HCT Co., Ltd.
74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Tel. +82 31 634 6300 Fax. +82 31 645 6401

SAR TEST REPORT

Applicant Name: **Panasonic Corporation of North America** Two Riverfront Plaza, 9th floor Newark, NJ 07102-5490	**Date of Issue:** Jul. 29, 2022 **Test Report No.:** HCT-SR-2206-FC004 **Test Site: HCT CO., LTD.**

FCC ID: ACJ9TGWL22B

Equipment Type:	**Intel Wi-Fi 6 AX211**
Application Type	**Certification**
FCC Rule Part(s):	**47CFR §2.1093**
Model Name:	**WL22B**
Host Model Name:	**CF-33**
Date of Test:	**Apr. 17, 2022 ~ May. 13, 2022**

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

Kyung-Mo, Kim
Test Engineer
SAR Team
Certification Division

Reviewed By

Yun-jeang, Heo
Technical Manager
SAR Team
Certification Division

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Jul. 29, 2022	Initial Release

This test results were applied only to the test methods required by the standard.

The above Test Report is not related to the accredited test result by (KS Q) ISO/IEC 17025 and KOLAS(Korea Laboratory Accreditation Scheme), which signed the ILAC-MRA.

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
Fax.:	+82 31 645 6401
Attestation of SAR test result	
Applicant Name:	Panasonic Corporation of North America
FCC ID:	ACJ9TGWL22B
Model:	WL22B
Host Model Name	CF-33
EUT Type:	Intel Wi-Fi 6 AX211
Application Type:	Certification

The Highest Reported SAR			
Band	Tx. Frequency (㎒)	Equipment Class	Reported SAR 1g SAR (W/kg)
2.4GHz WLAN	2 412 ~ 2 472	DTS	1.32
U-NII-1	5 180 ~ 5 250	NII	N/A
U-NII-2A	5 260 ~ 5 320	NII	1.14
U-NII-2C	5 500 ~ 5 720	NII	1.11
U-NII-3	5 745 ~ 5 825	NII	1.20
Bluetooth	2 402 ~ 2 480	DSS	0.29
Simultaneous Transmission Analysis			1.324
Date(s) of Tests:	Apr. 17, 2022 ~ May. 13, 2022		

2. DEVICE UNDER TEST DESCRIPTION

2.1 DUT specification

Device Wireless specification overview		
Band & Mode	**Operating Mode**	**Tx Frequency**
U-NII-1	Data	5 180 ㎒ ~ 5 250 ㎒
U-NII-2A	Data	5 260 ㎒ ~ 5 320 ㎒
U-NII-2C	Data	5 500 ㎒ ~ 5 720 ㎒
U-NII-3	Data	5 745 ㎒ ~ 5 825 ㎒
U-NII-5	Data	5 955 ㎒ ~ 6 415 ㎒
U-NII-6	Data	6 435 ㎒ ~ 6 525 ㎒
U-NII-7	Data	6 535 ㎒ ~ 6 875 ㎒
U-NII-8	Data	6 895 ㎒ ~ 7 115 ㎒
2.4 ㎓ WLAN	Data	2 412 ㎒ ~ 2 472 ㎒
Bluetooth / LE 5.2	Data	2 402 ㎒ ~ 2 480 ㎒
Device Serial Numbers	**Mode**	**Serial Number**
	2.4 ㎓ WLAN, 5 ㎓ WLAN, Bluetooth	S0P-21-03453 / S0P-21-03451 / S0P-21-03661 / S0P-21-03663

2.2 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 the IEEE1528-2013.

2.2.1 Maximum 2.4 GHz, 5 GHz WIFI output power

Tablet/Convertible mode

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
2.4 GHz	20MHz DSSS (802.11b)	1-12	16.50	15.75	N/A	N/A
		13	15.75	15.75	N/A	N/A
	20MHz OFDM (802.11g)	1-11	16.50	15.75	N/A	N/A
		12	15.75	15.50	N/A	N/A
		13	12.25	12.00	N/A	N/A
	20MHz OFDM (802.11n)	1-11	16.50	15.75	16.50	15.75
		12	15.75	15.50	12.25	12.25
		13	12.25	12.00	10.25	10.25
	20MHz OFDM (802.11ax)	1-11	16.50	15.75	16.50	15.75
		12	15.75	15.50	12.25	12.25
		13	12.25	12.00	10.25	10.25
	40MHz OFDM (802.11n)	3-7	16.50	15.75	15.50	15.50
		8	16.50	15.75	14.25	14.25
		9	16.25	15.75	14.75	14.75
		10	11.25	11.25	8.75	8.75
		11	11.25	11.00	9.75	9.75
	40MHz OFDM (802.11ax)	3-7	16.50	15.75	15.50	15.50
		8	16.50	15.75	14.25	14.25
		9	16.25	15.75	14.75	14.75
		10	11.25	11.25	8.75	8.75
		11	11.25	11.00	9.75	9.75

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
Wi-Fi 5GHz Band I,II	20MHz OFDM (802.11a)	36-64	14.50	13.50	N/A	N/A
	20MHz OFDM (802.11n)	36-56	14.50	13.50	14.50	13.50
		60	14.50	13.50	14.50	13.50
		64	14.50	13.50	14.50	13.50
	20MHz OFDM (802.11ac) (802.11ax)	36-56	14.50	13.50	14.50	13.50
		60	14.50	13.50	14.50	13.50
		64	14.50	13.50	14.50	13.50
	40MHz OFDM (802.11n)	38-54	14.50	13.50	14.50	13.50
		62	14.50	13.50	14.50	13.50
	40MHz OFDM (802.11ac) (802.11ax)	38-54	14.50	13.50	14.50	13.50
		62	14.50	13.50	14.50	13.50
	80MHz OFDM (802.11ac) (802.11ax)	42	14.50	13.50	14.50	13.50
		58	14.50	13.50	14.50	13.50
	160MHz OFDM (802.11ac)	50	14.50	13.50	13.25	13.25
	160MHz OFDM (802.11ax)	50	14.50	13.50	13.25	13.25

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
Wi-Fi 5GHz Band III	20MHz OFDM (802.11a)	100-140	12.75	12.75	N/A	N/A
	20MHz OFDM (802.11n)	100-144	12.75	12.75	N/A	N/A
	20MHz OFDM (802.11ac) (802.11ax)	100-144	12.75	12.75	N/A	N/A
	40MHz OFDM (802.11n)	102-142	12.75	12.75	12.75	12.75
	40MHz OFDM (802.11ac) (802.11ax)	102-142	12.75	12.75	12.75	12.75
	80MHz OFDM (802.11ac)	106-138	12.75	12.75	12.75	12.75
	80MHz OFDM (802.11ax)	106-138	12.75	12.75	12.75	12.75
	160MHz OFDM (802.11ac)	114	12.75	12.75	12.75	12.75
	160MHz OFDM (802.11ax)	114	12.75	12.75	12.75	12.75
Wi-Fi 5GHz Band IV	20MHz OFDM (802.11a)	149-165	13.00	14.00	13.00	14.00
	20MHz OFDM (802.11n)	149-165	13.00	14.00	13.00	14.00
	20MHz OFDM (802.11ac) (802.11ax)	149-165	13.00	14.00	13.00	14.00
	40MHz OFDM (802.11n)	151	13.00	14.00	13.00	14.00
		159	13.00	14.00	13.00	14.00
	40MHz OFDM (802.11ac) (802.11ax)	151	13.00	14.00	13.00	14.00
		159	13.00	14.00	13.00	14.00
	80MHz OFDM (802.11ac)	155	13.00	14.00	13.00	14.00
	80MHz OFDM (802.11ax)	155	13.00	14.00	13.00	14.00

Laptop mode

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
2.4 GHz	20MHz DSSS (802.11b)	1	21.00	21.00	N/A	N/A
		2-10	21.00	21.00	N/A	N/A
		11	21.00	21.00	N/A	N/A
		12	19.00	19.00	N/A	N/A
		13	15.75	16.00	N/A	N/A
	20MHz OFDM (802.11g)	1	18.25	18.25	N/A	N/A
		2	20.00	20.00	N/A	N/A
		3-7	21.00	21.00	N/A	N/A
		8-9	20.50	20.50	N/A	N/A
		10	20.00	20.00	N/A	N/A
		11	18.25	18.00	N/A	N/A
		12	15.75	15.50	N/A	N/A
		13	12.25	12.00	N/A	N/A
	20MHz OFDM (802.11n)	1	18.25	18.25	16.50	16.50
		2	20.00	20.00	18.00	18.00
		3-7	21.00	21.00	21.00	21.00
		8-9	20.50	20.50	19.75	19.75
		10	20.00	20.00	19.50	19.50
		11	18.25	18.00	16.50	16.50
		12	15.75	15.50	12.25	12.25
		13	12.25	12.00	10.25	10.25
	20MHz OFDM (802.11ax)	1	18.25	18.25	16.50	16.50
		2	20.00	20.00	18.00	18.00
		3-7	21.00	21.00	21.00	21.00
		8-9	20.50	20.50	19.75	19.75
		10	20.00	20.00	19.50	19.50
		11	18.25	18.00	16.50	16.50
		12	15.75	15.50	12.25	12.25
		13	12.25	12.00	10.25	10.25
	40MHz OFDM (802.11n)	3	16.50	16.25	15.50	15.50
		4	17.00	17.00	16.00	16.00
		5	17.50	17.50	16.00	16.00
		6	17.75	18.25	16.25	16.25
		7	17.00	17.00	15.75	15.75
		8	16.50	16.00	14.25	14.25
		9	16.25	16.00	14.75	14.75
		10	11.25	11.25	8.75	8.75
		11	11.25	11.00	9.75	9.75
	40MHz OFDM (802.11ax)	3	16.50	16.25	15.50	15.50
		4	17.00	17.00	16.00	16.00
		5	17.50	17.50	16.00	16.00
		6	17.75	18.25	16.25	16.25
		7	17.00	17.00	15.75	15.75
		8	16.50	16.00	14.25	14.25
		9	16.25	16.00	14.75	14.75
		10	11.25	11.25	8.75	8.75
		11	11.25	11.00	9.75	9.75

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
Wi-Fi 5GHz Band I,II	20MHz OFDM (802.11a)	36	18.50	19.75	N/A	N/A
		40-60	21.00	21.00	N/A	N/A
		64	19.00	20.75	N/A	N/A
	20MHz OFDM (802.11n)	36	18.50	19.75	16.50	16.50
		40-60	21.00	21.00	18.25	18.25
		64	19.00	20.75	17.00	17.00
	20MHz OFDM (802.11ac) (802.11ax)	36	18.50	19.75	16.50	16.50
		40-60	21.00	21.00	18.25	18.25
		64	19.00	20.75	17.00	17.00
	40MHz OFDM (802.11n)	38	17.75	19.50	15.75	15.75
		46	19.25	20.50	17.75	17.75
		54	20.50	20.50	18.75	18.75
		62	17.00	18.25	16.50	16.50
	40MHz OFDM (802.11ac) (802.11ax)	38	17.75	19.50	15.75	15.75
		46	19.25	20.50	17.75	17.75
		54	20.50	20.50	18.75	18.75
		62	17.00	18.25	16.50	16.50
	80MHz OFDM (802.11ac)	42	17.50	18.75	16.00	16.00
		58	18.00	17.75	16.00	16.00
	80MHz OFDM (802.11ax)	42	17.50	18.75	16.00	16.00
		58	18.00	17.75	16.00	16.00
	160MHz OFDM (802.11ac)	50	15.00	15.25	13.25	13.25
	160MHz OFDM (802.11ax)	50	15.00	15.25	13.25	13.25

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
Wi-Fi 5GHz Band III	20MHz OFDM (802.11a)	100	20.25	20.50	N/A	N/A
		120	21.00	21.00	N/A	N/A
		140	20.00	20.75	N/A	N/A
	20MHz OFDM (802.11n)	100	20.25	20.50	19.00	19.00
		120	21.00	21.00	19.00	19.00
		140	20.00	20.75	18.50	18.50
		144	21.00	21.00	18.50	18.50
	20MHz OFDM (802.11ac) (802.11ax)	100	20.25	20.50	19.00	19.00
		120	21.00	21.00	19.00	19.00
		140	20.00	20.75	18.50	18.50
		144	21.00	21.00	18.50	18.50
	40MHz OFDM (802.11n)	102	19.00	19.75	17.25	17.25
		118	21.00	21.00	21.00	21.00
		134	21.00	21.00	19.50	19.50
		142	21.00	21.00	18.50	18.50
	40MHz OFDM (802.11ac) (802.11ax)	102	19.00	19.75	17.25	17.25
		118	21.00	21.00	21.00	21.00
		134	21.00	21.00	19.50	19.50
		142	21.00	21.00	18.50	18.50
	80MHz OFDM (802.11ac)	106	18.50	19.50	17.00	17.00
		122	21.00	21.00	21.00	21.00
		138	21.00	21.00	21.00	21.00
	80MHz OFDM (802.11ax)	106	18.50	19.50	17.00	17.00
		122	21.00	21.00	21.00	21.00
		138	21.00	21.00	21.00	21.00
	160MHz OFDM (802.11ac)	114	16.25	15.50	14.50	14.50
	160MHz OFDM (802.11ax)	114	16.25	15.50	14.50	14.50

Band	Technology	Central Channel	Maximum Target Power for Host Approval(dBm)			
			SISO		MIMO	
			Main Antenna	Aux Antenna	Main Antenna	Aux Antenna
Wi-Fi 5GHz Band IV	20MHz OFDM (802.11a)	149-165	21.00	21.00	N/A	N/A
	20MHz OFDM (802.11n)	149	21.00	21.00	21.00	21.00
		157	21.00	21.00	21.00	21.00
		165	21.00	21.00	21.00	21.00
	20MHz OFDM (802.11ac) (802.11ax)	149	21.00	21.00	21.00	21.00
		157	21.00	21.00	21.00	21.00
		165	21.00	21.00	21.00	21.00
	40MHz OFDM (802.11n)	151	21.00	21.00	20.50	20.50
		159	21.00	21.00	21.00	21.00
	40MHz OFDM (802.11ac) (802.11ax)	151	21.00	21.00	20.50	20.50
		159	21.00	21.00	21.00	21.00
	80MHz OFDM (802.11ac)	155	20.25	20.25	18.75	18.75
	80MHz OFDM (802.11ax)	155	20.25	20.25	18.75	18.75

2.2.2 Nominal and Maximum Bluetooth Power

Mode / Band			Modulated Average (dBm)
Bluetooth	DH-5	Maximum	10.5
		Nominal	9.5
	2-DH5	Maximum	7.0
		Nominal	6.0
	3-DH5	Maximum	7.0
		Nominal	6.0
	LE	Maximum	7.0
		Nominal	6.0

2.3 Test Methodology and Procedures

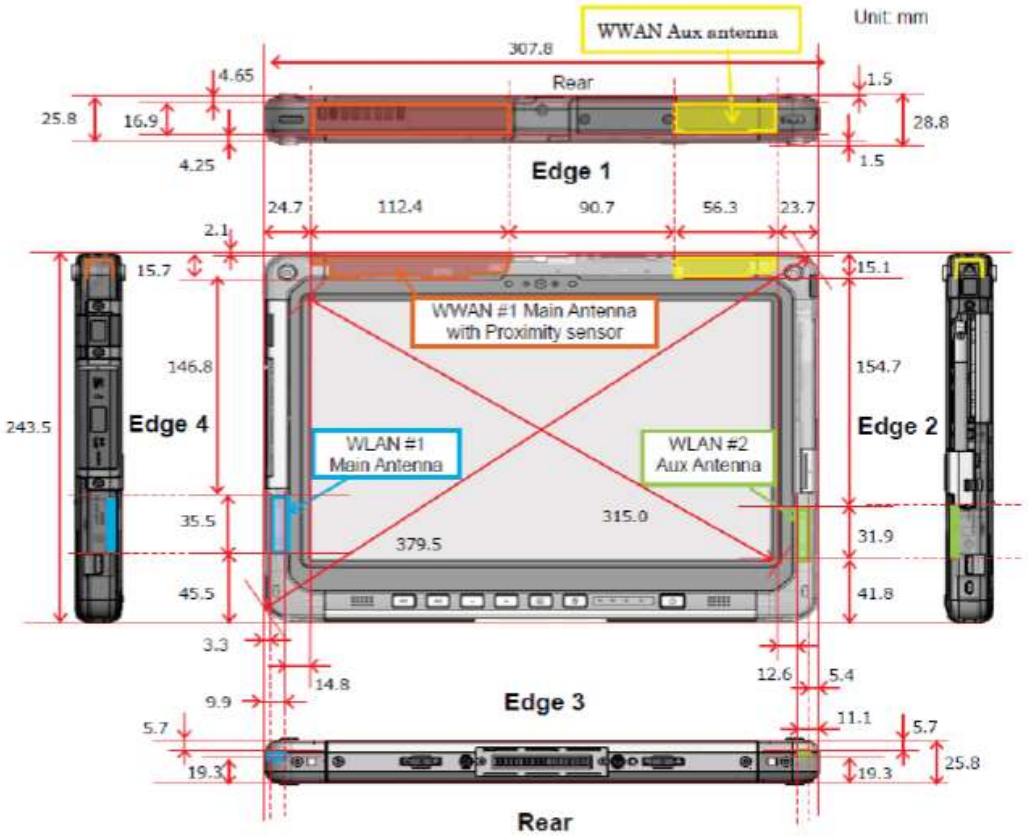
The tests documented in this report were performed in accordance with IEEE Standard 1528-2013 and the following published KDB procedures.

- FCC KDB Publication 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB Publication 616217 D04 SAR for Laptop and tablets v01r02
- FCC KDB Publication 447498 D01 General RF Exposure Guidance v06
- FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- FCC KDB Publication 865664 D02 SAR Reporting v01r02

In Addition to the above, the following information was used.

- April 2015 TCB Workshop Notes (Simultaneous transmission summation clarified)
- October 2016 TCB Workshop Notes (Bluetooth Duty Factor)
- April 2019 TCBC Workshop Notes (IEEE 802.11 ax)

2.4 DUT Antenna Locations [Host Model]



2.5 SAR Summation Scenario for Host Model

Simultaneous transmission paths

This device contains multiple transmitters that may operate simultaneously, and therefore requires a simultaneous transmission analysis according FCC KDB Publication 447498 D01 General RF Exposure Guidance v06

Simultaneous Transmission Scenarios	
Applicable Combination	Body Exposure Condition
2.4 GHz Wifi 1(Main) + 2.4 GHz Wifi 2(Aux)	Yes
5 GHz Wifi 1(Main) + 5 GHz Wifi 2(Aux)	Yes
6E Wifi 1(Main) + 6E Wifi 2(Aux)	Yes
2.4 GHz Wifi #1(Main) + 2.4 GHz Bluetooth	Yes
5 GHz Wifi #1(Main) + 2.4 GHz Bluetooth	Yes
6E Wifi #1(Main)+ 2.4 GHz Bluetooth	Yes

1. WIFI 2.4 / 5 GHz and 6E AUX antenna and Bluetooth share the same antenna path and cannot transmit simultaneously
2. The highest reported SAR for each exposure condition is used for SAR summation purpose.
3. Simultaneous Transmission Analysis between the WWAN module and the WLAN module will be evaluated in the SAR report, FCC ID : ACJ9TGWW22B, Report No.HCT-SR-2206-FC009, of the WWAN module.

2.6 WLAN Test Considerations.

Since U-NII-1 and U-NII-2A bands have the same maximum output power and the highest reported SAR for U-NII-2A is less than 1.2 W/kg for 1g SAR and is less than 3.0 W/kg for 10g SAR, SAR is not required for U-NII-1 band according to FCC KDB 248227D01v02r02.

This device supports IEEE 802.11 ax with the following features:
a) Up to 160 ㎒ Bandwidth at 5GHz
b) Up to 40 ㎒ Bandwidth at 2.4GHz
c) 2Tx antenna output
d) 1024 QAM is supported
e) TDWR channels are supported.
f) Straddle channels are supported.
.
Per April 2019 TCB Workshop Notes, SAR testing was not required for 802.11ax when applying the initial test configuration procedures of KDB 248227, with 802.11ax considered a higher order 802.11 mode

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.

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

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 DASY5 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 7 is working with SAR Measurement system 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.

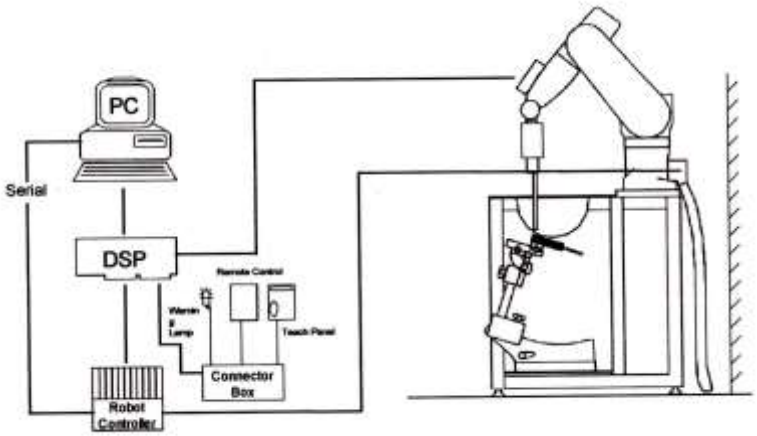


Figure 2. HCT SAR Lab. Test Measurement Set-up

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 area, 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.

<table>
<tr><td colspan="3"></td><td>≤ 3 GHz</td><td>> 3 GHz</td></tr>
<tr><td colspan="3">Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface</td><td>5±1 mm</td><td>·δ·ln(2)±0.5 mm</td></tr>
<tr><td colspan="3">Maximum probe angle from probe axis to phantom surface
normal at the measurement location</td><td>30°±1°</td><td>20°±1°</td></tr>
<tr><td colspan="3" rowspan="2">Maximum area scan Spatial resolution: Δx_{Area}, Δy_{Area}</td><td>≤ 2 GHz: ≤15 mm
2-3 GHz: ≤12 mm</td><td>3-4 GHz: ≤12 mm
4-6 GHz: ≤10 mm</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td colspan="3">Maximum zoom scan Spatial resolution: Δx_{zoom}, Δy_{zoom}</td><td>≤ 2 GHz: ≤8mm
2-3 GHz: ≤5mm*</td><td>3-4 GHz: ≤5 mm*
4-6 GHz: ≤4 mm*</td></tr>
<tr><td rowspan="3">Maximum zoom scan Spatial resolution normal to phantom surface</td><td colspan="2">uniform grid: $\Delta z_{zoom}(n)$</td><td>≤ 5 mm</td><td>3-4 GHz: ≤4 mm
4-5 GHz: ≤3 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td rowspan="2">graded grid</td><td>$\Delta z_{zoom}(1)$: between 1 st two Points closest to phantom surface</td><td>≤ 4 mm</td><td>3-4 GHz: ≤3 mm
4-5 GHz: ≤2.5 mm
5-6 GHz: ≤2 mm</td></tr>
<tr><td>$\Delta z_{zoom}(n>1)$: between subsequent Points</td><td colspan="2">≤1.5·$\Delta z_{zoom}(n-1)$</td></tr>
<tr><td>Minimum zoom scan volume</td><td colspan="2">x, y, z</td><td>≥ 30 mm</td><td>3-4 GHz: ≥28 mm
4-5 GHz: ≥25 mm
5-6 GHz: ≥22 mm</td></tr>
<tr><td colspan="5">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.</td></tr>
</table>

6. Estimated SAR Configurations

Antenna	RAT	Band	Frequency [MHz]	Output Power or ERP		Seperation Distance (mm)							Device Conifigurations for SAR Testing						
				dBm	mW	Edge1	Edge2	Edge3	Edge4	Rear	Edge4 Tilt	Edge2 Tilt	Edge1	Edge2	Edge3	Edge4	Rear	Edge4 Tilt	Edge2 Tilt
WLAN #1 Main Antenna	WLAN	2.4GHz	2480	16.5	45	162.5	297.9	45.5	3.3	19.3	2.6	N/A	*YES	*YES	NO	YES	YES	YES	*YES
	WLAN	UNII 1-2A	5320	13.5	22	162.5	297.9	45.5	3.3	19.3	2.6	N/A	*YES	*YES	NO	YES	YES	YES	*YES
	WLAN	UNII 2C	5720	11.75	15	162.5	297.9	45.5	3.3	19.3	2.6	N/A	*YES	*YES	NO	YES	YES	YES	*YES
	WLAN	UNII 3	5825	12	16	162.5	297.9	45.5	3.3	19.3	2.6	N/A	*YES	*YES	NO	YES	YES	YES	*YES
WLAN #2 Aux Antenna	BT	BT	2480	9.5	9	169.8	5.4	41.8	296.7	19.3	N/A	4.5	*YES	YES	NO	*YES	YES	*YES	YES
	WLAN	2.4GHz	2472	15.75	38	169.8	5.4	41.8	296.7	19.3	N/A	4.5	*YES	YES	NO	*YES	YES	*YES	YES
	WLAN	UNII 1-2A	5320	12.5	18	169.8	5.4	41.8	296.7	19.3	N/A	4.5	*YES	YES	NO	*YES	YES	*YES	YES
	WLAN	UNII 2C	5720	11.75	15	169.8	5.4	41.8	296.7	19.3	N/A	4.5	*YES	YES	NO	*YES	YES	*YES	YES
	WLAN	UNII 3	5825	13	20	169.8	5.4	41.8	296.7	19.3	N/A	4.5	*YES	YES	NO	*YES	YES	*YES	YES

Note; All test configurations are based on front view.
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.

Since the Dedicated Host Approach is applied, the standalone SAR test exclusion procedure in KDB447498 4.3.1 is applied in conjunction with KDB 616217 D04v01r02 4.3 to determine the minimum test separation distance:
This device was tested considering the Rear/left/right/top/bottom side for simultaneous transmission analysis of multiple transmitter conditions. The bottom side of the upper antenna and the top surface of the lower antenna excluded according to KDB 6162717.
Top surface and bottom, excluding SAR test by FCC KDB 616217 D04v01r02, were analyzed by applying 0.4 w/kg according to FCC KDB 447498 D01v06 during simultaneous transmission analysis.

6.1 Test Configurations for the WLAN #1 Main Antenna

Tablet Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	19.3 mm	Yes	-
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	162.5 mm	Yes	Due to simultaneous transmission SAR analysis with WWAN, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 2	297.9 mm	Yes	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 3	45.5 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	3.3 mm	Yes	-
Edge 2 Tilt	-	Yes	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 4 Tilt	2.6 mm	Yes	

Laptop Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Bottom Side (Laptop Mode)	96.6 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	42.3 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	162.5 mm	No	SAR is not required as this is accounted for by the Edge 1 test position for Tablet mode.
Edge 2	297.9 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 3	45.5 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	3.3 mm	No	SAR is not required as this is accounted for by the Edge 4 test position for Tablet mode.
Edge 2 Tilt	-	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 4 Tilt	2.6 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.

LEGEND:

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

6.2 Test Configurations for the WLAN #2 Aux Antenna

Tablet Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	19.3 mm	Yes	
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	169.8 mm	Yes	Due to simultaneous transmission SAR analysis with WWAN, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 2	5.4 mm	Yes	
Edge 3	41.8 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	296.7 mm	No	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.
Edge 2 Tilt	4.5 mm	Yes	
Edge 4 Tilt	-	Yes	Due to simultaneous transmission SAR analysis with WLAN MIMO, this position was tested even standalone SAR is excluded by SAR test exclusion consideration.

Laptop Mode:

Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Bottom Side (Laptop Mode)	92.9 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.

Convertible Mode:

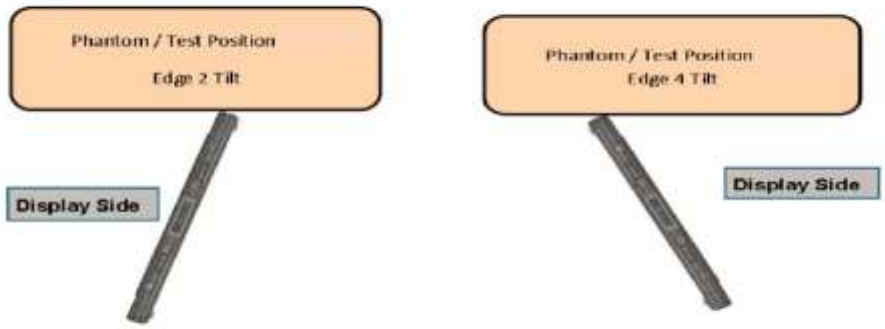
Test Configurations	Antenna-to-edge/surface	SAR Required	Note
Rear	42.3 mm	No	SAR is not required since separation distance from antenna to user is more far away compared with Edge3 tablet mode.
Front	-	No	SAR is not required as this is not a typical use scenario.
Edge 1	169.8 mm	No	SAR is not required as this is accounted for by the Edge 1 test position for Tablet mode.
Edge 2	5.4 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 3	41.8 mm	No	SAR is not required since calculated threshold value is higher than maximum output power.
Edge 4	296.7 mm	No	SAR is not required as this is accounted for by the Edge 4 test position for Tablet mode.
Edge 2 Tilt	4.5 mm	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.
Edge 4 Tilt	-	No	SAR is not required as this is accounted for by the Edge 2 test position for Tablet mode.

LEGEND:

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

6.3 Additional Test Scenarios

Due to the user separation distance of below setup case is shorter than Edge2 and Edge 4. Therefore below additional 2 position were tested.This setup is based on the KDB inquiry.



7. RF EXPOSURE LIMITS

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population	CONTROLLED ENVIRONMENT Occupational
	W/kg	W/kg
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

NOTES:

* The Spatial Peak value of the SAR averaged over any 1 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

** The Spatial Average value of the SAR averaged over the whole-body.

*** The Spatial Peak value of the SAR averaged over any 10 g of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

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. 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 Testing with 802.11 Transmitters

The normal network operating configurations of 802.11 transmitters are not suitable for SAR measurements. Unpredictable fluctuations in network traffic and antenna diversity conditions can introduce undesirable variations in SAR results. The SAR for these devices should be measured using chipset based test mode software to ensure the results are consistent and reliable. See KDB Publication 248227 D01v02r02 for more details.

8.3 General Device Setup

Chipset based test mode software is hardware dependent and generally varies among manufacturers. The device operating parameters established in test mode for SAR measurements must be identical to those programmed in production units, including output power levels, amplifier gain settings and other RF performance tuning parameters.
A periodic duty factor is required for current generation SAR system to measure SAR. When 802.11 frame gaps are accounted for in the transmission, a maximum transmission duty factor of 92-96% is typically achievable in most test mode configurations. A minimum transmission duty factor of 85% is required to avoid certain hardware and device implementation issues related to wide range SAR scaling. The reported SAR is scaled to 100% transmission duty factor to determine compliance at the maximum tune-up tolerance limit.

8.4 U-NII-1 and U-NII-2A

For devices that operate in both U-NII-1 and U-NII2A bands, when the same maximum output power is specified for both bands, SAR measurement using OFDM SAR test procedures is not required for U-NII-1 unless the highest reported SAR for U-NII-2A is > 1.2 W/kg for 1g SAR or > 3.0 W/kg for 10g SAR. When different maximum output powers are specified for the bands, SAR measurement for the U-NII band with the lower maximum output power is not required unless the highest reported SAR for the U-NII band with the higher maximum output power, adjusted by the ratio of lower to higher specified maximum output power for the two bands, is > 1.2 W/kg for 1g SAR or > 3.0 W/kg for 10g SAR.

8.5 U-NII-2C and U-NII-3

The frequency range covered by U-NII-2C and U-NII-3 is 380 ㎒ (5.47 ㎓ ~ 5.85 ㎓), which requires a minimum of at least two SAR probe calibration frequency points to support SAR measurements. When Terminal Doppler Weather Radar (TDWR) restriction applies, the channels at 5.60 ㎓ ~ 5.65 ㎓ in U-NII-2C band must be disabled with acceptable mechanisms and documented in the equipment certification.
Unless band gap channels are permanently disabled, SAR must be considered for these channels.

8.6 2.4 ㎓ SAR test Requirements

SAR is measured for 2.4 ㎓ 802.11b DSSS using either the fixed test position 2.4 ㎓ 802.11 g/n OFDM are additionally evaluated for SAR if the highest reported SAR for 802.11b, adjusted by the ratio of the OFDM to DSSS specified maximum output power, is > 1.2 W/kg.

8.7 OFDM Transmission Mode and SAR Test Channel Selection

For the 2.4 GHz and 5 GHz bands, when the same maximum output power was specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration with the largest channel bandwidth, lowest order modulation and lowest data rate and lowest order 802.11 a/g/n/ac mode. When the maximum output power of a channel is the same for equivalent OFDM configurations; for example, 802.11a, 802.11n and 802.11 ac or 802.11g and 802.11n with the same channel bandwidth, modulation and data rate etc., the lower order 802.11 mode i.2., 802.11a, then 802.11n and 802.11ac or 802.11g then 802.11n, is used for SAR measurement. When the maximum output power are the same for multiple test channels, either according to the default or additional power measurement requirements, SAR is measured using the channel closest to the middle of the frequency band or aggregated band. When there are multiple channels with the same maximum output power, SAR is measured using the higher number channel.

8.8 Initial Test Configuration Procedure

For OFDM, in both 2.4 GHz and 5 GHz bands, an initial test configuration is determined for each frequency band and aggregated band, according to the transmission mode with the highest maximum output power specified for SAR measurements. When the same maximum output power is specified for multiple OFDM transmission mode configurations in a frequency band or aggregated band, SAR is measured using the configuration(s) with the largest channel bandwidth, lowest order modulation, and lowest data rate. If the average RF output powers of the highest identical transmission modes are within 0.25 dB of each other, mid channel of the transmission mode with highest average RF output power is the initial test channel. Otherwise, the channel of the transmission mode with the highest average RF output conducted power will be the initial test configuration.

When the reported SAR is ≤ 0.8 W/kg, no additional measurements on other test channels are required. Otherwise, SAR is evaluated using the subsequent highest average RF output channel until the reported SAR result is 1.2 W/kg or all channels are measured. When there are multiple untested channels having the same subsequent highest average RF output power, the channel with higher frequency from the lowest 802.11 mode is considered for SAR measurements.

8.9 Subsequent Test Configuration Procedures

For OFDM configurations in each frequency band and aggregated band, SAR is evaluated for initial test configuration using the fixed test position or the initial test position on procedure. When the highest reported SAR (for the initial test configuration), adjusted by the ratio of the specified maximum output power of the subsequent test configuration to initial test configuration, is ≤ 1.2 W/kg for 1g SAR and ≤ 3.0 W/kg for 10g SAR, no additional SAR tests for the subsequent test configurations are required.

8.10 MIMO SAR considerations

Per KDB Publication 248227 D01v02r02, the simultaneous SAR provisions in KDB Publication 447498 D01v06 should be applied to determine simultaneous transmission SAR test exclusion for WIFI MIMO. If the sum of 1g single transmission chain SAR measurements is <1.6 W/kg, no additional SAR measurements for MIMO are required Alternatively, SAR for MIMO can be measured with all antennas transmitting simultaneously at the specified maximum output power of MIMO operation. When 10g SAR measurement is considered, a factor of 2.5 is applied to the thresholds above.

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 WIFI Conducted Power measurement

9.1.1 IEEE 802.11 (2.4 GHz) Maximum Conducted Power For Laptop Mode

SISO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) SISO RF Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11b	2 412	1	20.80	20.99
	2 437	6	20.83	20.97
	2 462	11	20.85	20.75
	2 467	12	18.81	18.96
	2 472	13	15.64	15.99
802.11g	2 412	1	18.16	18.19
	2 437	6	20.88	20.71
	2 462	11	18.15	17.97
	2 467	12	15.43	15.48
	2 472	13	12.17	11.99
802.11n20	2 412	1	18.05	18.17
	2 437	6	20.79	20.63
	2 462	11	18.10	17.92
	2 467	12	15.32	15.39
	2 472	13	12.05	11.94
802.11ax20	2 412	1	18.23	18.07
	2 437	6	20.94	20.99
	2 462	11	18.20	17.99
	2 467	12	15.47	15.45
	2 472	13	12.05	11.92
802.11n40	2 422	3	16.47	16.08
	2 437	6	17.65	18.11
	2 447	8	16.28	15.91
	2 452	9	16.08	15.99
	2 457	10	11.06	11.08
	2 462	11	11.15	11.00
802.11ax40	2 422	3	16.32	16.23
	2 437	6	17.50	18.23
	2 447	8	16.39	15.93
	2 452	9	16.11	15.90
	2 457	10	11.18	11.10
	2 462	11	11.20	10.91

MIMO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) RF Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11n20	2 412	1	15.17	15.24
	2 437	6	19.59	19.48
	2 462	11	14.75	14.60
	2 467	12	11.64	11.86
	2 472	13	8.34	8.36
802.11ax20	2 412	1	15.07	15.09
	2 437	6	19.71	19.65
	2 462	11	14.93	14.86
	2 467	12	11.02	10.91
	2 472	13	8.56	8.74
802.11n40	2 422	3	13.04	12.75
	2 437	6	14.47	14.03
	2 447	8	12.80	12.10
	2 452	9	12.49	12.48
	2 457	10	7.50	7.65
	2 462	11	7.38	7.24
802.11ax40	2 422	3	13.60	13.63
	2 437	6	14.30	14.42
	2 447	8	12.64	12.57
	2 452	9	13.01	13.11
	2 457	10	7.41	7.22
	2 462	11	8.02	8.11

9.1.2 IEEE 802.11 (2.4 GHz) Maximum Conducted Power For Tablet Mode

SISO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) RF Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11b	2 412	1	16.32	15.65
	2 437	6	16.26	15.59
	2 462	11	16.37	15.72
	2 467	12	15.75	14.93
	2 472	13	15.43	15.53
802.11g	2 412	1	16.38	15.39
	2 437	6	16.34	15.43
	2 462	11	16.47	15.59
	2 467	12	15.38	15.39
	2 472	13	12.01	11.77
802.11n20	2 412	1	16.31	15.54
	2 437	6	16.34	15.58
	2 462	11	16.35	15.75
	2 467	12	15.36	15.33
	2 472	13	11.81	11.58
802.11ax20	2 412	1	16.43	15.41
	2 437	6	16.40	15.43
	2 462	11	16.49	15.61
	2 467	12	15.41	15.36
	2 472	13	11.68	11.48
802.11n40	2 422	3	16.50	15.56
	2 437	6	16.44	15.53
	2 447	8	16.45	15.50
	2 452	9	15.97	15.65
	2 457	10	11.06	10.86
	2 462	11	11.10	10.81
802.11ax40	2 422	3	16.25	15.64
	2 437	6	16.28	15.61
	2 447	8	16.29	15.66
	2 452	9	16.08	15.71
	2 457	10	10.90	10.69
	2 462	11	10.81	10.41

MIMO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (2.4 GHz) RF Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11n20	2 412	1	15.17	14.49
	2 437	6	15.03	15.06
	2 462	11	14.75	14.60
	2 467	12	11.64	11.86
	2 472	13	8.34	8.36
802.11ax20	2 412	1	15.07	15.09
	2 437	6	15.57	14.41
	2 462	11	14.93	14.86
	2 467	12	11.02	10.91
	2 472	13	8.56	8.74
802.11n40	2 422	3	13.57	13.78
	2 437	6	14.47	14.03
	2 447	8	12.80	13.17
	2 452	9	13.22	13.20
	2 457	10	7.50	7.65
	2 462	11	7.94	7.77
802.11ax40	2 422	3	13.60	13.63
	2 437	6	14.30	14.42
	2 447	8	12.64	12.57
	2 452	9	13.01	13.11
	2 457	10	7.41	7.22
	2 462	11	8.02	8.11

9.1.3 IEEE 802.11 (5 GHz) Maximum Conducted Power For Laptop Mode

SISO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11a	5 180	36	18.36	19.72
	5 200	40	20.71	20.98
	5 220	44	20.79	20.97
	5 240	48	20.77	20.96
	5 260	52	20.82	20.89
	5 280	56	20.66	20.75
	5 300	60	20.87	20.95
	5 320	64	18.81	20.59
	5 500	100	20.05	20.27
	5 580	116	20.05	20.42
	5 700	140	19.84	20.67
	5 720	144	20.93	20.88
	5 745	149	20.86	20.88
	5 765	153	20.95	20.89
	5 785	157	20.79	20.88
	5 805	161	20.72	20.80
	5 825	165	20.83	20.78
802.11n20	5 180	36	18.38	19.61
	5 200	40	20.93	20.81
	5 220	44	20.85	20.78
	5 240	48	20.84	20.78
	5 260	52	20.86	20.68
	5 280	56	20.92	20.60
	5 300	60	20.92	20.60
	5 320	64	18.97	20.39
	5 500	100	20.13	20.30
	5 580	116	20.22	20.65
	5 700	140	19.92	20.73
	5 720	144	20.97	20.91
	5 745	149	20.91	20.89
	5 765	153	20.78	20.80
	5 785	157	20.89	20.72
	5 805	161	20.75	20.75
	5 825	165	20.72	20.81
802.11n40	5 190	38	17.61	19.28
	5 230	46	19.11	20.47
	5 270	54	20.35	20.33
	5 310	62	16.94	18.24
	5 510	102	18.91	19.53
	5 590	118	21.00	20.81
	5 670	134	20.76	20.85
	5 710	142	20.78	20.82
	5 755	151	20.73	20.86
	5 795	159	20.75	20.83

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ac20	5 180	36	18.37	19.72
	5 200	40	20.95	20.83
	5 220	44	20.82	20.81
	5 240	48	20.83	20.84
	5 260	52	20.86	20.92
	5 280	56	20.92	20.77
	5 300	60	20.90	20.82
	5 320	64	18.93	20.42
	5 500	100	20.13	20.36
	5 580	116	20.23	20.67
	5 700	140	19.92	20.68
	5 720	144	20.97	20.92
	5 745	149	20.90	20.72
	5 765	153	20.81	20.77
	5 785	157	20.88	20.72
	5 805	161	20.77	20.68
	5 825	165	20.87	20.81
802.11ac40	5 190	38	17.72	19.27
	5 230	46	19.09	20.48
	5 270	54	20.30	20.40
	5 310	62	16.90	18.21
	5 510	102	18.84	19.56
	5 590	118	20.78	21.00
	5 670	134	20.99	20.89
	5 710	142	20.96	20.85
	5 755	151	20.76	20.83
	5 795	159	20.96	20.76
802.11ac80	5 210	42	17.10	18.67
	5 290	58	17.90	17.63
	5 530	106	18.28	19.46
	5 610	122	20.95	20.98
	5 690	138	20.85	20.81
	5 775	155	20.04	20.05
802.11ax20	5 180	36	18.43	19.71
	5 200	40	20.86	20.89
	5 220	44	20.96	20.90
	5 240	48	20.91	20.89
	5 260	52	20.91	20.81
	5 280	56	20.83	20.92
	5 300	60	20.78	20.88
	5 320	64	18.70	20.56
	5 500	100	20.24	20.44
	5 580	116	20.23	20.56
	5 700	140	19.75	20.66
	5 720	144	20.89	20.86
	5 745	149	20.79	20.83
	5 765	153	20.72	20.86
	5 785	157	20.76	20.80
	5 805	161	20.84	20.77
	5 825	165	20.99	20.71

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ax40	5 190	38	17.73	19.49
	5 230	46	19.12	20.43
	5 270	54	20.40	20.27
	5 310	62	16.62	18.15
	5 510	102	18.91	19.73
	5 590	118	20.95	20.93
	5 670	134	20.75	20.99
	5 710	142	20.78	20.82
	5 755	151	20.69	21.00
	5 795	159	20.96	20.75
802.11ax80	5 210	42	17.26	18.71
	5 290	58	17.86	17.66
	5 530	106	18.47	19.45
	5 610	122	20.89	20.97
	5 690	138	20.86	21.00
	5 775	155	20.03	20.14
802.11ax160	5 250	50	14.86	15.23
	5 570	114	16.19	15.31
802.11ax160	5 250	50	14.97	15.23
	5 570	114	16.03	15.39

MIMO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11n20	5 180	36	15.71	15.63
	5 200	40	16.89	16.95
	5 220	44	16.99	17.05
	5 240	48	17.10	17.09
	5 260	52	17.04	17.02
	5 280	56	17.08	16.89
	5 300	60	17.09	16.89
	5 320	64	16.82	16.68
	5 500	100	17.61	17.91
	5 580	116	17.80	17.58
	5 700	140	16.73	16.53
	5 720	144	16.96	16.99
	5 745	149	19.72	19.56
	5 765	153	19.63	19.52
	5 785	157	19.55	19.53
	5 805	161	19.28	19.50
	5 825	165	19.25	19.48
802.11n40	5 190	38	15.63	15.45
	5 230	46	16.43	16.70
	5 270	54	16.93	17.01
	5 310	62	14.80	14.51
	5 510	102	15.74	15.65
	5 590	118	19.49	19.63
	5 670	134	17.80	17.55
	5 710	142	16.76	17.11
	5 755	151	19.30	19.24
	5 795	159	19.03	19.73
802.11ac20	5 180	36	15.74	15.63
	5 200	40	16.85	17.02
	5 220	44	16.83	17.04
	5 240	48	16.91	16.84
	5 260	52	16.79	16.79
	5 280	56	16.86	17.01
	5 300	60	16.78	16.95
	5 320	64	16.85	16.69
	5 500	100	17.11	17.08
	5 580	116	17.33	17.30
	5 700	140	16.72	16.78
	5 720	144	16.96	16.73
	5 745	149	19.72	19.53
	5 765	153	19.65	19.55
	5 785	157	19.57	19.53
	5 805	161	19.29	19.53
	5 825	165	19.26	19.52

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ac40	5 190	38	15.70	15.46
	5 230	46	16.60	16.70
	5 270	54	17.00	17.02
	5 310	62	14.88	14.73
	5 510	102	15.68	15.76
	5 590	118	19.50	19.67
	5 670	134	17.62	17.61
	5 710	142	17.03	17.12
	5 755	151	19.34	19.22
	5 795	159	19.44	19.45
802.11ac80	5 210	42	14.75	14.63
	5 290	58	14.40	14.18
	5 530	106	15.40	15.40
	5 610	122	19.34	19.32
	5 690	138	19.39	19.38
	5 775	155	16.96	16.99
802.11ax_20	5 180	36	15.74	15.83
	5 200	40	17.15	16.88
	5 220	44	17.02	16.92
	5 240	48	16.94	17.01
	5 260	52	16.88	16.95
	5 280	56	16.76	16.83
	5 300	60	16.95	16.79
	5 320	64	16.83	16.52
	5 500	100	17.07	17.26
	5 580	116	17.44	17.30
	5 700	140	16.79	16.67
	5 720	144	16.93	16.73
	5 745	149	19.42	19.64
	5 765	153	19.30	19.66
	5 785	157	19.21	19.63
	5 805	161	19.12	19.70
	5 825	165	19.06	19.58

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ax_40	5 190	38	15.43	15.48
	5 230	46	16.69	16.53
	5 270	54	16.95	16.78
	5 310	62	14.64	14.74
	5 510	102	15.69	15.89
	5 590	118	19.61	19.44
	5 670	134	17.68	17.61
	5 710	142	17.20	16.88
	5 755	151	18.99	19.21
	5 795	159	19.13	19.21
802.11ax_80	5 210	42	14.64	14.63
	5 290	58	14.14	14.19
	5 530	106	15.37	15.69
	5 610	122	19.64	19.44
	5 690	138	19.60	19.54
	5 775	155	16.96	16.92
802.11ax_160	5 250	50	11.32	11.42
	5 570	114	12.51	12.62
802.11ax_160	5 250	50	11.40	11.46
	5 570	114	12.70	12.66

9.1.4 IEEE 802.11 (5 GHz) Maximum Conducted Power For Tablet Mode

SISO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11a	5 180	36	14.21	13.39
	5 200	40	14.09	13.33
	5 220	44	14.16	13.31
	5 240	48	14.10	13.39
	5 260	52	14.26	13.37
	5 280	56	14.17	13.27
	5 300	60	14.20	13.20
	5 320	64	14.12	13.19
	5 500	100	12.50	12.47
	5 580	116	12.63	12.52
	5 700	140	12.61	12.51
	5 720	144	12.60	12.61
	5 745	149	12.76	13.62
	5 765	153	12.74	13.61
	5 785	157	12.56	13.46
	5 805	161	12.66	13.51
	5 825	165	12.67	13.57
802.11n20	5 180	36	14.35	13.25
	5 200	40	14.21	13.24
	5 220	44	14.25	13.17
	5 240	48	14.24	13.26
	5 260	52	14.31	13.24
	5 280	56	14.27	13.39
	5 300	60	14.33	13.42
	5 320	64	14.26	13.34
	5 500	100	12.60	12.64
	5 580	116	12.46	12.62
	5 700	140	12.46	12.56
	5 720	144	12.45	12.48
	5 745	149	12.60	13.46
	5 765	153	12.57	13.71
	5 785	157	12.74	13.54
	5 805	161	12.57	13.60
	5 825	165	12.73	13.61
802.11n40	5 190	38	14.40	13.32
	5 230	46	14.34	13.39
	5 270	54	14.35	13.44
	5 310	62	14.33	13.39
	5 510	102	12.69	12.64
	5 590	118	12.59	12.64
	5 670	134	12.54	12.57
	5 710	142	12.58	12.59
	5 755	151	12.72	13.60
	5 795	159	12.57	13.82

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ac20	5 180	36	14.33	13.21
	5 200	40	14.28	13.20
	5 220	44	14.23	13.20
	5 240	48	14.20	13.29
	5 260	52	14.28	13.36
	5 280	56	14.24	13.17
	5 300	60	14.30	13.23
	5 320	64	14.22	13.45
	5 500	100	12.60	12.54
	5 580	116	12.43	12.55
	5 700	140	12.42	12.46
	5 720	144	12.53	12.39
	5 745	149	12.93	13.83
	5 765	153	12.79	13.90
	5 785	157	12.73	13.78
	5 805	161	12.55	13.86
	5 825	165	12.47	13.87
802.11ac40	5 190	38	14.42	13.40
	5 230	46	14.37	13.20
	5 270	54	14.42	13.24
	5 310	62	14.20	13.39
	5 510	102	12.61	12.35
	5 590	118	12.49	12.62
	5 670	134	12.45	12.53
	5 710	142	12.40	12.55
	5 755	151	12.73	13.86
	5 795	159	12.62	13.79
802.11ac80	5 210	42	14.25	13.30
	5 290	58	14.22	13.43
	5 530	106	12.58	12.55
	5 610	122	12.59	12.48
	5 690	138	12.56	12.35
	5 775	155	12.87	13.69
802.11ax_20	5 180	36	14.36	13.27
	5 200	40	14.24	13.33
	5 220	44	14.25	13.26
	5 240	48	14.43	13.34
	5 260	52	14.33	13.39
	5 280	56	14.30	13.24
	5 300	60	14.40	13.26
	5 320	64	14.31	13.20
	5 500	100	12.48	12.58
	5 580	116	12.65	12.63
	5 700	140	12.55	12.53
	5 720	144	12.60	12.56
	5 745	149	12.81	13.70
	5 765	153	12.80	13.73
	5 785	157	12.69	13.59
	5 805	161	12.69	13.66
	5 825	165	12.55	13.78

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ax_40	5 190	38	14.45	13.38
	5 230	46	14.39	13.42
	5 270	54	14.23	13.47
	5 310	62	14.16	13.30
	5 510	102	12.59	12.40
	5 590	118	12.51	12.57
	5 670	134	12.64	12.44
	5 710	142	12.68	12.48
	5 755	151	12.67	13.76
	5 795	159	12.90	13.66
802.11ax_80	5 210	42	14.34	13.18
	5 290	58	14.24	13.29
	5 530	106	12.41	12.44
	5 610	122	12.62	12.53
	5 690	138	12.55	12.48
	5 775	155	12.63	13.54
802.11ax_160	5 250	50	13.79	12.81
	5 570	114	12.06	12.13
802.11ax_160	5 250	50	13.66	12.57
	5 570	114	11.85	11.91

MIMO Mode

Mode	Frequency [MHz]	Channel	IEEE 802.11 (5 GHz) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11n20	5 180	36	13.11	11.85
	5 200	40	12.92	11.90
	5 220	44	12.90	11.94
	5 240	48	12.93	12.06
	5 260	52	12.80	12.11
	5 280	56	12.87	11.99
	5 300	60	12.87	12.01
	5 320	64	12.96	12.09
	5 500	100	N/A	N/A
	5 580	116	N/A	N/A
	5 700	140	N/A	N/A
	5 720	144	N/A	N/A
	5 745	149	11.27	12.53
	5 765	153	11.20	12.51
	5 785	157	11.15	12.42
	5 805	161	11.32	12.43
	5 825	165	11.27	12.57
802.11n40	5 190	38	13.21	12.17
	5 230	46	13.18	12.30
	5 270	54	13.02	12.44
	5 310	62	13.05	12.32
	5 510	102	11.15	11.22
	5 590	118	11.15	11.75
	5 670	134	11.13	11.74
	5 710	142	11.11	11.71
	5 755	151	11.76	12.62
	5 795	159	11.31	12.53
802.11ac20	5 180	36	12.97	12.07
	5 200	40	12.89	12.11
	5 220	44	12.93	12.16
	5 240	48	12.84	12.33
	5 260	52	12.74	12.41
	5 280	56	12.78	12.29
	5 300	60	12.85	12.33
	5 320	64	12.86	12.33
	5 500	100	N/A	N/A
	5 580	116	N/A	N/A
	5 700	140	N/A	N/A
	5 720	144	N/A	N/A
	5 745	149	11.28	12.52
	5 765	153	11.20	12.54
	5 785	157	11.04	12.46
	5 805	161	11.06	12.46
	5 825	165	11.23	12.55

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ac40	5 190	38	13.12	12.09
	5 230	46	13.13	12.32
	5 270	54	13.00	12.42
	5 310	62	13.11	12.29
	5 510	102	11.22	11.19
	5 590	118	11.15	11.70
	5 670	134	11.14	11.63
	5 710	142	11.04	11.66
	5 755	151	11.72	12.78
	5 795	159	11.41	12.64
802.11ac80	5 210	42	12.89	11.92
	5 290	58	12.72	12.03
	5 530	106	11.14	11.21
	5 610	122	11.25	11.69
	5 690	138	11.09	11.63
	5 775	155	11.53	12.49
802.11ax_20	5 180	36	13.04	12.14
	5 200	40	12.96	12.23
	5 220	44	12.99	12.26
	5 240	48	12.98	12.47
	5 260	52	12.85	12.51
	5 280	56	12.96	12.41
	5 300	60	12.96	12.43
	5 320	64	12.94	12.40
	5 500	100	N/A	N/A
	5 580	116	N/A	N/A
	5 700	140	N/A	N/A
	5 720	144	N/A	N/A
	5 745	149	11.66	12.64
	5 765	153	11.53	12.69
	5 785	157	11.42	12.52
	5 805	161	11.18	12.56
	5 825	165	11.14	12.65

Mode	Frequency [㎒]	Channel	IEEE 802.11 (5 ㎓) Reduced Average Conducted Power [dBm]	
			Main Ant.	Aux Ant.
802.11ax_40	5 190	38	12.88	11.84
	5 230	46	12.89	11.92
	5 270	54	12.72	12.03
	5 310	62	12.79	12.00
	5 510	102	11.31	10.84
	5 590	118	11.49	11.39
	5 670	134	11.48	11.38
	5 710	142	11.35	11.38
	5 755	151	11.35	12.46
	5 795	159	11.31	12.35
802.11ax_80	5 210	42	12.89	11.82
	5 290	58	12.73	11.83
	5 530	106	11.12	10.82
	5 610	122	10.95	11.26
	5 690	138	11.15	11.32
	5 775	155	11.57	12.42
802.11ax_160	5 250	50	11.77	11.55
	5 570	114	11.81	11.34
802.11ax_160	5 250	50	11.54	11.96
	5 570	114	11.61	11.33

Justification for test configurations for WLAN per KDB Publication 248227 D01v02r02:

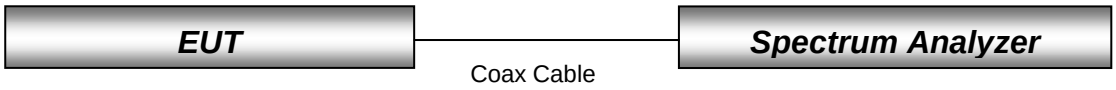
▪ Power measurements were performed for the transmission mode configuration with the highest maximum output power specified for production units.

▪ For transmission mode with the same maximum output power specification, powers were measured for the largest channel bandwidth, lowest order modulation and lowest data rate.

▪ For transmission modes with identical maximum specified output power, channel bandwidth, modulation and data rates, power measurements were required for all identical configurations.

▪ For each transmission mode configuration, powers were measured for the highest and lowest channels; and at the mid-band channel(s) when there were at least 3 channels supported. For configurations with multiple mid-band channels, due to an even number of channels, both channels were measured.

Test Configuration



9.1.3 Bluetooth Maximum Conducted Power

The Burst averaged-conducted power

Mode	Channel	Ant	Bluetooth Power [dBm]
DH5	0	Ant.2 (Aux)	8.99
	39	Ant.2 (Aux)	9.09
	78	Ant.2 (Aux)	9.24
2-DH5	0	Ant.2 (Aux)	6.41
	39	Ant.2 (Aux)	6.28
	78	Ant.2 (Aux)	6.49
3-DH5	0	Ant.2 (Aux)	6.12
	39	Ant.2 (Aux)	6.28
	78	Ant.2 (Aux)	6.50
LE	0	Ant.2 (Aux)	5.82
	19	Ant.2 (Aux)	6.08
	39	Ant.2 (Aux)	6.37

Per October 2016 TCB Workshop Notes:
When call box and Bluetooth protocol are used for Bluetooth SAR measurement, time-domain plot is required to identify duty factor for supporting the test setup and result.
Bluetooth duty cycle was measured using Bluetooth tester equipment (CBT / R&S) with Bluetooth DH5 mode.

Bluetooth

Duty Cycle

= (BT-On time /BT-Full time) =(2.888/3.752) = 0.770 (DH5)

Duty factor= 1/Duty cycle : 1.299

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 Head 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
04/17/2022	21.1	2450H	2400	1.792	39.203	1.756	39.290	2.05	-0.22
			2450	1.833	39.246	1.800	39.200	1.83	0.12
			2500	1.875	39.325	1.855	39.140	1.08	0.47
04/18/2022	19.2	2450H	2400	1.794	39.172	1.756	39.290	2.16	-0.30
			2450	1.835	39.217	1.800	39.200	1.94	0.04
			2500	1.877	39.304	1.855	39.140	1.19	0.42
04/19/2022	19.0	2450H	2400	1.792	39.196	1.756	39.290	2.05	-0.24
			2450	1.833	39.239	1.800	39.200	1.83	0.10
			2500	1.875	39.317	1.855	39.140	1.08	0.45
05/11/2022	20.8	5180H-5320H	5180	4.570	36.844	4.635	36.010	-1.40	2.32
			5250	4.673	36.633	4.706	35.930	-0.70	1.96
			5280	4.716	36.608	4.737	35.894	-0.44	1.99
			5320	4.792	36.605	4.778	35.846	0.29	2.12
05/13/2022	20.6	5500H-5600H	5500	4.902	36.510	4.963	35.640	-1.23	2.44
			5600	4.959	36.156	5.065	35.530	-2.09	1.76
04/25/2022	20.8	5750H-5825H	5750	5.229	35.976	5.219	35.360	0.19	1.74
			5800	5.200	36.034	5.270	35.300	-1.33	2.08
			5825	5.194	35.966	5.296	35.270	-1.93	1.97

10.2 System Check

Prior to assessment, the system is verified to the ± 10 % of the specifications at 2 450 MHz/ 5 250 MHz/ 5 600 MHz/ 5 750 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.

Input Power: 50 mW

Freq. [MHz]	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. [°C]	Liquid Temp. [°C]	1 W Target SAR_{1g} (SPEAG) [W/kg]	50mW Measured SAR_{1g} [W/kg]	1 W Normalized SAR_{1g} [W/kg]	Deviation [%]	Limit [%]
2 450	04/17/2022	7654	965	Head	21.0	21.1	53.3	2.460	49.2	- 7.69	± 10
2 450	04/18/2022	7654		Head	19.3	19.2	53.3	2.540	50.8	- 4.69	± 10
2 450	04/19/2022	7654		Head	19.0	19.0	53.3	2.450	49	- 8.07	± 10
5 250	05/11/2022	7654	1107	Head	20.9	20.8	80.6	4.180	83.6	+ 3.72	± 10
5 600	05/13/2022	7654		Head	20.7	20.6	84.2	4.360	87.2	+ 3.56	± 10
5 750	04/25/2022	7654		Head	21.0	20.8	80.9	4.380	87.6	+ 8.28	± 10

11. SAR TEST DATA SUMMARY

11.1 Body SAR Measurement Results For Tablet mode

2.4 GHz WLAN Body SAR																	
Frequency		Mode	Band width (Mhz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
Mhz	Ch.																
2 462	11	802.11b	20	1	16.50	16.37	0.01	Rear	Main	99.5	0	0.276	0.168	1.030	1.005	0.174	-
2 462	11	802.11b	20	1	16.50	16.37	0.12	Edge 4	Main	99.5	0	1.89	1.010	1.030	1.005	1.046	-
2 412	1	802.11b	20	1	16.50	16.32	0.03	Edge 4	Main	99.5	0	1.87	1.010	1.042	1.005	1.058	-
2 437	6	802.11b	20	1	16.50	16.26	0.11	Edge 4	Main	99.5	0	1.89	0.972	1.057	1.005	1.032	-
2 462	11	802.11b	20	1	16.50	16.37	0.01	Edge 2	Main	99.5	0	0.00475	0.0018	1.030	1.005	0.002	-
2 462	11	802.11b	20	1	16.50	16.37	0.01	Edge 1	Main	99.5	0	0.02	0.012	1.030	1.005	0.012	-
2 462	11	802.11b	20	1	16.50	16.37	0.13	Edge 4 Tilt	Main	99.5	0	2.2	1.080	1.030	1.005	1.118	-
2 412	1	802.11b	20	1	16.50	16.32	-0.04	Edge 4 Tilt	Main	99.5	0	2.03	1.230	1.042	1.005	1.288	-
2 437	6	802.11b	20	1	16.50	16.26	0.08	Edge 4 Tilt	Main	99.5	0	2.09	**1.240**	1.057	1.005	**1.317**	1
2 462	11	802.11b	20	1	16.50	16.37	0.01	Edge 2 Tilt	Main	99.5	0	0.0201	0.00657	1.030	1.005	0.007	-
2 437	6	802.11b	20	1	16.50	16.26	0.09	Edge 4 Tilt	Main	99.5	0	1.97	1.140	1.057	1.005	1.211	*
2 437	6	802.11b	20	1	16.50	16.26	0.01	Edge 4 Tilt	Main	99.5	0	1.97	1.150	1.057	1.005	1.221	**
2 462	11	802.11b	20	1	15.75	15.72	0.01	Rear	Aux	99.5	0	0.301	0.189	1.007	1.005	0.191	-
2 462	11	802.11b	20	1	15.75	15.72	0.01	Edge 4	Aux	99.5	0	0	0	1.007	1.005	0.000	-
2 462	11	802.11b	20	1	15.75	15.72	0.18	Edge 2	Aux	99.5	0	1.94	1.050	1.007	1.005	1.063	-
2 412	1	802.11b	20	1	15.75	15.65	0.07	Edge 4	Aux	99.5	0	1.76	0.991	1.023	1.005	1.019	-
2 437	6	802.11b	20	1	15.75	15.59	0.02	Edge 4	Aux	99.5	0	1.8	1.040	1.038	1.005	1.084	-
2 462	11	802.11b	20	1	15.75	15.72	0.01	Edge 1	Aux	99.5	0	0.0394	0.011	1.007	1.005	0.011	-
2 462	11	802.11b	20	1	15.75	15.72	0.01	Edge 4 Tilt	Aux	99.5	0	0.01	0.00666	1.007	1.005	0.007	-
2 462	11	802.11b	20	1	15.75	15.72	0.08	Edge 2 Tilt	Aux	99.5	0	1.88	1.120	1.007	1.005	1.133	-
2 412	1	802.11b	20	1	15.75	15.65	0.05	Edge 2 Tilt	Aux	99.5	0	1.77	1.020	1.023	1.005	1.049	-
2 437	6	802.11b	20	1	15.75	15.59	0.03	Edge 2 Tilt	Aux	99.5	0	1.81	1.040	1.038	1.005	1.084	-
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.

** Data entry indicate Device holder perturbation measurement.

2.4 GHz WLAN Body SAR																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
2 422	3	802.11n	40	MCS0	16.50	16.50	0.01	Rear	Main	98.9	0	0.216	0.135	1.000	1.011	0.137	-
2 422	3	802.11n	40	MCS0	16.50	16.50	-0.17	Edge 4	Main	98.9	0	1.78	1.010	1.000	1.011	1.021	-
2 437	6	802.11n	40	MCS0	16.50	16.44	0.02	Edge 4	Main	98.9	0	1.78	1.020	1.014	1.011	1.046	-
2 447	8	802.11n	40	MCS0	16.50	16.45	0.02	Edge 4	Main	98.9	0	1.77	1.070	1.012	1.011	1.095	-
2 422	3	802.11n	40	MCS0	16.50	16.50	0.01	Edge 2	Main	98.9	0	0	0	1.000	1.011	0.000	-
2 422	3	802.11n	40	MCS0	16.50	16.50	0.01	Edge 1	Main	98.9	0	0.0309	0.013	1.000	1.011	0.013	-
2 422	3	802.11n	40	MCS0	16.50	16.50	0.17	Edge 4 Tilt	Main	98.9	0	2.19	1.070	1.000	1.011	1.082	-
2 437	6	802.11n	40	MCS0	16.50	16.44	0.08	Edge 4 Tilt	Main	98.9	0	2.48	**1.150**	1.014	1.011	**1.179**	2
2 447	8	802.11n	40	MCS0	16.50	16.45	0.05	Edge 4 Tilt	Main	98.9	0	2.37	1.130	1.012	1.011	1.156	-
2 422	3	802.11n	40	MCS0	16.50	16.50	0.01	Edge 2 Tilt	Main	98.9	0	0.0206	0.00451	1.000	1.011	0.005	-
2 437	6	802.11n	40	MCS0	16.50	16.44	0.08	Edge 4 Tilt	Main	98.9	0	2.34	1.140	1.014	1.011	1.169	*
2 437	6	802.11n	40	MCS0	16.50	16.44	0.07	Edge 4 Tilt	Main	98.9	0	2.29	1.140	1.012	1.011	1.166	**
2 452	9	802.11n	40	MCS0	15.75	15.65	0.01	Rear	Aux	98.9	0	0.312	0.194	1.023	1.011	0.201	-
2 452	9	802.11n	40	MCS0	15.75	15.65	0.01	Edge 4	Aux	98.9	0	0	0	1.023	1.011	0.000	-
2 452	9	802.11n	40	MCS0	15.75	15.65	0.11	Edge 2	Aux	98.9	0	1.96	1.020	1.023	1.011	1.056	-
2 422	3	802.11n	40	MCS0	15.75	15.56	0.13	Edge 2	Aux	98.9	0	1.84	0.982	1.045	1.011	1.038	-
2 437	6	802.11n	40	MCS0	15.75	15.53	0.05	Edge 2	Aux	98.9	0	1.9	1.000	1.052	1.011	1.064	-
2 452	9	802.11n	40	MCS0	15.75	15.65	0.01	Edge 1	Aux	98.9	0	0.0237	0.016	1.023	1.011	0.017	-
2 452	9	802.11n	40	MCS0	15.75	15.65	0.01	Edge 4 Tilt	Aux	98.9	0	0	0	1.023	1.011	0.000	-
2 452	9	802.11n	40	MCS0	15.75	15.65	0.06	Edge 2 Tilt	Aux	98.9	0	1.81	0.954	1.023	1.011	0.987	-
2 422	3	802.11n	40	MCS0	15.75	15.56	0.09	Edge 2 Tilt	Aux	98.9	0	1.73	0.923	1.045	1.011	0.975	-
2 437	6	802.11n	40	MCS0	15.75	15.53	0.08	Edge 2 Tilt	Aux	98.9	0	1.81	0.938	1.052	1.011	0.998	-
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.

** Data entry indicate Device holder perturbation measurement.

5 GHz WLAN Body SAR UNII-2A																	
Frequency		Mode	Band width (Mhz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.01	Rear	Main	98.9	0	0.311	0.087	1.067	1.011	0.094	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.05	Edge 4	Main	98.9	0	1.61	0.767	1.067	1.011	0.827	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.01	Edge 2	Main	98.9	0	0	0	1.067	1.011	0.000	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.01	Edge 1	Main	98.9	0	0.131	0.052	1.067	1.011	0.056	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.06	Edge 4 Tilt	Main	98.9	0	1.96	1.010	1.067	1.011	1.089	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.01	Edge 2 Tilt	Main	98.9	0	0	0	1.067	1.011	0.000	-
5 290	58	802.11ac	80	MCS0	14.5	14.22	0.02	Edge 4 Tilt	Main	98.9	0	2.04	1.010	1.067	1.011	1.089	*
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.01	Rear	Aux	98.9	0	0.289	0.092	1.016	1.011	0.095	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.01	Edge 4	Aux	98.9	0	0	0	1.016	1.011	0.000	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.05	Edge 2	Aux	98.9	0	2.4	0.923	1.016	1.011	0.949	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.01	Edge 1	Aux	98.9	0	0.0725	0.020	1.016	1.011	0.021	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.01	Edge 4 Tilt	Aux	98.9	0	0	0	1.016	1.011	0.000	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.06	Edge 2 Tilt	Aux	98.9	0	2.5	1.100	1.016	1.011	1.131	-
5 290	58	802.11ac	80	MCS0	13.5	13.43	0.13	Edge 2 Tilt	Aux	98.9	0	2.5	**1.110**	1.016	1.011	**1.141**	3*
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.

5 GHz WLAN Body SAR UNII-2C																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.01	Rear	Main	98.9	0	0.307	0.065	1.172	1.011	0.077	-
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.06	Edge 4	Main	98.9	0	1.11	0.454	1.172	1.011	0.538	-
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.01	Edge 2	Main	98.9	0	0	0	1.172	1.011	0.000	-
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.01	Edge 1	Main	98.9	0	0.109	0.030	1.172	1.011	0.036	-
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.02	Edge 4 Tilt	Main	98.9	0	1.49	0.572	1.172	1.011	0.678	-
5 570	114	802.11ac	160	MCS0	12.75	12.06	0.01	Edge 2 Tilt	Main	98.9	0	0.00963	0.00172	1.172	1.011	0.002	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.01	Rear	Aux	98.9	0	0.391	0.108	1.153	1.011	0.126	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.01	Edge 4	Aux	98.9	0	0.025	0.0000252	1.153	1.011	0.000	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.05	Edge 2	Aux	98.9	0	2.16	0.833	1.153	1.011	0.971	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.01	Edge 1	Aux	98.9	0	0	0	1.153	1.011	0.000	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.01	Edge 4 Tilt	Aux	98.9	0	0.0451	0.000218	1.153	1.011	0.000	-
5 570	114	802.11ac	160	MCS0	12.75	12.13	0.01	Edge 2 Tilt	Aux	98.9	0	2.24	**0.955**	1.153	1.011	**1.114**	4
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population												Body 1.6 W/kg (mW/g) Averaged over 1 gram					

5 GHz WLAN Body SAR UNII-3																	
Frequency		Mode	Band width (MHz)	Data Rate (Mbps)	Tune-Up Limit (dBm)	Meas. Power (dBm)	Power Drift (dB)	Test Position	Ant Config.	Duty Cycle	Distance (mm)	Area Scan Peak SAR (W/kg)	Meas. SAR (W/kg)	Scaling Factor	Scaling Factor (Duty)	Reported SAR (W/kg)	Plot No.
MHz	Ch.																
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.01	Rear	Main	98.9	0	1.16	0.418	1.030	1.011	0.436	-
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.09	Edge 4	Main	98.9	0	1.65	0.608	1.030	1.011	0.634	-
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.01	Edge 2	Main	98.9	0	0	0	1.030	1.011	0.000	-
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.01	Edge 1	Main	98.9	0	0.156	0.053	1.030	1.011	0.054	-
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.03	Edge 4 Tilt	Main	98.9	0	1.53	0.703	1.030	1.011	0.733	-
5 775	155	802.11ac	80	MCS0	13.0	12.87	0.01	Edge 2 Tilt	Main	98.9	0	0	0	1.030	1.011	0.000	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.01	Rear	Aux	98.9	0	0.458	0.188	1.074	1.011	0.204	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.01	Edge 4	Aux	98.9	0	0	0	1.074	1.011	0.000	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.15	Edge 2	Aux	98.9	0	2.22	0.885	1.074	1.011	0.961	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.01	Edge 1	Aux	98.9	0	0	0	1.074	1.011	0.000	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.01	Edge 4 Tilt	Aux	98.9	0	0	0	1.074	1.011	0.000	-
5 775	155	802.11ac	80	MCS0	14.0	13.69	-0.07	Edge 2 Tilt	Aux	98.9	0	2.74	**1.100**	1.074	1.011	**1.195**	5
5 775	155	802.11ac	80	MCS0	14.0	13.69	0.08	Edge 2 Tilt	Aux	98.9	0	2.75	1.080	1.074	1.011	1.173	*
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.

DSS Body SAR													
Frequency		Mode	Tune-Up Limit	Meas. Power	Power Drift	Test Position	Ant. Config	Distance (mm)	Meas. SAR	Scaling Factor	Scaling Factor	Scaled SAR	Plot No.
MHz	Ch.		(dBm)	(dBm)	(dB)				(W/kg)		(Duty)	(W/kg)	
2 480	78	Bluetooth DH5	10.5	9.24	0.01	Rear	Aux	0	0.049	1.337	1.299	0.085	-
2 480	78	Bluetooth DH5	10.5	9.24	0.01	Edge 4	Aux	0	0	1.337	1.299	0.000	-
2 480	78	Bluetooth DH5	10.5	9.24	0.06	Edge 2	Aux	0	0.155	1.337	1.299	0.269	-
2 480	78	Bluetooth DH5	10.5	9.24	0.01	Edge 1	Aux	0	0	1.337	1.299	0.000	-
2 480	78	Bluetooth DH5	10.5	9.24	0.01	Edge 4 Tilt	Aux	0	0	1.416	1.299	0.000	-
2 480	78	Bluetooth DH5	10.5	9.24	0.04	Edge 2 Tilt	Aux	0	**0.163**	1.384	1.299	**0.283**	6
2 402	0	Bluetooth DH5	10.5	8.99	-0.14	Edge 2 Tilt	Aux	0	0.159	1.416	1.299	**0.292**	7
2 441	39	Bluetooth DH5	10.5	9.09	0.01	Edge 2 Tilt	Aux	0	0.130	1.384	1.299	0.234	-
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Uncontrolled Exposure/ General Population						Body 1.6 W/kg (mW/g) Averaged over 1 gram							

11.2 SAR Test Notes

General Notes:

1. The test data reported are the worst-case SAR values according to test procedures specified in FCC KDB Publication 616217 D04v01r02 and KDB Publication 447498 D01v06
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. Per FCC KDB 865664 D01v01r04, variability SAR measurement were performed when the measured SAR results for a frequency band were greater than or equal to 0.8 W/kg for 1g SAR and >2 for 10g SAR Please see Section 15 for variability analysis. the maximum tune-up tolerance limit.
7. FCC KDB Publication 616217 D04v01r02 Section 4.2, SAR tests for Laptop are required for the rear side with the DUT touching the phantom with the display screen opened at an angle of 90º

WLAN Notes:

1.Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHz WiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement.

2.Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHz WiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode were not investigated since the highest reported SAR for initial test configuration adjusted by the ration of maximum output powers is less than 1.2 W/kg for 1g SAR and less than 3.0 W/kg for 10 g SAR.

3.When the maximum reported 1g averaged SAR is ≤ 0.8 W/kg, SAR testing on additional channels was not required. Otherwise, SAR for the next highest output power channel was required until the reported SAR result was ≤ 1.20 W/kg or all test channels were measured.

4.The device was configured to transmit continuously at the required data rated, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools. The reported SAR was scaled to the 100% transmission duty factor to determine compliance. Procedures used to measure the duty factor are identical to that in the associated WLAN test reports.

12. SIMULTANEOUS SAR ANALYSIS

12.1 Simultaneous Transmission Summation.

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 SAR Test Report[HCT-SR-2206-FC004], Module model: RI18C with FCC: ACJ9TGWL22B and WIFI 6 GHz RF Exposure Report[HCT-SR-2206-FC003]

Simultaneoustransmission analysis between the WWAN module and the WLAN module was evaluated in the SAR report of the WWAN module.

Simultaneous Transmission Summation Scenario						
Band	2.4 GHz Ant Main WLAN SAR	2.4 GHz Ant Aux WLAN SAR	Bluetooth SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/
	1	2	3	1+2	1+3	No)
Rear	0.174	0.201	0.085	0.375	0.259	No
Edge 4	1.095	0	0	1.095	1.095	No
Edge 2	0.002	1.084	0.269	1.086	0.271	No
Edge 1	0.013	0.017	0	0.030	0.013	No
Edge 4 Tilt	1.317	0.007	0	1.324	1.317	No
Edge 2 Tilt	0.007	1.133	0.292	1.140	0.299	No

Simultaneous Transmission Summation Scenario						
Band	5 GHz Ant Main WLAN SAR	5 GHz Ant Aux WLAN SAR	Bluetooth SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/
	1	2	3	1+2	1+3	No)
Rear	0.436	0.204	0.085	0.640	0.521	No
Edge 4	0.827	0	0	0.827	0.827	No
Edge 2	0	0.971	0.269	0.971	0.269	No
Edge 1	0.056	0.021	0	0.077	0.056	No
Edge 4 Tilt	1.089	0	0	1.089	1.089	No
Edge 2 Tilt	0.002	1.195	0.292	1.197	0.294	No

Simultaneous Transmission Summation Scenario						
Band	6E Ant Main WLAN SAR	6E Ant Aux WLAN SAR	Bluetooth SAR	∑ 1-g SAR	∑ 1-g SAR	SPLSR
	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(W/kg)	(Yes/
	1	2	3	1+2	1+3	No)
Rear	0.056	0.126	0.085	0.182	0.141	No
Edge 4	0.431	0	0	0.431	0.431	No
Edge 2	0	0.447	0.269	0.447	0.269	No
Edge 1	0.008	0	0	0.008	0.008	No
Edge 4 Tilt	0.627	0	0	0.627	0.627	No
Edge 2 Tilt	0.003	0.644	0.292	0.647	0.295	No

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 the IEEE1528-2013.

13. MEASUREMENT UNCERTAINTY

The measured SAR was <1.5 W/kg for 1g SAR and <3.75 W/kg For 10g SAR for all frequency Bands. Therefore, per KDB Publication 865664 D01v01r04, the extended measurement uncertainty analysis per IEEE1528-2013 was not required.

14. SAR TEST EQUIPMENT

Manufacturer	Type / Model	S/N	Calib. Date	Calib.Interval	Calib.Due
SPEAG	SAM Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F17/ 59RAA1/ C/ 01	N/A	N/A	N/A
Staubli	TX90 Xlspeag	F17/ 59RAA1/ A/ 01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick)	011578	N/A	N/A	N/A
TESTO	175-H1/Thermometer	40331922309	01/04/2022	Annual	01/04/2023
SPEAG	DAE4	869	03/25/2022	Annual	03/25/2023
SPEAG	E-Field Probe EX3DV4	7654	05/21/2021	Annual	05/21/2022
SPEAG	Dipole D2450V2	965	06/15/2021	Annual	06/15/2022
SPEAG	Dipole D5GHzV2	1107	07/22/2021	Annual	07/22/2022
Agilent	Power Meter E4419B	MY41291386	10/06/2021	Annual	10/06/2022
Agilent	Power Meter N1911A	MY45101406	07/08/2021	Annual	07/08/2022
Agilent	Power Sensor 8481A	SG1091286	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor 8481A	MY41090675	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor N1921A	MY55220026	08/05/2021	Annual	08/05/2022
SPEAG	DAKS 3.5	1038	03/28/2022	Annual	03/28/2023
SPEAG	DAKS_VNA R140	0141013	03/25/2022	Annual	03/25/2023
Agilent	SIGNAL GENERATOR N5182A	MY47070230	05/10/2021	Annual	05/10/2022
Agilent	SIGNAL GENERATOR N5182A	MY47070230	04/28/2022	Annual	04/28/2023
Agilent	11636B/Power Divider	58698	02/24/2022	Annual	02/24/2023
EMPOWER	RF Power Amplifier	1084	06/25/2021	Annual	06/25/2022
EMPOWER	RF Power Amplifier	1011	10/06/2021	Annual	10/06/2022
MICRO LAB	LP Filter / LA-30N	-	10/06/2021	Annual	10/06/2022
MICRO LAB	LP Filter / LA-60N	32011	10/06/2021	Annual	10/06/2022
HP	Attenuator (3dB) 333340A	02427	09/06/2021	Annual	09/06/2022
HP	Attenuator (20dB) 8493C	09271	09/06/2021	Annual	09/17/2022
Agilent	Directional Bridge 86205A	3140A03878	05/28/2021	Annual	05/28/2022
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/20/2021	Annual	10/20/2022
HP	Dual Directional Coupler	16072	10/05/2021	Annual	10/05/2022
R&S	Bluetooth CBT	100272	02/08/2022	Annual	02/08/2023

* 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.

15. 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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Appendix *A.* DUT Ant. Information & SETUP PHOTO

Please refer to test DUT Ant. Information & setup photo file no. as follows:

No.	Description
0	HCT-SR-2206-FC004-P

Appendix B. – SAR Test Plots

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	21.1 ℃
Ambient Temperature:	21.0 ℃
Test Date:	04/17/2022
Plot No.:	1

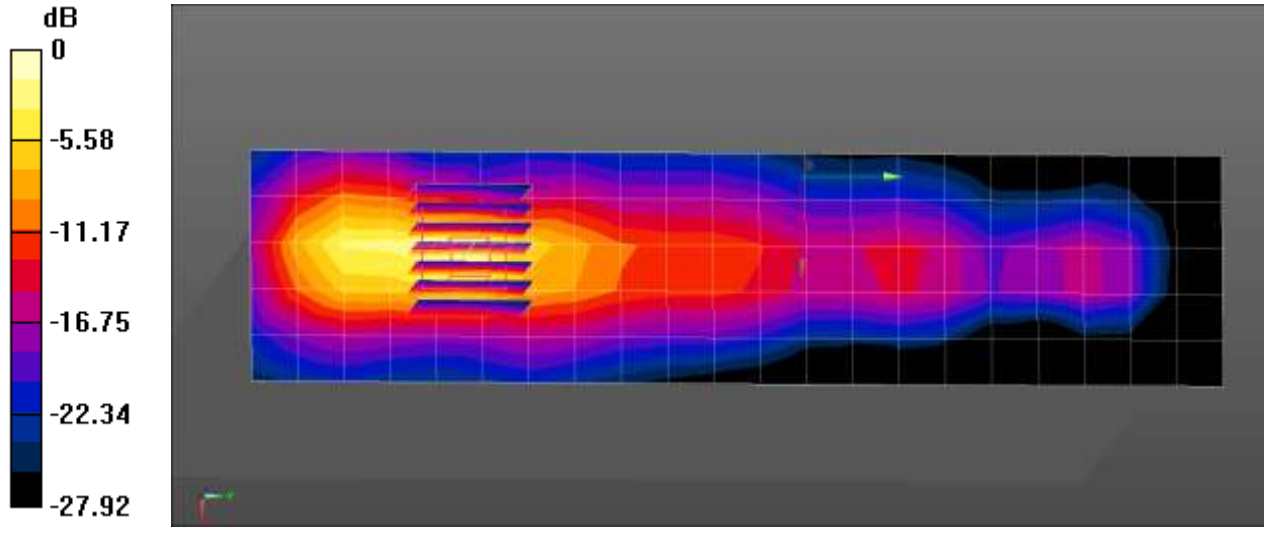
Communication System: UID 0, 2450MHz (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.823 S/m; ε_r = 39.227; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2437 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11b Body Edge 4 Tilt 1Mbps 6ch/Area Scan (22x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 1.57 W/kg

802.11b Body Edge 4 Tilt 1Mbps 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.46 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.38 W/kg
SAR(1 g) = 1.24 W/kg; SAR(10 g) = 0.471 W/kg
Maximum value of SAR (measured) = 2.50 W/kg



0 dB = 2.50 W/kg = 3.98 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	19.2 ℃
Ambient Temperature:	19.3 ℃
Test Date:	04/18/2022
Plot No.:	2

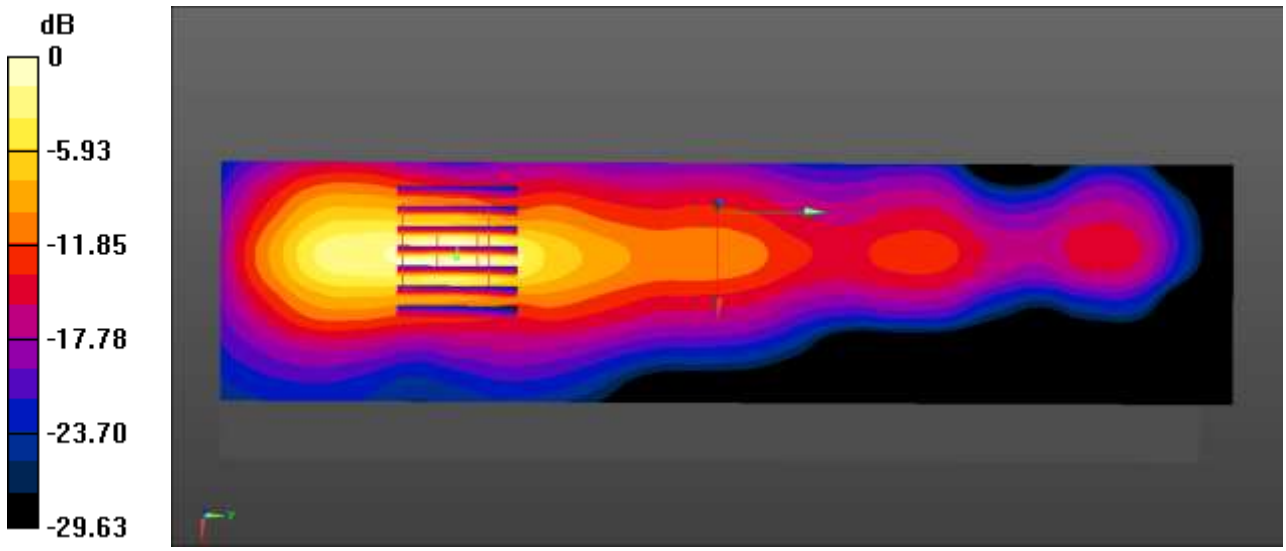
Communication System: UID 0, 2450MHz (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.825 S/m; ε_r = 39.198; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2437 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11n40 Body Edge 4 Tilt MCS0 6ch/Area Scan (211x51x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.48 W/kg

802.11n40 Body Edge 4 Tilt MCS0 6ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.079 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 3.20 W/kg
SAR(1 g) = 1.15 W/kg; SAR(10 g) = 0.435 W/kg
Maximum value of SAR (measured) = 2.33 W/kg



0 dB = 2.33 W/kg = 3.67 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	20.8 ℃
Ambient Temperature:	20.9 ℃
Test Date:	05/11/2022
Plot No.:	3

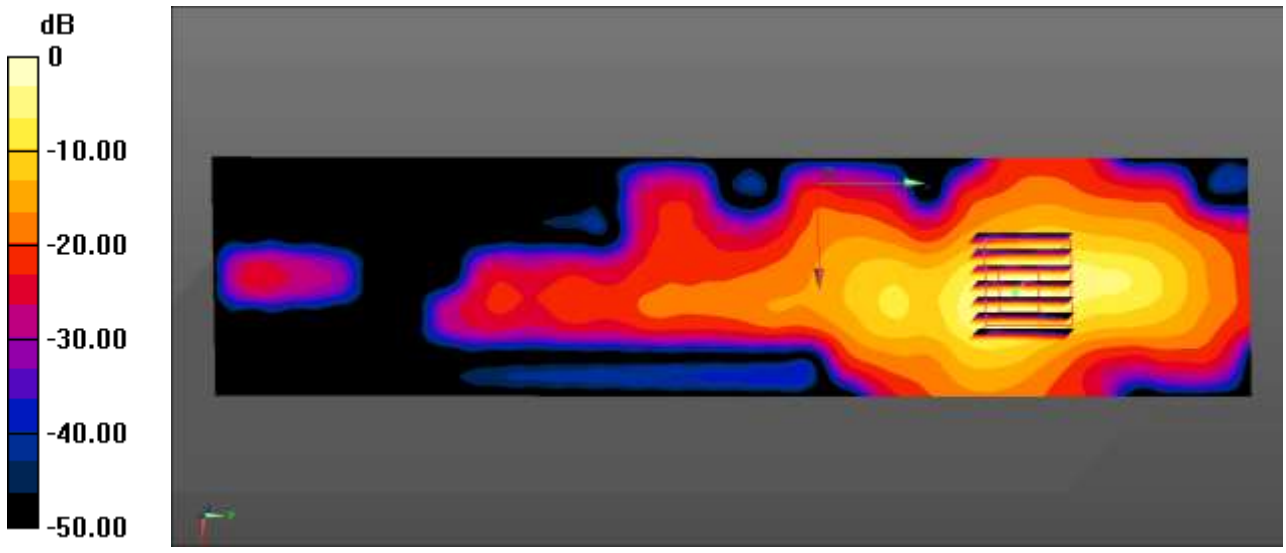
Communication System: UID 0, WIFI 5GHz UNII2A (0); Frequency: 5290 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5290 MHz; σ = 4.741 S/m; ε_r = 36.61; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(6.1, 6.1, 6.1) @ 5290 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11ac80 Body Edge 2 Tilt MCS0 58ch/Area Scan (261x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.50 W/kg

802.11ac80 Body Edge 2 Tilt MCS0 58ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.835 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 5.27 W/kg
SAR(1 g) = 1.11 W/kg; SAR(10 g) = 0.302 W/kg
Maximum value of SAR (measured) = 3.03 W/kg



0 dB = 3.03 W/kg = 4.81 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	20.6 ℃
Ambient Temperature:	20.7 ℃
Test Date:	05/13/2022
Plot No.:	4

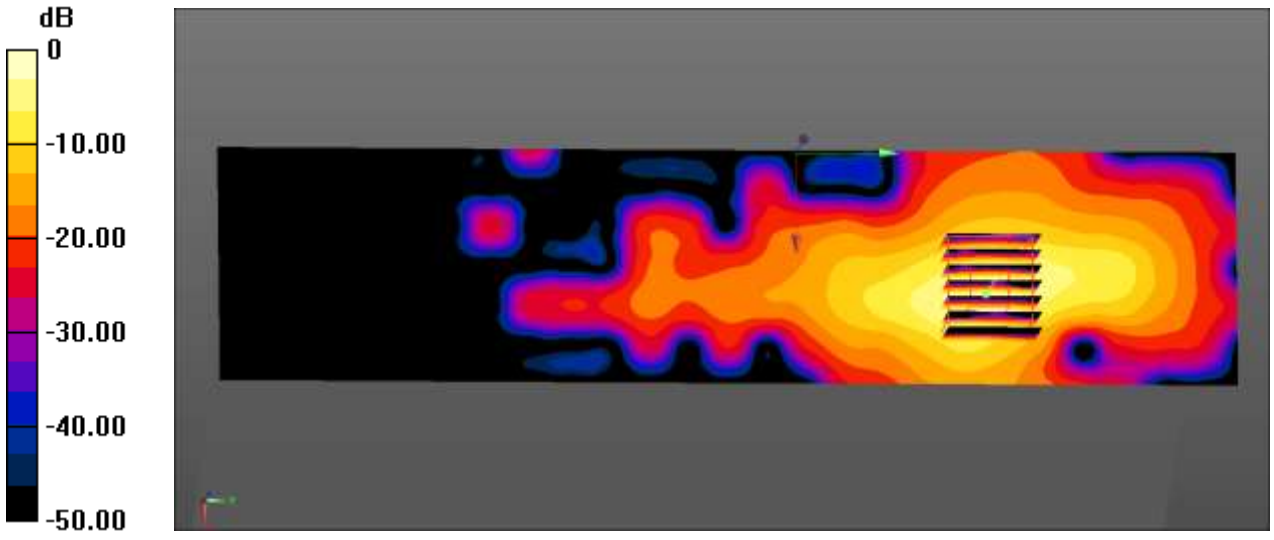
Communication System: UID 0, WIFI 5GHz UNII2C (0); Frequency: 5570 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5570 MHz; σ = 4.934 S/m; ε_r = 36.298; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(5.4, 5.4, 5.4) @ 5570 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11ac160 Body Edge 2 tilt MCS0 114ch/Area Scan (261x61x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.24 W/kg

802.11ac160 Body Edge 2 tilt MCS0 114ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 0 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 4.68 W/kg
SAR(1 g) = 0.955 W/kg; SAR(10 g) = 0.268 W/kg
Maximum value of SAR (measured) = 2.63 W/kg



0 dB = 2.63 W/kg = 4.20 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	20.8 ℃
Ambient Temperature:	21.0 ℃
Test Date:	04/25/2022
Plot No.:	5

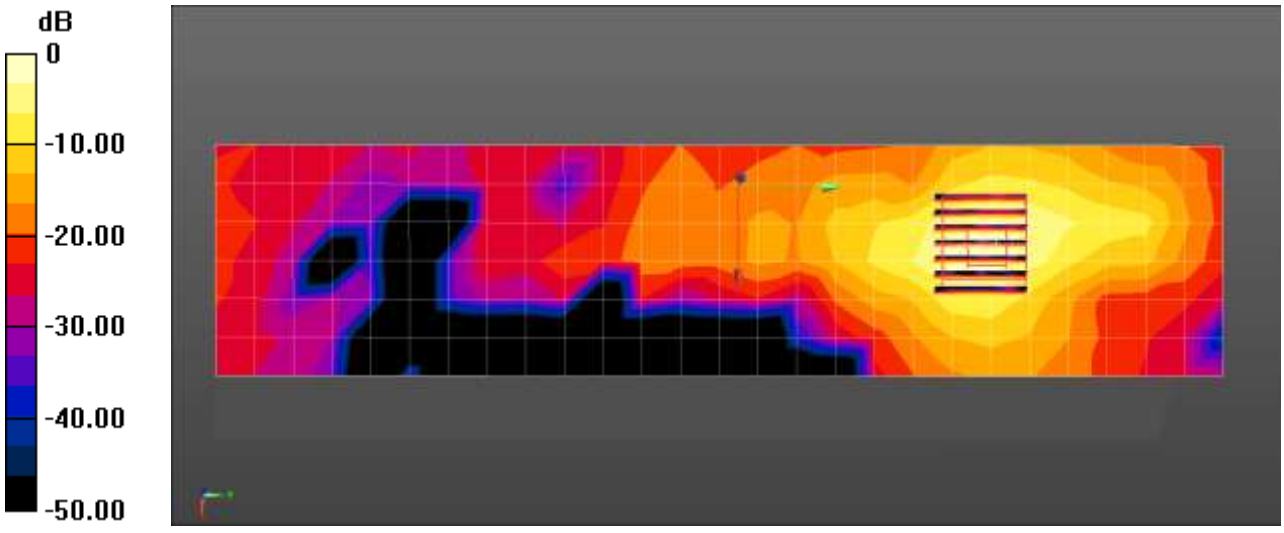
Communication System: UID 0, WIFI 5GHz UNII3 (0); Frequency: 5775 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5775 MHz; σ = 5.219 S/m; ε_r = 36.016; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(5.37, 5.37, 5.37) @ 5775 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

802.11ac80 Body Edge 2 Tilt MCS0 155ch/Area Scan (27x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 2.34 W/kg

802.11ac80 Body Edge 2 Tilt MCS0 155ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 2.763 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 5.22 W/kg
SAR(1 g) = 1.1 W/kg; SAR(10 g) = 0.354 W/kg
Maximum value of SAR (measured) = 2.85 W/kg



0 dB = 2.85 W/kg = 4.55 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	19.0 ℃
Ambient Temperature:	19.0 ℃
Test Date:	04/19/2022
Plot No.:	6

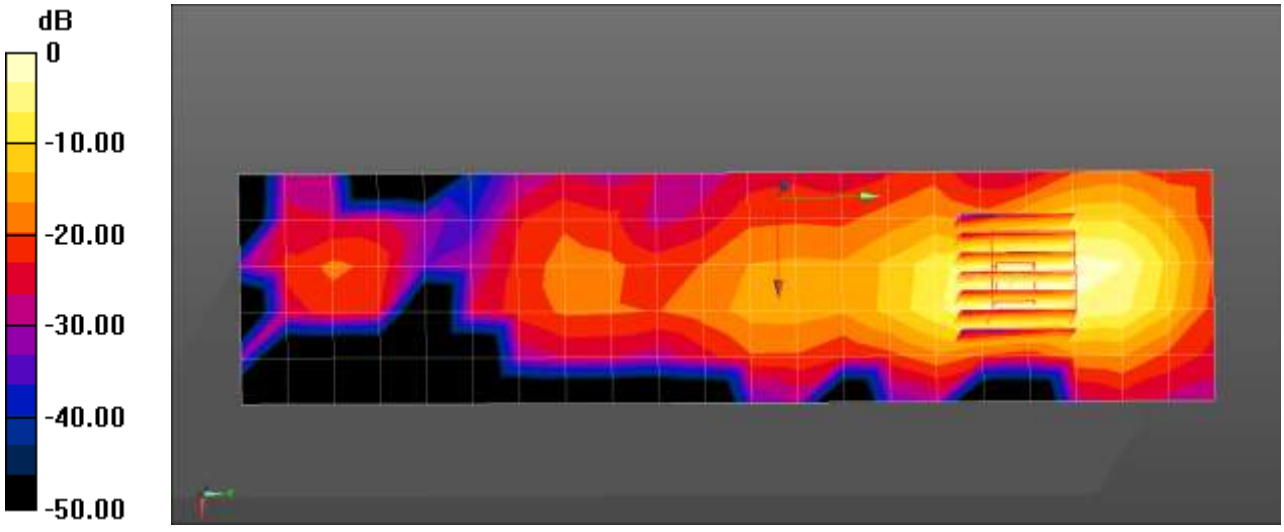
Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz;Duty Cycle: 1: 1.299
Medium parameters used: f = 2480 MHz; σ = 1.859 S/m; ε_r = 39.289; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2480 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Bluetooth Body Edge 2 Tilt DH5 78ch/Area Scan (22x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.203 W/kg

Bluetooth Body Edge 2 Tilt DH5 78ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.406 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.423 W/kg
SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.068 W/kg
Maximum value of SAR (measured) = 0.315 W/kg



0 dB = 0.315 W/kg = -5.02 dBW/kg

Test Laboratory:	HCT CO., LTD
EUT Type:	Intel Wi-Fi 6 AX211
Liquid Temperature:	19.0 ℃
Ambient Temperature:	19.0 ℃
Test Date:	04/19/2022
Plot No.:	7

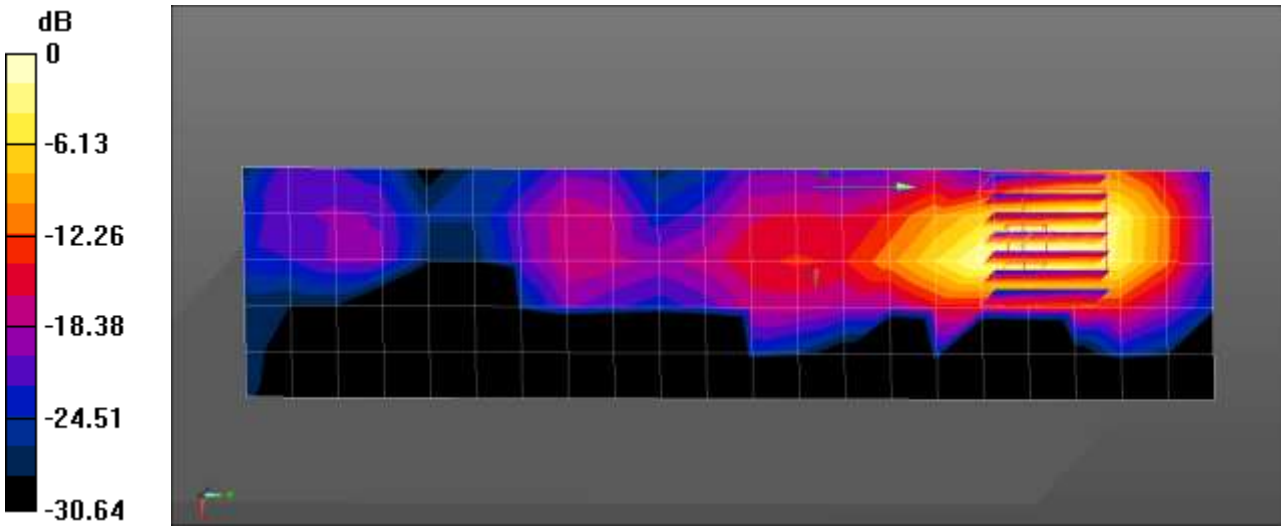
Communication System: UID 0, Bluetooth (0); Frequency: 2402 MHz;Duty Cycle: 1: 1.299
Medium parameters used (interpolated): f = 2402 MHz; σ = 1.796 S/m; ε_r = 39.196; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2402 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Bluetooth Body Edge 2 Tilt DH5 0ch/Area Scan (22x6x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 0.246 W/kg

Bluetooth Body Edge 2 Tilt DH5 0ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.622 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.409 W/kg
SAR(1 g) = 0.159 W/kg; SAR(10 g) = 0.072 W/kg
Maximum value of SAR (measured) = 0.310 W/kg



0 dB = 0.310 W/kg = -5.09 dBW/kg

Appendix C. – Dipole Verification Plots

Verification Data (2 450 Mhz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	21.1 ℃
Test Date:	04/17/2022

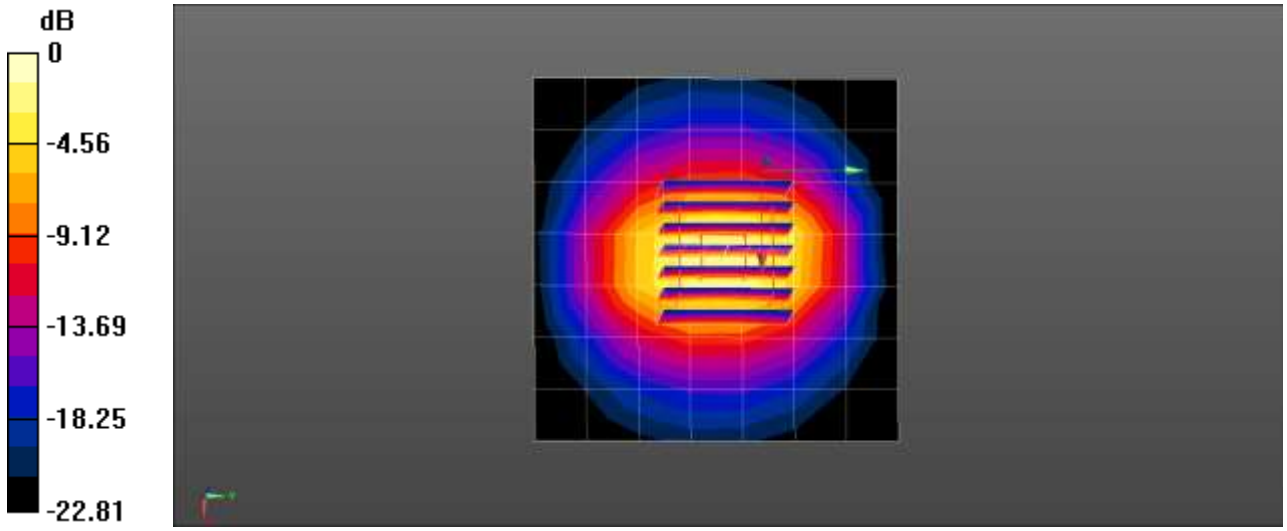
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.833 S/m; ε_r = 39.246; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2450 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

2450MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 2.98 W/kg

2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.45 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.55 W/kg
SAR(1 g) = 2.46 W/kg; SAR(10 g) = 1.13 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 44.5%
Maximum value of SAR (measured) = 4.32 W/kg



0 dB = 4.32 W/kg = 6.35 dBW/kg

Verification Data (2 450 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.2 ℃
Test Date:	04/18/2022

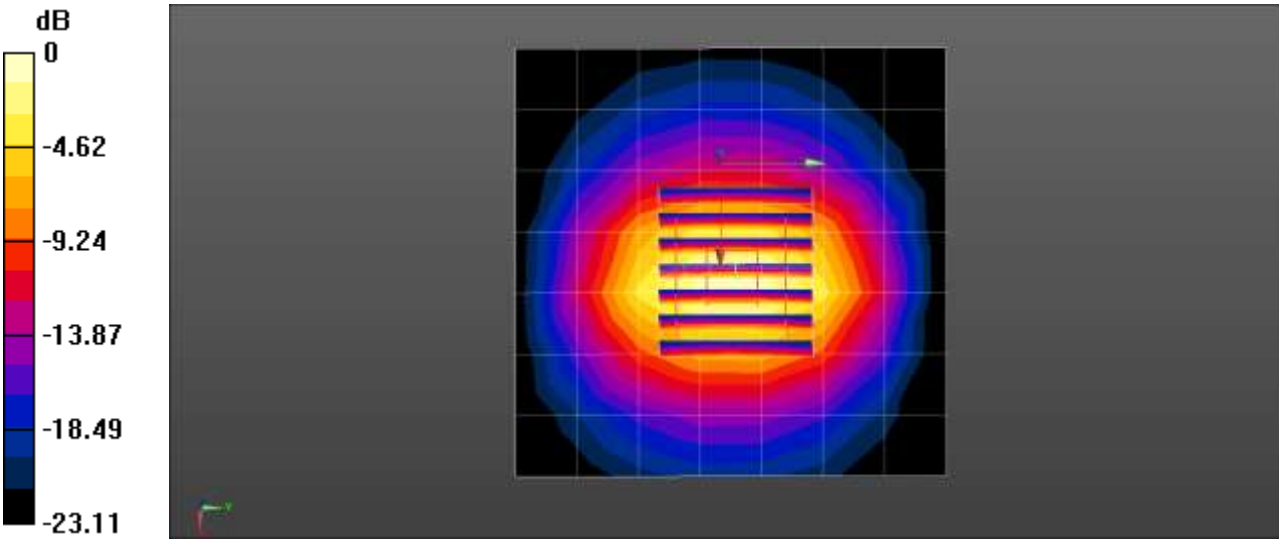
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.835 S/m; ε_r = 39.217; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2450 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

2450MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.96 W/kg

2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 48.47 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 5.70 W/kg
SAR(1 g) = 2.54 W/kg; SAR(10 g) = 1.15 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 44.6%
Maximum value of SAR (measured) = 4.44 W/kg



0 dB = 4.44 W/kg = 6.47 dBW/kg

Verification Data (2 450 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	19.0 ℃
Test Date:	04/19/2022

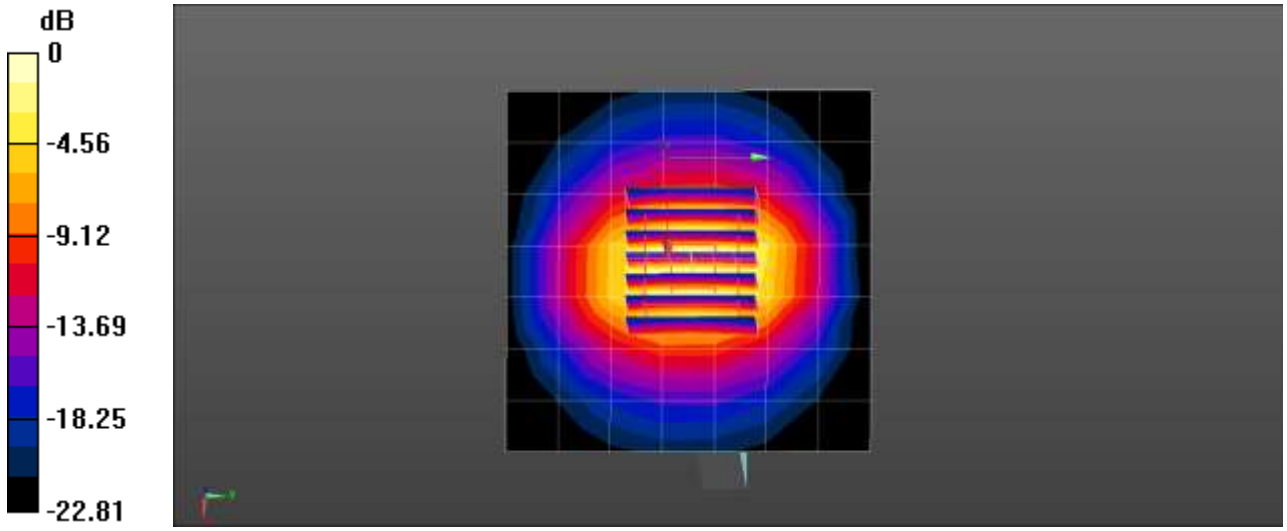
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.833 S/m; ε_r = 39.239; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(8.49, 8.49, 8.49) @ 2450 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

2450MHz Head Verification/Area Scan (8x8x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 3.01 W/kg

2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 50.11 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 5.48 W/kg
SAR(1 g) = 2.45 W/kg; SAR(10 g) = 1.12 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 44.8%
Maximum value of SAR (measured) = 4.27 W/kg



0 dB = 4.27 W/kg = 6.30 dBW/kg

Verification Data (5 250 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.8 ℃
Test Date:	05/11/2022

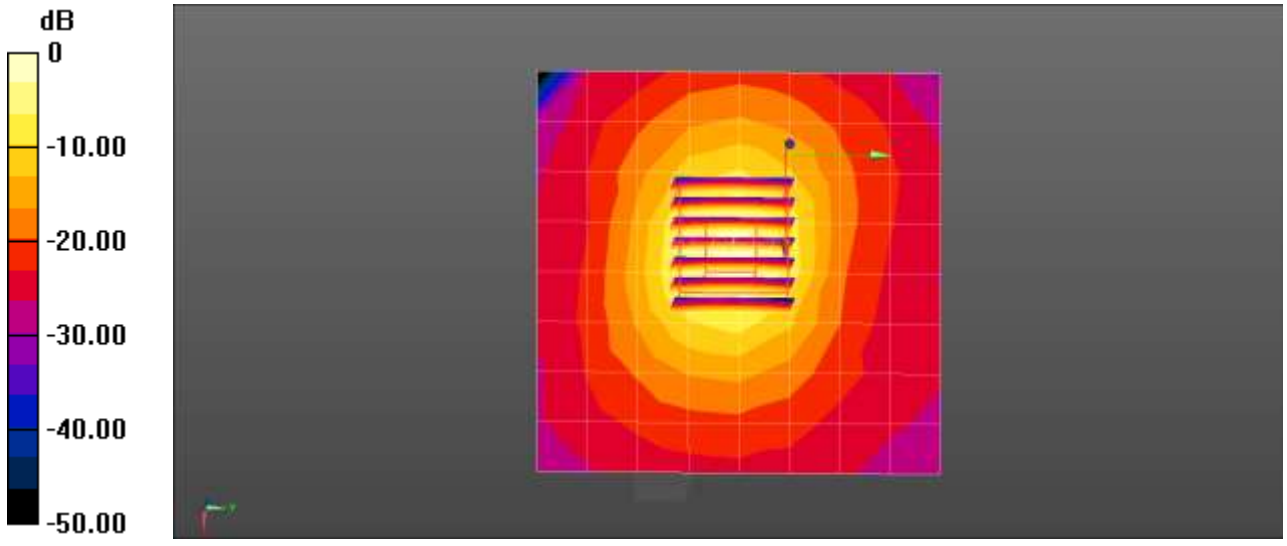
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.673 S/m; ε_r = 36.633; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(6.1, 6.1, 6.1) @ 5250 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

5250MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.81 W/kg

5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 43.73 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 17.2 W/kg
SAR(1 g) = 4.18 W/kg; SAR(10 g) = 1.2 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 64.1%
Maximum value of SAR (measured) = 10.6 W/kg



0 dB = 10.6 W/kg = 10.25 dBW/kg

Verification Data (5 600 MHz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.6 ℃
Test Date:	05/13/2022

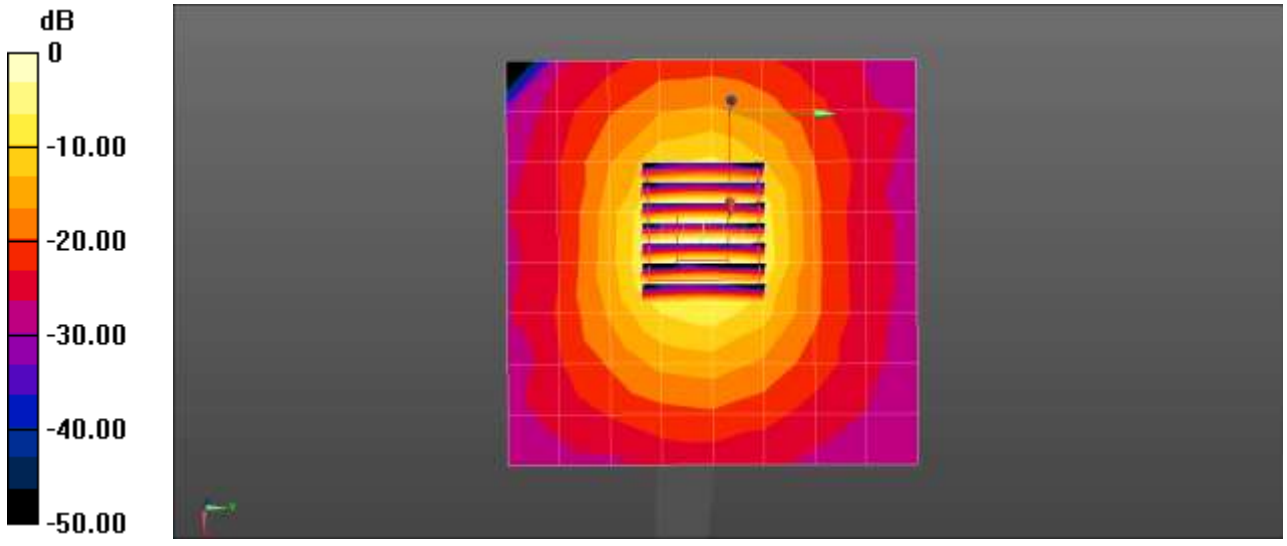
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 4.959 S/m; ε_r = 36.156; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(5.4, 5.4, 5.4) @ 5600 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

5600MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.75 W/kg

5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 44.21 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 19.7 W/kg
SAR(1 g) = 4.36 W/kg; SAR(10 g) = 1.24 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 61.2%
Maximum value of SAR (measured) = 11.4 W/kg



0 dB = 11.4 W/kg = 10.57 dBW/kg

Verification Data (5 750 Mhz Body)

Test Laboratory:	HCT CO., LTD
Input Power	0.05 W
Liquid Temp:	20.8 ℃
Test Date:	04/25/2022

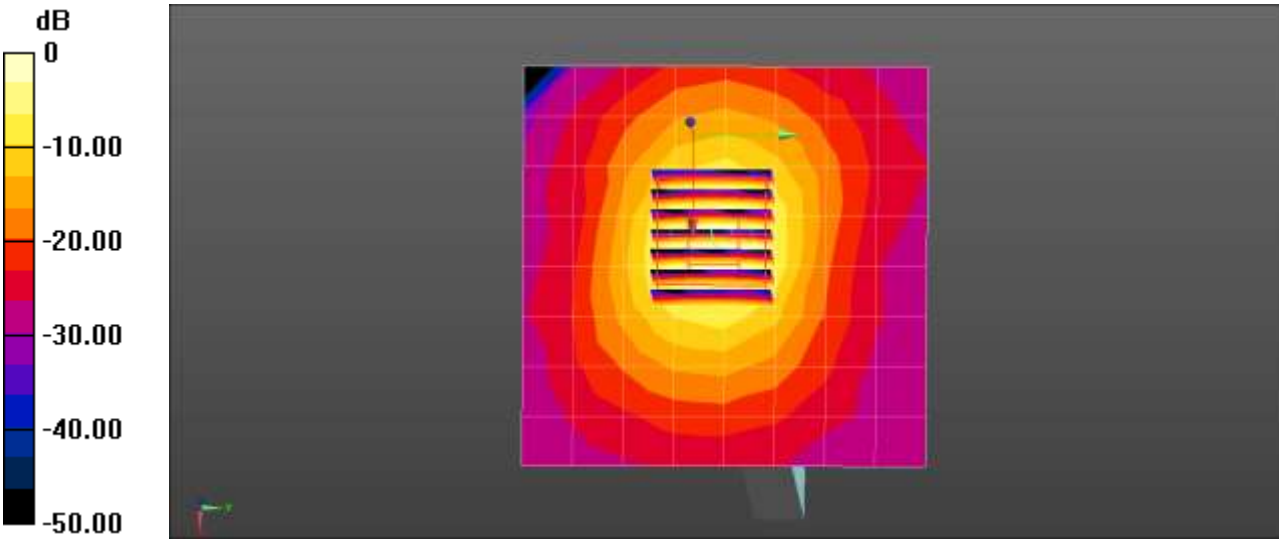
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.229 S/m; ε_r = 35.976; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7654; ConvF(5.37, 5.37, 5.37) @ 5750 MHz; Calibrated: 2021-05-21
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn869; Calibrated: 2022-03-25
- Phantom: ELI V6.0 (20deg probe tilt); Type: QD OVA 003 AA; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

5750MHz Head Verification/Area Scan (9x9x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 8.72 W/kg

5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 43.11 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 20.4 W/kg
SAR(1 g) = 4.38 W/kg; SAR(10 g) = 1.25 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 60.1%
Maximum value of SAR (measured) = 11.6 W/kg



0 dB = 11.6 W/kg = 10.64 dBW/kg

Appendix D. – 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)	
	2 450 – 2 700	3 500 - 5 800
Tissue Type	Body	Body
Water	73.2	78.66
Salt (NaCl)	0.1	0.0
Sugar	0.0	0.0
HEC	0.0	0.0
Bactericide	0.0	0.0
Triton X-100	0.0	10.67
DGBE	26.7	0.0
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

Appendix E. – SAR system validation

Per the IEEE1528-2013.,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 the IEEE1528-2013. 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.

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
7654	EX3DV4	Head	2450	965	2021-06-28	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
7654	EX3DV4	Head	5250	1107	2021-08-04	35.7	4.70	PASS	PASS	PASS	OFDM	N/A	PASS
7654	EX3DV4	Head	5600	1107	2021-08-04	35.3	5.05	PASS	PASS	PASS	OFDM	N/A	PASS
7654	EX3DV4	Head	5750	1107	2021-08-04	35.6	5.24	PASS	PASS	PASS	OFDM	N/A	PASS

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 the IEEE1528-2013. 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 the IEEE1528-2013.

Appendix F. – Probe Calibration Data

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

S C S Schweizerischer Kalibrierdienst
Service suisse d'étalonnage
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: EX3-7654_May21

	담당자	확인자
결		
재	이 석 경 2021.05.19	허 정 태 2021.05.19

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:7654

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

Calibration date: May 21, 2021

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-21
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-21
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-21
DAE4	SN: 660	23-Dec-20 (No. DAE4-660_Dec20)	Dec-21
Reference Probe ES3DV2	SN: 3013	30-Dec-20 (No. ES3-3013_Dec20)	Dec-21
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-21

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 22, 2021

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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

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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).

EX3DV4 – SN:7654 May 21, 2021

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7654

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.63	0.59	0.55	± 10.1 %
DCP (mV)[B]	106.0	102.6	104.0	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Max dev.	Max Unc[E] (k=2)
0	CW	X	0.00	0.00	1.00	0.00	142.5	± 3.0 %	± 4.7 %
		Y	0.00	0.00	1.00		140.5		
		Z	0.00	0.00	1.00		149.1		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	1.69	61.43	6.91	10.00	60.0	± 2.4 %	± 9.6 %
		Y	1.60	61.06	6.83		60.0		
		Z	1.64	61.29	6.91		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	10.00	72.00	9.00	6.99	80.0	± 2.1 %	± 9.6 %
		Y	0.79	60.00	5.21		80.0		
		Z	0.79	60.00	5.16		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	0.00	117.89	0.98	3.98	95.0	± 2.7 %	± 9.6 %
		Y	0.27	142.53	0.06		95.0		
		Z	0.00	118.29	0.67		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	0.44	60.00	2.81	2.22	120.0	± 1.8 %	± 9.6 %
		Y	10.55	157.32	15.31		120.0		
		Z	13.49	98.98	0.99		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	0.84	65.43	13.05	1.00	150.0	± 3.7 %	± 9.6 %
		Y	0.70	65.12	13.49		150.0		
		Z	0.50	61.86	11.25		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	1.54	65.84	14.18	0.00	150.0	± 1.2 %	± 9.6 %
		Y	1.47	66.24	14.49		150.0		
		Z	1.24	64.38	13.11		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	1.60	63.10	15.11	3.01	150.0	± 1.1 %	± 9.6 %
		Y	1.61	63.57	15.56		150.0		
		Z	1.55	62.98	15.08		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	2.86	65.51	14.72	0.00	150.0	± 1.4 %	± 9.6 %
		Y	2.92	66.28	15.20		150.0		
		Z	2.74	65.55	14.66		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.12	65.94	15.34	0.00	150.0	± 2.8 %	± 9.6 %
		Y	3.93	65.79	15.30		150.0		
		Z	3.91	66.15	15.30		150.0		

Note: For details on UID parameters see Appendix

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.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:7654

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	13.5	97.47	33.25	2.45	0.00	4.90	0.35	0.00	1.00
Y	11.4	81.88	33.18	2.44	0.00	4.90	0.22	0.00	1.00
Z	10.1	73.24	33.37	2.66	0.00	4.92	0.22	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	168.9
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7654

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)
750	41.9	0.89	10.79	10.79	10.79	0.49	0.80	± 12.0 %
835	41.5	0.90	10.54	10.54	10.54	0.47	0.80	± 12.0 %
900	41.5	0.97	10.37	10.37	10.37	0.41	0.89	± 12.0 %
1750	40.1	1.37	9.40	9.40	9.40	0.25	0.86	± 12.0 %
1900	40.0	1.40	9.15	9.15	9.15	0.27	0.86	± 12.0 %
2300	39.5	1.67	8.80	8.80	8.80	0.24	0.90	± 12.0 %
2450	39.2	1.80	8.49	8.49	8.49	0.34	0.90	± 12.0 %
2600	39.0	1.96	8.28	8.28	8.28	0.32	0.90	± 12.0 %
3300	38.2	2.71	7.80	7.80	7.80	0.30	1.35	± 13.1 %
3500	37.9	2.91	7.70	7.70	7.70	0.30	1.35	± 13.1 %
3700	37.7	3.12	7.57	7.57	7.57	0.30	1.35	± 13.1 %
3900	37.5	3.32	7.16	7.16	7.16	0.40	1.60	± 13.1 %
4100	37.2	3.53	6.95	6.95	6.95	0.40	1.60	± 13.1 %
4400	36.9	3.84	6.80	6.80	6.80	0.40	1.70	± 13.1 %
4600	36.7	4.04	6.76	6.76	6.76	0.40	1.70	± 13.1 %
4800	36.4	4.25	6.71	6.71	6.71	0.40	1.80	± 13.1 %
4950	36.3	4.40	6.50	6.50	6.50	0.40	1.80	± 13.1 %
5250	35.9	4.71	6.10	6.10	6.10	0.40	1.80	± 13.1 %
5600	35.5	5.07	5.40	5.40	5.40	0.40	1.80	± 13.1 %
5750	35.4	5.22	5.37	5.37	5.37	0.40	1.80	± 13.1 %

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

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

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7654

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
6500	34.5	6.07	5.98	5.98	5.98	0.25	2.50	± 18.6 %

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

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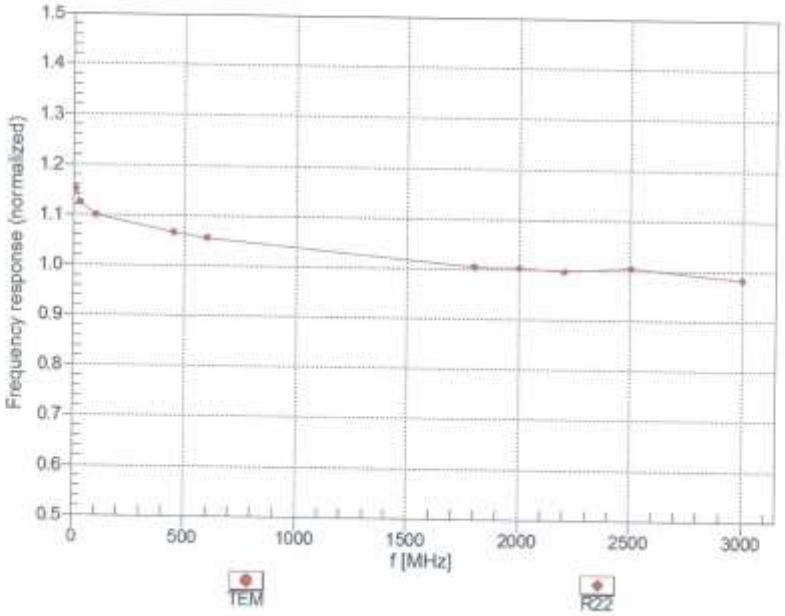
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



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

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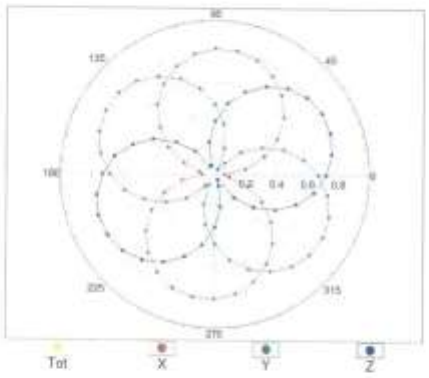
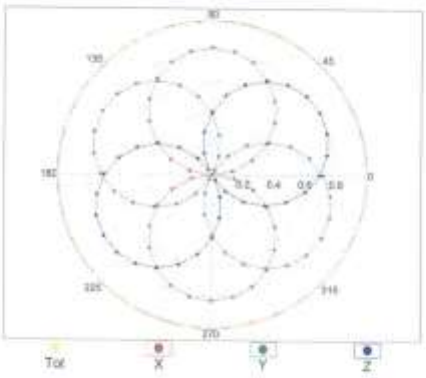
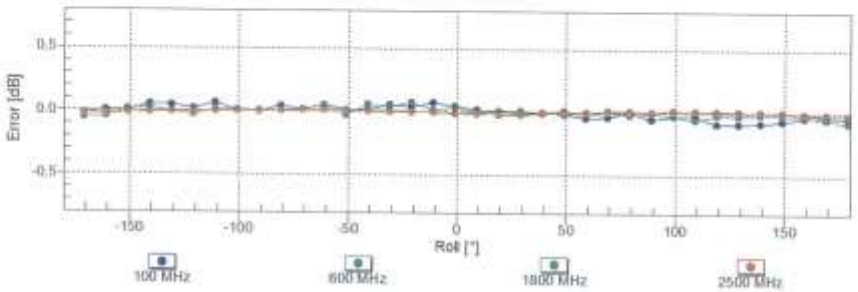
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





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

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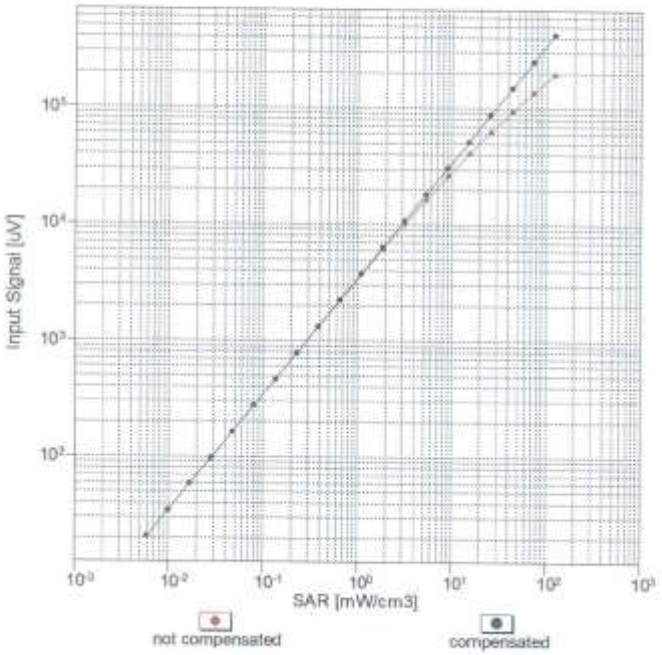
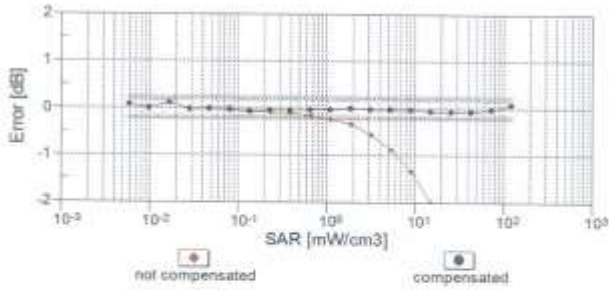
Dynamic Range f(SAR_{head})
(TEM cell , f_{eval}= 1900 MHz)





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

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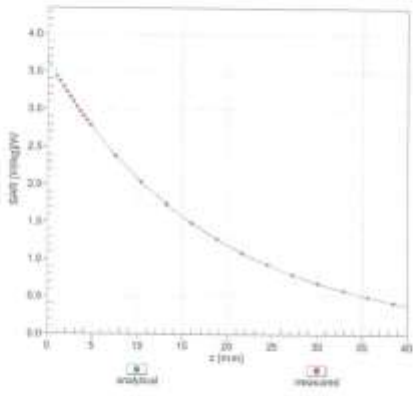
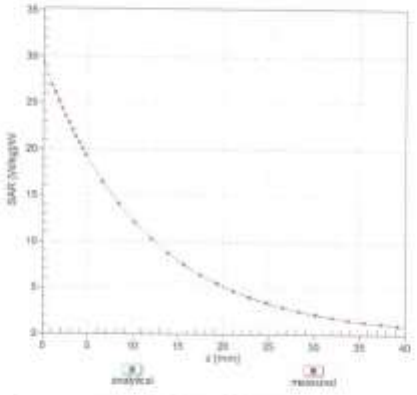
Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

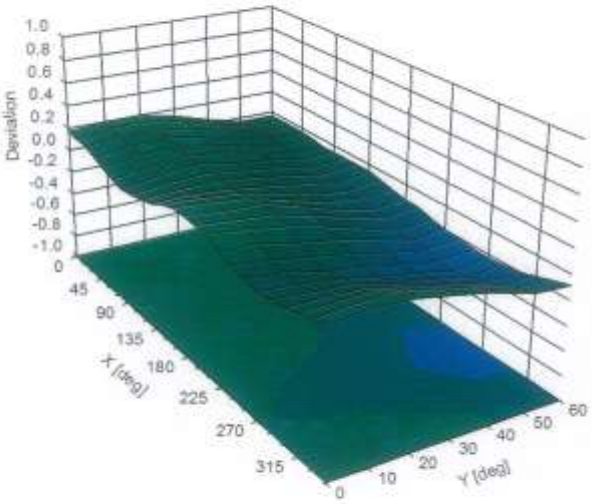


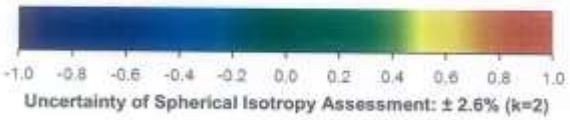
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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

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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc[E] (k=2)
0		CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	DAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %

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10099	CAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	DAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAG	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAG	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAG	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAG	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAD	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAC	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAF	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	AAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %

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10181	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAI	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAE	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	AAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAE	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAE	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	AAE	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAF	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAF	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
10220	AAF	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAD	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAD	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAD	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	DAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %

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10260	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAD	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAD	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAD	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAG	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	CAG	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	CAG	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	CAG	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	CAG	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	CAG	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %
10300	CAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	CAC	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	CAB	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WiMAX	12.57	± 9.6 %
10303	CAB	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	CAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	CAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	15.24	± 9.6 %
10306	CAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	14.67	± 9.6 %
10307	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WiMAX	14.49	± 9.6 %
10308	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM,AMC 2x3)	WiMAX	14.58	± 9.6 %
10310	AAB	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3	WiMAX	14.57	± 9.6 %
10311	AAB	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAD	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAD	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAD	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	± 9.6 %
10316	AAD	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10317	AAA	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)	WLAN	8.37	± 9.6 %
10401	AAA	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAA	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAD	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %

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10410	AAA	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAE	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAE	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAE	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAC	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAG	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAA	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAA	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAA	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAA	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10453	AAC	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
10456	AAC	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	WLAN	8.63	± 9.6 %
10457	AAC	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAC	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAC	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAC	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %
10463	AAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAA	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAA	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %

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10488	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10489	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	± 9.6 %
10496	AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10497	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10498	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10499	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 9.6 %
10500	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAF	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
10525	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10526	AAF	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 %
10527	AAF	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.21	± 9.6 %
10528	AAF	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAF	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAF	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.43	± 9.6 %
10532	AAF	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10533	AAE	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.38	± 9.6 %
10534	AAE	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAE	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAF	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 %
10537	AAF	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	± 9.6 %
10538	AAF	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %

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10546	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10552	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10553	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10564	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10565	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10566	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10569	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10571	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10573	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10575	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10576	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10578	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10580	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10582	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10593	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10594	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10595	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	WLAN	8.74	± 9.6 %
10596	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10601	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10603	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %

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10604	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
10605	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAC	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAC	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAC	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAC	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAC	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10613	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.94	± 9.6 %
10614	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	± 9.6 %
10615	AAC	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.81	± 9.6 %
10618	AAC	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	± 9.6 %
10619	AAC	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	± 9.6 %
10620	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAC	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAC	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	± 9.6 %
10623	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10625	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10627	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10628	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9.6 %
10629	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10630	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 %
10631	AAC	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 %
10634	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAC	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAC	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
10655	AAC	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAC	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAC	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAC	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAC	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAC	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAC	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAD	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	± 9.6 %

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10672	AAD	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %
10673	AAD	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10674	AAD	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAD	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAD	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAD	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAD	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAD	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAD	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %
10681	AAG	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAF	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10684	AAC	IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10685	AAC	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10686	AAC	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	± 9.6 %
10687	AAE	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6 %
10688	AAE	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6 %
10689	AAD	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6 %
10690	AAE	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10691	AAB	IEEE 802.11ax (20MHz, MCS8, 99pc dc)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAC	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10708	AAC	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAC	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10710	AAC	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
10711	AAC	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10712	AAC	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAC	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
10714	AAC	IEEE 802.11ax (40MHz, MCS7, 99pc dc)	WLAN	8.26	± 9.6 %
10715	AAC	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10716	AAC	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.30	± 9.6 %
10717	AAC	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.48	± 9.6 %
10718	AAC	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	± 9.6 %
10719	AAC	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
10720	AAC	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	± 9.6 %
10721	AAC	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 %
10722	AAC	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAC	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAC	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAC	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAC	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAC	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %

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10728	AAC	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.65	± 9.6 %
10729	AAC	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 %
10730	AAC	IEEE 802.11ax (80MHz, MCS11, 90pc dc)	WLAN	8.67	± 9.6 %
10731	AAC	IEEE 802.11ax (80MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10732	AAC	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN	8.46	± 9.6 %
10733	AAC	IEEE 802.11ax (80MHz, MCS2, 99pc dc)	WLAN	8.40	± 9.6 %
10734	AAC	IEEE 802.11ax (80MHz, MCS3, 99pc dc)	WLAN	8.25	± 9.6 %
10735	AAC	IEEE 802.11ax (80MHz, MCS4, 99pc dc)	WLAN	8.33	± 9.6 %
10736	AAC	IEEE 802.11ax (80MHz, MCS5, 99pc dc)	WLAN	8.27	± 9.6 %
10737	AAC	IEEE 802.11ax (80MHz, MCS6, 99pc dc)	WLAN	8.36	± 9.6 %
10738	AAC	IEEE 802.11ax (80MHz, MCS7, 99pc dc)	WLAN	8.42	± 9.6 %
10739	AAC	IEEE 802.11ax (80MHz, MCS8, 99pc dc)	WLAN	8.29	± 9.6 %
10740	AAC	IEEE 802.11ax (80MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10741	AAC	IEEE 802.11ax (80MHz, MCS10, 99pc dc)	WLAN	8.40	± 9.6 %
10742	AAC	IEEE 802.11ax (80MHz, MCS11, 99pc dc)	WLAN	8.43	± 9.6 %
10743	AAC	IEEE 802.11ax (160MHz, MCS0, 90pc dc)	WLAN	8.94	± 9.6 %
10744	AAC	IEEE 802.11ax (160MHz, MCS1, 90pc dc)	WLAN	9.16	± 9.6 %
10745	AAC	IEEE 802.11ax (160MHz, MCS2, 90pc dc)	WLAN	8.93	± 9.6 %
10746	AAC	IEEE 802.11ax (160MHz, MCS3, 90pc dc)	WLAN	9.11	± 9.6 %
10747	AAC	IEEE 802.11ax (160MHz, MCS4, 90pc dc)	WLAN	9.04	± 9.6 %
10748	AAC	IEEE 802.11ax (160MHz, MCS5, 90pc dc)	WLAN	8.93	± 9.6 %
10749	AAC	IEEE 802.11ax (160MHz, MCS6, 90pc dc)	WLAN	8.90	± 9.6 %
10750	AAC	IEEE 802.11ax (160MHz, MCS7, 90pc dc)	WLAN	8.79	± 9.6 %
10751	AAC	IEEE 802.11ax (160MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10752	AAC	IEEE 802.11ax (160MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10753	AAC	IEEE 802.11ax (160MHz, MCS10, 90pc dc)	WLAN	9.00	± 9.6 %
10754	AAC	IEEE 802.11ax (160MHz, MCS11, 90pc dc)	WLAN	8.94	± 9.6 %
10755	AAC	IEEE 802.11ax (160MHz, MCS0, 99pc dc)	WLAN	8.64	± 9.6 %
10756	AAC	IEEE 802.11ax (160MHz, MCS1, 99pc dc)	WLAN	8.77	± 9.6 %
10757	AAC	IEEE 802.11ax (160MHz, MCS2, 99pc dc)	WLAN	8.77	± 9.6 %
10758	AAC	IEEE 802.11ax (160MHz, MCS3, 99pc dc)	WLAN	8.69	± 9.6 %
10759	AAC	IEEE 802.11ax (160MHz, MCS4, 99pc dc)	WLAN	8.58	± 9.6 %
10760	AAC	IEEE 802.11ax (160MHz, MCS5, 99pc dc)	WLAN	8.49	± 9.6 %
10761	AAC	IEEE 802.11ax (160MHz, MCS6, 99pc dc)	WLAN	8.58	± 9.6 %
10762	AAC	IEEE 802.11ax (160MHz, MCS7, 99pc dc)	WLAN	8.49	± 9.6 %
10763	AAC	IEEE 802.11ax (160MHz, MCS8, 99pc dc)	WLAN	8.53	± 9.6 %
10764	AAC	IEEE 802.11ax (160MHz, MCS9, 99pc dc)	WLAN	8.54	± 9.6 %
10765	AAC	IEEE 802.11ax (160MHz, MCS10, 99pc dc)	WLAN	8.54	± 9.6 %
10766	AAC	IEEE 802.11ax (160MHz, MCS11, 99pc dc)	WLAN	8.51	± 9.6 %
10767	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	± 9.6 %
10768	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10769	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10770	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10771	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10772	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	± 9.6 %
10773	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	± 9.6 %
10774	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10775	AAC	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %
10776	AAC	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10778	AAC	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10780	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10781	AAC	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10782	AAC	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10783	AAC	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %

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10784	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	± 9.6 %
10785	AAC	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10786	AAC	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10787	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	± 9.6 %
10788	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10789	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10790	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10791	AAC	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	± 9.6 %
10792	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
10793	AAC	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10794	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10795	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	± 9.6 %
10796	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10797	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10798	AAC	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10799	AAC	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10801	AAC	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10802	AAC	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	± 9.6 %
10803	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10810	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10817	AAD	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10818	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	± 9.6 %
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10821	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10823	AAC	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10824	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10828	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	± 9.6 %
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 %
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	± 9.6 %
10833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	± 9.6 %
10839	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %

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10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10864	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10865	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10866	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	± 9.6 %
10869	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	± 9.6 %
10871	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10872	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10875	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	± 9.6 %
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10879	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	± 9.6 %
10880	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	± 9.6 %
10884	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	± 9.6 %
10885	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAD	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAD	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAD	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10901	AAD	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAD	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAD	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAD	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAD	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAD	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAD	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAD	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAD	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAD	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10912	AAD	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAD	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10914	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 %
10915	AAD	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10916	AAD	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10917	AAD	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10918	AAD	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10919	AAD	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10920	AAD	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10921	AAD	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %

EX3DV4– SN:7654 May 21, 2021

10922	AAD	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %
10923	AAD	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10924	AAD	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10925	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 %
10926	AAD	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAD	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10928	AAD	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10929	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10930	AAD	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10931	AAD	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10932	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAA	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAA	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10935	AAA	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10936	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10937	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 9.6 %
10940	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAB	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10942	AAB	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10943	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 %
10944	AAB	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10946	AAC	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10947	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10948	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10949	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10950	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10951	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10952	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	± 9.6 %
10953	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 9.6 %
10954	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 %
10955	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
10956	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAC	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 %
10958	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	± 9.6 %
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10964	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	± 9.6 %
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 9.6 %
10972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	± 9.6 %
10973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	± 9.6 %
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	± 9.6 %

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

Appendix G. – Dipole Calibration Data

Calibration Laboratory of
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Accreditation No.: **SCS 0108**

Client: **HCT (Dymstec)**

Certificate No: **D2450V2-965_Jun21**

CALIBRATION CERTIFICATE

결재	담당자	확인자
	김 / 사원 2021.07.05	이 / 차장 2021.07.05

Object: D2450V2 - SN:965

Calibration procedure(s): QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz

Calibration date: June 15, 2021

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344)	Apr-22
Reference Probe EX3DV4	SN: 7349	28-Dec-20 (No. EX3-7349_Dec20)	Dec-21
DAE4	SN: 601	02-Nov-20 (No. DAE4-601_Nov20)	Nov-21

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-21

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 16, 2021

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

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Accreditation No.: SCS 0108

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

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"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	37.7 ± 6 %	1.87 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.7 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**53.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.8 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	57.8 Ω + 6.6 jΩ
Return Loss	- 20.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.153 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 15.06.2021

Test Laboratory: SPEAG, Zurich, Switzerland

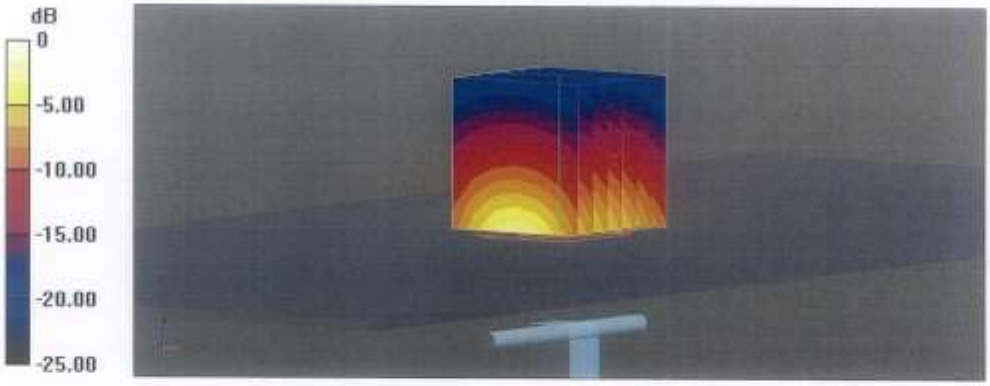
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:965

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.87 S/m; ε_r = 37.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

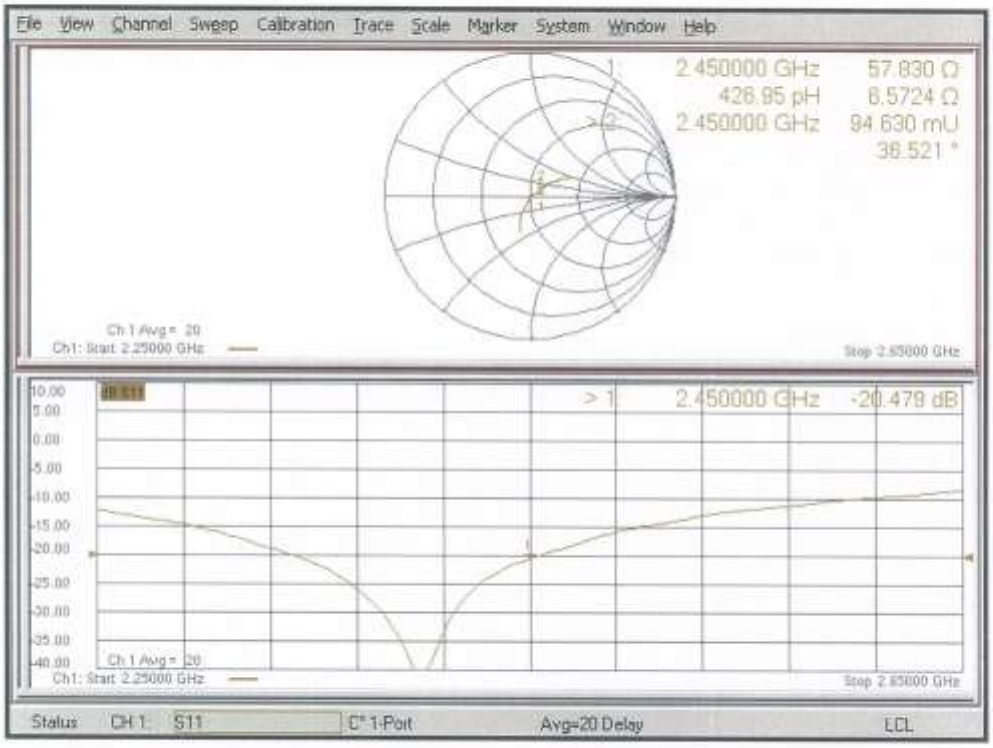
- Probe: EX3DV4 - SN7349; ConvF(7.96, 7.96, 7.96) @ 2450 MHz; Calibrated: 28.12.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.11.2020
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 116.7 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 13.7 W/kg; SAR(10 g) = 6.30 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 50%
Maximum value of SAR (measured) = 22.4 W/kg



0 dB = 22.4 W/kg = 13.50 dBW/kg

Impedance Measurement Plot for Head TSL



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Accreditation No.: SCS 0108

Client HCT (Dymstec) Certificate No: D5GHzV2-1107_Jul21

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN:1107
Calibration procedure(s)	QA CAL-22.v6 Calibration Procedure for SAR Validation Sources between 3-10 GHz
Calibration date:	July 22, 2021

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: BH9394 (20k)	09-Apr-21 (No. 217-03343)	Apr-22
Type-N mismatch combination	SN: 310982 / 06327	09-Apr-21 (No. 217-03344)	Apr-22
Reference Probe EX3DV4	SN: 3503	30-Dec-20 (No. EX3-3503_Dec20)	Dec-21
DAE4	SN: 601	02-Nov-20 (No. DAE4-601_Nov20)	Nov-21

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-21

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

Issued: July 23, 2021

결재	담당자	확인자
	DL 박정훈 2021.08.11	남혁성 2021.08.11

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

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Accreditation No.: SCS 0108

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.6 ± 6 %	4.60 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.33 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.2 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.1 ± 6 %	4.95 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.44 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**84.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.43 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.2 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.8 ± 6 %	5.11 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**80.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.3 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	48.4 Ω - 6.5 jΩ
Return Loss	- 23.4 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.2 Ω - 2.6 jΩ
Return Loss	- 26.5 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	56.5 Ω - 2.9 jΩ
Return Loss	- 23.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.199 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 22.07.2021

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1107

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency:5750 MHz
Medium parameters used: f = 5250 MHz; σ = 4.6 S/m; ε_r = 35.6; ρ = 1000 kg/m^3,
Medium parameters used: f = 5600 MHz; σ = 4.95 S/m; ε_r = 35.1; ρ = 1000 kg/m^3
Medium parameters used: f = 5750 MHz; σ = 5.11 S/m; ε_r = 34.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

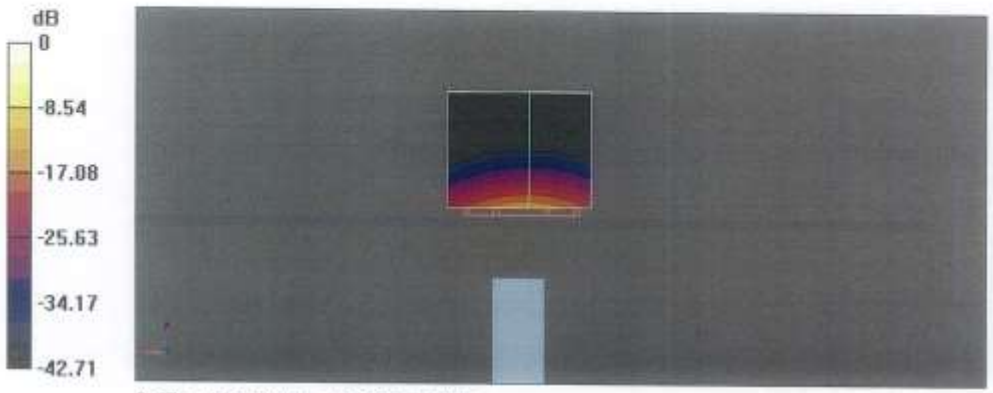
- Probe: EX3DV4 - SN3503; ConvF(5.5, 5.5, 5.5) @ 5250 MHz, ConvF(5.1, 5.1, 5.1) @ 5600 MHz, ConvF(5.08, 5.08, 5.08) @ 5750 MHz; Calibrated: 30.12.2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.11.2020
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 77.05 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 27.4 W/kg
SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.33 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 71.4%
Maximum value of SAR (measured) = 18.3 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 76.80 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 31.0 W/kg
SAR(1 g) = 8.44 W/kg; SAR(10 g) = 2.43 W/kg
Smallest distance from peaks to all points 3 dB below = 7.5 mm
Ratio of SAR at M2 to SAR at M1 = 68.7%
Maximum value of SAR (measured) = 19.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 74.42 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 31.4 W/kg
SAR(1 g) = 8.13 W/kg; SAR(10 g) = 2.34 W/kg
Smallest distance from peaks to all points 3 dB below = 7.6 mm

Ratio of SAR at M2 to SAR at M1 = 66.9%
Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 18.3 W/kg = 12.62 dBW/kg

Impedance Measurement Plot for Head TSL