79		65.0	
		Z	9.51	89.29	25.14		65.0	
10234-CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	X	6.09	83.61	24.25	6.02	65.0	± 9.6 %
		Y	3.42	79.13	24.11		65.0	
		Z	5.93	85.47	26.28		65.0	
10235-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	X	7.78	84.19	22.69	6.02	65.0	± 9.6 %
		Y	6.68	89.41	25.71		65.0	
		Z	9.89	91.19	26.39		65.0	
10236-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	X	7.18	81.98	21.35	6.02	65.0	± 9.6 %
		Y	5.91	86.16	23.84		65.0	
		Z	9.62	89.44	25.18		65.0	
10237-CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	6.36	84.53	24.70	6.02	65.0	± 9.6 %
		Y	3.52	79.81	24.52		65.0	
		Z	6.16	86.34	26.72		65.0	
10238-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	X	7.75	84.14	22.67	6.02	65.0	± 9.6 %
		Y	6.66	89.35	25.68		65.0	
		Z	9.86	91.13	26.37		65.0	

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10239-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	X	7.11	81.87	21.32	6.02	65.0	± 9.6 %
		Y	5.81	85.95	23.78		65.0	
		Z	9.48	89.25	25.13		65.0	
10240-CAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	X	6.34	84.51	24.69	6.02	65.0	± 9.6 %
		Y	3.52	79.81	24.52		65.0	
		Z	6.14	86.30	26.70		65.0	
10241-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	X	7.98	81.00	24.33	6.98	65.0	± 9.6 %
		Y	6.14	81.54	25.53		65.0	
		Z	7.26	79.71	24.64		65.0	
10242-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	X	6.47	76.99	22.66	6.98	65.0	± 9.6 %
		Y	4.99	77.45	23.83		65.0	
		Z	6.91	78.72	24.15		65.0	
10243-CAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	X	5.40	74.34	22.44	6.98	65.0	± 9.6 %
		Y	4.21	73.63	23.07		65.0	
		Z	5.61	75.34	23.62		65.0	
10244-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	3.76	67.79	12.85	3.98	65.0	± 9.6 %
		Y	1.87	62.25	8.40		65.0	
		Z	4.41	71.62	16.01		65.0	
10245-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	3.71	67.43	12.64	3.98	65.0	± 9.6 %
		Y	1.87	62.05	8.24		65.0	
		Z	4.30	70.99	15.67		65.0	
10246-CAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	4.05	72.21	15.44	3.98	65.0	± 9.6 %
		Y	1.80	64.42	10.44		65.0	
		Z	3.80	73.10	16.90		65.0	
10247-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	X	4.44	71.15	15.84	3.98	65.0	± 9.6 %
		Y	2.54	65.63	11.89		65.0	
		Z	4.00	70.77	16.63		65.0	
10248-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	X	4.38	70.57	15.58	3.98	65.0	± 9.6 %
		Y	2.50	65.09	11.62		65.0	
		Z	4.00	70.27	16.39		65.0	
10249-CAD	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	X	6.22	78.94	19.39	3.98	65.0	± 9.6 %
		Y	3.43	72.93	16.18		65.0	
		Z	5.02	77.51	19.84		65.0	
10250-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	X	6.14	76.63	20.38	3.98	65.0	± 9.6 %
		Y	4.51	74.09	18.97		65.0	
		Z	5.00	73.95	19.97		65.0	
10251-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	X	5.56	73.72	18.77	3.98	65.0	± 9.6 %
		Y	3.95	70.70	16.95		65.0	
		Z	4.76	71.87	18.65		65.0	
10252-CAD	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	7.45	81.83	21.98	3.98	65.0	± 9.6 %
		Y	5.54	80.55	21.60		65.0	
		Z	5.55	78.23	21.33		65.0	
10253-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	X	5.77	73.44	19.25	3.98	65.0	± 9.6 %
		Y	4.37	71.25	18.16		65.0	
		Z	4.94	71.30	18.85		65.0	
10254-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	X	6.22	74.67	20.11	3.98	65.0	± 9.6 %
		Y	4.73	72.48	19.03		65.0	
		Z	5.27	72.27	19.61		65.0	

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10255-CAD	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	X	6.76	78.48	21.18	3.98	65.0	± 9.6 %
		Y	5.16	77.25	20.99		65.0	
		Z	5.37	75.38	20.49		65.0	
10256-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	X	2.78	64.16	9.93	3.98	65.0	± 9.6 %
		Y	1.36	60.00	5.83		65.0	
		Z	3.18	67.02	12.70		65.0	
10257-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	X	2.75	63.84	9.69	3.98	65.0	± 9.6 %
		Y	1.38	60.00	5.75		65.0	
		Z	3.11	66.43	12.31		65.0	
10258-CAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	X	2.69	66.45	11.77	3.98	65.0	± 9.6 %
		Y	1.25	60.72	7.00		65.0	
		Z	2.70	67.95	13.57		65.0	
10259-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	X	5.09	73.24	17.52	3.98	65.0	± 9.6 %
		Y	3.20	68.61	14.39		65.0	
		Z	4.40	72.05	17.89		65.0	
10260-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	X	5.09	72.94	17.39	3.98	65.0	± 9.6 %
		Y	3.20	68.30	14.22		65.0	
		Z	4.44	71.81	17.78		65.0	
10261-CAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	X	6.43	79.43	20.17	3.98	65.0	± 9.6 %
		Y	4.14	75.58	18.12		65.0	
		Z	5.00	77.05	20.16		65.0	
10262-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	X	6.11	76.51	20.31	3.98	65.0	± 9.6 %
		Y	4.48	73.95	18.88		65.0	
		Z	4.98	73.88	19.92		65.0	
10263-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	X	5.55	73.70	18.77	3.98	65.0	± 9.6 %
		Y	3.94	70.69	16.95		65.0	
		Z	4.76	71.84	18.64		65.0	
10264-CAD	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	X	7.33	81.55	21.85	3.98	65.0	± 9.6 %
		Y	5.45	80.22	21.44		65.0	
		Z	5.49	78.02	21.23		65.0	
10265-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	X	5.87	73.86	19.53	3.98	65.0	± 9.6 %
		Y	4.46	71.68	18.63		65.0	
		Z	5.02	71.71	19.09		65.0	
10266-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	X	6.39	75.29	20.53	3.98	65.0	± 9.6 %
		Y	4.89	73.18	19.70		65.0	
		Z	5.38	72.78	19.95		65.0	
10267-CAD	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	7.04	78.96	21.22	3.98	65.0	± 9.6 %
		Y	5.43	77.99	21.30		65.0	
		Z	5.60	75.97	20.54		65.0	
10268-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	X	6.56	74.07	20.20	3.98	65.0	± 9.6 %
		Y	5.15	72.08	19.58		65.0	
		Z	5.68	71.86	19.63		65.0	
10269-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	X	6.55	73.70	20.08	3.98	65.0	± 9.6 %
		Y	5.19	71.84	19.47		65.0	
		Z	5.68	71.51	19.52		65.0	
10270-CAD	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	6.77	76.24	20.42	3.98	65.0	± 9.6 %
		Y	5.40	75.25	20.50		65.0	
		Z	5.66	73.75	19.79		65.0	

10274-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	X	2.43	66.71	14.85	0.00	150.0	± 9.6 %
		Y	2.33	68.15	14.74		150.0	
		Z	2.38	65.72	14.40		150.0	
10275-CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	X	1.47	67.75	15.10	0.00	150.0	± 9.6 %
		Y	1.72	72.43	16.90		150.0	
		Z	1.36	65.94	13.97		150.0	
10277-CAA	PHS (QPSK)	X	1.92	60.08	5.51	9.03	50.0	± 9.6 %
		Y	1.38	58.77	3.99		50.0	
		Z	1.98	60.78	6.41		50.0	
10278-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	X	3.08	65.19	10.55	9.03	50.0	± 9.6 %
		Y	2.17	61.96	7.67		50.0	
		Z	3.52	67.85	12.76		50.0	
10279-CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	X	3.15	65.40	10.71	9.03	50.0	± 9.6 %
		Y	2.20	62.03	7.77		50.0	
		Z	3.61	68.12	12.94		50.0	
10290-AAB	CDMA2000, RC1, SO55, Full Rate	X	0.92	64.86	10.52	0.00	150.0	± 9.6 %
		Y	0.39	60.00	5.42		150.0	
		Z	0.92	63.92	10.28		150.0	
10291-AAB	CDMA2000, RC3, SO55, Full Rate	X	0.56	63.07	9.34	0.00	150.0	± 9.6 %
		Y	0.29	60.00	5.06		150.0	
		Z	0.54	61.87	8.78		150.0	
10292-AAB	CDMA2000, RC3, SO32, Full Rate	X	0.78	67.26	11.80	0.00	150.0	± 9.6 %
		Y	0.28	60.00	5.38		150.0	
		Z	0.61	63.79	10.15		150.0	
10293-AAB	CDMA2000, RC3, SO3, Full Rate	X	2.07	78.82	16.86	0.00	150.0	± 9.6 %
		Y	0.39	62.28	7.09		150.0	
		Z	0.82	67.12	12.27		150.0	
10295-AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	X	10.77	83.93	21.20	9.03	50.0	± 9.6 %
		Y	21.51	90.17	21.22		50.0	
		Z	9.58	84.17	22.47		50.0	
10297-AAC	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	2.52	69.39	16.43	0.00	150.0	± 9.6 %
		Y	2.55	71.75	17.73		150.0	
		Z	2.42	68.12	15.58		150.0	
10298-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	X	1.11	64.88	11.35	0.00	150.0	± 9.6 %
		Y	0.56	60.19	6.52		150.0	
		Z	1.13	64.17	11.22		150.0	
10299-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	X	1.42	62.80	9.08	0.00	150.0	± 9.6 %
		Y	0.76	60.00	5.28		150.0	
		Z	1.91	65.84	11.56		150.0	
10300-AAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	X	1.21	60.93	7.40	0.00	150.0	± 9.6 %
		Y	0.73	60.00	4.72		150.0	
		Z	1.52	62.72	9.26		150.0	
10301-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	X	4.38	65.24	17.03	4.17	50.0	± 9.6 %
		Y	4.10	66.08	16.99		50.0	
		Z	4.53	65.17	17.06		50.0	
10302-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3 CTRL symbols)	X	4.87	65.87	17.74	4.96	50.0	± 9.6 %
		Y	4.52	66.36	17.57		50.0	
		Z	5.00	65.70	17.71		50.0	

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10303-AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	X	4.64	65.56	17.55	4.96	50.0	± 9.6 %
		Y	4.40	66.71	17.70		50.0	
		Z	4.76	65.34	17.52		50.0	
10304-AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	X	4.47	65.53	17.12	4.17	50.0	± 9.6 %
		Y	4.17	66.24	17.01		50.0	
		Z	4.56	65.19	17.01		50.0	
10305-AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC, 15 symbols)	X	4.18	67.59	18.77	6.02	35.0	± 9.6 %
		Y	3.89	67.96	17.61		35.0	
		Z	4.33	67.73	19.13		35.0	
10306-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC, 18 symbols)	X	4.44	66.50	18.52	6.02	35.0	± 9.6 %
		Y	4.16	67.24	17.98		35.0	
		Z	4.60	66.59	18.78		35.0	
10307-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC, 18 symbols)	X	4.34	66.59	18.45	6.02	35.0	± 9.6 %
		Y	4.05	67.23	17.84		35.0	
		Z	4.50	66.72	18.72		35.0	
10308-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	X	4.32	66.82	18.60	6.02	35.0	± 9.6 %
		Y	4.06	67.54	18.06		35.0	
		Z	4.48	66.95	18.87		35.0	
10309-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	X	4.46	66.56	18.61	6.02	35.0	± 9.6 %
		Y	4.17	67.31	18.10		35.0	
		Z	4.64	66.74	18.90		35.0	
10310-AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	X	4.40	66.58	18.52	6.02	35.0	± 9.6 %
		Y	4.14	67.40	18.05		35.0	
		Z	4.55	66.67	18.76		35.0	
10311-AAC	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	X	2.88	68.63	16.10	0.00	150.0	± 9.6 %
		Y	2.88	70.38	17.20		150.0	
		Z	2.77	67.46	15.32		150.0	
10313-AAA	iDEN 1:3	X	3.55	71.03	14.37	6.99	70.0	± 9.6 %
		Y	2.76	72.05	15.47		70.0	
		Z	2.49	69.17	14.17		70.0	
10314-AAA	iDEN 1:6	X	6.09	81.23	20.99	10.00	30.0	± 9.6 %
		Y	7.74	88.37	24.07		30.0	
		Z	3.89	76.29	19.81		30.0	
10315-AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	X	1.04	63.85	14.96	0.17	150.0	± 9.6 %
		Y	1.05	65.58	16.18		150.0	
		Z	0.96	62.52	14.00		150.0	
10316-AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	X	4.35	66.66	16.11	0.17	150.0	± 9.6 %
		Y	4.12	67.27	16.33		150.0	
		Z	4.39	66.31	15.96		150.0	
10317-AAC	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	X	4.35	66.66	16.11	0.17	150.0	± 9.6 %
		Y	4.12	67.27	16.33		150.0	
		Z	4.39	66.31	15.96		150.0	
10400-AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc duty cycle)	X	4.42	66.96	16.15	0.00	150.0	± 9.6 %
		Y	4.13	67.43	16.34		150.0	
		Z	4.47	66.60	15.95		150.0	
10401-AAD	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc duty cycle)	X	5.08	66.77	16.17	0.00	150.0	± 9.6 %
		Y	5.02	67.75	16.71		150.0	
		Z	5.22	66.85	16.19		150.0	

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10402-AAD	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc duty cycle)	X	5.43	67.35	16.36	0.00	150.0	± 9.6 %
		Y	5.23	67.61	16.59		150.0	
		Z	5.46	67.09	16.19		150.0	
10403-AAB	CDMA2000 (1xEV-DO, Rev. 0)	X	0.92	64.86	10.52	0.00	115.0	± 9.6 %
		Y	0.39	60.00	5.42		115.0	
		Z	0.92	63.92	10.28		115.0	
10404-AAB	CDMA2000 (1xEV-DO, Rev. A)	X	0.92	64.86	10.52	0.00	115.0	± 9.6 %
		Y	0.39	60.00	5.42		115.0	
		Z	0.92	63.92	10.28		115.0	
10406-AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	X	6.61	82.29	18.19	0.00	100.0	± 9.6 %
		Y	100.00	99.95	18.83		100.0	
		Z	45.79	108.43	26.26		100.0	
10410-AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	X	3.30	74.41	15.15	3.23	80.0	± 9.6 %
		Y	16.11	98.20	22.53		80.0	
		Z	23.08	102.83	25.32		80.0	
10415-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	X	0.96	62.96	14.43	0.00	150.0	± 9.6 %
		Y	0.99	64.96	15.77		150.0	
		Z	0.90	61.91	13.52		150.0	
10416-AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	X	4.32	66.73	16.13	0.00	150.0	± 9.6 %
		Y	4.11	67.43	16.39		150.0	
		Z	4.34	66.32	15.91		150.0	
10417-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	X	4.32	66.73	16.13	0.00	150.0	± 9.6 %
		Y	4.11	67.43	16.39		150.0	
		Z	4.34	66.32	15.91		150.0	
10418-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	X	4.31	66.93	16.18	0.00	150.0	± 9.6 %
		Y	4.10	67.68	16.50		150.0	
		Z	4.33	66.49	15.93		150.0	
10419-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	X	4.33	66.86	16.17	0.00	150.0	± 9.6 %
		Y	4.11	67.59	16.46		150.0	
		Z	4.35	66.43	15.93		150.0	
10422-AAB	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	X	4.43	66.84	16.18	0.00	150.0	± 9.6 %
		Y	4.21	67.51	16.45		150.0	
		Z	4.46	66.43	15.95		150.0	
10423-AAB	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	X	4.56	67.09	16.27	0.00	150.0	± 9.6 %
		Y	4.30	67.73	16.52		150.0	
		Z	4.61	66.71	16.06		150.0	
10424-AAB	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	X	4.49	67.05	16.24	0.00	150.0	± 9.6 %
		Y	4.23	67.65	16.49		150.0	
		Z	4.53	66.66	16.03		150.0	
10425-AAB	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	X	5.11	67.24	16.43	0.00	150.0	± 9.6 %
		Y	4.85	67.48	16.62		150.0	
		Z	5.16	66.98	16.26		150.0	
10426-AAB	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	X	5.13	67.32	16.47	0.00	150.0	± 9.6 %
		Y	4.90	67.67	16.71		150.0	
		Z	5.18	67.07	16.30		150.0	

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10427-AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	X	5.10	67.11	16.36	0.00	150.0	± 9.6 %
		Y	4.87	67.47	16.61		150.0	
		Z	5.17	66.96	16.24		150.0	
10430-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	X	4.40	73.18	18.78	0.00	150.0	± 9.6 %
		Y	5.18	77.79	19.68		150.0	
		Z	4.07	70.86	17.81		150.0	
10431-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	X	3.93	67.31	16.00	0.00	150.0	± 9.6 %
		Y	3.67	68.21	16.08		150.0	
		Z	3.97	66.78	15.76		150.0	
10432-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	X	4.25	67.14	16.17	0.00	150.0	± 9.6 %
		Y	4.00	67.91	16.40		150.0	
		Z	4.29	66.70	15.93		150.0	
10433-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	X	4.51	67.08	16.27	0.00	150.0	± 9.6 %
		Y	4.26	67.71	16.52		150.0	
		Z	4.55	66.70	16.05		150.0	
10434-AAA	W-CDMA (BS Test Model 1, 64 DPCH)	X	4.57	74.23	18.62	0.00	150.0	± 9.6 %
		Y	4.96	77.01	18.39		150.0	
		Z	4.13	71.55	17.59		150.0	
10435-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.22	74.05	14.97	3.23	80.0	± 9.6 %
		Y	12.58	95.13	21.66		80.0	
		Z	20.50	101.13	24.83		80.0	
10447-AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.16	67.07	14.83	0.00	150.0	± 9.6 %
		Y	2.72	66.94	13.70		150.0	
		Z	3.20	66.46	14.68		150.0	
10448-AAB	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	X	3.80	67.10	15.87	0.00	150.0	± 9.6 %
		Y	3.57	68.05	15.99		150.0	
		Z	3.82	66.56	15.62		150.0	
10449-AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	X	4.09	66.98	16.07	0.00	150.0	± 9.6 %
		Y	3.88	67.77	16.33		150.0	
		Z	4.12	66.51	15.82		150.0	
10450-AAB	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.31	66.86	16.12	0.00	150.0	± 9.6 %
		Y	4.10	67.50	16.40		150.0	
		Z	4.33	66.45	15.89		150.0	
10451-AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	X	2.96	66.79	14.05	0.00	150.0	± 9.6 %
		Y	2.28	65.25	11.94		150.0	
		Z	3.03	66.33	14.05		150.0	
10456-AAB	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc duty cycle)	X	6.03	67.73	16.57	0.00	150.0	± 9.6 %
		Y	6.14	68.84	17.23		150.0	
		Z	6.09	67.66	16.51		150.0	
10457-AAA	UMTS-FDD (DC-HSDPA)	X	3.67	65.47	15.85	0.00	150.0	± 9.6 %
		Y	3.57	66.44	16.21		150.0	
		Z	3.66	65.00	15.61		150.0	
10458-AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	X	3.82	71.77	16.94	0.00	150.0	± 9.6 %
		Y	2.33	66.01	12.18		150.0	
		Z	3.66	70.24	16.55		150.0	
10459-AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	X	5.04	70.06	18.38	0.00	150.0	± 9.6 %
		Y	4.33	69.08	16.37		150.0	
		Z	4.93	68.74	17.97		150.0	

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10460-AAA	UMTS-FDD (WCDMA, AMR)	X	0.82	68.06	15.67	0.00	150.0	± 9.6 %
		Y	1.52	80.43	21.00		150.0	
		Z	0.70	65.12	13.61		150.0	
10461-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.71	68.46	13.76	3.29	80.0	± 9.6 %
		Y	18.73	104.14	25.37		80.0	
		Z	16.72	101.23	25.84		80.0	
10462-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.95	60.00	7.25	3.23	80.0	± 9.6 %
		Y	0.26	55.18	3.00		80.0	
		Z	1.02	61.47	8.87		80.0	
10463-AAA	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.96	60.00	6.79	3.23	80.0	± 9.6 %
		Y	3.83	65.07	6.10		80.0	
		Z	0.88	60.00	7.59		80.0	
10464-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.35	65.72	12.06	3.23	80.0	± 9.6 %
		Y	3.75	82.77	18.52		80.0	
		Z	9.51	92.26	22.65		80.0	
10465-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.95	60.00	7.20	3.23	80.0	± 9.6 %
		Y	0.25	55.06	2.87		80.0	
		Z	0.96	60.91	8.53		80.0	
10466-AAA	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.97	60.00	6.75	3.23	80.0	± 9.6 %
		Y	3.08	64.36	5.91		80.0	
		Z	0.88	60.00	7.54		80.0	
10467-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.38	66.05	12.23	3.23	80.0	± 9.6 %
		Y	4.97	86.13	19.58		80.0	
		Z	11.48	94.80	23.39		80.0	
10468-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.95	60.00	7.22	3.23	80.0	± 9.6 %
		Y	0.26	55.12	2.95		80.0	
		Z	0.97	61.07	8.63		80.0	
10469-AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.96	60.00	6.75	3.23	80.0	± 9.6 %
		Y	3.73	65.04	6.11		80.0	
		Z	0.88	60.00	7.54		80.0	
10470-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.38	66.03	12.21	3.23	80.0	± 9.6 %
		Y	5.04	86.32	19.63		80.0	
		Z	11.56	94.91	23.42		80.0	
10471-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.95	60.00	7.21	3.23	80.0	± 9.6 %
		Y	0.25	55.11	2.92		80.0	
		Z	0.97	61.03	8.59		80.0	
10472-AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.96	60.00	6.74	3.23	80.0	± 9.6 %
		Y	8.84	67.69	6.73		80.0	
		Z	0.88	60.00	7.53		80.0	
10473-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.37	66.01	12.20	3.23	80.0	± 9.6 %
		Y	4.94	86.08	19.55		80.0	
		Z	11.45	94.77	23.37		80.0	
10474-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.94	60.00	7.21	3.23	80.0	± 9.6 %
		Y	0.25	55.09	2.91		80.0	
		Z	0.96	61.01	8.58		80.0	
10475-AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.96	60.00	6.74	3.23	80.0	± 9.6 %
		Y	5.48	65.71	6.11		80.0	
		Z	0.88	60.00	7.53		80.0	

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10477-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	0.94	60.00	7.19	3.23	80.0	± 9.6 %
		Y	0.25	55.02	2.82		80.0	
		Z	0.95	60.87	8.49		80.0	
10478-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	0.96	60.00	6.73	3.23	80.0	± 9.6 %
		Y	0.28	53.97	1.35		80.0	
		Z	0.88	60.00	7.52		80.0	
10479-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.21	72.74	16.33	3.23	80.0	± 9.6 %
		Y	39.60	110.75	27.52		80.0	
		Z	6.66	84.68	21.96		80.0	
10480-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.08	64.62	11.24	3.23	80.0	± 9.6 %
		Y	1.03	61.93	8.80		80.0	
		Z	4.36	74.13	16.27		80.0	
10481-AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.78	62.75	10.02	3.23	80.0	± 9.6 %
		Y	0.84	60.00	7.33		80.0	
		Z	3.24	70.04	14.31		80.0	
10482-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.73	64.95	12.00	2.23	80.0	± 9.6 %
		Y	0.84	60.00	7.70		80.0	
		Z	1.75	65.57	13.09		80.0	
10483-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.61	61.02	9.13	2.23	80.0	± 9.6 %
		Y	1.09	60.00	6.49		80.0	
		Z	2.56	66.79	13.19		80.0	
10484-AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.61	60.82	9.02	2.23	80.0	± 9.6 %
		Y	1.11	60.00	6.48		80.0	
		Z	2.45	66.04	12.85		80.0	
10485-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.62	70.06	15.66	2.23	80.0	± 9.6 %
		Y	1.92	68.50	13.94		80.0	
		Z	2.29	68.71	15.73		80.0	
10486-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.37	65.68	13.03	2.23	80.0	± 9.6 %
		Y	1.24	60.58	8.96		80.0	
		Z	2.33	65.68	13.73		80.0	
10487-AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.37	65.34	12.86	2.23	80.0	± 9.6 %
		Y	1.24	60.28	8.75		80.0	
		Z	2.35	65.41	13.59		80.0	
10488-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.19	71.23	17.45	2.23	80.0	± 9.6 %
		Y	2.91	73.05	18.24		80.0	
		Z	2.77	69.32	17.00		80.0	
10489-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.21	68.38	16.16	2.23	80.0	± 9.6 %
		Y	2.80	68.89	15.94		80.0	
		Z	2.91	66.98	15.94		80.0	
10490-AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.28	68.24	16.11	2.23	80.0	± 9.6 %
		Y	2.81	68.47	15.72		80.0	
		Z	3.00	66.92	15.92		80.0	
10491-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.47	70.14	17.34	2.23	80.0	± 9.6 %
		Y	3.03	70.90	17.92		80.0	
		Z	3.12	68.57	16.90		80.0	
10492-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.59	67.96	16.53	2.23	80.0	± 9.6 %
		Y	3.13	68.26	16.56		80.0	
		Z	3.32	66.68	16.23		80.0	

10493-AAC	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.65	67.84	16.48	2.23	80.0	± 9.6 %
		Y	3.17	68.05	16.43		80.0	
		Z	3.39	66.61	16.21		80.0	
10494-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.72	71.32	17.72	2.23	80.0	± 9.6 %
		Y	3.26	72.17	18.50		80.0	
		Z	3.30	69.67	17.25		80.0	
10495-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.62	68.25	16.75	2.23	80.0	± 9.6 %
		Y	3.18	68.50	16.94		80.0	
		Z	3.33	66.95	16.42		80.0	
10496-AAC	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.71	68.07	16.72	2.23	80.0	± 9.6 %
		Y	3.25	68.28	16.85		80.0	
		Z	3.43	66.81	16.39		80.0	
10497-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	1.07	60.00	8.19	2.23	80.0	± 9.6 %
		Y	0.87	60.00	5.66		80.0	
		Z	1.16	61.09	9.64		80.0	
10498-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	1.24	60.00	7.11	2.23	80.0	± 9.6 %
		Y	1.51	60.00	4.12		80.0	
		Z	1.24	60.00	7.97		80.0	
10499-AAA	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	1.26	60.00	6.97	2.23	80.0	± 9.6 %
		Y	1.84	60.00	3.85		80.0	
		Z	1.26	60.00	7.82		80.0	
10500-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	2.86	70.59	16.41	2.23	80.0	± 9.6 %
		Y	2.47	71.37	16.06		80.0	
		Z	2.47	68.90	16.23		80.0	
10501-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	2.77	67.13	14.41	2.23	80.0	± 9.6 %
		Y	1.82	64.08	11.77		80.0	
		Z	2.61	66.45	14.70		80.0	
10502-AAA	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	2.80	66.92	14.24	2.23	80.0	± 9.6 %
		Y	1.80	63.62	11.44		80.0	
		Z	2.65	66.33	14.58		80.0	
10503-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.15	71.01	17.34	2.23	80.0	± 9.6 %
		Y	2.85	72.73	18.09		80.0	
		Z	2.74	69.14	16.90		80.0	
10504-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.18	68.25	16.09	2.23	80.0	± 9.6 %
		Y	2.77	68.71	15.84		80.0	
		Z	2.89	66.89	15.87		80.0	
10505-AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.26	68.13	16.04	2.23	80.0	± 9.6 %
		Y	2.78	68.31	15.63		80.0	
		Z	2.99	66.83	15.86		80.0	
10506-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	3.68	71.16	17.64	2.23	80.0	± 9.6 %
		Y	3.23	71.98	18.40		80.0	
		Z	3.28	69.54	17.18		80.0	
10507-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.60	68.17	16.71	2.23	80.0	± 9.6 %
		Y	3.16	68.41	16.88		80.0	
		Z	3.32	66.89	16.36		80.0	

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10508-AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	3.69	67.98	16.67	2.23	80.0	± 9.6 %
		Y	3.23	68.18	16.79		80.0	
		Z	3.42	66.74	16.35		80.0	
10509-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.09	70.27	17.38	2.23	80.0	± 9.6 %
		Y	3.57	70.54	17.94		80.0	
		Z	3.72	68.92	16.97		80.0	
10510-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	4.09	67.97	16.86	2.23	80.0	± 9.6 %
		Y	3.56	67.74	16.96		80.0	
		Z	3.82	66.86	16.53		80.0	
10511-AAC	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.17	67.81	16.83	2.23	80.0	± 9.6 %
		Y	3.64	67.61	16.92		80.0	
		Z	3.90	66.70	16.51		80.0	
10512-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	X	4.18	71.35	17.66	2.23	80.0	± 9.6 %
		Y	3.66	71.62	18.28		80.0	
		Z	3.77	69.95	17.25		80.0	
10513-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	X	3.98	68.10	16.91	2.23	80.0	± 9.6 %
		Y	3.47	67.78	17.03		80.0	
		Z	3.70	66.98	16.58		80.0	
10514-AAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	X	4.02	67.80	16.84	2.23	80.0	± 9.6 %
		Y	3.52	67.49	16.93		80.0	
		Z	3.75	66.69	16.51		80.0	
10515-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	X	0.92	63.12	14.48	0.00	150.0	± 9.6 %
		Y	0.96	65.32	15.94		150.0	
		Z	0.86	62.01	13.50		150.0	
10516-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	X	0.54	70.00	16.71	0.00	150.0	± 9.6 %
		Y	2.46	99.33	28.61		150.0	
		Z	0.41	65.69	13.40		150.0	
10517-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	X	0.76	64.84	14.98	0.00	150.0	± 9.6 %
		Y	0.86	68.98	17.56		150.0	
		Z	0.68	63.15	13.53		150.0	
10518-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	X	4.31	66.83	16.12	0.00	150.0	± 9.6 %
		Y	4.10	67.60	16.42		150.0	
		Z	4.33	66.40	15.88		150.0	
10519-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	X	4.45	66.99	16.21	0.00	150.0	± 9.6 %
		Y	4.21	67.71	16.48		150.0	
		Z	4.49	66.60	15.99		150.0	
10520-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	X	4.31	66.93	16.12	0.00	150.0	± 9.6 %
		Y	4.08	67.63	16.41		150.0	
		Z	4.35	66.53	15.90		150.0	
10521-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	X	4.24	66.89	16.10	0.00	150.0	± 9.6 %
		Y	4.01	67.52	16.35		150.0	
		Z	4.28	66.50	15.87		150.0	
10522-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	X	4.29	67.01	16.19	0.00	150.0	± 9.6 %
		Y	4.02	67.52	16.36		150.0	
		Z	4.34	66.64	15.98		150.0	

10523-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	X	4.22	67.02	16.12	0.00	150.0	± 9.6 %
		Y	4.02	67.85	16.48		150.0	
		Z	4.24	66.53	15.84		150.0	
10524-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	X	4.25	66.98	16.19	0.00	150.0	± 9.6 %
		Y	4.00	67.65	16.47		150.0	
		Z	4.28	66.56	15.95		150.0	
10525-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc duty cycle)	X	4.28	66.09	15.82	0.00	150.0	± 9.6 %
		Y	4.09	66.89	16.17		150.0	
		Z	4.29	65.63	15.56		150.0	
10526-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc duty cycle)	X	4.40	66.37	15.93	0.00	150.0	± 9.6 %
		Y	4.16	67.06	16.24		150.0	
		Z	4.43	65.94	15.69		150.0	
10527-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc duty cycle)	X	4.33	66.34	15.87	0.00	150.0	± 9.6 %
		Y	4.12	67.09	16.20		150.0	
		Z	4.36	65.89	15.62		150.0	
10528-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc duty cycle)	X	4.35	66.35	15.90	0.00	150.0	± 9.6 %
		Y	4.12	67.05	16.21		150.0	
		Z	4.37	65.91	15.65		150.0	
10529-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc duty cycle)	X	4.35	66.35	15.90	0.00	150.0	± 9.6 %
		Y	4.12	67.05	16.21		150.0	
		Z	4.37	65.91	15.65		150.0	
10531-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc duty cycle)	X	4.31	66.37	15.88	0.00	150.0	± 9.6 %
		Y	4.07	67.03	16.17		150.0	
		Z	4.35	65.96	15.64		150.0	
10532-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc duty cycle)	X	4.19	66.23	15.81	0.00	150.0	± 9.6 %
		Y	3.98	66.94	16.12		150.0	
		Z	4.22	65.81	15.56		150.0	
10533-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc duty cycle)	X	4.35	66.43	15.91	0.00	150.0	± 9.6 %
		Y	4.13	67.21	16.24		150.0	
		Z	4.38	65.98	15.65		150.0	
10534-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc duty cycle)	X	4.91	66.34	15.97	0.00	150.0	± 9.6 %
		Y	4.69	66.74	16.24		150.0	
		Z	4.94	66.04	15.77		150.0	
10535-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc duty cycle)	X	4.95	66.47	16.03	0.00	150.0	± 9.6 %
		Y	4.71	66.81	16.28		150.0	
		Z	4.99	66.21	15.85		150.0	
10536-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc duty cycle)	X	4.84	66.47	16.01	0.00	150.0	± 9.6 %
		Y	4.62	66.84	16.27		150.0	
		Z	4.87	66.16	15.80		150.0	
10537-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc duty cycle)	X	4.90	66.47	16.01	0.00	150.0	± 9.6 %
		Y	4.71	66.93	16.32		150.0	
		Z	4.93	66.13	15.79		150.0	
10538-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc duty cycle)	X	4.97	66.42	16.03	0.00	150.0	± 9.6 %
		Y	4.73	66.75	16.26		150.0	
		Z	5.00	66.13	15.84		150.0	
10540-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc duty cycle)	X	4.90	66.38	16.03	0.00	150.0	± 9.6 %
		Y	4.67	66.70	16.26		150.0	
		Z	4.93	66.11	15.84		150.0	

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10541-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc duty cycle)	X	4.88	66.31	15.97	0.00	150.0	± 9.6 %
		Y	4.67	66.70	16.23		150.0	
		Z	4.91	66.01	15.77		150.0	
10542-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc duty cycle)	X	5.04	66.41	16.04	0.00	150.0	± 9.6 %
		Y	4.80	66.76	16.28		150.0	
		Z	5.07	66.11	15.85		150.0	
10543-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc duty cycle)	X	5.11	66.49	16.11	0.00	150.0	± 9.6 %
		Y	4.85	66.80	16.33		150.0	
		Z	5.14	66.14	15.89		150.0	
10544-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc duty cycle)	X	5.25	66.42	15.96	0.00	150.0	± 9.6 %
		Y	5.07	66.65	16.18		150.0	
		Z	5.27	66.15	15.78		150.0	
10545-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc duty cycle)	X	5.42	66.84	16.13	0.00	150.0	± 9.6 %
		Y	5.21	67.04	16.34		150.0	
		Z	5.45	66.60	15.96		150.0	
10546-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc duty cycle)	X	5.28	66.54	15.99	0.00	150.0	± 9.6 %
		Y	5.09	66.74	16.19		150.0	
		Z	5.31	66.30	15.82		150.0	
10547-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc duty cycle)	X	5.36	66.65	16.04	0.00	150.0	± 9.6 %
		Y	5.22	67.07	16.36		150.0	
		Z	5.39	66.38	15.86		150.0	
10548-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc duty cycle)	X	5.50	67.24	16.31	0.00	150.0	± 9.6 %
		Y	5.18	67.11	16.36		150.0	
		Z	5.58	67.16	16.22		150.0	
10550-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc duty cycle)	X	5.34	66.72	16.10	0.00	150.0	± 9.6 %
		Y	5.22	67.23	16.45		150.0	
		Z	5.36	66.42	15.90		150.0	
10551-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc duty cycle)	X	5.28	66.50	15.95	0.00	150.0	± 9.6 %
		Y	5.06	66.66	16.14		150.0	
		Z	5.33	66.34	15.82		150.0	
10552-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc duty cycle)	X	5.26	66.54	15.97	0.00	150.0	± 9.6 %
		Y	5.07	66.82	16.21		150.0	
		Z	5.27	66.23	15.76		150.0	
10553-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc duty cycle)	X	5.31	66.48	15.97	0.00	150.0	± 9.6 %
		Y	5.11	66.71	16.17		150.0	
		Z	5.34	66.23	15.80		150.0	
10554-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc duty cycle)	X	5.67	66.75	16.04	0.00	150.0	± 9.6 %
		Y	5.52	66.90	16.21		150.0	
		Z	5.69	66.52	15.88		150.0	
10555-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc duty cycle)	X	5.76	66.97	16.13	0.00	150.0	± 9.6 %
		Y	5.58	67.06	16.29		150.0	
		Z	5.80	66.79	16.00		150.0	
10556-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc duty cycle)	X	5.80	67.08	16.18	0.00	150.0	± 9.6 %
		Y	5.63	67.23	16.36		150.0	
		Z	5.83	66.86	16.03		150.0	
10557-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc duty cycle)	X	5.76	66.95	16.13	0.00	150.0	± 9.6 %
		Y	5.57	67.06	16.29		150.0	
		Z	5.78	66.73	15.98		150.0	

10558-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc duty cycle)	X	5.77	67.00	16.18	0.00	150.0	± 9.6 %
		Y	5.54	66.98	16.27		150.0	
		Z	5.82	66.87	16.07		150.0	
10560-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc duty cycle)	X	5.79	66.93	16.18	0.00	150.0	± 9.6 %
		Y	5.57	66.97	16.30		150.0	
		Z	5.82	66.74	16.04		150.0	
10561-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc duty cycle)	X	5.72	66.92	16.20	0.00	150.0	± 9.6 %
		Y	5.51	66.95	16.32		150.0	
		Z	5.75	66.73	16.07		150.0	
10562-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc duty cycle)	X	5.77	67.08	16.28	0.00	150.0	± 9.6 %
		Y	5.56	67.09	16.39		150.0	
		Z	5.83	66.98	16.19		150.0	
10563-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc duty cycle)	X	5.87	67.06	16.24	0.00	150.0	± 9.6 %
		Y	5.77	67.47	16.55		150.0	
		Z	5.92	66.90	16.12		150.0	
10564-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	X	4.62	66.82	16.22	0.46	150.0	± 9.6 %
		Y	4.39	67.43	16.46		150.0	
		Z	4.66	66.47	16.04		150.0	
10565-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	X	4.82	67.25	16.56	0.46	150.0	± 9.6 %
		Y	4.56	67.87	16.81		150.0	
		Z	4.86	66.91	16.38		150.0	
10566-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	X	4.65	67.05	16.34	0.46	150.0	± 9.6 %
		Y	4.40	67.63	16.58		150.0	
		Z	4.70	66.72	16.17		150.0	
10567-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	X	4.70	67.52	16.78	0.46	150.0	± 9.6 %
		Y	4.46	68.13	17.04		150.0	
		Z	4.73	67.13	16.55		150.0	
10568-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	X	4.54	66.72	16.04	0.46	150.0	± 9.6 %
		Y	4.23	67.04	16.12		150.0	
		Z	4.60	66.47	15.91		150.0	
10569-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	X	4.69	67.76	16.91	0.46	150.0	± 9.6 %
		Y	4.48	68.53	17.28		150.0	
		Z	4.70	67.29	16.65		150.0	
10570-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	X	4.68	67.52	16.79	0.46	150.0	± 9.6 %
		Y	4.43	68.13	17.07		150.0	
		Z	4.72	67.10	16.55		150.0	
10571-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	X	1.13	64.43	15.18	0.46	130.0	± 9.6 %
		Y	1.09	65.61	16.13		130.0	
		Z	1.02	62.91	14.24		130.0	
10572-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	X	1.14	65.04	15.56	0.46	130.0	± 9.6 %
		Y	1.11	66.40	16.63		130.0	
		Z	1.02	63.36	14.54		130.0	
10573-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	X	2.01	84.38	21.80	0.46	130.0	± 9.6 %
		Y	35.15	138.74	38.20		130.0	
		Z	0.86	72.57	16.97		130.0	
10574-AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	X	1.29	71.29	18.68	0.46	130.0	± 9.6 %
		Y	1.41	75.83	21.40		130.0	
		Z	1.02	67.46	16.65		130.0	

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10575-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	X	4.40	66.56	16.20	0.46	130.0	± 9.6 %
		Y	4.16	67.14	16.39		130.0	
		Z	4.44	66.24	16.07		130.0	
10576-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	X	4.43	66.78	16.30	0.46	130.0	± 9.6 %
		Y	4.20	67.45	16.55		130.0	
		Z	4.46	66.42	16.14		130.0	
10577-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	X	4.59	67.02	16.46	0.46	130.0	± 9.6 %
		Y	4.33	67.64	16.68		130.0	
		Z	4.64	66.69	16.31		130.0	
10578-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	X	4.50	67.20	16.59	0.46	130.0	± 9.6 %
		Y	4.26	67.87	16.85		130.0	
		Z	4.54	66.83	16.41		130.0	
10579-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	X	4.24	66.27	15.75	0.46	130.0	± 9.6 %
		Y	3.96	66.67	15.85		130.0	
		Z	4.30	66.02	15.65		130.0	
10580-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	X	4.27	66.31	15.76	0.46	130.0	± 9.6 %
		Y	3.95	66.55	15.77		130.0	
		Z	4.34	66.08	15.68		130.0	
10581-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	X	4.41	67.27	16.55	0.46	130.0	± 9.6 %
		Y	4.19	68.04	16.88		130.0	
		Z	4.44	66.86	16.35		130.0	
10582-AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	X	4.16	66.00	15.50	0.46	130.0	± 9.6 %
		Y	3.86	66.35	15.58		130.0	
		Z	4.23	65.78	15.42		130.0	
10583-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	X	4.40	66.56	16.20	0.46	130.0	± 9.6 %
		Y	4.16	67.14	16.39		130.0	
		Z	4.44	66.24	16.07		130.0	
10584-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	X	4.43	66.78	16.30	0.46	130.0	± 9.6 %
		Y	4.20	67.45	16.55		130.0	
		Z	4.46	66.42	16.14		130.0	
10585-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	X	4.59	67.02	16.46	0.46	130.0	± 9.6 %
		Y	4.33	67.64	16.68		130.0	
		Z	4.64	66.69	16.31		130.0	
10586-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	X	4.50	67.20	16.59	0.46	130.0	± 9.6 %
		Y	4.26	67.87	16.85		130.0	
		Z	4.54	66.83	16.41		130.0	
10587-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	X	4.24	66.27	15.75	0.46	130.0	± 9.6 %
		Y	3.96	66.67	15.85		130.0	
		Z	4.30	66.02	15.65		130.0	
10588-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	X	4.27	66.31	15.76	0.46	130.0	± 9.6 %
		Y	3.95	66.55	15.77		130.0	
		Z	4.34	66.08	15.68		130.0	
10589-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	X	4.41	67.27	16.55	0.46	130.0	± 9.6 %
		Y	4.19	68.04	16.88		130.0	
		Z	4.44	66.86	16.35		130.0	
10590-AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	X	4.16	66.00	15.50	0.46	130.0	± 9.6 %
		Y	3.86	66.35	15.58		130.0	
		Z	4.23	65.78	15.42		130.0	

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10591-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle)	X	4.56	66.67	16.34	0.46	130.0	± 9.6 %
		Y	4.32	67.28	16.57		130.0	
		Z	4.59	66.33	16.20		130.0	
10592-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc duty cycle)	X	4.67	66.95	16.47	0.46	130.0	± 9.6 %
		Y	4.40	67.50	16.68		130.0	
		Z	4.73	66.64	16.33		130.0	
10593-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc duty cycle)	X	4.59	66.81	16.31	0.46	130.0	± 9.6 %
		Y	4.33	67.38	16.52		130.0	
		Z	4.64	66.52	16.18		130.0	
10594-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc duty cycle)	X	4.65	67.01	16.49	0.46	130.0	± 9.6 %
		Y	4.38	67.56	16.71		130.0	
		Z	4.70	66.70	16.35		130.0	
10595-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc duty cycle)	X	4.61	66.98	16.39	0.46	130.0	± 9.6 %
		Y	4.34	67.53	16.61		130.0	
		Z	4.66	66.65	16.24		130.0	
10596-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc duty cycle)	X	4.54	66.93	16.37	0.46	130.0	± 9.6 %
		Y	4.25	67.39	16.55		130.0	
		Z	4.60	66.62	16.23		130.0	
10597-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc duty cycle)	X	4.49	66.79	16.22	0.46	130.0	± 9.6 %
		Y	4.22	67.27	16.39		130.0	
		Z	4.55	66.50	16.09		130.0	
10598-AAB	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc duty cycle)	X	4.49	67.08	16.53	0.46	130.0	± 9.6 %
		Y	4.26	67.70	16.78		130.0	
		Z	4.53	66.74	16.37		130.0	
10599-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc duty cycle)	X	5.23	67.11	16.59	0.46	130.0	± 9.6 %
		Y	5.12	67.88	17.03		130.0	
		Z	5.27	66.86	16.46		130.0	
10600-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc duty cycle)	X	5.32	67.43	16.72	0.46	130.0	± 9.6 %
		Y	5.06	67.70	16.91		130.0	
		Z	5.40	67.28	16.64		130.0	
10601-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc duty cycle)	X	5.23	67.24	16.64	0.46	130.0	± 9.6 %
		Y	5.01	67.64	16.90		130.0	
		Z	5.29	67.02	16.53		130.0	
10602-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc duty cycle)	X	5.32	67.24	16.55	0.46	130.0	± 9.6 %
		Y	5.04	67.46	16.72		130.0	
		Z	5.42	67.18	16.53		130.0	
10603-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc duty cycle)	X	5.39	67.57	16.87	0.46	130.0	± 9.6 %
		Y	5.05	67.60	16.95		130.0	
		Z	5.48	67.46	16.80		130.0	
10604-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc duty cycle)	X	5.28	67.19	16.65	0.46	130.0	± 9.6 %
		Y	5.00	67.36	16.79		130.0	
		Z	5.37	67.14	16.62		130.0	
10605-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc duty cycle)	X	5.31	67.30	16.70	0.46	130.0	± 9.6 %
		Y	5.01	67.43	16.83		130.0	
		Z	5.39	67.19	16.65		130.0	
10606-AAB	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc duty cycle)	X	5.10	66.73	16.26	0.46	130.0	± 9.6 %
		Y	4.93	67.27	16.59		130.0	
		Z	5.13	66.48	16.14		130.0	

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10607-AAB	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc duty cycle)	X	4.40	66.00	15.99	0.46	130.0	± 9.6 %
		Y	4.19	66.71	16.28		130.0	
		Z	4.43	65.63	15.81		130.0	
10608-AAB	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc duty cycle)	X	4.54	66.32	16.13	0.46	130.0	± 9.6 %
		Y	4.28	66.94	16.39		130.0	
		Z	4.59	65.99	15.97		130.0	
10609-AAB	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	X	4.43	66.14	15.93	0.46	130.0	± 9.6 %
		Y	4.18	66.77	16.19		130.0	
		Z	4.48	65.81	15.78		130.0	
10610-AAB	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	X	4.48	66.33	16.12	0.46	130.0	± 9.6 %
		Y	4.24	66.96	16.39		130.0	
		Z	4.53	65.98	15.95		130.0	
10611-AAB	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	X	4.40	66.11	15.95	0.46	130.0	± 9.6 %
		Y	4.14	66.70	16.20		130.0	
		Z	4.44	65.77	15.79		130.0	
10612-AAB	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	X	4.38	66.21	15.97	0.46	130.0	± 9.6 %
		Y	4.09	66.68	16.16		130.0	
		Z	4.44	65.90	15.83		130.0	
10613-AAB	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	X	4.37	66.02	15.81	0.46	130.0	± 9.6 %
		Y	4.10	66.52	16.00		130.0	
		Z	4.44	65.75	15.68		130.0	
10614-AAB	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	X	4.36	66.31	16.11	0.46	130.0	± 9.6 %
		Y	4.12	66.94	16.38		130.0	
		Z	4.40	65.96	15.94		130.0	
10615-AAB	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	X	4.38	65.89	15.68	0.46	130.0	± 9.6 %
		Y	4.11	66.48	15.90		130.0	
		Z	4.44	65.60	15.55		130.0	
10616-AAB	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	X	5.04	66.30	16.17	0.46	130.0	± 9.6 %
		Y	4.81	66.63	16.40		130.0	
		Z	5.08	66.07	16.04		130.0	
10617-AAB	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	X	5.07	66.41	16.20	0.46	130.0	± 9.6 %
		Y	4.82	66.67	16.40		130.0	
		Z	5.15	66.26	16.12		130.0	
10618-AAB	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	X	4.99	66.49	16.26	0.46	130.0	± 9.6 %
		Y	4.75	66.78	16.48		130.0	
		Z	5.04	66.28	16.14		130.0	
10619-AAB	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	X	5.01	66.29	16.09	0.46	130.0	± 9.6 %
		Y	4.79	66.70	16.36		130.0	
		Z	5.05	66.06	15.96		130.0	
10620-AAB	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	X	5.07	66.29	16.14	0.46	130.0	± 9.6 %
		Y	4.80	66.49	16.29		130.0	
		Z	5.13	66.09	16.03		130.0	
10621-AAB	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	X	5.09	66.45	16.35	0.46	130.0	± 9.6 %
		Y	4.85	66.75	16.57		130.0	
		Z	5.15	66.25	16.23		130.0	
10622-AAB	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	X	5.08	66.53	16.39	0.46	130.0	± 9.6 %
		Y	4.83	66.78	16.59		130.0	
		Z	5.14	66.36	16.28		130.0	

10623-AAB	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	X	4.96	66.05	15.99	0.46	130.0	± 9.6 %
		Y	4.74	66.39	16.22		130.0	
		Z	5.02	65.88	15.90		130.0	
10624-AAB	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	X	5.16	66.32	16.20	0.46	130.0	± 9.6 %
		Y	4.91	66.60	16.40		130.0	
		Z	5.22	66.13	16.10		130.0	
10625-AAB	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	X	5.25	66.46	16.34	0.46	130.0	± 9.6 %
		Y	5.01	66.87	16.61		130.0	
		Z	5.43	66.66	16.42		130.0	
10626-AAB	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	X	5.37	66.32	16.13	0.46	130.0	± 9.6 %
		Y	5.18	66.52	16.32		130.0	
		Z	5.41	66.14	16.02		130.0	
10627-AAB	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	X	5.59	66.90	16.39	0.46	130.0	± 9.6 %
		Y	5.36	67.08	16.58		130.0	
		Z	5.64	66.75	16.30		130.0	
10628-AAB	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	X	5.36	66.27	16.00	0.46	130.0	± 9.6 %
		Y	5.15	66.43	16.17		130.0	
		Z	5.41	66.15	15.92		130.0	
10629-AAB	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	X	5.46	66.45	16.08	0.46	130.0	± 9.6 %
		Y	5.33	66.94	16.43		130.0	
		Z	5.50	66.26	15.98		130.0	
10630-AAB	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	X	5.68	67.33	16.53	0.46	130.0	± 9.6 %
		Y	5.30	67.01	16.48		130.0	
		Z	5.83	67.48	16.58		130.0	
10631-AAB	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	X	5.68	67.46	16.80	0.46	130.0	± 9.6 %
		Y	5.39	67.46	16.91		130.0	
		Z	5.77	67.39	16.74		130.0	
10632-AAB	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	X	5.60	67.13	16.65	0.46	130.0	± 9.6 %
		Y	5.50	67.73	17.05		130.0	
		Z	5.63	66.87	16.50		130.0	
10633-AAB	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	X	5.39	66.38	16.10	0.46	130.0	± 9.6 %
		Y	5.16	66.54	16.27		130.0	
		Z	5.48	66.37	16.07		130.0	
10634-AAB	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	X	5.42	66.59	16.25	0.46	130.0	± 9.6 %
		Y	5.22	66.83	16.48		130.0	
		Z	5.46	66.38	16.13		130.0	
10635-AAB	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	X	5.26	65.75	15.53	0.46	130.0	± 9.6 %
		Y	5.03	65.88	15.68		130.0	
		Z	5.33	65.66	15.49		130.0	
10636-AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	X	5.80	66.66	16.21	0.46	130.0	± 9.6 %
		Y	5.64	66.80	16.37		130.0	
		Z	5.84	66.53	16.13		130.0	
10637-AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	X	5.91	66.96	16.34	0.46	130.0	± 9.6 %
		Y	5.72	67.05	16.49		130.0	
		Z	5.98	66.89	16.30		130.0	
10638-AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	X	5.94	67.02	16.35	0.46	130.0	± 9.6 %
		Y	5.77	67.21	16.55		130.0	
		Z	5.98	66.86	16.26		130.0	

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10639-AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	X	5.90	66.90	16.34	0.46	130.0	± 9.6 %
		Y	5.70	66.99	16.48		130.0	
		Z	5.95	66.78	16.26		130.0	
10640-AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	X	5.85	66.77	16.21	0.46	130.0	± 9.6 %
		Y	5.60	66.70	16.26		130.0	
		Z	5.94	66.77	16.19		130.0	
10641-AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	X	5.95	66.85	16.27	0.46	130.0	± 9.6 %
		Y	5.73	66.88	16.38		130.0	
		Z	6.01	66.77	16.22		130.0	
10642-AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	X	5.98	67.10	16.57	0.46	130.0	± 9.6 %
		Y	5.76	67.11	16.68		130.0	
		Z	6.04	66.98	16.50		130.0	
10643-AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	X	5.82	66.74	16.27	0.46	130.0	± 9.6 %
		Y	5.59	66.71	16.35		130.0	
		Z	5.88	66.67	16.23		130.0	
10644-AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	X	5.88	66.93	16.39	0.46	130.0	± 9.6 %
		Y	5.65	66.92	16.48		130.0	
		Z	5.97	66.96	16.39		130.0	
10645-AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	X	6.00	66.98	16.38	0.46	130.0	± 9.6 %
		Y	5.89	67.36	16.67		130.0	
		Z	6.11	67.04	16.40		130.0	
10646-AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	X	10.64	95.54	31.22	9.30	60.0	± 9.6 %
		Y	4.79	84.10	28.76		60.0	
		Z	10.44	97.20	33.10		60.0	
10647-AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	X	9.38	93.52	30.68	9.30	60.0	± 9.6 %
		Y	4.24	81.79	27.97		60.0	
		Z	9.23	95.05	32.51		60.0	
10648-AAA	CDMA2000 (1x Advanced)	X	0.45	60.96	7.58	0.00	150.0	± 9.6 %
		Y	0.27	60.00	4.46		150.0	
		Z	0.46	60.51	7.45		150.0	
10652-AAB	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	X	3.44	66.86	15.90	2.23	80.0	± 9.6 %
		Y	3.11	67.55	15.78		80.0	
		Z	3.23	65.63	15.61		80.0	
10653-AAB	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	X	4.00	66.30	16.33	2.23	80.0	± 9.6 %
		Y	3.63	66.57	16.36		80.0	
		Z	3.80	65.27	16.02		80.0	
10654-AAB	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	X	4.02	65.95	16.40	2.23	80.0	± 9.6 %
		Y	3.68	66.02	16.44		80.0	
		Z	3.82	64.96	16.07		80.0	
10655-AAB	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	X	4.10	65.87	16.44	2.23	80.0	± 9.6 %
		Y	3.77	65.78	16.47		80.0	
		Z	3.89	64.93	16.12		80.0	
10658-AAA	Pulse Waveform (200Hz, 10%)	X	3.96	69.40	12.41	10.00	50.0	± 9.6 %
		Y	3.54	68.64	11.84		50.0	
		Z	6.60	76.50	15.95		50.0	
10659-AAA	Pulse Waveform (200Hz, 20%)	X	3.35	69.24	11.38	6.99	60.0	± 9.6 %
		Y	2.54	68.41	10.67		60.0	
		Z	15.62	86.85	17.81		60.0	

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10660-AAA	Pulse Waveform (200Hz, 40%)	X	3.13	70.75	10.92	3.98	80.0	± 9.6 %
		Y	2.65	71.33	10.38		80.0	
		Z	100.00	100.70	18.97		80.0	
10661-AAA	Pulse Waveform (200Hz, 60%)	X	3.01	72.21	10.50	2.22	100.0	± 9.6 %
		Y	0.47	62.70	6.02		100.0	
		Z	0.86	65.62	7.78		100.0	
10662-AAA	Pulse Waveform (200Hz, 80%)	X	0.23	60.01	4.55	0.97	120.0	± 9.6 %
		Y	0.53	60.44	2.25		120.0	
		Z	0.27	60.00	2.59		120.0	

[I] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.