TEST REPORT

FCC SAR Test for certification of K44515050

APPLICANT JVCKENWOOD Corporation

REPORT NO. HCT-SR-2209-FI001-R1

DATE OF ISSUE Oct. 11, 2022

> **Tested by** Jin Nyeong Choi

(signaure)

Technical Manager Yun Jeang Heo (signature) Jir



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TEST REPORT FCC SAR Test for certification	REPORT NO. HCT-SR-2209-Fl001-R1 DATE OF ISSUE Oct. 11, 2022
Applicant	JVCKENWOOD Corporation 1-16-2 Hakusan Midori-ku Yokohama-shi Kanagawa 226-8525 Japan
Equipment Type Model Name	Communication Module W0C-0430
FCC ID	K44515050
Date of Test	Jul. 04, 2022 ~ Jul. 21, 2022
FCC Rule Part(s)	47CFR §2.1093
	This device has been shown to be capable of compliance for localized specific absorption rate (SAR) for controlled environment/occupational 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.
	The result shown in this test report refer only to the sample(s) tested unless otherwise stated. This test results were applied only to the test methods required by the standard.





REVISION HISTORY

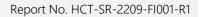
The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	Sep. 07, 2022	Initial Release
1	Oct. 11, 2022	Revised Sec. 12



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1. Test Regulations

The tests were performed according to the following regulations:

 FCC KDB Publication 447498 D01 General SAR Guidance v06 FCC KDB Publication 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04 FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02 FCC KDB Publication 865664 D02 SAR Reporting v01r02
- FCC KDB Publication 643646 D01 SAR Test for PTT Radios v01r03

2. Test Location

2.1 Test Laboratory

Company Name HCT Co., Ltd.	
Address	74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
Telephone	031-645-6300
Fax.	031-645-6401



3. Information of the EUT

3.1 General Information of the EUT

Model Name	W0C-0430	
Equipment Type	Communication Module	
FCC ID	K44515050	
Applicant	JVCKENWOOD Corporation	

3.2 General Information of the Host EUT

Model Name	VP8000-F2, VP8000-F3	
Equipment Type	MULTIBAND DIGITAL TRANSCEIVER	
FCC ID	K44515000	

* Limit Module specific host Device(Kenwood model: VP8000-F2/F3

3.3 Host DUT description



VP8000-F3

VP8000-F2

Standard key





The Highest Reported SAR (W/Kg)				
	Tx. Frequency		Reported 1g SAR SAR (W/kg)	
Band	(MHz)	Equipment Class	Hand-held to Face	Body-Worn Belt clip
WLAN 2.4 GHz	2 412 ~ 2 462	DTS	<0.10	<0.10
	5 180 ~ 5 240	NII	N/A	N/A
	5 260 ~ 5 320	<0.10	<0.10	
WLAN 5 GHz	5 500 ~ 5 720	NII	<0.10	<0.10
	5 745 ~ 5 825	NII	<0.10	<0.10
BLUETOOTH	2 402 ~ 2 480	DSS	<0.10	<0.10
Total Exposure Ratio			0.288	0.770
Date(s) of Tests:	Jul. 04, 2022 ~ Jul. 21, 2022			

3.4 Attestation of test result of device under test

Note : The Duty Cycle of PTT was 50 % applied.(VHF, UHF, 700/800MHz)



4. 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.

Mode	Freq. (MHz)	Channel	Target Power(dBm)
	2412	1	14.5
802.11 b	2437	6	14.5
	2462	11	14.5
	2412	1	10.5
802.11 g	2437	6	14.5
	2462	11	11.0
	2412	1	10.5
802.11 n	2437	6	12.5
	2462	11	10.5

4.1 2.4 @ WIFI Maximum Output Power

(Tolerance: Target -2.5dB, +2.5dB)

4.2 5 GHz WIFI Maximum Output Power

Mode	Freq. (MHz)	Channel	Target Power(dBm)
	5180	36	10.0
	5200	40	10.0
	5220	44	13.0
	5240	48	13.0
	5260	52	13.0
	5280	56	13.0
	5300	60	10.0
	5320	64	10.0
	5500	100	10.0
	5520	104	10.0
	5540	108	12.0
	5560	112	12.0
802.11a	5580	116	12.0
	5600	120	12.0
	5620	124	12.0
	5640	128	12.0
	5660	132	12.0
	5680	136	9.5
	5700	140	9.5
	5720	144	9.5
	5745	149	9.5
	5765	153	9.0
	5785	157	12.0
	5805	161	9.0
	5825	165	9.0



Mode	Freq. (MHz)	Channel	Target Power(dBm)
	5180	36	10.0
	5200	40	10.0
	5220	44	13.0
	5240	48	13.0
	5260	52	13.0
	5280	56	13.0
	5300	60	10.0
	5320	64	10.0
	5500	100	10.0
	5520	104	10.0
	5540	108	12.0
802.11n	5560	112	12.0
(HT20)	5580	116	12.0
(11120)	5600	120	12.0
	5620	124	12.0
	5640	128	12.0
	5660	132	12.0
	5680	136	9.0
	5700	140	9.0
	5720	144	9.0
	5745	149	9.0
	5765	153	8.5
	5785	157	11.5
	5805	161	8.5
	5825	165	8.5
	5190	38	8.0
802.11n (HT40)	5230	46	13.0
	5270	54	13.0
	5310	62	8.0
	5510	102	8.0
	5550	110	12.0
	5590	118	12.0
	5630	126	12.0
	5670	134	7.5
	5710	142	7.5
	5755	151	7.5
	5795	159	7.0



Mode	Freq. (MHz)	Channel	Target Power(dBm)
	5180	36	10.0
	5200	40	10.0
	5220	44	13.0
	5240	48	13.0
	5260	52	13.0
	5280	56	13.0
	5300	60	10.0
	5320	64	10.0
	5500	100	9.5
	5520	104	9.5
	5540	108	12.0
	5560	112	12.0
802.11ac	5580	116	12.0
(VHT20)	5600	120	12.0
	5620	124	12.0
	5640	124	12.0
	5660	132	12.0
	5680	136	9.0
	5700	140	9.0
	5720	140	9.0
	5745	144	9.0
	5765	153	9.0
	5785	157	11.5
	5805	161	8.5
	5825	165	8.5
	5190	38	8.0
	5230	46	13.0
	5270	54	13.0
	5310		
	5510	62 102	<u>8.0</u> 8.0
002 11	5550	1102	12.0
802.11ac (VHT40)			
	5590	118 126	12.0 12.0
	5630 5670		
		134	8.0
	5710	142	7.5
	5755	151	7.5
	5795	159	7.5
	5210	42	8.0
000.44	5290	58	8.0
802.11ac	5530	106	7.5
(VHT80)	5610	122	8.0
	5690	138	7.5
	5775	155	7.0

(Tolerance: Target -2.0dB, +2.0dB)

4.3 Bluetooth Maximum Output Power

Band	Mode Target Power (dBm)	
	DH1	5.0
Bluetooth	DH3	4.5
	DH5	4.5

(DH1 Tolerance: Target -6.0dB, +1.0dB) (DH3,5 Tolerance: Target -5.5dB, +1.0dB)



4.4 Conducted Power measurement method

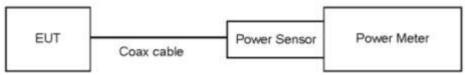
Un-Licensed Bands (DTS Band)

Test Description	Test Procedure Used
Conducted Output Power	- KDB 558074 v05 - Section 8.3.2.3 - ANSI 63.10-2013 - Section 11.9.2.3

Test Procedure

- 1. Measure the duty cycle.
- 2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- 3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup



Un-Licensed Bands(NII Band)

Test Description	Test Procedure Used		
Conducted Output Power	- KDB 789033 D02 v02r01 - Section E.3.a		

Test Procedure

- 1. Measure the duty cycle.
- 2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
- 3. Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Test setup

EUT		Spectrum Analyzer
	Coax Cable	



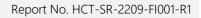
4.5 Output Average Conducted Power

4.5.1 2.4 GHz WLAN Conducted Power

	2.4 GHz						
Mode	Freq. (Młz) Channel Maximum Power (dBm)						
	2412	1	15.46				
802.11 b	2437	6	15.31				
	2462	11	15.35				
	2412	1	11.40				
802.11 g	2437	6	15.30				
	2462	11	11.71				
	2412	1	11.30				
802.11 n	2437	6	13.40				
	2462	11	11.38				

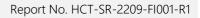
4.5.2 5 GHz WLAN Conducted Power

5.2 GHz~ 5.75 GHz				
Mode	Freq. (MHz)	Channel	Maximum Power (dBm)	
	5180	36	11.10	
	5200	40	11.13	
	5220	44	13.78	
	5240	48	13.68	
	5260	52	13.87	
	5280	56	13.97	
	5300	60	11.33	
	5320	64	11.31	
	5500	100	10.45	
	5520	104	10.41	
	5540	108	12.93	
	5560	112	12.99	
802.11a	5580	116	12.96	
	5600	120	12.77	
	5620	124	12.74	
	5640	128	12.81	
	5660	132	12.75	
	5680	136	9.94	
	5700	140	9.94	
	5720	144	9.53	
	5745	149	9.64	
	5765	153	9.42	
	5785	157	12.06	
	5805	161	9.46	
	5825	165	9.27	





5.2 GHz~ 5.75 GHz				
Mode	Freq. (MHz)	Channel	Maximum Power (dBm)	
	5180	36	10.44	
	5200	40	10.61	
	5220	44	13.40	
	5240	48	13.37	
	5260	52	13.49	
	5280	56	13.38	
	5300	60	10.92	
	5320	64	10.87	
	5500	100	10.02	
	5520	104	10.02	
	5540	108	12.53	
802.11n	5560	112	12.70	
802.11n (HT20)	5580	116	12.66	
(H120)	5600	120	12.39	
	5620	124	12.56	
	5640	128	12.33	
	5660	132	12.35	
	5680	136	9.70	
	5700	140	9.59	
	5720	144	9.38	
	5745	149	9.38	
	5765	153	8.87	
	5785	157	11.55	
	5805	161	8.94	
	5825	165	8.80	
	5190	38	8.96	
	5230	46	13.33	
	5270	54	13.24	
	5310	62	8.96	
	5510	102	8.28	
802.11n	5550	110	12.40	
(HT40)	5590	118	12.43	
· · ·	5630	126	12.37	
	5670	134	7.88	
	5710	142	7.77	
	5755	151	7.63	
	5795	159	7.40	





5.2 GHz~ 5.75 GHz			
Mode	Freq. (MHz)	Channel	Maximum Power (dBm)
	5180	36	10.35
	5200	40	10.60
	5220	44	13.32
	5240	48	13.27
	5260	52	13.35
	5280	56	13.46
	5300	60	10.93
	5320	64	10.89
	5500	100	9.60
	5520	104	9.73
	5540	108	12.32
802.11ac	5560	112	12.24
(VHT20)	5580	116	12.21
(11120)	5600	120	12.10
	5620	124	12.20
	5640	128	12.31
	5660	132	12.13
	5680	136	9.41
	5700	140	9.42
	5720	144	9.29
	5745	149	9.13
	5765	153	9.01
	5785	157	11.72
	5805	161	8.85
	5825	165	8.80
	5190	38	8.63
	5230	46	13.32
	5270	54	13.31
	5310	62	9.19
	5510	102	8.09
802.11ac	5550	110	12.35
(VHT40)	5590	118	12.40
, , , , , , , , , , , , , , , , , , ,	5630	126	12.21
	5670	134	8.01
	5710	142	7.94
	5755	151	7.59
	5795	159	7.59
	5210	42	9.53
	5290	58	9.12
802.11ac	5530	106	7.89
(VHT80)	5610	122	8.01
· · · /	5690	138	7.86
	5775	155	7.46



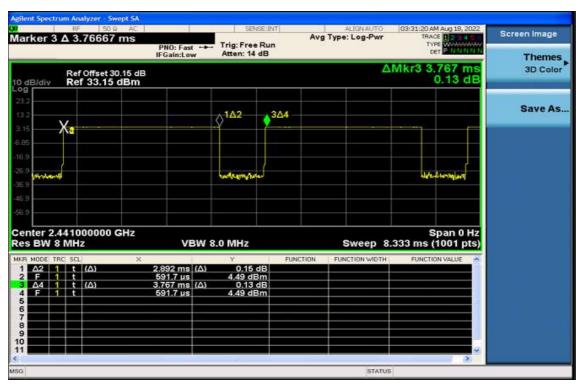
4.5.3 BLUETOOTH

Mode	channel	Maximum Power (dBm)		
	0	4.41		
DH1	39	5.07		
	78	4.36		
	0	3.87		
DH3	39	4.64		
	78	3.85		
	0	3.65		
DH5	39	4.52		
	78	3.75		

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 by Bluetooth DH5 mode.



Bluetooth Duty Cycle [BDR]

Duty Cycle = (BT-On time /BT-Full time) =(2.892/3.767) = 0.768 (DH5) / Duty factor= 1/Duty cycle : 1.302



5. Manufacturer's Accessory List

Part Nol.	Description	Accessory Type	Accessory			
KRA-23M	UHF Low Profile Helical Antenna (440-490 MHz)		1			
KRA-23M2	UHF Low Profile Helical Antenna (470-520 MHz)		2			
KRA-23M3	UHF Low Profile Helical Antenna (400-450 MHz)		3			
KRA-27M	UHF Whip Antenna (440-490 MHz)		4			
KRA-27M2	UHF Whip Antenna (470-520 MHz)		5			
KRA-27M3	UHF Whip Antenna (400-450 MHz)		6			
KRA-42M	UHF Stubby Antenna (440-490 MHz)		7			
KRA-42M2	UHF Stubby Antenna (470-520 MHz)		8			
KRA-42M3	UHF Stubby Antenna (400-450 MHz)		9			
KRA-22M	VHF Low Profile Helical Antenna (146-162 MHz)		10			
KRA-22M2	VHF Low Profile Helical Antenna (162-174 MHz)		11			
KRA-26M	VHF Helical Antenna (146-162 MHz)	Antenna	12			
KRA-26M2	VHF Helical Antenna (162-174 MHz)	Antenna	13			
KRA-41M	VHF Stubby antenna (146-162 MHz)		14			
KRA-41M2	VHF Stubby antenna (162-174 MHz)	1	15			
KRA-25	High gain VHF helically loaded whip antenna (148-162 MHz)	1	16			
KRA-28	Broad-band VHF helically loaded whip antenna (140-170 MHz)		17			
KRA-29	Broad-band ÚHFAntenna (380-430MHz)	1	18			
KRA-36	700/800 MHz Stubby Antenna		19			
KRA-32	700/800MHz Whip Antenna		20			
KRA-29P	Broad-band UHF Antenna (400-470MHz)		21			
KRA-47MB	MULTIBAND ANTENNA (Helical, 136-174 MHz, 380-520 MHz, 763-870 MHz)		22			
	ANTENNA, MULTIBAND, 700-800/VHF, GPS, LOGO, WHITE CORE					
5010900400	(Helical, 136-174 MHz, 762-870 MHz)		23			
KNB-L2	2600mAh Li-ion Battery		1			
KNB-L3	3400mAh Li-ion Battery		2			
KNB-LS5	2000mAh Li-ion Battery	Dettern	3			
KNB-LS7	3800mAh Li-ion Battery	Battery	4			
KNB-L11	4000mAh Li-ion Battery		5			
KBP-8	AAx12 Battery Case		6			
KBH-11	Belt Clip		1			
KW9140-LF	VP8000 LEATHER CASE, BELT LOOP (SMALL BATT)		2			
KW9140-LP	VP8000 LEATHER CASE, D-SWIVEL (SMALL BATT)	Commission	3			
KW9140-NP	VP8000 NYLON CASE, D-SWIVEL (SMALL BATT)	Carrying	4			
KW9130-LF	VP8000 LEATHER CASE, BELT LOOP (LARGE BATT)	Accessories	5			
KW9130-LP	VP8000 LEATHER CASE, D-SWIVEL (LARGE BATT)		6			
KW9130-NP	VP8000 NYLON CASE, D-SWIVEL (LARGE BATT)		7			
KCT-30	2.5mm Audio Accessory Adapter for KEP-3/4		1			
KEP-1	3.5mm earphone		2			
KEP-2	2.5mm earphone kit for KMC-49 Speaker Mic		3			
KEP-3	30" Earphone kit w/ 2.5mm plug for KCT-30		4			
KEP-4	48" Earphone kit w/ 2.5mm plug for KCT-30		5			
KHS-11BE	2-wire mic w/earphone (Beige)		6			
KHS-11BL	2-wire mic w/earphone (Black)	Microphones	7			
KHS-12BE	3-wire mic w/earphone (Beige, non TDMA)	Microphones	8			
KHS-12BL	3-wire mic w/earphone (Black, non TDMA)	& Audio Accessories	9			
KHS-14	Light Weight headset	ACCESSONES	10			
KHS-15-BH	Heavy-duty behind-the-headset (non TDMA)					
KHS-15-OH	Heavy-duty over-the-headset (non TDMA)	1	11 12			
KMC-49	Mic. with Antenna Connector	1	13			
KMC-70	Speaker Microphone	1	14			
KMC-70GR	Speaker Microphone	1	15			
KMC-SM1	Smart Speaker Microphone	1	16			
			-			



No.	description	Size (mm)
KNB-L2	2600mAh Li-ion Battery	WHD 58.0 x 116.4 x 20.5
KNB-L3	3400mAh Li-ion Battery	WHD 58.0 x 138.9 x 25.9
KNB-LS5	2000mAh Li-ion Battery	WHD 58.0 x 116.4 x 20.5
KNB-LS7	3800mAh Li-ion Battery	WHD 58.0 x 116.4 x 27.1
KNB-L11	4000mAh Li-ion Battery	WHD 58.0 x 116.4 x 27.9
KBP-8	AAx12 Battery Case	WHD 67.0 x 218.3 x 53.9

* Note: Battery Dimensions

No.	description	L2	LS5	L3	LS7	L11
KW9140-LF	VP8000 LEATHER CASE, BELT LOOP (SMALL BATT)	\checkmark	\checkmark			
KW9140-LP	VP8000 LEATHER CASE, D-SWIVEL (SMALL BATT)	\checkmark	\checkmark			
KW9140-NP	VP8000 NYLON CASE, D-SWIVEL (SMALL BATT)	\checkmark	\checkmark			
KW9130-LF	VP8000 LEATHER CASE, BELT LOOP (LARGE BATT)	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
KW9130-LP	VP8000 LEATHER CASE, D-SWIVEL (LARGE BATT)	with spacer	with spacer	\checkmark	\checkmark	\checkmark
KW9130-NP	VP8000 NYLON CASE, D-SWIVEL (LARGE BATT)	with spacer	with spacer	\checkmark	\checkmark	\checkmark

This SAR report is the result of a change test for the addition of a battery Since the additional battery has the biggest capacity of the battery, the Head Face SAR test were performed the Full SAR test and the body worn SAR were evaluated under the thinnest battery.



Audio Accessory			Bat	tery		
Audio Accessory	1	2	3	4	5	6
1	No	No	No	No	No	No
2	No	No	No	No	No	No
3	No	No	No	No	No	No
4	No	No	No	No	No	No
5	No	No	No	No	No	No
6	No	No	No	No	No	No
7	No	No	No	No	No	No
8	No	No	No	No	No	No
9	No	No	No	No	No	No
10	No	No	No	No	No	No
11	No	No	No	No	No	No
12	No	No	No	No	No	No
13	No	No	No	No	No	No
14	Yes	Yes	Yes	Yes	Yes	Yes
15	No	No	No	No	No	No
16	Yes	Yes	Yes	Yes	Yes	Yes

Radio Body Test (Body-Worn)

* Manufacture's disclosed accessory listing information provided by Kenwood corporation.



6. 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 (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) 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.

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

Figure 1. SAR Mathematical Equation SAR is expressed in units of Watts per Kilogram (W/kg) $SAR = \sigma E^2 / \rho$

Where:

 $\begin{aligned} \sigma &= \text{conductivity of the tissue-simulant material (S/m)} \\ \rho &= \text{mass density of the tissue-simulant material (kg/m')} \\ E &= \text{Total RMS electric field strength (V/m)} \end{aligned}$

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.



7. Description of test equipment

7.1 SAR MEASUREMENT SETUP

These measurements are performed using the DASY4 automated dosimetric assessment system. It is made by Schmid & Partner Engineering AG (SPEAG) in Zurich, Switzerland. It consists of high precision robotics system (Staubli), robot controller, Pentium III computer, near-field probe, probe alignment sensor, and the generic twin phantom containing the brain equivalent material. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF) (see Figure.2).

A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The PC with Windows XP or Windows 7 is working with SAR Measurement system DASY4 & DASY5, A/D interface card, monitor, mouse, and keyboard. The Staubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

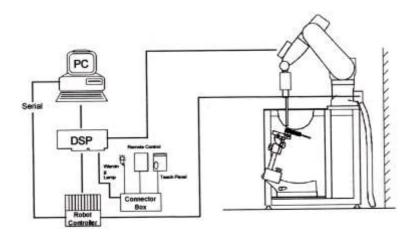


Figure 2. HCT SAR Lab. Test Measurement Set-up

The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gainswitching 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.



7.2 ELI Phantom

Phantom for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 6 GHz. ELI is fully compatible with the IEC 62209-2 standard and all known tissue simulating liquids. ELI has been optimized regarding its performance and can be integrated into our standard phantom tables. A cover prevents evaporation of the liquid. Reference markings on the phantom allow installation of the complete setup, including all predefined phantom positions and measurement grids, by teaching three points. The phantom is compatible with all SPEAG diametric probes and dipoles.



Figure 6.1 ELI Phantom

Shell Thickness Filling Volume Dimensions 2.0 ± 0.2mm approx. 30 liters Major axis: 600 mm, Minor axis: 400 mm

7.3 Device Holder for Transmitters

Device Holder – Mounting Device

In combination with the SAM Phantom, the Mounting Device enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatable positioned according to the EN 50360:2001/A:2001 and FCC KDB specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

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





7.4 Validation Dipole

The reference dipole should have a return loss better than -20 dB (measured in the setup) at the resonant frequency to reduce the uncertainty in the power measurement.

	System Validation Dipole									
Description	ymmetrical dipole with $\lambda/4$ balun. Enables measurement of feedpoint impedance with network analyzer (NWA). Matched for use near flat phantoms filled with tissue simulating liquids.									
Frequency	2 450 MHz, 5 000 MHz,									
Return Loss	> 20 dB at specified validation position									
Power Capability	> 100 W (f < 1GHz), >40 W (f > 1 GHz)									
Dimension	D2450V2: dipole length : 52.0 mm ; overall height : 290.0 mm D5GHzV2: dipole length : 20.6 mm ; overall height : 300.0 mm	9								

7.5 Brain & Muscle Tissue Simulating Mixture Characterization

The brain and muscle mixtures consist of a viscous gel using hydrox-ethyl cellulose (HEC) gelling agent and saline solution (see Table 1). Preservation with a bactericide 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. Hartsgrove.

Frequency (MHz)	30	5	0	1	44	4	50	835	9	00
Recipe source number	3	3	2	2	3	2	4	2	2	4
Ingredients (% by weight)	II								1	
Deionised water	48,30	48,30	53,53	55,12	48,30	48,53	56	50,36	50,31	56
Tween			44,70	43,31		49,51		48,39	48,34	1
Oxidised mineral oil				1		1	44			44
Diethylenglycol monohexylether										
Triton X-100										
Diacetin	50,00	50,00			50,00					
DGBE										
NaCl	1,60	1,60	1,77	1,57	1,60	1,96		1,25	1,35	
Additives and salt	0,10	0,10			0,10					
Measured dielectric paramete	rs								•	
¢,'	54,2	53,1	54,54	52,81	51,0	43,29	42,3	41,6	41,0	40,6
or (S/m)	0,75	0,75	0,76	0,76	0,77	0,88	0,84	0,90	0,98	0,98
Temp. (*C)			21	21		21	20	21	21	20
<pre>s_temp_liquid uncertainty (%)</pre>	0,8	0,1			0,1	0,1		0,04	0,04	
σ_temp_liquid _{uncertainty} (%)	2,8	2,8			2,6	4,2		1,6	1,6	
Target values (from Table 1)					•				•	
¢,'	55,0	54	,5	52	2,4	4	3,5	41,5	41,5	
σ (S/m)	0,75	0,	75	0,	76	0	,87	0,90	0,97	



8. SAR Measurement Procedure

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

- 1. The SAR distribution at the exposed side of the head or body was measured at a distance no more than 5.0 mm from the inner surface of the shell. The area covered the entire dimension of the DUT's head and body area and the horizontal grid resolution was depending on the FCC KDB 865664 D01v01r04 table 4-1 & IEEE 1528-2013.
- 2. Based on step, the area of the maximum absorption was determined by sophisticated interpolations routines implemented in DASY software. When an Area Scan has measured all reachable point. DASY system computes the field maximal found in the scanned are, within a range of the maximum. SAR at this fixed point was measured and used as a reference value.
- 3. Around this point, a volume was assessed according to the measurement resolution and volume size requirements of FCC KDB 865664 D01v01r04 table 4-1 and IEEE 1528-2013. On the basis of this data set, the spatial peak SAR value was evaluated with the following procedure (reference from the DASY manual.)

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

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

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

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



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

			≤ 3 GHz	> 3 GHz	
Maximum distance from (geometric center of pr			5±1 mm	$1/2.8 \cdot \ln(2) \pm 0.5 \text{ mm}$	
Maximum probe angle normal at the measurer		e axis to phantom surface ion	30°±1°	20 ° ±1°	
			≤ 2 GHz: ≤15 mm 2-3 GHz: ≤12 mm	3-4 GHz: ≤12 mm 4-6 GHz: ≤10 mm	
Maximum area scan Sp	atial resolu	ution: Δx _{Area,} Δy _{Area}	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 \leq the corresponding x or y dimension of the test device with at least one measurement point on the test device.		
Maximum zoom scan S	patial resc	lution: Δx _{zoom} , Δy _{zoom}	≤ 2 GHz: ≤8mm 2-3 GHz: ≤5mm*	3-4 GHz: ≤5 mm* 4-6 GHz: ≤4 mm*	
	uniforr	n grid: Δz _{zoom} (n)	≤ 5 mm	3-4 GHz: ≤4 mm 4-5 GHz: ≤3 mm 5-6 GHz: ≤2 mm	
Maximum zoom scan Spatial resolution normal to phantom surface grad		Δz _{zoom} (1): between 1 st two Points closest to phantom surface	≤ 4 mm	3-4 GHz: ≤3 mm 4-5 GHz: ≤2.5 mm 5-6 GHz: ≤2 mm	
	grid	∆z _{zoom} (n>1): between subsequent Points	$\leq 1.5 \cdot \Delta z_{zoom}(n-1)$		
Minimum zoom scan volume	x, y, z		≥ 30 mm	3-4 GHz: ≥28 mm 4-5 GHz: ≥25 mm 5-6 GHz: ≥22 mm	

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

* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is \leq 1.4 W/kg, \leq 8 mm, \leq 7 mm and \leq 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.



9. Description of Test Position

9.1 Body Holster/Belt Clip Configurations

Body-worn operating configurations are tested with the belt-clips and holsters attached to the device and positioned against a flat phantom in a normal use configuration. A device with a headset output is tested with a headset connected to the device. Body dielectric parameters are used.

Accessories for Body-worn operation configurations are divided into two categories: those that do not contain metallic components and those that contain metallic components. When multiple accessories that do not contain metallic components are supplied with the device, the device is tested with only the accessory that dictates the closest spacing to the body. Then multiple accessories that contain metallic components are tested with each accessory. If multiple accessory share an identical metallic component (i.e. the same metallic belt-clip used with different holsters with no other metallic components) only the accessory that dictates the closest spacing to the body is tested.

Body-worn accessories may not always be supplied or available as options for some Devices intended to be authorized for body-worn use. In this case, a test configuration with a separation distance between the back of the device and the flat phantom is used.

Since this EUT does not supply any body worn accessory to the end user a distance of 0 cm from the EUT

back surface to the liquid interface is configured for the generic test.

"See the Test SET-UP Photo"

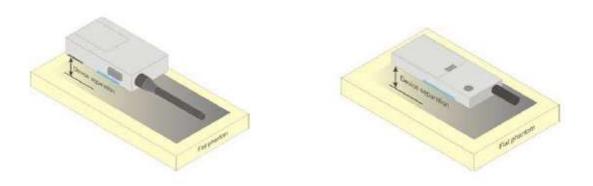
Transmitters that are designed to operate in front of a person's face, as in push-to-talk configurations, are tested for SAR compliance with the front of the device positioned to face the flat phantom. For devices that are carried next to the body such as a shoulder, waist or chest-worn transmitters, SAR compliance is tested with the accessory(ies), Including headsets and microphones, attached to the device and positioned against a flat phantom in a normal use configuration.

In all cases SAR measurements are performed to investigate the worst-case positioning. Worst case positioning is then documented and used to perform Body SAR testing.



9.2 Hand-held to Face device

A typical example of a front-of-face device is a two-way radio that is held at a distance from the face of the user when transmitting. In these cases the device under test shall be positioned at the distance to the phantom surface that corresponds to the intended use as specified by the manufacturer in the user instructions. If the intended use is not specified, a separation distance of 25 mm⁵ between the phantom surface and the device shall be used.





10. RF Exposure Limits

HUMAN EXPOSURE	UNCONTROLLED ENVIRONMENT General Population (W/kg)	CONTROLLED ENVIRONMENT Occupational (W/kg)
SPATIAL PEAK SAR * (Brain)	1.60	8.00
SPATIAL AVERAGE SAR ** (Whole Body)	0.08	0.40
SPATIAL PEAK SAR *** (Hands / Feet / Ankle / Wrist)	4.00	20.00

Table 10.1 Safety Limits for Partial Body Exposure

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.



11. System Verification

11.1 Tissue Verification

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

				Table for Hea	nd Tissue Verific	cation			
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
			2400	1.778	38.547	1.756	39.290	1.25	-1.89
07/21/2022	21.1	2450H	2450	1.839	38.325	1.800	39.200	2.17	-2.23
			2500	1.895	38.129	1.855	39.140	2.16	-2.58
			2400	1.803	37.863	1.756	39.290	2.68	-3.63
07/04/2022	22.3	2450H	2450	1.864	37.640	1.800	39.200	3.56	-3.98
			2500	1.919	37.950	1.855	39.140	3.45	-3.04
			5180	4.574	36.436	4.635	36.010	-1.32	1.18
07/19/2022	20.5	5250H	5250	4.698	36.283	4.706	35.930	-0.17	0.98
07/19/2022		525011	5280	4.733	36.189	4.737	35.894	-0.08	0.82
			5320	4.798	36.162	4.778	35.846	0.42	0.88
			5180	4.574	36.186	4.635	36.010	-1.32	0.49
07/20/2022	20.6	5250H	5250	4.684	35.936	4.706	35.930	-0.47	0.02
01/20/2022	20.0		5280	4.734	35.880	4.737	35.894	-0.06	-0.04
			5320	4.792	35.914	4.778	35.846	0.29	0.19
07/19/2022	20.5	5600H	5500	4.899	36.077	4.963	35.640	-1.29	1.23
07/19/2022	20.5	200011	5600	4.981	35.702	5.065	35.530	-1.66	0.48
07/20/2022	20.6	5600H	5500	4.907	35.759	4.963	35.640	-1.13	0.33
07/20/2022	20.0	5000H	5600	4.963	35.403	5.065	35.530	-2.01	-0.36
			5750	5.252	35.515	5.219	35.360	0.63	0.44
07/19/2022	20.5	5750H	5800	5.237	35.559	5.270	35.300	-0.63	0.73
			5825	5.224	35.502	5.296	35.270	-1.36	0.66
			5750	5.246	35.172	5.219	35.360	0.52	-0.53
07/20/2022	20.6	5750H	5800	5.231	35.238	5.270	35.300	-0.74	-0.18
			5825	5.211	35.215	5.296	35.270	-1.60	-0.16

11.2 System Verification

* Input Power: 50 mW

Freq. (MHz)	Date	Probe (S/N)	Dipole (S/N)	Liquid	Amb. Temp. (°C)	Liquid Temp. (°C)	1 W Target SAR _{1a} (SPEAG) (W/kg)	50mW Measured SAR _{1a} (W/kg)	1 W Normalized SAR _{1a} (W/kg)	Deviation (%)	Limit (%)
2 450	07/21/2022	7732	743	Head	21.2	21.1	53.2	2.580	51.6	- 3.01	± 10
2 450	07/04/2022	3903	743	Head	22.4	22.3	53.2	2.520	50.4	- 5.26	± 10
5 250	07/19/2022	7732	1253	Head	20.6	20.5	80.4	3.830	76.6	- 4.73	± 10
5 250	07/20/2022	7732	1253	Head	20.7	20.6	80.4	3.910	78.2	- 2.74	± 10
5 600	07/19/2022	7732	1253	Head	20.6	20.5	82.1	4.130	82.6	+ 0.61	± 10
5 600	07/20/2022	7732	1253	Head	20.7	20.6	82.1	4.180	83.6	+ 1.83	± 10
5 750	07/19/2022	7732	1253	Head	20.6	20.5	79.9	3.730	74.6	- 6.63	± 10
5 750	07/20/2022	7732	1253	Head	20.7	20.6	79.9	3.740	74.8	- 6.38	± 10



11.3 System Verification Procedure

SAR measurement was prior to assessment, the system is verified to the \pm 10 % of the specifications at each frequency band by using the system verification kit. (Graphic Plots Attached)

- Cabling the system, using the verification kit equipment.
- Generate about 50 mW Input level from the signal generator to the Dipole Antenna.
- Dipole antenna was placed below the flat phantom.
- The measured one-gram SAR at the surface of the phantom above the dipole feed-point should be within 10 % of the target reference value.
- The results are normalized to 1 W input power.

Note;

SAR Verification was performed according to the FCC KDB 865664 D01v01r04.



12. SAR Test Data Summary

12.1 Hand-held to Face SAR Results (with VP8000-F3)

Frequency (MHz) Ch. Mode Width (MHz) Rate (Mbps) Up Limit (Mbps) Power (dBm) Drift (dB) Battery (dB) Distance (mm) Peak (mm) SAR (W/Kg) Scaling Factor Duty Scaling Factor 2 412 1 802.11b 20 1 17.0 15.46 -0.12 KNB-L11 25 0.0325 0.019 1.426 1.011 2 412 1 802.11b 20 1 17.0 15.46 -0.10 KNB-L11 25 0.0375 0.028 1.476 1.011 ANSI/ IEEE C95.1 - 2005 - Safety Limit Spatial Peak Spatial Peak Veraged over 1 gram Head * Note : VP8000-F2 VP8000-F2 NII SAR Mrea Scan Area Scan Mrea Scan											
2 412 1 802.11b 20 1 17.0 15.46 -0.10 KNB-L11 25 0.0375 0.028 1.476 1.011 ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Controlled Exposure/ Occupational * Note : VP8000-F2 NII SAR Frequency (MHz) Ch. Mode Band Data Width Tune- Up Limit (MBm) Power Up Limit (MBm) Power Drift (MBm) Separation Distance (MMm) Area Scan (W/Kg) Measured SAR (W/Kg) Power Scaling Factor Duty Scaling Factor Factor 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.0866 0.016 1.500 1.150 5 550 110 802.11n 40 MCS0 14.0 12.06 -0.07 KNB-L11 25 0.016 1.445 1.150 5 785 157 802.11a 20 6 14.0 12.06 -0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 Separatial Peak Controlled	Reported SAR (W/Kg)	Plot No.									
ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Controlled Exposure/ Occupational Head 1.6 W/kg (W/kg) Averaged over 1 gram * Note : VP8000-F2 NII SAR Frequency (Mtz) Mage: Ch. Mode Band Data Width Rate (Mtz) Tune- Up Limit (Mbps) Mul SAR Frequency (Mtz) Mil SAR Frequency (Mtz) Mul SAR Separation (Mtz) Band Data (Mbps) Data (MBm) Tune- Power (dBm) Measured Power (dBm) Separation (MB) Area Scan (mm) Measured SAR Power Scaling (W/kg) Duty Scaling Factor 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.016 1.500 1.150 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.016 1.445 1.150 5 785 157 802.11a 20 6 14.0 12.06 -0.07 KNB-L11 25 0.0371 0.010 1.563 1.070 ANSI/ IEEE C95.1 - 2005 - Safety Limit Spatial Peak Sepatial Peak Averaged over 1	0.027	-									
Spatial Peak Controlled Exposure/ Occupational 1.6 W/kg (W/kg) Averaged over 1 gram * Note : VP8000-F2 NII SAR Frequency (MHz) Ch. Mode Band Data Tune- Up NII SAR Frequency (MHz) Ch. Mode Band Data Outy Scaling Power Area Scan Measured Power Paik (dBm) Outy Scaling Peak Duty Scaling Peak Duty Scaling Peak Duty Scaling Peak Duty Scaling Peak Duty Scaling Peak Power Sale 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.0866 0.016 1.500 1.150 5 5 570 100 802.11n 40 MCS0 14.0 12.06 -0.17 KNB-L11 25 0.0371 0.010 1.563 1.070 1.63 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25	0.040	1*									
Controlled Exposure/ Occupational Averaged over 1 gram * Note : VP8000-F2 Frequency (Mtz) Band (Mtz) Data (Mbps) (Mtz) Tune- Up (Mtz) Measured Power (dBm) Power Drift (dB) Separation Distance (mm) Area Scan Peak SAR Measured SAR Power Scaling (WKg) Duty Scaling Factor Power Factor Duty Scaling Factor Power Factor 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.0866 0.016 1.500 1.150 1.50 5 550 110 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.016 1.445 1.150 1.50 5 785 157 802.11a 20 6 14.0 12.06 -0.17 KNB-L11 25 0.016 1.445 1.150 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 1.6 5 785											
* Note : VP8000-F2											
NII SAR Frequency (Mtz) Ch. Mode Band (Width (WHz) Data Rate (Mbps) Tune- Up Limit (dBm) Measured Power (dBm) Power Drift (dB) Separation Battery Area Scan Distance (mm) Measured Peak SAR (W/Kg) Power Factor Duty Scaling Factor Duty Scaling Factor Power Factor Power Factor Power (MKg) Duty Scaling Factor Power Factor Power Factor <td></td> <td></td>											
Frequency (MHz) Ch. Mode Band (Width (MHz) Data Rate (Mbps) Tune- Up Limit (dBm) Measured Power (dBm) Power Battery Separation Battery Area Scan (mm) Measured SAR (W/Kg) Power Scaling (W/Kg) Duty Scaling Factor Duty Scaling Factor Power Scaling Factor Duty Scaling Factor Power Scaling Factor <											
Frequency (MHz) Ch. Mode Band Width (Mbz) Data Rate (Mbps) Up Limit (dBm) Newer (dBm) Drift (dB) Battery (dB) Separation Battery Peak SAR (W/Kg) Measured SAR (W/Kg) Power Factor Duty Scaling Factor 5 270 54 802.11n 40 MCS0 15.0 13.24 0.00 KNB-L11 25 0.0866 0.016 1.500 1.150 5 5 550 110 802.11n 40 MCS0 14.0 12.40 0.00 KNB-L11 25 0.115 0.016 1.445 1.150 5 5 785 157 802.11a 20 6 14.0 12.06 -0.17 KNB-L11 25 0.116 0.019 1.563 1.070 1 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-											
5 550 110 802.11n 40 MCS0 14.0 12.40 0.00 KNB-L11 25 0.115 0.016 1.445 1.150 5 785 157 802.11a 20 6 14.0 12.06 -0.17 KNB-L11 25 0.116 0.019 1.563 1.070 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.116 0.019 1.563 1.070 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 ANSI/ IEEE C95.1 - 2005 - Safety Limit Head Spatial Peak Controlled Exposure/ Occupational Averaged over 1 gram * Note : VP8000-F2	Reported SAR (W/Kg)	Plot No.									
5 785 157 802.11a 20 6 14.0 12.06 -0.17 KNB-L11 25 0.116 0.019 1.563 1.070 5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 ANSI/ IEEE C95.1 - 2005 – Safety Limit Head Spatial Peak Controlled Exposure/ Occupational * Note : VP8000-F2	0.028										
5 785 157 802.11a 20 6 14.0 12.06 0.00 KNB-L11 25 0.0371 0.010 1.563 1.070 ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Head Controlled Exposure/ Occupational * Note : VP8000-F2	0.027										
ANSI/ IEEE C95.1 - 2005 – Safety Limit Head Spatial Peak 1.6 W/kg (W/kg) Controlled Exposure/ Occupational Averaged over 1 gram * Note : VP8000-F2	0.032	2									
Spatial Peak 1.6 W/kg (W/kg) Controlled Exposure/ Occupational Averaged over 1 gram * Note : VP8000-F2	0.017	*									
Controlled Exposure/ Occupational Averaged over 1 gram * Note : VP8000-F2											
* Note : VP8000-F2											
DSS SAR											
I Ch Model I Power Diritt Battery Distance I Scaling I I Scaling I I I		Plot No.									
2 441 39 DH5 5.5 4.52 -0.15 KNB-L11 25 0.00000718 1.253 1.302 0.00	0000117	3									
2441 39 DH5 5.5 4.52 -0.11 KNB-L11 25 0.00000212 1.496 1.302 0.00	000035	*									

* Note : VP8000-F2

ANSI/ IEEE C95.1 - 2005 - Safety Limit

Spatial Peak Controlled Exposure/ Occupational Head 1.6 W/kg (W/kg)

Averaged over 1 gram



12.2 Body-worn Belt clip SAR Results (with VP8000-F3 and KMC-SM1)

								DTS S	AR								
Frequency (MHz)	Ch.	Mode	Band Width (MHz)	Data Rate (Mbps)	Tune- Up Limit (dBm)	Measured Power (dBm)	Power Drift (dB)	Battery	Separatio Distance (mm)	Poal	SAR	Power Scaling Factor	Duty Scaliı Factor	ng Reported SAR (W/Kg)	Plot No.		
2 412	1	802.11b	20	1	17.0	15.46	0.00	KNB-L2	0	0.026	0.00402	1.426	1.011	0.0058	-		
2 412	1	802.11b	20	1	17.0	15.46	0.00	KNB-L2	0	0.04	19 0.013	1.476	1.011	0.019	4*		
	ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Controlled Exposure/ Occupational * Note : VP8000-F2										Body 1.6 W/kg (W/kg) Averaged over 1 gram						
								NII SA	٩R								
Frequency (MHz)	Ch.	Mode	Band Width (MHz)	Data Rate (Mbps)	Tune- Up Limit (dBm)	Measured Power (dBm)	Power Drift (dB)	Battery	Separatio Distance (mm)	Pear	SAR	Power Scaling Factor	Duty Scaliı Factor	ng Reported SAR (W/Kg)	Plot No.		
5 270	54	802.11n	40	MCS0	15.0	13.24	0.00	KNB-L2	0	0.024	12 0.000674	1.500	1.150	0.00116			
5 550	110	802.11n	40	MCS0	14.0	12.40	0.00	KNB-L2	0	0	0	1.445	1.150	0			
5 785	157	802.11a	20	6	14.0	12.06	0.00	KNB-L2	0	0.003	63 0.020	1.563	1.070	0.033	5		
5 785	157	802.11a	20	6	14.0	12.06	0.00	KNB-L2	0	0.010		1.563	1.070	0.000738	*		
		Contro	EEE C95. Spa olled Exp : VP8000	atial Pea osure/	ak	-					1.6 W,	Body /kg (W/kg) d over 1 gra	am				
								DSS S	AR								
Frequency (MHz)	Ch.	Mode	Tune-Up Limit (dBm)	Po	sured wer Bm)	Pov Dr (d	ift	Batte	Sep ry Dis	aration stance mm)	Measured SAR (W/Kg)	Power Scaling Factor	Duty Scaling Factor	Reported SAR (W/Kg)	Plot No.		
2 441	39	DH5	5.5	4	.52	0.0	00	KNB-	L2	0	0	1.253	1.302	0	6		
2441	39	DH5	5.5		.52	0.0	00	KNB-	L2	0	0	1.496	1.302	0	*		
	ANSI/ IEEE C95.1 - 2005 – Safety Limit Spatial Peak Controlled Exposure/ Occupational * Note : VP8000-F2											Body //kg (W/kg) ed over 1 gr					

DICCAD

Note : VP8000-F2



12.3 SAR Test Notes

General Notes:

- 1. The test data reported are the worst-case SAR values according to test procedures specified in IEEE 1528-2013, FCC KDB Procedure.
- 2. Batteries are fully charged at the beginning of the SAR measurements. A standard battery was used for all 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. Test signal call mode is Manual test cord.
- 7. The EUT was tested for face-held SAR with a 2.5 cm separation distance between the front of the EUT and the outer surface of the planer phantom
- 8. The Body-worn SAR evaluation was performed with the Balt-clip body-worn accessory and audio accessory attached to the DUT and touching the outer surface of the planar phantom.
- 9. The adjusted SAR value was calculated by first scaling the SAR value up by the drift. This value was then scaled up based on the difference of the upper end the tolerance and the measured conducted power. The resultant value is then multiplied by 0.5 to give the SAR value at 50% duty cycle.
- 10. SAR results were scaled to the maximum allowed power to demonstrate compliance per FCC KDB 447498 D01v06. Test Procedures applied in accordance with FCC KDB 643646 D01v01r03.
- 11. Measurement was reduced per KDB 643646 D01v01r03.
- 12. When the SAR for all antennas tested using the default battery is \leq 3.5 W/kg, testing of all other required channels is not necessary.
- 13. When the SAR of an antenna tested on the highest output power using the default battery is >3.5 W/Kg and ≤ 4.0 W/Kg, testing of the immediately adjacent channel(s) is not necessary, but testing of other required channels may still be required.
- 14. When the SAR for all antennas tested using the default battery \leq 4.0 W/kg, test additional batteries using the antenna and channel configuration that resulted in the highest SAR.
- 15. When the SAR of an antenna tested on the highest output power channel using the default battery is > 4.0 W/kg and ≤6.0 W/kg, testing of the required immediately adjacent channel(s) is necessary. For the remaining channels that cannot be excluded, this rule may be applied recursively with respect to the highest output power channel among the remaining channels.
- 16. Based on the SAR measured in the body-worn test sequence with default audio accessory, if the SAR for the antenna, body-worn accessory and battery combination(s) applicable to an audio accessory is/are >4.0 W/kg and <6.0 W/kg, test that audio accessory using the highest body-worn SAR combination (antenna, battery and body-worn accessory) and channel configuration previously identified that is applicable to the audio accessory.
- 17. When the SAR of an antenna tested is > 6.0 W/kg, test that battery and antenna combination with the default body-worn and audio accessory on the required immediately adjacent channels.
- 18. If the SAR measured >7.0 W/kg, test that battery, antenna, body-worn and audio accessory combination on all required channels.



WLAN Notes:

- 1. For held-to-ear and hotspot operations, the initial test position procedures were applied. For initial test position, the highest extrapolated peak SAR will be used. When reported SAR for the initial test position is ≤ 0.4 W/kg for 1g SAR and ≤ 1.0 W/kg for 10g SAR, no additional testing for the remaining test positions was required. Otherwise, SAR is evaluated at the subsequent highest peak SAR positions until the reported SAR results is ≤ 0.8 W/kg for 1g SAR and ≤ 2.0 W/kg for 10g SAR or all test position are measured.
- 2. Per KDB 2482227 D01v02r02 justification for test configurations of 2.4 GHzWiFi Single transmission chain operations, the highest measured maximum output power channel for DSSS was selected for SAR measurement. SAR for OFDM modes (2.4 GHz 802.11 g/n) was not required due to the maximum allowed powers and the highest reported DSSS SAR.
- 3. Per KDB 2482227 D01v02r02 justification for test configurations of 5 GHzWiFi Single transmission chain operations, the initial test configuration was selected according to the transmission mode with the highest maximum allowed powers. Other transmission mode was 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.
- 4. When the maximum reported 1g averaged SAR is \leq 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 \leq 1.20 W/kg or all test channels were measured.
- 5. 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.

Bluetooth Notes:

- 1. Bluetooth SAR was measured with the device connected to a call box with hopping disabled with DH5 operation and Tx Tests mode type. Per October 2016 TCBC Workshop Notes, the reported SAR was scaled to 100% transmission duty factor to determine compliance. Please see sec.11 for the time-domain plot and calculation for duty factor of the device.
- 2. Head and Bluetooth tethering SAR were evaluated for BT BR tethering applications.





13. Simultaneous SAR Analysis

This device is containing transmitters that may operate simultaneously. Therefore, simultaneous transmission analysis is required. Per KDB Publication 447498 D01v06 4.3.2, simultaneous transmission SAR test exclusion may be applied when the sum of 1g SAR and 10g SAR for all the simultaneous transmitting antennas in a specific a physical test configuration is ≤ 1.6 W/kg for 1g SAR and ≤ 4 W/kg for 10g SAR. The different test positions in an exposure condition may be considered collectively to determine SAR exclusion according to the sum of 1g or 10g SAR.

The Bluetooth and WLAN can transmit simultaneously with the PTT Radio. But The 2.4GHz WLAN and 5GHz WLAN are not simultaneously transmitted. WLAN when used only during program installation.

For the simultaneous transmission analysis of this model, it was evaluated by referring to the report [no : HCT-SR-2208-FC003] of the original model.

13.1 Hand-held to Face SAR Simultaneous Transmission Analysis

Europeuro condition	UHF	SAR	WLAI	N2.4G	Bluetoc	ТГР		
Exposure condition	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	TER	
Applicable Limit	8	1	1.6	1	1.6	1	1	
Hand-held to Face SAR	2.10	0.263	0.040	0.025	0.0000117	0.00000731	0.288	

Exposure condition	UHF	SAR	WLA	N5G	Bluetoc	тгр	
	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	TER
Applicable Limit	8	1	1.6	1	1.6	1	1
Hand-held to Face SAR	2.10	0.263	0.032	0.020	0.0000117	0.00000731	0.283

13.2 Body-worn Belt clip SAR Simultaneous Transmission Analysis

Europeuro condition	UHF	SAR	WLAN	V2.4G	Bluetoo	ТГР	
Exposure condition	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	TER
Applicable Limit	8	1	1.6	1	1.6	1	1
Body-worn Belt clip SAR	5.99	0.749	0.019	0.012	0	0	0.761

Exposure condition	UHF SAR		WLAN5G		Bluetooth SAR		TER
	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	(W/kg)	SAR/Limit	IER
Applicable Limit	8	1	1.6	1	1.6	1	1
Body-worn Belt clip SAR	5.99	0.749	0.033	0.021	0	0	0.770

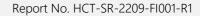
13.3 Simultaneous Transmission Conclusion

The above numerical summed TER results for all the worst-case simultaneous transmission conditions were below the TER limit. Therefore, the above analysis is sufficient to determine that simultaneous transmission cases will not exceed the TER limit. And therefore no measured volumetric simultaneous SAR summation is required per FCC KDB Publication 447498 D01v06 and IEEE 1528-2013.



14. Measurement Uncertainty

а	с	d	е	f	g	h =	i=	k
Source of uncertainty	Uncertainty ±%	Probability distribution	Div.	Ci	Ci	c x f / e Standard Uncertainty	<i>c x g / e</i> Standard Uncertainty	Vi Or Veff
				(1 g)	(10 g)	± % (1 g)	± % (10 g)	
Measurement system		1				(. 3/	(10 9)	
Probe calibration	6.65	Ν	1	1	1	6.65	6.65	00
Axial isotropy	4.70	R	1.73	0.71	0.71	1.92	1.92	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Hemispherical isotropy	9.60	R	1.73	0.71	0.71	3.92	3.92	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Boundary effect	2.00	R	1.73	1	1	1.15	1.15	00
Linearity	4.70	R	1.73	1	1	2.71	2.71	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Detection limits	1.00	R	1.73	1	1	0.58	0.58	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Readout electronics	0.30	N	1	1	1	0.30	0.30	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Response time	0.80	R	1.73	1	1	0.46	0.46	00
Integration time	2.60	R	1.73	1	1	1.50	1.50	00
RF ambient conditions - noise	3.00	R	1.73	1	1	1.73	1.73	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
RF ambient conditions - reflections	3.00	R	1.73	1	1	1.73	1.73	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Probe positioner mechanical tolerance	0.80	R	1.73	1	1	0.46	0.46	00
Probe positioning with respect to ohantom shell	6.70	R	1.73	1	1	3.87	3.87	00
Max. SAR Evaluation	4.00	R	1.73	1	1	2.31	2.31	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Test sample related						-		
Test sample positioning	5.51	N	1	1	1	5.51	5.51	47
Device holder uncertainity	2.99	N	1	1	1	2.99	2.99	5
SAR drift measurement	5.00	R	1.73	1	1	2.89	2.89	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
SAR scaling	0.00	R	1.73	1	1	0.00	0.00	∞
Phantom and set-up				•				
Phantom uncertainty (shape and thickness uncertainty)	7.60	R	1.73	1	1	4.39	4.39	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Liquid conductivity (measured)	1.54	Ν	1	0.78	0.71	1.20	1.09	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Liquid permittivity (measured)	1.17	N	1	0.23	0.26	0.22	0.25	00
Liquid conductivity (temperature uncert	2.93	R	1.73	0.78	0.71	1.32	1.20	00
Liquid permittivity (temperature uncerta	0.95	R	1.73	0.23	0.26	0.13	0.14	~
Liquid conductivity - deviation from targ	5.00	R	1.73	0.64	0.43	1.85	1.24	∞
Liquid permittivity - deviation from targe	5.00	R	1.73	0.6	0.49	1.73	1.41	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Combined standard uncertainty		RSS				13.34	13.21	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Expanded uncertainty		k = 2				26.68	26.42	





15. SAR Test Equipment

Manufacturer	Type / Model	S/N		Calib.Interval	
SPEAG	ELI Phantom	-	N/A	N/A	N/A
HP	SAR System Control PC	-	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F07/55B8A1/C/01	N/A	N/A	N/A
Staubli	CS8Cspeag-TX90	F07/56W9A1/C/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F07/55B8A1/A/01	N/A	N/A	N/A
Staubli	TX90 XLspeag	F07/56W9A1/A/01	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick) D21139902	S-0306	N/A	N/A	N/A
Staubli	Teach Pendant (Joystick) D21142102	S-0602	N/A	N/A	N/A
Staubli	Light Alignment Sensor	SE UKS 030 AA	N/A	N/A	N/A
Staubli	Light Alignment Sensor	SE UKS 030 AA	N/A	N/A	N/A
TESTO	608-H1/Thermometer	83348021	04/29/2022	Annual	04/29/2023
TESTO	608-H1/Thermometer	83406789	07/07/2022	Annual	07/07/2023
SPEAG	DAE4	1225	12/01/2021	Annual	12/01/2022
SPEAG	DAE4	446	09/30/2021	Annual	09/30/2022
SPEAG	E-Field Probe EX3DV4	3903	03/29/2022	Annual	03/29/2023
SPEAG	E-Field Probe EX3DV4	7732	06/30/2022	Annual	06/30/2023
SPEAG	Dipole D2450V2	743	05/31/2022	Annual	05/31/2023
SPEAG	Dipole D5GHzV2	1253	05/31/2022	Annual	05/31/2023
Agilent	Power Meter E4419B	MY41291386	10/06/2021	Annual	10/06/2022
Agilent	Power Meter N1911A	MY45101406	06/27/2022	Annual	06/27/2023
EMPOWER	RF Power Amplifier	1084	06/20/2022	Annual	06/20/2023
AR	RF Power Amplifier	0359498	04/20/2022	Annual	04/20/2023
EMPOWER	RF Power Amplifier	1011	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor N1921A	MY55220026	08/25/2021	Annual	08/25/2022
Agilent	Power Sensor	SG1091286	10/06/2021	Annual	10/06/2022
Agilent	Power Sensor	MY41090873	02/27/2022	Annual	02/27/2023
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	Directional Bridge 86205A	3140A04581	05/26/2022	Annual	05/26/2023
Agilent	Signal Generator N5182A	MY47070230	04/28/2022	Annual	04/28/2023
Agilent	MXA Signal Analyzer N9020A	MY50510407	10/22/2021	Annual	10/22/2022
HP	Attenuator (3dB) 33340A	02427	09/06/2021	Annual	09/06/2022
HP	Attenuator (20dB) 8493C	09271	09/06/2021	Annual	09/06/2022
Aeroflex/Weinschel	Fixed Coaxial Attenuator (30 dB)	CE6106	11/11/2021	Annual	11/11/2022
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

1. The E-field probe was calibrated by SPEAG, by the waveguide technique procedure. Dipole Verification measurement is performed by HCT Lab. before each test. The brain/body simulating material is calibrated by HCT using the DAK-12 to determine the conductivity and permittivity (dielectric constant) of the brain/body-equivalent material.



16. Conclusion

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

These measurements are taken to simulate the RF effects exposure under worst-case conditions. Precise laboratory measures were taken to assure repeatability of the tests.

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



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Report No. HCT-SR-2209-FI001-R1

Attachment 1. – SAR Test Plots



Test Laboratory:	HCT CO., LTD
EUT Type:	2.4GHz TRANSCEIVER
Liquid Temperature:	21.1 °C
Ambient Temperature:	21.2 °C
Test Date:	07/21/2022
Plot No.:	1

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz; Duty Cycle: 1:1 Medium parameters used (interpolated): f = 2412 MHz; $\sigma = 1.794$ S/m; $\epsilon_r = 38.494$; $\rho = 1000$ kg/m³ Phantom section: Flat Section

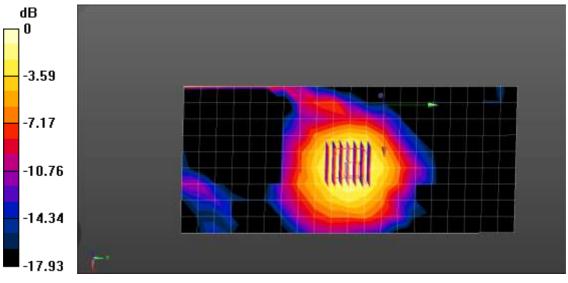
DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(8.42, 8.42, 8.42) @ 2412 MHz; Calibrated: 2022-06-30 •
- Sensor-Surface: 1.4mm (Mechanical Surface Detection) •
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30 •
- •
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.14 (7501) •

802.11b Hand-Held to Face 1Mbps 1ch/Area Scan (10x21x1): Measurement grid: dx=12mm, dy=12mm. Maximum value of SAR (measured) = 0.0375 W/kg 802.11b Hand-Held to Face 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm,

dz=5mm

Reference Value = 0.9100 V/m; Power Drift = -0.10 dB Peak SAR (extrapolated) = 0.0540 W/kg SAR(1 g) = 0.028 W/kg; SAR(10 g) = 0.015 W/kg Maximum value of SAR (measured) = 0.0429 W/kg



0 dB = 0.0429 W/kg = -13.68 dBW/kg



HCT CO., LTD
5.GHz TRANSCEIVER
20.5 °C
20.6 °C
07/19/2022
2

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1 Medium parameters used (interpolated): f = 5785 MHz; σ = 5.25 S/m; ϵ_r = 35.55; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

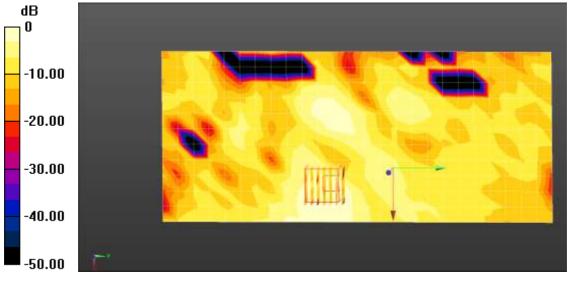
- Probe: EX3DV4 SN7732; ConvF(5.25, 5.25, 5.25) @ 5785 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection) •
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30 •
- •
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.14 (7501) •

802.11a Hand-Held to Face 6Mbps 157ch/Area Scan (12x26x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 0.0504 W/kg 802.11a Hand-Held to Face 6Mbps 157ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm,

dy=4mm, dz=1.4mm

Reference Value = 1.319 V/m; Power Drift = -0.17 dB Peak SAR (extrapolated) = 0.295 W/kg SAR(1 g) = 0.019 W/kg; SAR(10 g) = 0.00839 W/kg

Maximum value of SAR (measured) = 0.0567 W/kg



0 dB = 0.0567 W/kg = -12.46 dBW/kg



Test Laboratory:	HCT CO., LTD
EUT Type:	Bluetooth TRANSCEIVER
Liquid Temperature:	22.3 ℃
Ambient Temperature:	22.4 °C
Test Date:	07/04/2022
Plot No.:	3

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz; Duty Cycle: 1:1 Medium parameters used (interpolated): f = 2441 MHz; σ = 1.853 S/m; ϵ_r = 37.677; ρ = 1000 kg/m³ Phantom section: Flat Section

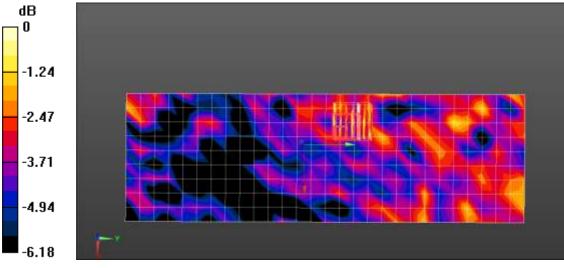
DASY5 Configuration:

- Probe: EX3DV4 SN3903; ConvF(7.7, 7.7, 7.7) @ 2441 MHz; Calibrated: 2022-03-29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection) ٠
- Electronics: DAE4 Sn1225; Calibrated: 2021-12-01 •
- .
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501) •

Bluetooth Hand-held to face DH5 39ch/Area Scan (10x29x1): Measurement grid: dx=12mm, dy=12mm Maximum value of SAR (measured) = 0.00293 W/kg

Bluetooth Hand-held to face DH5 39ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.8410 V/m; Power Drift = -0.15 dB Peak SAR (extrapolated) = 0.00282 W/kg SAR(1 g) = 7.18e-006 W/kg; SAR(10 g) = 1.28e-006 W/kg. Maximum value of SAR (measured) = 0.00384 W/kg



0 dB = 0.00384 W/kg = -24.16 dBW/kg



Test Laboratory:	HCT CO., LTD
EUT Type:	2.4 GHz TRANSCEIVER
Liquid Temperature:	21.1 °C
Ambient Temperature:	21.2 ℃
Test Date:	07/21/2022
Plot No.:	4

Communication System: UID 0, 2450MHz FCC (0); Frequency: 2412 MHz;Duty Cycle: 1:1 Medium parameters used (interpolated): f = 2412 MHz; σ = 1.794 S/m; ϵ_r = 38.494; ρ = 1000 kg/m³ Phantom section: Flat Section

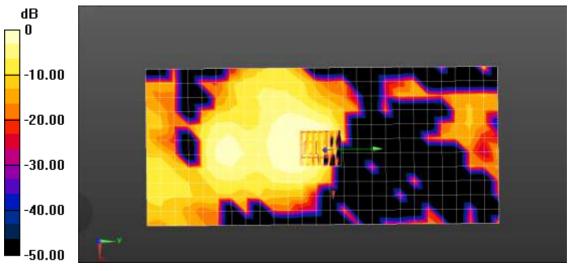
DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(8.42, 8.42, 8.42) @ 2412 MHz; Calibrated: 2022-06-30 •
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30 •
- •
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.14 (7501) •

Body-worn Belt clip 802.11b 1Mbps 1ch/Area Scan (12x26x1): Measurement grid: dx=12mm, dy=12mm Maximum value of SAR (measured) = 0.0260 W/kg

Body-worn belt clip 802.11b 1Mbps 1ch/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0 V/m; Power Drift = 0.00 dB Peak SAR (extrapolated) = 0.0280 W/kg SAR(1 g) = 0.013 W/kg; SAR(10 g) = 0.00562 W/kg Maximum value of SAR (measured) = 0.0228 W/kg



0 dB = 0.0228 W/kg = -16.42 dBW/kg



Test Laboratory:	HCT CO., LTD
EUT Type:	5 GHz TRANSCEIVER
Liquid Temperature:	20.6 °C
Ambient Temperature:	20.7 °C
Test Date:	07/20/2022
Plot No.:	5

Communication System: UID 0, WIFI 5GHz (0); Frequency: 5785 MHz;Duty Cycle: 1:1 Medium parameters used (interpolated): f = 5785 MHz; σ = 5.247 S/m; ϵ_r = 35.23; ρ = 1000 kg/m³ Phantom section: Flat Section

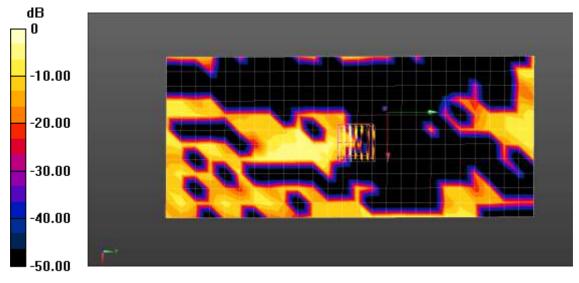
DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(5.25, 5.25, 5.25) @ 5785 MHz; Calibrated: 2022-06-30 •
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30 •
- •
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.14 (7501) .

Body-worn Belt clip 802.11a 6Mbps 157ch/Area Scan (12x26x1): Measurement grid: dx=10mm, dy=10mm. Maximum value of SAR (measured) = 0.0172 W/kg

Body-worn Belt clip 802.11a 6Mbps 157ch/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) = 0.198 W/kg SAR(1 g) = 0.020 W/kg; SAR(10 g) = 0.00444 W/kg. Maximum value of SAR (measured) = 0.0393 W/kg



0 dB = 0.0393 W/kg = -14.06 dBW/kg



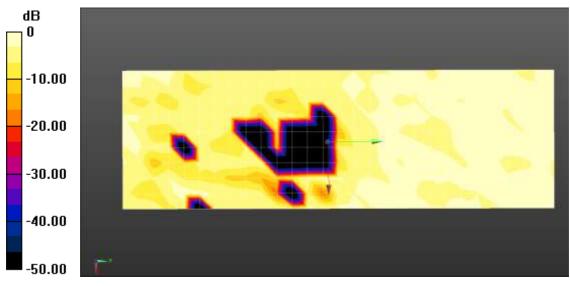
HCT CO., LTD
Bluetooth TRANSCEIVER
22.3℃
22.4 ℃
07/04/2022
6

Communication System: UID 0, Bluetooth (0); Frequency: 2441 MHz;Duty Cycle: 1:1 Medium parameters used (interpolated): f = 2441 MHz; σ = 1.853 S/m; ϵ_r = 37.677; ρ = 1000 kg/m³ Phantom section: Flat Section

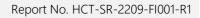
DASY5 Configuration:

- Probe: EX3DV4 SN3903; ConvF(7.7, 7.7, 7.7) @ 2441 MHz; Calibrated: 2022-03-29 Sensor-Surface: 1.4mm (Mechanical Surface Detection) •
- ٠
- •
- •
- Electronics: DAE4 Sn1225; Calibrated: 2021-12-01 Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501) •

Body-worn Belt clip Bluetooth DH5 39ch/Area Scan (10x29x1): Measurement grid: dx=12mm, dy=12mm. Maximum value of SAR (measured) = 0.00396 W/kg



0 dB = 0.00396 W/kg = -24.02 dBW/kg





Attachment 2. – Dipole Verification Plots



■ Verification Data (2 450 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	21.2 °C
Test Date:	07/21/2022

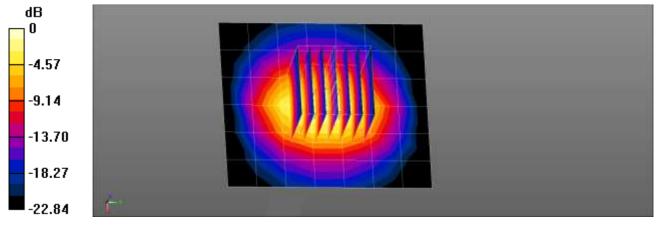
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1 Medium parameters used: f = 2450 MHz; σ = 1.839 S/m; ϵ_r = 38.325; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(8.42, 8.42, 8.42) @ 2450 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

2450MHz Head Verification/Area Scan (7x8x1): Measurement grid: dx=12mm, dy=12mm Maximum value of SAR (measured) = 4.04 W/kg

2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 50.85 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 5.60 W/kg SAR(1 g) = 2.58 W/kg; SAR(10 g) = 1.17 W/kg Maximum value of SAR (measured) = 4.45 W/kg



0 dB = 4.45 W/kg = 6.48 dBW/kg



■ Verification Data (2 450 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	22.3 ℃
Test Date:	07/04/2022

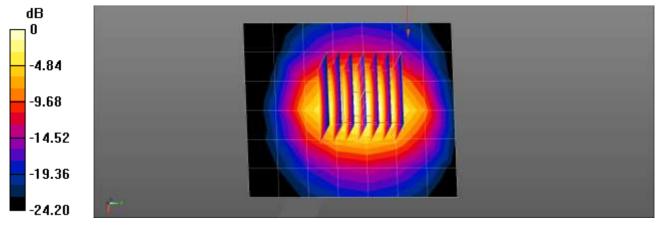
Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1 Medium parameters used: f = 2450 MHz; σ = 1.864 S/m; ϵ_r = 37.64; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 SN3903; ConvF(7.7, 7.7, 7.7) @ 2450 MHz; Calibrated: 2022-03-29
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1225; Calibrated: 2021-12-01
- Phantom: ELI V4.0 (20deg probe tilt); Type: QD OVA 001 Bx; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.13 (7474)

2450MHz Head Verification/Area Scan (7x8x1): Measurement grid: dx=12mm, dy=12mm Maximum value of SAR (measured) = 4.38 W/kg

2450MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 49.61 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 5.63 W/kg SAR(1 g) = 2.52 W/kg; SAR(10 g) = 1.15 W/kg Maximum value of SAR (measured) = 4.33 W/kg



0 dB = 4.33 W/kg = 6.36 dBW/kg



■ Verification Data (5 250 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.5 °C
Test Date:	07/19/2022

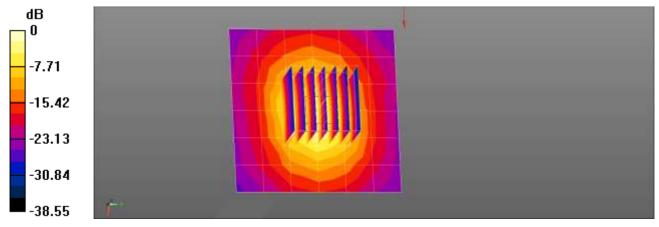
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5250 MHz; σ = 4.698 S/m; ϵ_r = 36.283; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(5.84, 5.84, 5.84) @ 5250 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5250MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 9.16 W/kg

5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 49.24 V/m; Power Drift = -0.17 dB Peak SAR (extrapolated) = 15.0 W/kg SAR(1 g) = 3.83 W/kg; SAR(10 g) = 1.1 W/kg Maximum value of SAR (measured) = 9.56 W/kg



0 dB = 9.56 W/kg = 9.80 dBW/kg



■ Verification Data (5 250 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.6 °C
Test Date:	07/20/2022

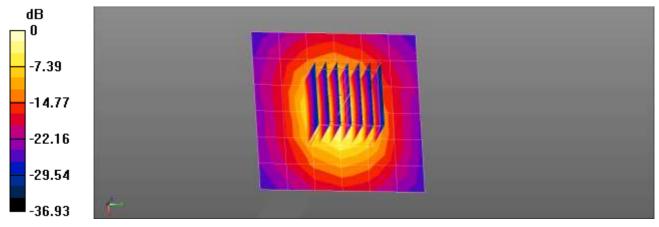
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5250 MHz; σ = 4.684 S/m; ϵ_r = 35.936; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(5.84, 5.84, 5.84) @ 5250 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5250MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 9.54 W/kg

5250MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 49.90 V/m; Power Drift = -0.10 dB Peak SAR (extrapolated) = 15.3 W/kg SAR(1 g) = 3.91 W/kg; SAR(10 g) = 1.12 W/kg Maximum value of SAR (measured) = 9.77 W/kg



0 dB = 9.77 W/kg = 9.90 dBW/kg



■ Verification Data (5 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.5 °C
Test Date:	07/19/2022

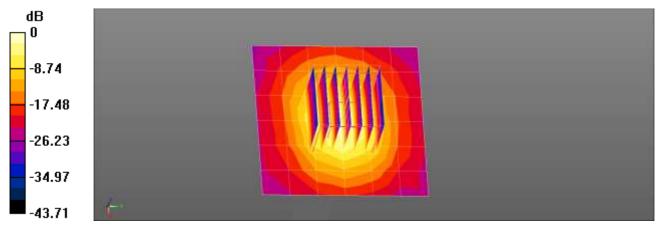
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5600 MHz; σ = 4.981 S/m; ϵ_r = 35.702; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

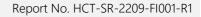
- Probe: EX3DV4 SN7732; ConvF(5.12, 5.12, 5.12) @ 5600 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5600MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 10.4 W/kg

5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 50.49 V/m; Power Drift = -0.05 dB Peak SAR (extrapolated) = 17.7 W/kg SAR(1 g) = 4.13 W/kg; SAR(10 g) = 1.17 W/kg Maximum value of SAR (measured) = 10.7 W/kg



0 dB = 10.7 W/kg = 10.29 dBW/kg





■ Verification Data (5 600 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.6 °C
Test Date:	07/20/2022

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5600 MHz; σ = 4.963 S/m; ϵ_r = 35.403; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

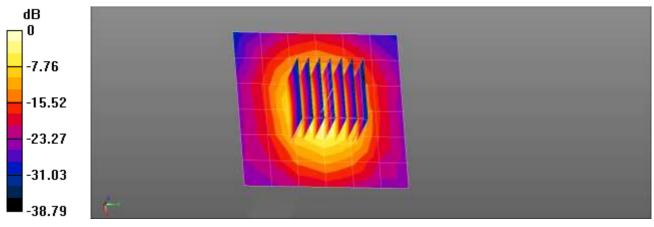
- Probe: EX3DV4 SN7732; ConvF(5.12, 5.12, 5.12) @ 5600 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5600MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 10.5 W/kg

5600MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 50.84 V/m; Power Drift = -0.09 dB Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 4.18 W/kg; SAR(10 g) = 1.18 W/kg

Maximum value of SAR (measured) = 10.8 W/kg



0 dB = 10.8 W/kg = 10.33 dBW/kg





■ Verification Data (5 750 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.5 °C
Test Date:	07/19/2022

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5750 MHz; σ = 5.252 S/m; ϵ_r = 35.515; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

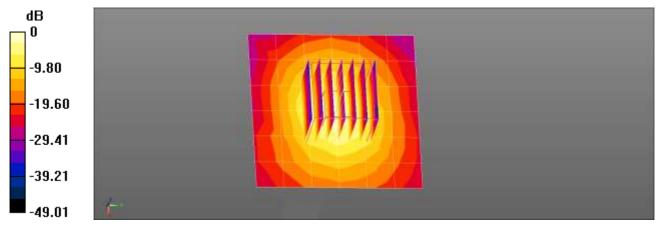
- Probe: EX3DV4 SN7732; ConvF(5.36, 5.36, 5.36) @ 5750 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5750MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 9.53 W/kg

5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 46.93 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 16.4 W/kg SAR(1 g) = 3.73 W/kg; SAR(10 g) = 1.07 W/kg

Maximum value of SAR (measured) = 9.74 W/kg



0 dB = 9.74 W/kg = 9.89 dBW/kg



■ Verification Data (5 750 MHz Head)

Test Laboratory:	HCT CO., LTD
Input Power	50 mW
Liquid Temp:	20.6 °C
Test Date:	07/20/2022

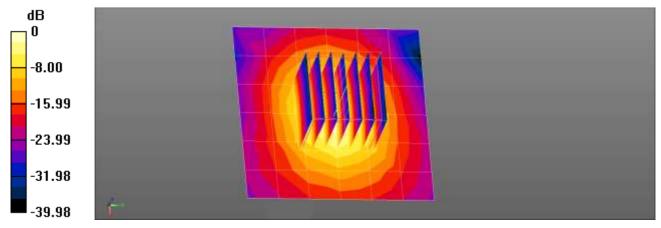
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1 Medium parameters used: f = 5750 MHz; σ = 5.246 S/m; ϵ_r = 35.172; ρ = 1000 kg/m³ Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 SN7732; ConvF(5.36, 5.36, 5.36) @ 5750 MHz; Calibrated: 2022-06-30
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn446; Calibrated: 2021-09-30
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: xxxx
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

5750MHz Head Verification/Area Scan (7x7x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 9.49 W/kg

5750MHz Head Verification/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 47.30 V/m; Power Drift = -0.12 dB Peak SAR (extrapolated) = 16.5 W/kg SAR(1 g) = 3.74 W/kg; SAR(10 g) = 1.07 W/kg Maximum value of SAR (measured) = 9.81 W/kg



0 dB = 9.81 W/kg = 9.92 dBW/kg





Attachment 3. – SAR Tissue Characterization

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

Ingredients	Frequency (MHz)				
(% by weight)	2 450 – 2 700	3500 - 5 800			
Tissue Type	Head	Head			
Water	71.88%	65.52%			
Salt (NaCl)	0.16%	0.0%			
Sugar	0.0%	0.0%			
HEC	0.0%	0.0%			
Bactericide	0.0%	0.0%			
Triton X-100	19.97%	17.24%			
DGBE	7.99%	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



Attachment 4. – SAR System Validation

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

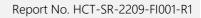
A tabulated summary of the system validation status including the validation date(s), measurement frequencies, SAR probes and tissue dielectric parameters has been included.

		Pro	ha			Dielectric	Parameters	CW	Validation		Modulat	ion Valio	dation
Probe	Probe Type	Calib	ration pint	Dipole	Date	Measured Permittivity	Measured Conductivity	Sensitivity	Probe Linearity	Probe Isotrop y	MOD. Type	Duty Factor	PAR
7732	EX3DV4	Head	2450	743	2022-07-06	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
3903	EX3DV4	Head	2450	743	2022-04-25	39.2	1.83	PASS	PASS	PASS	OFDM	N/A	PASS
7732	EX3DV4	Head	5250	1253	2022-07-05	35.7	4.70	PASS	PASS	PASS	OFDM	N/A	PASS
7732	EX3DV4	Head	5600	1253	2022-07-05	35.3	5.05	PASS	PASS	PASS	OFDM	N/A	PASS
7732	EX3DV4	Head	5750	1253	2022-07-05	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 per FCC KDB Publication 865664 D01v01r04. SAR system were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5 dB), such as OFDM according to KDB 865664 D01v01r04.





Attachment 5. – Probe Calibration Data



Zeughausstrasse 43, 8004 Zu		C S	Service suisse d'étaionnage Servizio svizzero di taratura Swiss Calibration Service
Accredited by the Swiss Accred The Swiss Accreditation Serv Multilateral Agreement for the	ice is one of the signatories	to the EA	creditation No.: SCS 0108
Client HCT (Dymste		and process	EX3-3903_Mar22
CALIBRATION	CERTIFICATE		and the second
Object	EX3DV4 - SN:390)3	A DE LE REAL PORTE
Calibration procedure(s)	QA CAL-25.v7	A CAL-12.v9, QA CAL-14.v6, QA lure for dosimetric E-field probes	
Calibration date:	March 29, 2022	FILL PLAY PLAY AND	The second s
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-291 Power sensor NRP-291	SN: 103244 SN: 103245	09-Apr-21 (No. 217-03291)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03292) 09-Apr-21 (No. 217-03343)	Apr-22 Apr-22
DAE4	SN: 660	13-Oct-21 (No. DAE4-660_Oct21)	Oct-22
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ES3-3013_Dec21)	Dec-22
Secondary Standards	ID.	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	05-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	05-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: U\$3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22
Network Analyzer E8358A	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	Flee
	Jeton Kastrati Sven Kühn	Laboratory Technician	5.8
Cellbrated by: Approved by:	Sven Kühn		S. S. Issued: April 4, 2022



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



- S Schweizerischer Kalibrierdienst
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- S Servizio svizzero di taratura

Accreditation No.: SCS 0108

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

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 3	9 rotation around an axis that is in the plane normal to probe axis (at measurement center),
	i.e., 9 = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 3 = 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 E²-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 1 ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for 1 > 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).

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March 29, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3903

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (µV/(V/m)2)A	0.43	0.36	0.54	± 10.1 %
DCP (mV) ^E	101.9	103.6	100.5	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	с	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	146.1	± 3.3 %	± 4.7 %
	12222	Y	0.00	0.00	1.00	1.13355	137.5	1.126111124	12000
		Z	0.00	0.00	1.00	-	143.6	1	
10352-	Pulse Waveform (200Hz, 10%)	X	20.00	90.96	21.33	10.00	60.0	± 3.0 %	± 9.6 %
AAA	A) A 32	Y	20.00	90.83	20.91	10.0000	60.0	228250	12030302
		Z	20.00	93.48	23.74		60.0	1	
10353-	Pulse Waveform (200Hz, 20%)	X	20.00	90.86	19.97	6.99	80.0	±1.6%	±9.6 %
AAA		Y	20.00	91.93	20.21		80.0	1	
00200	Concernation of the second	Z	20.00	93.45	22.42	P	80.0	1	
10354-	Pulse Waveform (200Hz, 40%)	X	20.00	91.76	18.90	3.98	95.0	±1.2%	± 9.6 %
AAA		Y	20.00	95.39	20.48		95.0		
	and the best of the second	Z	20.00	94.85	21.49		95.0		
10355-	Pulse Waveform (200Hz, 60%)	X	20.00	93.32	18.33	2.22	120.0	\$1.1%	±9.69
AAA		Y.	20.00	102.00	22.34		120.0		
1001000	and an and the second sec	Z	20.00	97.24	21.17	E.	120.0		
10387-	QPSK Waveform, 1 MHz	X	1.63	64.85	14.36	1.00	150.0	#2.1%	± 9.6 %
AAA	1 1 4 4 5 1 J 1 1 6 - 5 4 7 9 J. 6 2 7 7 6 4 7 9 M 9 1	Y	1.79	67.89	15.88		150.0		
		Z	1.72	64.95	14.62		150.0		
10388-	QPSK Waveform, 10 MHz	X	2.14	67.03	15.04	0.00	150.0	±0.9 %	± 9.6 %
4AA	- 1989 (MILE) (MILE) (MILE) (MILE) (MILE)	Y	2.37	69.52	16:53		150.0	10-10-10-08V	
		Z	2.25	67.43	15.22		150.0	1	
10396-	64-QAM Waveform, 100 kHz	X	3.15	70.75	18.57	3.01	150.0	± 0.7 %	± 9.6 %
AAA	1. 2010 CONTRACTOR CONTRA	Y	3.14	72.84	19.76		150,0		200202
		Z	3.32	70.51	18.55		150.0	1	
10399-	64-QAM Waveform, 40 MHz	X	3.45	66.73	15.44	0.00	150.0	±1.4 %	± 9.6 %
AAA		Y	3.47	67.33	15.89	1.12222	150.0	122220/101	10.000.0
		Z	3.54	66.94	15.57		150.0	1	
10414-	WLAN CCDF, 64-QAM, 40MHz	Х	4.87	65.43	15.32	0.00	150.0	± 3.1 %	± 9.6 %
AAA		Y	4.76	65.68	15.50	12202	150.0	10000	15 4 6 5 5
10.00	Market Market	Z	5.01	65.58	15.44		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 E²-field uncertainty inside TSL (see Pages 5 and 6). ⁸ Numerical linearization parameter: uncertainty not required. ⁹ 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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March 29, 2022

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3903

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
×	53.4	394.62	34,79	15.85	0.79	5.04	1,27	0.34	1.01
Y	41.5	297.03	33.03	12.65	0.49	5.03	1.63	0.08	1.01
Z	62.1	465.36	35.71	25.03	1.11	5.10	0.48	0.59	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (")	126.6
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.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3903

Calibration Paramet	er Determined in Head	Tissue Simulating Media
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f (MHz) ^c	Relative Permittivity [#]	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
150	52.3	0.76	13.49	13.49	13.49	0.00	1.00	± 13.3 %
450	43.5	0.87	11.23	11.23	11.23	0.16	1.30	± 13.3 %
750	41.9	0.89	10.01	10.01	10.01	0.49	0.80	± 12.0 %
835	41.5	0.90	9.64	9.64	9.64	0.52	0.80	± 12.0 %
900	41.5	0.97	9.48	9.48	9.48	0.48	0.80	± 12.0 %
1450	40.5	1.20	8.88	8.88	8.88	0.39	0.80	± 12.0 %
1750	40.1	1.37	8.68	8.68	8.68	0.38	0.86	± 12.0 %
1900	40.0	1.40	8.48	8.48	8.48	0.38	0.86	± 12.0 %
2300	39.5	1.67	7.81	7.81	7.81	0.39	0.90	± 12.0 %
2450	39.2	1.80	7.70	7.70	7.70	0.40	0.90	± 12.0 %
2600	39.0	1,96	7.57	7.57	7.57	0.34	0.90	± 12.0 %
3300	38.2	2.71	7.00	7.00	7.00	0.25	1.30	± 13.1 %
3500	37.9	2.91	6.90	6.90	6.90	0.35	1.30	± 13.1 %
3700	37.7	3.12	6.80	6.80	6.80	0.35	1.30	± 13.1 %
3900	37.5	3.32	6.60	6.60	6.60	0.35	1.60	± 13.1 9
4100	37.2	3.53	6.27	6.27	6.27	0.35	1.60	± 13.1 %
4400	36.9	3.84	6.14	6.14	6.14	0.35	1.60	± 13.1 %
4600	36.7	4.04	6.08	6.08	6.08	0.35	1.60	± 13.1 %
4800	36.4	4,25	6.02	6.02	6.02	0.45	1.60	± 13.1 %
5250	35.9	4.71	5.25	5.25	5.25	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.95	4.95	4.95	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.85	4.85	4.85	0.40	1.80	± 13.1 %

⁶ 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. ⁷ Al frequencies below 3 GHz, the validity of issue parameters (is and o) can be released to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of issue parameters (is and o) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters. ⁶ AlphaDepth and dehemined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is aWays less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3903

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity"	Conductivity (S/m)"	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
6500	34.5	6.07	5.45	5.45	5.45	0.20	2.50	± 18.6 %

^C Frequency validity above 6GHz is ± 700 MHz. The uncertainty is the RSS of the CorwF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
^R At frequencies 6-10 GHz, the validity of tissue parameters (z and o) 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.
^O Alpha/Depth are determined during calibration. SPEAG warrate 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.

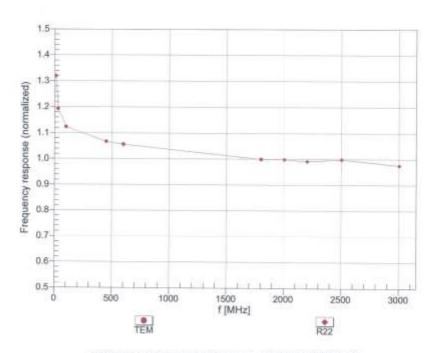
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Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

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

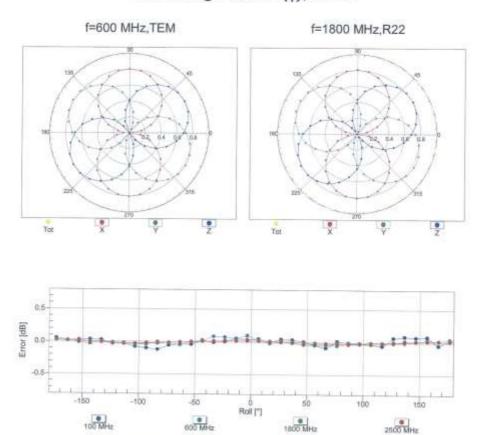
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Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$

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

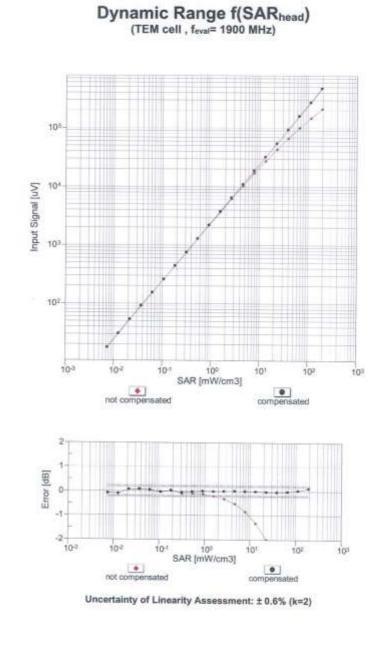
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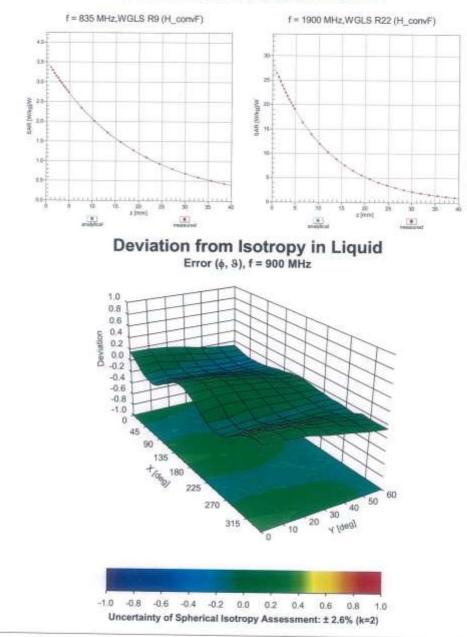
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Conversion Factor Assessment

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc [#] (k=2)
0	+	CW	CW	0.00	±4.7 9
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-F00 (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 9
10032	CAA	IEEE 802.15.1 Biuetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 9
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 9
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 9
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 9
10037	CAA	IEEE 802.15.1 Blueboth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6 9
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PV4-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 Skit, 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	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDO (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6 %

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10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 *
10101	CAE	LTE-FDD (SC-FDMA, 100% R8, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 *
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	19.6*
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 3
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6
10105	CAG	LTE-TDD (SC-FDMA, 100% R8, 20 MHz, 64-QAM)	LTE-TOD	10.01	± 9.6 °
10108	CAG	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, 84-QAM)	LTE-FDD	6.62	± 9.6
10114	CAD	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6
10115	CAD	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6
10116	CAD	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6
10117	CAD	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	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6
10141	CAE	LTE-FOD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6
10143	CAE	LTE-FOD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 9
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	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 *
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 9
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 4
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 9
10158	CAG	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	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 5
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 5
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 9
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6.5
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 5
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 9
0172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 9
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6.9
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
0178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
0179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
0180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, OPSK)	LTE-FDD	5.73	± 9.6 %

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10182	CAE	LTE-FDD (SC-FDMA, 1 R8, 15 MHz, 18-QAM)	LTE-FDD	6.52	±9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 R8, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 9
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 9
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 *
10189	AAF	LTE-FDD (SC-FDMA, 1 R8, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 *
10193	CAD	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 *
10194	CAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6
10195	CAD	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 °
10196	CAD	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 °
10197	CAD	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 °
10198	CAD	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 *
10219	CAD	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 *
10220	CAD	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 4
10221	CAD	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 °
10222	CAD	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	CAB	UMTS-FDD (HSPA*)	WCDMA	5.97	± 9.6 °
10226	CAB	LTE-TOD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 °
10227	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 °
10228	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 °
10229	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6
10231	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6
10232	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 9
10236	CAG	LTE-TOD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 1
10237	CAG	LTE-TOD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	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	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 9
10243	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 9
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6 %
10245	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TOD	10.06	± 9.6 %
10246	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	L'TE-TDD	9.30	1 9.6 9
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 9
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 3
10249	CAG	LTE-TOD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TOD	9.29	± 9.6 5
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.63
10251	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TOD	10.17	± 9.6 %
10252	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	±9.63
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	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-TOD	9.96	19.6%
10257	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	±9.6 9
10258	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
0259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	±9.6 %
0260	CAD	LTE-TDO (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	±9.6 %

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10261	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TOD	9.24	± 9.6 1
10262	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	±9.63
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	1 9.6 9
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 °
10266	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 84-QAM)	LTE-TDO	10.07	± 9.6 %
10267	CAG	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	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 9
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 *
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 9
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	±9.64
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 *
10290	AAB	CDMA2000, RC1, SD55, Full Rate	CDMA2000	3.91	± 9.6
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	±9.6
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6
10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 °
10301	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	± 9.6
10302	AAA	IEEE 802.15e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WIMAX	12.57	± 9.6 °
10303	AAA	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6
10304	AAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 9
10305	AAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 84QAM, PUSC)	WIMAX	15.24	±9.6 9
10306	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WIMAX	14.67	±9.6 9
10307	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WIMAX	14.49	± 9.6 1
10308	AAA	IEEE 802 16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	±9.6 9
10309	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)	WIMAX	14.58	± 9.6 1
10310	AAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3	WIMAX	14.57	± 9.6 1
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 1
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 9
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 9
10315	AAB	IEEE 802.11b WIFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WIFI 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 9
10317	AAD	IEEE 802.11s WIFI 5 GHz (OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	±9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	±9.6 9
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	±9.6 %
10364	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
0355	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 %
0388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
0399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
0400	AAE	IEEE 802.11ac WIFI (20MHz, 64-QAM, 99pc dc)	WLAN	8.37	± 9.6 %
0401	AAE	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	±9.6%
0402	AAE	IEEE 802.11ac WIFI (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	±9.6 %
0403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	±9.6 %
0404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6 %
0406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.69
0410	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7;8,9)	LTE-TDD	7.82	±9.6%

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10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 4
10415	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6
10416	AAA	IEEE 802.11g WFI 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 9
10417	AAC	AAC IEEE 802.11a/h WIFI 5 GHz (OFDM, 6 Mbps, 99pc dc)		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	and the second	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6
10422	AAC	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6
10423	AAC	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6
10424	AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6
10425	AAC	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6
10426	AAC	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	±9.6
10427	AAC	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6
10432	AAC	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	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6
10435	AAF	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6
10448	AAD	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, Cliping 44%)	LTE-FDD	7.51	± 9.6
10450	AAC	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	AAD	Validation (Square, 10ms, 1ms)	Test		
10456	AAC	IEEE 802.11ac WIFI (160MHz, 64-QAM, 99pc dc)	WLAN	10.00	± 9.6
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	8.63	± 9.6
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	and the second s	6.62	± 9.6
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000 CDMA2000	8.55	± 9.6
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	8.25	± 9.6
10461	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub)		2.39	± 9.6
10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	7.82	± 9.6
10463	AAB	LTE-TOD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 1
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	8.56	± 9.6 *
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 18-QAM, UL Sub)	LTE-TDD	7.82	± 9.6
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 9.6
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	8.57	± 9.6 °
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	7.82	± 9.6
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 9.6
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	8.56	± 9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	7.82	± 9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 R8, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 R8, 15 MHz, QPSK, UL Sub)	LTE-TDD	8.57	± 9.6 1
10474	AAE	LTE-TOD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	7.82	±9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 *
10477	AAF	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, 18-QAM, UL SUD)	LTE-TDD	8.57	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 1
10479	AAB		LTE-TDD	8.57	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TOD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	±9.69
10482		LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7,71	±9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	±9.6 9
		LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8,47	±9,6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	±9.6 %
0486	AAF	LTE-TOD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	\$ 9.6 1
0488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 1

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10489	AAF	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	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 *
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	19.6
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6
10495	AAF	LTE-TOD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	19.6
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6
10497	AAB	LTE-TDD (SC-FDMA, 100% R8, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 1
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 9.6
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 °
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL, Sub)	LTE-TDD	8.44	± 9.6
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UI, Sub)	LTE-TDD	7.72	± 9.6 °
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 °
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6
10507	AAF	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, 84-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 9
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 9
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	Contract of the second second	and the second second	
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	8.51	±9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	and the second s	± 9.6 1
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)		8.42	- Contractor and the second
10515	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps, 99oc dc)	UTE-TDD WLAN	8.45	± 9.6
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.58	± 9,6 1
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	the second s	1,57	± 9.6 %
10518	AAC	IEEE 802.11a/h WFI 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	1.58	19.6
10519	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10520	AAC	IEEE 802.11a/h WFI 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 9
10521	AAC	IEEE 802.11a/h WFI 5 GHz (OFDM, 16 Mbps, 99pc dc)	WLAN	8.12	± 9.6 °
10522	AAC	IEEE 802.11a/h WFI-5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10523	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.45	± 9.6 9
10524	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 46 Mbps, 99pc dc)	WLAN	80.8	± 9.6 9
10525	AAC	IEEE 802.11ac WIFI (20MHz, MCS0, 99pc dc)		8.27	±9.69
10526	AAC	IEEE 802.11ac WIFI (20MHz, MCS1, 99pc dc)	WLAN	8.36	± 9.6 1
10527	AAC	IEEE 802.11ac WIFI (20MHz, MCS2, 99pc dc)	WLAN	8.42	±9.6 %
10528	AAC	IEEE 802.11ac WIFI (20MHz, MCS3, 99pc dc)	WLAN	8.21	± 9.6 5
10529	AAC	IEEE 802.11ac WFI (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.36	± 9.6 5
10532	AAC	IEEE 802.11ac WIFI (20MHz, MCS7, 99pc dc)	WLAN	8.43	± 9.6 %
10533	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc 6c)	WLAN	8.29	± 9.6 %
10534	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.38	± 9.6 9
10535	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAC	IEEE 802.11ac WFI (40MHz, MCS2, 99pc dc)	WLAN	8.45	± 9.6 9
10537	AAC	IEEE 802.11ac WFI (40MHz, MCS3, 99pc dc)	WLAN	8.32	± 9.6 %
0538	AAC	IEEE 802.11ac WFI (40MHz, MCS4, 99pc dc)	WLAN	8.44	±9.59
0540	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.54	± 9.6 %
0541	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.39	± 9.6 %
10542	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, B9pc dc)	WLAN	8.46	± 9.6 %
10543	AAC		WLAN	8.65	± 9.6 %
10544	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	±9.6 %
0545	AAC	IEEE 802.11ac WIFI (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
0546	In the second second	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
0.0040	AAC	IEEE 802.11ac WIFI (80MHz, MCS2, 99pc dc)	WLAN	8.35	±9.6 %

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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	8.39	± 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 9
10553	AAC	IEEE 802.11ac WIFI (80MHz, MC59, 99pc dc)	WLAN	8.45	± 9.6 °
10554	AAD	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 °
10555	AAD	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 °
10556	AAD	IEEE 802.11ac WIFI (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 °
10557	AAD	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 °
10558	AAD	IEEE 802.11ac WIFI (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 °
10560	AAD	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 °
10561	AAD	IEEE 802.11ac WIFI (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6
10562	AAD	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	± 9.6
10563	AAD	IEEE 802.11ac WIFI (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6
10564	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6
10565	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6
10566	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6
10567	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6
10568	AAA	IEEE 802 11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6
10569	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.61
10570	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6
10571	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6
10572	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6
10573	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6
10574	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 11 Mbos, 90pc dc)	WLAN	1.98	± 9.6
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 °
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6
10577	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 *
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 °
10579	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 °
10580	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6
10581	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 9
10582	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-DFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 9
10583	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6
10584	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	+9.6
10585	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 5
10586	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 *
10587	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 5
10588	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 *
10589	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 *
10590	AAC	IEEE 802.11a/h WIFI 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 9
10593	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10594	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 9
10595	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	WLAN	8.74	± 9.6 %
10596	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8,71	±9.6 %
10597	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 9
10599	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 5
10600	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 9
10601	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 5
0602	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 3
10603	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %
10604	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 3

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10605	AAC	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 5
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 9
10609	AAC	IEEE 802 11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	19.6
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, MCS8, 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	± 9.61
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	± 9.64
10620	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	19.6
10621	AAC	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	19.6
10622	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	and the second second second	and in case of the local division of the
10623	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.68	± 9.6 °
10624	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	
10625	AAC	IEEE 802.11ac WiFI (40MHz, MCS9, 90pc dc)			± 9.6 °
10626	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.96	±9.6
10627	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 30pc dc)	WLAN	8.83	± 9.6
10628	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.88	±9.6
10629	AAC	IEEE 802.11ac WiFI (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9.6 5
10630	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 °
10631	AAC	IEEE 802.11ac WiFI (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 9
10632	AAC	IEEE 802.11ac WFI (80MHz, MCS6, 90pc dc)	WLAN	8.81	± 9.6 9
10633	AAC	IEEE 802.11ac WFI (80MHz, MCS6, 90pc dc)	WEAN	8.74	± 9.6 4
10634	AAC	IEEE 802.11ac WFI (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 9
10635	AAC	IEEE 802.11ac WIFI (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 °
10636	AAD		WLAN	8.81	± 9.6 5
10637	AAD	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc) IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.83	± 9.6 *
10638	AAD		WLAN	8.79	± 9.6
10639	AAD	IEEE 802.11ac WIFI (160MHz, MCS2, 90pc do)	WLAN	8.86	± 9.6 1
10639	AAD	IEEE 802 11ac WIFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6
10641	AAD	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.98	± 9.6 5
10642	AAD	IEEE 802.11ac WIFI (160MHz, MCS5, 90pc dc)	WLAN	9.06	± 9.6 *
	rene british and its	IEEE 802.11ac WIFI (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAD	IEEE 802.11ec WIFI (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10645	AAD	IEEE 802.11ac WIFI (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9,6 9
10645	AAG	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	±9.69
10647	AAF	LTE-TDD (SC-FDMA, 1 R8, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
		LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QP5K, UL Sub=2,7)	LTE-TDD	11.96	±9.6 %
0648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
0652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
0653	AAE	LTE-TDD (OFDMA, 10 MHz; E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
0655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 3
0658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
0659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
0660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
0661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
0662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
0670	AAA	Bluetoath Low Energy	Bluetooth	2.19	±9.6 %
0671	AAC	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	±9.63
0672	AAC	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %

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10673	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	±9.6 %
10674	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAC	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 5
10676	AAC	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8,77	± 9.6 1
10677	AAC	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 1
10678	AAC	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6
10679	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6
10680	AAC	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6
10681	AAC	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 1
10682	AAC	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 °
10683	AAC	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 do)	WLAN	8.28	± 9.6
10687	AAC	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6
10688	AAC	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6
10689	AAC	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6
10690	AAC	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6
10691	AAC	IEEE 802.11ax (20MHz, MCS8, 99pc dc)	WLAN	8.25	± 9.6
10692	AAC	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.29	± 9.6 °
10693	AAC	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN	8.25	± 9.6 9
10694	AAC	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 9
10695	AAC	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6
10696	AAC	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6
10697	AAC	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6
10698	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	±9.6
10699	AAC	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 °
10700	AAC	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAC	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAC	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAC	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAC	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 °
10705	AAG	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 9
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 9
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 9
10711	AAC	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 5
10712	AAC	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAC	IEEE 802.11ax (40MHz, MCS8, 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 1
0717	AAC	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.48	± 9.6 9
10718	AAC	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	±9.69
0719	AAC	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
0720	AAC	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	±9.6 %
0721	AAC	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 9
0722	AAC	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 9
0723	AAC	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 9
0724	AAC	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	±9.6 %
0725	AAC	IEEE 802 11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	±9.69
0726	AAC	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
0727	AAC	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %
0728	AAC	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.65	± 9.6 %

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10729	AAC	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 4
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, 98pc 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	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	± 9.6
10768	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6
10769	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QP5K, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6
10770	AAD	5G NR (CP-OFDM, 1 R8, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6
10771	AAD	5G NR (CP-OFDM, 1 R8, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6
10772	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	± 9.6
10773	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	± 9.6
10774	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6
10775	AAD	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6
10776	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	19.6
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 1
10778	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	± 9.6 1
10779	AAC	5G NR (CP-OFDM, 50% R8, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	± 9.6 °
10780	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.64
10781	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6
10782	AAD	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	± 9.6
0783	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6
0784	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	± 9.6 1

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10785	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	±9.6 %
10786	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	\$ 9.6 9
10787	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	± 9.6 %
10788	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	19.63
10789	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	± 9.6 9
10790	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	19.6 3
10791	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	± 9.6 5
10792	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
10793	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10794	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10795	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	± 9.6 5
10796	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 5
10797	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10798	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 5
10799	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 9
10801	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 5
10802	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	± 9.6 %
10803	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 3
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 9
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 3
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 9
10817	AAE	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 9
10821	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9,6 9
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6 %
10823	AAD	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% RS, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6.9
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10828	AAD	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	±9.69
10832	AAD	5G NR (CP-DFDM, 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-DFDM, 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	AAD	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	±9.63
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 80 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 %
10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %

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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	AAD	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-6-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 9
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 9
10681	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 9
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 9
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 5
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	19.6 1
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	AAC	5G NR (DFT-8-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAB	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 5
10899	AAB	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAB	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 9
10901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 3
10902	AAB	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAB	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 9
10904	AAB	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAB	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 9
10906	AAB	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	19.6.9
10907	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAB	5G NR (DFT-8-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
0910	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 5
10912	AAB	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAB	5G NR (DFT-s-OFDM, 50% R8, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 3
10914	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 7
0915	AAB	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 3
0916	AAB	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10917	AAB	5G NR (DFT-s-OFDM, 50% R8, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 3
0918	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 7
10919	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
0920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
0921	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
0922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±9.6 %

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10923	AAB	5G NR (DFT-s-OFDM, 100% R8, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TOD	5.84	± 9.6 %
10924	AAB	5G NR (DFT-s-OFDM, 100% R8, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6.9
10925	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 5
10926	AAB	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAB	5G NR (DFT-s-OFDM, 100% R8, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10928	AAC	5G NR (DFT-e-OFDM, 1 RB, 5 MHz, QP5K, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 5
10929	AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 1
10930	AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 °
10931	AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6
10932	AAC	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 9
10933	AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 °
10934	AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 9
10935	AAD	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	AAC	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 9.6 9
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	19.6
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	SG NR FR1 FDD	5.85	± 9.6 5
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 1
10944	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAC	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 1
10947	AAC	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 *
10948	AAC	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 1
10949	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 1
10950	AAC	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10951	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	± 9.6 9
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 9.6 1
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 9
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	±9.69
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAA	5G NR DI. (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 9
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	19.6 9
10960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	19.6 9
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 84-QAM, 15 kHz)	5G NR FR1 TDD	9.36	19.6 9
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
0963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	19.65
10964	AAC	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 9
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
0967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
0968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	±9.63
0972	AAB	5G NR (CP-OFDM, 1 R8, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	± 9.6 7
0973	AAB	5G NR (DFT-8-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	± 9.6 9
0974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	± 9.6 %
0978	AAA	ULLA BDR	ULLA	2.23	± 9.6 %
0979	AAA	ULLA HDR4	ULLA	7.02	± 9.6 %
0980	AAA	ULLA HDR8	ULLA	8.82	± 9.6 %
0981	AAA	ULLA HDR04	ULLA	1.50	±9.69
0982	AAA	ULLA HDRp8	ULLA	1.50	±9.69
C890	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz)			and the second s
	AAA	The second	5G NR FR1 TDD	9.31	±9.69

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10985	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.54	± 9.6 %
10986	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.50	± 9.6 %
10987	AAA	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.53	±9.6 %
10988	AAA	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.38	± 9.6 %
10989	AAA	5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.33	± 9.6 %
10990	AAA	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.52	± 9.6 %

^{II} 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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Calibration Laborator Schmid & Partner Engineering AG	y of	Iac-MRA (•	C Serv	velzerischer Kalibrierdier ice suisse d'étalonnage izio svizzero di taratura is Calibration Service
eughausstrasse 43, 8004 Zur	ich, Switzerland	SON Y		5 Swis	is Galibration Service
coredited by the Swiss Accre he Swiss Accreditation Ser ultilateral Agreement for th	vice is one of the signate			Accredit	ntion No.: SCS 0108
HCT (Dymst	ec)	Cor	tificate No	EX-77	32_Jun22
CALIBRATION C	ERTIFICATE				S. 4 25 - 540
			_		
Object	EX3DV4 - SN:7	732			
Calibration procedure(s)	QA CAL-25.v7	QA CAL-12.v9, QA edure for dosimetric			L-23.v5,
Calibration date	June 30, 2022				
Primary Standards Power meter NRP	ID SN: 104778	Cal Date (Certificate 04-Apr-22 (No. 217		and and a second s	Scheduled Calibration Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-			Apr-23
OCP DAK-3.5 (weighted)	SN: 1249	20-Oct-21 (OCP-DA			Oct-22
CCP DAK-12 Reference 20 dB Attenuator	SN: 1016 SN: CC2552 (20x)	20-Oct-21 (OCP-DA			Oct-22
CAE4	SN: 660	04-Apr-22 (No. 217 13-Oct-21 (No. DAE			Apr-23
Reference Probe ES3DV2	SN: 3013	27-Dec-21 (No. ESS			Oct-22 Dec-22
Part of the second s					
Secondary Standards Power meter E4419B	ID SN: GB41293874	Check Date (in hous			Scheduled Check
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house 06-Apr-16 (in house		and the second se	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house			In house check: Jun-22 In house check: Jun-22
IF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house		Card and a second se	In house check: Jun-22
latwork Analyzer E8358A	SN: US41080477	31-Mar-14 (in house			In house check: Oct-22
	Name	Function		Sian	ature
Calibrated by	Jeton Kashali	Laboratory T	echnician	de	le
Approved by	Sven Kühn	Technical Ma	enager	S	6
This calibration certificate sh	all not be reproduced excep	t in full without written app	proval of the	Issue Issue	ed: July 1, 2022
			격	담당	자 확 있 자
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



S Schweizerlischer Kallbrierdienst C Service suisse d'étalonnage Servizio svizzero di taratura S Swiss Callbration Service

Accreditation No.: SCS 0108

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

Glossary

TSL NORMx,y,z	tissue simulating liquid 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 w	w rotation around probe axis
Polarization θ	0 rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., 0 = 0 is normal to probe axis
CONTRACTOR OF A CONTRACT	1.1 A second second second second second with a second se second second sec

Connector Angle information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization ∂ = 0 (f ≤ 900MHz in TEM-cell; f > 1800MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E²-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. 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; Cx,y,z; VRx,y,z; A, B, C, D are numerical linearization parameters assessed based on the data of
 power aweep 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* ≤ 800MHz) and inside waveguide using analytical field distributions based on power measurements for *f* > 800MHz. 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 anterina;
- 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).

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Parameters of Probe: EX3DV4 - SN:7732

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc $(k=2)$
Norm (µV/(V/m)2) A	0.52	D.50	0.50	±10.1%
DCP (mV) B	101.0	101.0	104.0	±4.7%

Calibration Results for Modulation Response

aıu	Communication System Name		A dB	B dBõV	с	D dB	WR mV	Max dev.	Max Unc ^E k = 2	
0	CW	X	0.00	0.00	1.00	0.00	154.2	±2.5%	±4.7%	
		Y	0.00	0.00	1.00		151.3			
		Z	0.00	0.00	1.00		154.6			
10352	Pulse Waveform (200Hz, 10%)	X	1.65	61.32	6.63	10.00	60.0	±2.6%	±9.6%	
		Y	1.36	60.00	5.94		60.0			
		Z	1.73	61.65	6.93		60.0	1		
10353	Pulse Waveform (200Hz, 20%)	X	0.77	60.00	4.71	6.99	80.0	±2.0%	±9.6%	
		Y	0.80	60.00	4.68	0.000000	80.0	C SS SGLORD	10.42.42	
	The set of	Z	0.78	60.00	4.87		80.0			
10354	Pulse Waveform (200Hz, 40%)	X	0.06	122.90	0.69	3.98	95.0	±2.3%	±9.6%	
		Y	0.26	153.42	2.99		0.000	95.0		
		Z	0.00	128.17	0.88		95.0			
10355	Pulse Waveform (200Hz, 60%)	X	0.19	159.96	0.87	2.22	120.0	±1.3%	±9.6%	
	50 - KS - KA	Y	6.23	75.70	0.38	4	120.0			
		Z	1.10	159.92	1.90		120.0	f		
10387	QPSK Waveform, 1 MHz	X	0.48	63.10	11.75	1.00	150.0	±3.9%	±9.6%	
		Y	0.72	68.20	15.03		1	150.0		
		Z	0.50	64.17	12.36	1	150.0			
10388	QPSK Waveform, 10 MHz	X	1,26	65.48	13.52	0.00	150.0	±0.8%	±9.6%	
		Y	1.54	68.15	15.30		150.0		2010.028	
		Z	1.31	66.29	13.98	-	150.0	1		
10396	64-QAM Waveform, 100 kHz	X	1.65	64.44	16.09	3.01	150.0	±0.9%	±9,6%	
		Y	1.69	64.89	16.52	150.0	1			
		Z	1.71	65,15	16.37		150.0	1		
10399	64-QAM Waveform, 40 MHz	X	2.75	65.96	14.97	0.00	150.0	±2.9%	±9.6%	
	1997-1999 Weither Other (* 1999) - 912	Y	2.93	66.91	15.64	100000	150.0			
		Z	2.76	66.27	15.14	2	150.0	1		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.88	66.42	15.51	0.00	150.0	±4.4%	$\pm 9.6\%$	
	and the second	Y	3.89	66.30	15.62		150.0			
		Z	3.88	66.59	15.60	1	150.0	1		

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%.

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A The uncertainties of Norm X,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6). ^B Linearisation parameter uncertainty for maximum specified field strength. ^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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Parameters of Probe: EX3DV4 - SN:7732

Sensor Model Parameters

	C1 fF	C2 IF	а V ⁻¹	T1 msV ⁻²	T2 ms V ⁻¹	T3 ms	T4 V ⁻²	T5 V ⁻¹	T6
X	9.3	69.67	35.37	1.64	0.00	4.93	0.39	0.00	1.00
Y	9.9	73.29	35.00	2.42	0.00	4.90	0.32	0.00	1.00
2	9.3	68.66	34.73	2.00	0.00	4.95	0.53	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-80.3°
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 Scart job.

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Parameters of Probe: EX3DV4 - SN:7732

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k = 2)
750	41.9	0,89	10.36	10.36	10.36	0.45	0.80	±12.0%
835	41.5	0.90	10.03	10.03	10.03	0.46	0.80	±12.0%
900	41.5	0.97	9.79	9.79	9.79	0.43	0.87	±12.0%
1750	40.1	1.37	8.93	8.93	8.93	0.30	0.86	±12.0%
1900	40.0	1.40	8.57	8.57	8.57	0.28	0.86	±12.0%
2300	39.5	1.67	8.55	8.55	8.55	0.34	0.90	±12.0%
2450	39.2	1.80	8.42	8.42	8.42	0.31	0.90	±12.0%
2600	39.0	1.96	8.10	8.10	8.10	0.41	0.90	±12.0%
3300	38.2	2.71	7.53	7.53	7.53	0.30	1.35	±13.1%
3500	37.9	2.91	7.50	7,50	7.50	0.30	1.35	±13.1%
3700	37.7	3.12	7.40	7.40	7,40	0.30	1.35	±13,1%
3900	37.5	3.32	6.96	6.96	6.96	0.40	1.60	±13.1%
4950	36.3	4.40	6.34	6.34	6.34	0.40	1.80	±13.1%
5250	35.9	4,71	5.84	5.84	5.84	0.40	1.80	±13.1%
5600	35.5	5.07	5.12	5.12	5.12	0.40	1.80	±13.1%
5750	35.4	5.22	5.36	5.36	5.36	0.40	1.80	±13.1%
5800	35.3	5.27	5.25	5.25	5.25	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 in the RSS of the ConvF uncertainty at calibration trequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz for ConvF assessed at 13 MHz is 0-19 MHz. Above 55Hz frequency validity can be extended to ±100 MHz. Validity of ConvF assessed at 5 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 0-19 MHz. Above 55Hz frequency validity can be extended to ±10 MHz. F All frequencies below 5 GHz, the validity of Issue parameters (*c* and *c*) is restricted to ±10%. If block compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of Issue parameters (*c* and *c*) is restricted to ±5%. The uncertainty is the RSS of the ConvF uncertainty for indicated trends target lissue parameters.

⁹ Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz and below ±2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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Parameters of Probe: EX3DV4 - SN:7732

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ⁰	Depth ^G (mm)	Unc (k = 2)
6500	34.5	6.07	5,65	5.65	5.65	0.20	2.50	±18.6%

^C Frequency validity at 0.5 GHz is -600/+700 MHz, and ±700 MHz at or above 7 GHz. 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 (*c* and *a*) can be relaxed to ±10% If figuid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated larget (issue parameters.)

G Apha/Depth are determined during calibration. SPEAG warrants that the ramaining deviation due to the boundary effect after compensation is always less. than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3+8 GHz; and below ±4% for frequencies between 6+10 GHz at any distance larger than half the probe tip diameter from the boundary.

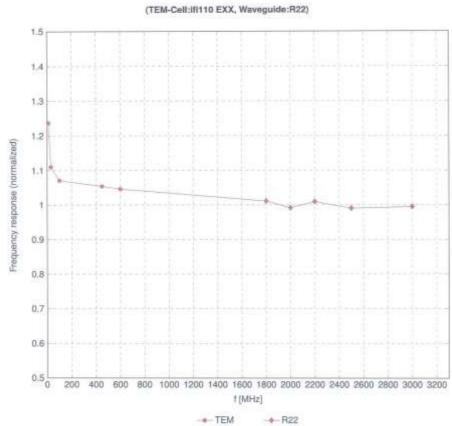
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Frequency Response of E-Field

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

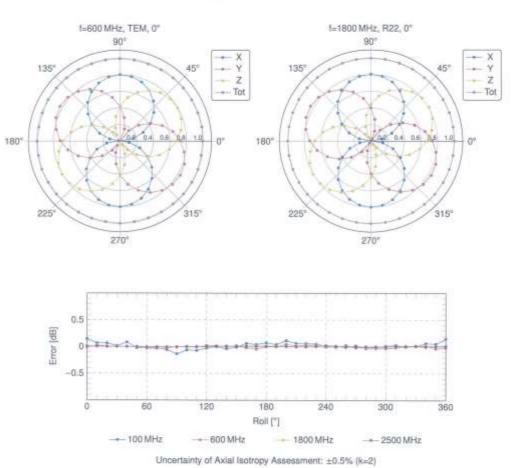
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EX3DV4 - SN:7732



Receiving Pattern (ϕ), $\theta = 0^{\circ}$

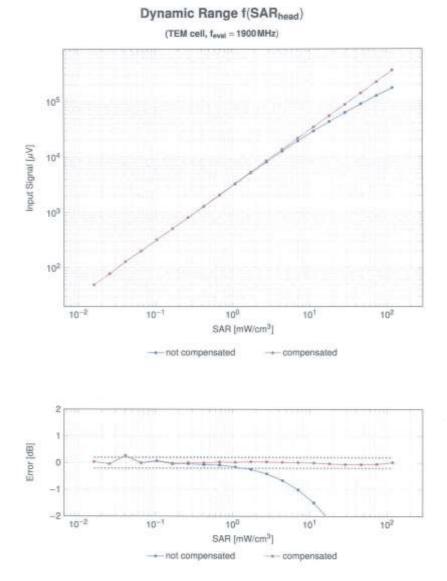
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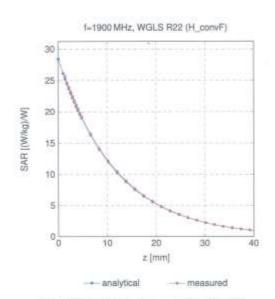
Uncertainty of Linearity Assessment: ±0.6% (k=2)

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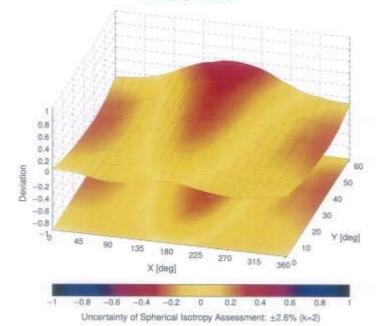
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Conversion Factor Assessment

Deviation from Isotropy in Liquid

Error (ϕ , θ), f = 900 MHz



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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc [®] k = 2
0		CW	CW	0,00	±4.7
10010	CAA	SAR Validation (Square, 100 ms, 10 ms)	Test	10.00	+9.6
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	+8.6
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	±9.8
10023	DAC		GSM	8.56	±0.6 ±9.6
		GPRS-FDD (TDMA, GMSK, TN 0-1)			1
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6
10025	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	±9.0
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GBM	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
10.031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Biyetooth	1.18	±9.6
10033	GAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	±9.6
10034	CAA	IEEE 802.15.1 Bluetouth (PI/4-DQPSK, DH3)	Buetooth	4.53	±9.6
10035	CAA	IEEE 802.15.1 Bluetoath (PI/4-DDPSK, DH5)	Bluetooth	3.63	+9.6
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6
10037	CAA	IEEE 802 15.1 Bluetoath (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	4.10	±9.6
10042	CAB	IS-54 / IS-136 FD0 (TDMA/FDM, PI/4-DOPSK, Halfrate)	AMPS	7.78	
10644	CAA			0000	±9.6
		IS-01/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	±9.6
10.048	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	±9,8
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mops)	TD-SCDMA	11,01	±9,6
10.058	CAC	EDGE-FDD (TDMA, BPSK, TN 0-1-2-3)	GSM	6.52	±9.6
10.059	CAB	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps)	WEAN	2.12	±8.6
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 CHz (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
10065	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	19.6
10065	CAD	IEEE 802.11a/h WFI 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 WFI 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	19.6
10068	CAD	IEEE 802 11a/h WIFI 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	19.6
10069	CAD	IEEE 802.11a/h WIFI 5 GHz (OFDM, 54 Mbps)	WLAN	and the second s	the second se
10071	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 9 Mbps)		10.56	±9.6
10072	CAB	and the second	WLAN	9.83	±9.6
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	100.000	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	±8.8
10078	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	±8.6
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	8,56	±9.6
10097	CAC	UMTS-FDD (HSDPA)	WGDMA	3.98	+9.6
10098	DAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.8
10099	CAC	EDGE-FDD (TOMA, 8PSK, TN 0-4)	GSM	9.55	±9.6
10100	CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, OPSK)	LTE-FDD	5.67	±9.6
10101	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	+9.8
10102	CAB	LTE FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.8
10103	DAC	LTE-TDD (SC-FOMA, 100% RB, 20 MHz, OPSK)	LTE-TDD	9.29	
10104	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	the second se		±9.6
10105	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	8.97	+9.8
10105	CAE		LTE-TOD	10.01	土泉島
Contract of the local distance of the	10 TO 17 TO 1	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, CPSK)	LTE-FDD	5.80	±9.6
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6,43	土泉.后
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5MHz, QPSK)	LTE-FOD	5.75	±9.8
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	8.44	± 9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k =
0112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	+9.6
0113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5MHz, 64-DAM)	LTE-FDD	6.62	±9.6
0114	CAG	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6
0115	GAG	IEEE 802.11n (HT Greenfield, 81 Mbps, 18-QAM)	WLAN	8.46	+9.6
0115	CAG	IEEE 802,11n (HT Greenfield, 135Mbps, 64-QAM)	WLAN	8.15	49.6
0117	CAG	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	+9.6
			WLAN	8.59	+9.6
0118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-CAM)			
0119	CAD	IEEE 802.11n (H7 Mixed, 135 Mbps, 84-QAM)	WLAN	8.13	±9.6
0140	CAD	LTE-FDD (SC-FDMA, 100% RB, 15MHz, 16-QAM)	LTE-FDD	6.49	±9.6
0141	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FOD	8.53	±9.6
0142	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5,73	±9.6
0143	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6
0144	CAC	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6
0145	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4MHz, OPSK)	LTE-FDD	5.78	19.6
0146	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6,41	±9.8
0147	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6
0148	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9,6
0150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 84-QAM)	LTE-FDD	6.60	±9.6
0151	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6
0152	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	19.6
0153	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	+9.8
0154	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6
0155	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 18-QAM)	LTE-FDD	6.43	±9.6
0156	CAF	LTE-FDD (SC-FDMA, 50% RB, 5MHz, QPSK)	LTE-FDD	5.79	19.6
0157	CAE	LTE-FDD (SC-FDMA, 50% RB, 5MHz, 16-GAM)	LTE-FDD	6,49	19.6
	CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-GAM)	LTE-FDD	6.62	19.6
0158	and the second second		and the local difference in the second se		and the second s
	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6
0160	CAG	LTE-FDD (SC-FDMA, 50% R8, 15MHz, QPSK)	LTE-FDD	5.82	±9,8
0161	CAG	LTE-FDO (SC-FDMA, 50% RB, 15 MHz, 18-QAM)	LTE-FDD	6.43	±9.8
0162	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	±9.6
0166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	±9,6
0167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.8
0168	CAG	LTE-FDO (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6,79	土9.6
0.169	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5,73	±9.6
0.170	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9,6
0171	ÇAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-GAM)	LTE-FDD	6.49	±9,6
0172	CAE	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, GPSK)	LTE-TDD	9,21	±9.6
0173	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TOD	9,48	=9.6
0174	CAF	LTE-TOD (SC-FDMA, 1 RB, 20 MHz; 64-QAM)	LTE-TDD	10,25	±9.6
0175	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, OPSK)	LTE-FDD	5.72	±9.6
0176	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FOD	6.52	+9.6
0177	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.8
0178	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
0179	AAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
0180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	19.6
0181	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	19.6
0182	CAG	LTE-FDD (SC-FDMA, 1 RB, 15MHz, 18-QAM)			
0183	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-GAM)	LTE-FDD LTE-FDD	6,52	±9,8
for the standard	and a set of the set of	stanting is being the stanting of t	the second se	6.50	±9.6
0184	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.8
0185	CAI	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.8
0188	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FOD	6.50	+9.6
01B7	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4MHz, QPSK)	LTE-FDD	5.73	±9.6
0188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FOD	6.52	±9.8
0189	CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 54-QAM)	LTE-FDD	6,50	±9,6
0193	CAE	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WCAN .	8.09	±9.6
0194	AAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	±9.6
0155	CAE	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	±9.8
0196	CAE	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	+9.6
0197	AAE	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	+9.6
0198	CAF	IEEE 802.11n (HT Mixed, 65 Mbps, 84-QAM)	WLAN	8.27	19.6
0219	CAF	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	19.6
6220	AAF	IEEE 802.11n (HT Mixed, 43.3 Mbos, 16-QAM)	WLAN	8.13	19.6
0221	CAC	EEE 802.11n (HT Model, 43.3 Model, 18-GHM)	WLAN	8,27	the second se
0222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	and the second se		19.6
	and the second se	IEEE 802.11n (HT Mixed, 90 Mbps, 18-QAM)	WLAN	8.05	±9.6 ±9.6
0223	CAD				

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^t k =:
10.225	CAD	UMTS-FDD (HSPA+)	WCOMA	5.97	±9.8
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	10.25	+9.6
10228	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TOD	9.22	±9.6
10.229	DAG	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10,230	CAC	LTE-TDD (SC-FDMA, 1 BB, SMHz, 64-QAM)	LTE-TDD	10.25	+9.6
10231	CAC	LTE-TDD (SC-FDMA, 1 FIB, 3 MHz, QPSK)	LTE-TOO	9.19	+9.6
10232	CAD	LTE-TDD (SC-FDMA, 1 RB, 5MHz, 16-QAM)	LTE-TDD	9.48	19.6
10233	CAD	LTE-TOD (SC-FDMA, 1 RB, 5MHz, 64-QAM)	LTE-TOD	10.25	±0.6
10234	CAD	LTE-TDD (SC-FDMA, 1 RB, 5MHz, QPSK)	LTE-TDD	9.21	+9.6
10235	CAD	LTE-TDD (SC-FDMA, 1 R8, 10MHz, 16-QAM)	LTE-TDD	9.48	±0.6
10,236	CAD	LTE-TDD (SC-FDMA, 1 RB, 10MHz, 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, 16 MHz, 16-QAM)	LTE-TOD	9.48	19.8
10239	CAB	LTE-TOD (SC-FDMA, 1 R8, 15MHz, 64-QAM)	LTE-TDD	10.25	+0.6
10240	CAB	LTE-TDD (SC-FDMA, 1 RB, 15MHz, QPSK)	LTE-TOD	9.21	±9.6
10241	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 15-QAM)	LTE-TOD	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	19.6
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3MHz, 16-QAM)	LTE-TOD	10.06	±9.6
10245	CAG	LTE-TDD (SC-FDMA, 50% RB, 3MHz, 64-QAM)	LTE-TOD	10.06	+9.6
10246	CAG	LTE-TDD (SC-FDMA, 50% RB, 3MHz, OPSK)	LTE-TDD	9.30	19.6
10.247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5MHz, 18-QAM)	LTE-TDD	9.91	19.6
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5MHz, 64-QAM)	LTE-TOD	10.09	19.6
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5MHz, QPSK)	LTE-TOD	9.29	+9.6
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TOD	9.81	and the second se
10251	CAF	LTE-TOD (SC-FDMA, 50% RB, 10MHz, 64-QAM)	LTE-TOD		±9.6
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10MHz, QPSK)	LTE-TOD	10,17 9,24	±9.6
10253	GAF	LTE-TOD (SC-FDMA, 50% RB, 15MHz, 16-QAM)	LTE-TOD	11000	+9.6
10254	CAB	LTE-TOD (SC-FDMA, 50% RB, 15MHz, 64-QAM)	LTE-TOD	9.90	±9,6
10255	CAB	LTE-TOD (SC-FDMA, 50% RB, 15 MHz, QPSK)	the set of the set of the	10.14	±9,6
10256	CAB	LTE-TOD (SC-FDMA, 100% RB, 1.4MHz, 18-OAM)	LTE-TOD	9.20	±9.6
10257	CAD	LTE-TOD (SC-FDMA, 100% RB, 1.4 MHz, 16-04M)	LTE-TOD	9.96	±9,8
10258	CAD	LTE-TOD (SC-FDMA, 100% RB, 1.4 MHz, OPSK)	LTE-TOD	10.08	29.6
10258	CAD	LTE-TOD (SC-FDMA, 100% RB, 3 MHz, 16-DAM)	LTE-TOD	9.34	±9.6
10280	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TOD	9.98	±9.6
10261	CAG	LTE-TOD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.97	±9.6
10282	CAG	LTE-TDD (SC-FDMA, 100% RB, 5MHz, 0FSK)	LTE-TOD	9,24	±9.6
10263	GAG	LTE-TDD (SC-FDMA, 100% RB, 5MHz, 64-QAM)	LTE-TOD	8.83	±9.6
10264	CAG		LTE-TOD	10.16	±9.8
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 5MHz, QPSK) LTE-TDD (SC-FDMA, 100% RB, 10MHz, 16-QAM)	LTE-TDD	9.23	±9.6
10265	CAF		LTE-TDD	9.92	±9.6
10265	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TOD	10.07	8.8±
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TOD	9.30	±9,8
		LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.05	±9.0
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	±9.8
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	±9.6
10275	CAD	UMTS-FDD (HSUPA, Subtest 5, 3GPP Refil.4)	WCDMA	3.96	±9.6
10277	CAD	PHS (CPSK)	PHS	11.81	±9.6
1027E 10279	CAD	PHS (OPSK, BW 884 MHz, Rolloft 0.5)	PHS	11.81	19.8
1.		PHS (OPSK, BW 884 MHz, Rolloff 0.38)	PHS	12,18	±9.6
10290	CAG	COMA2000, RC1, SO55, Full Rate COMA2000, RC3, SO55, Full Rate	CDMA2000	3.91	+9.6
10291	CAG	CEMA2000, HC3, SOSS, Full Hate CEMA2000, RC3, SO32, Full Rate	CDMA2000	3.46	±9.6
10292	CAG		CDMA2000	3.36	±9.6
10293		CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±9.6
	CAG	COMA2000, RC1, SO3, 1/8th Rate 25 k.	CIDMA2000	12,49	±8,6
10297	CAF.	LTE-FDD (SC-FDMA, 50% RB, 20MHz, QPSK)	LTE-FOD	5.81	±9.6
10298	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QP5K)	LTE-FOD	5.72	±9.6
10299	CAF	LTE-FDD (SC-FDMA, 50% AB, 3 MHz, 16-QAM)	LTE-FDD	6.39	±8.6
10300	CAC	LTE-FDD (SC-FDMA, 50% RB, 3MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10301	CAC	IEEE 802.16e WIMAX (29:18, 5ms, 10 MHz, QPSK, PUSC)	XAMIW	12.03	±9.6
10302	CAB	IEEE 602.16e WIMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3CTRL)	WMAX	12.57	±9.8
10303	CAB	IEEE 802.16e WIMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)	WIMAX	12.52	±9.6
10304	CAA	IEEE 802.16e WIMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)	WIMAX	11.86	+9.6
10305	CAA	IEEE 802 16e WIMAX (31:15, 10 ms, 10 MHz, 54QAM, PUSC)	WIMAX	15,24	±9;8
10306	CAA	IEEE 802.16e WIMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC)	WMAX	14,67	±9.6

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10307	AAB	IEEE 802.16e WIMAX (29:18, 10 ms, 10 MHz, GPSK, PUSC)	WMAX	14.49	±9.6
10308	AAB	IEEE 802.16e WIMAX (29:18, 10 ms, 10 MHz, 18QAM, PUSC)	WMAX	14,46	±9.6
0309	AAB	IEEE 802.16e WIMAX (29:18, 10 ms, 10 MHz, 16GAM, AMC 2x3)	WMAX	14.58	±9.0
0310	AAB	IEEE 802.16e WIMAX (29:18, 10 ms, 10 MHz, CPSK, AMC 2x3	WMAX	14.57	+9.6
10311	AAB	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, OPSK)	LTE-FDD	6.06	±9.6
0313	AAD	IDEN-13	IDEN	10.51	±9.6
0314	AAD	IDEN 15	DEN	13.48	+9.6
0315	AAD	IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1,71	±9.6
0316	AAD	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 9 Mbps, 96pc dc)	WLAN	8.36	±9.0
0317	AAA	IEEE 802.11a WIFI 5 GHz (OFDM, 8 Mbps, 96pt dc)	WLAN	8.36	±0.6
0352	AAA	Pulse Waveform (200 Hz, 10%)	Generic.	10.00	:9.6
0353	AAA	Pulse Waveform (200 Hz, 20%)	Generic	6.99	+9.6
0354	AAA	Pulse Waveform (200 Hz, 40%)	Generic	3.98	+9.6
0.355	AAA	Pulse Waveform (200 Hz, 60%)	Generic	2.22	±9.6
0356	AAA	Pulse Waveform (200 Hz, 80%)	Generic	0.97	+9.6
0387	AAA	CPSK Waveform, 1 MHz	Generic	5.10	19.6
1010 CC	AAA				
0388		GPSK Waveform, 10 MHz	Generic	5.22	±9.6
0396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	±9.8
0399	AAA	S4-QAM Waveform, 40 MHz	Generic	6.27	±9.8
0400	AAD	IEEE 802.11ac WFI (20 MHz; 84-QAM, 99pc dc)	WLAN	8.37	±9.0
0401	AAA	IEEE 802.11 ac WFI (40 MHz, 64-QAM, 99pc dc)	WLAN	8,60	±9.6
0402	AAA	IEEE 802.11ac WFI (80 MHz, 84-QAM, 98pc dc)	WLAN	8.53	29,6
0.403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3,76	±9,6
0404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6
10406	AAD	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.8
10410	AAA	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, OPSK, UL Sub=2.3,4,7,8,9)	LTE-TDD	7.82	±9,8
0414	AAA	WLAN CCDF, 64-QAM, 40 MHz	Generic	8.54	±9.0
0415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	±9.6
0416	AAA	1EEE 802.11g WIFI 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8,23	±9.6
0417	AAA	IEEE 802.11a/h WIFI 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8,23	±9.6
0.418	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	±9,8
0.422	AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	由.9.6
10.423	AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 18-DAM)	WLAN	8:47	±9.0
10424	AAE	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	±9:8
10.425	AAE	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	±9.8
10426	AAE	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	±9.8
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-FDO	8.38	8.8
10432	AAB	LTE-FDD (OFDMA, 15MHz, E-TM 3.1)	LTE-FDD	8.34	±9.0
10.433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
0434	AAG	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	±9.6
0435	AAA	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TOD	7.82	±9.6
0447	AAA	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.58	±9.6
0448	AAA	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	±9.6
0449	ANC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	±9.6
0.450	AAA	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	+9.0
0.451	AAA	W-CDMA (BS Test Model 1, 54 DPCH, Clipping 44%)	WCDMA	7.59	+9.6
0.453	AAC	Validation (Gquare, 10 ms, 1 ms)	Test	10.00	±9.6
0.456	AAC	IEEE 802.11ac WFI (160 MHz, 64-QAM, 99pc dc)	WLAN	8.63	19.6
0457	AAC	UMTS-FOD (DC-HSDPA)	WCOMA	6.62	19.6
0458	AAC	CDMA2000 (1xEV-DO, Rev. B, 2 partiers)	CDMA2000	6.55	+9.6
0.459	AAC	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	±9.6
0.400	AAC	UMTS-FDD (WCDMA, AMF)	WCDMA	2.39	±9.6
0-461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL SLb)	LTE-TOD	10.000	11110
0.462	AAC	LTE-TDD (SC-FDMA, 1 PB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TOD	8.30	+9.6
0463	AAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-GAM, UL Sub)	LTE-TOD	8.56	±9,6
0464	AAD	LTE-TDD (SC-FDMA, 1 R8, 3 MHz, QPSK, UL Sub)	LTE-TOD	7.82	±9.6
0465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Sub)			±9.6
0.466	AAC	LTE-TOD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TOD	8.32	±9.6
0.467	AAA		LTE-TOD	8.67	±9,6
		LTE-TOD (SC-FDMA, 1 RB, 5 MHz, QPSK, UI, Sub)	LTE-TOD	7,82	±9.6
0.468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5MHz, 18-GAM, UL Sub)	LTE-TOD	8.32	±0.6
0469	AAD	LTE-TDD (SC-FDMA, 1 RB, 5MHz, 64-GAM, UL Sub)	LTE-TOD	8,56	±9,6
0470	AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MRz, QPSK, UL Sub)	LTE-TOD	7.82	支9,6
0471	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz; 18-QAM, UL Sub)	LTE-TOD	8.32	±9.6

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10472	AAC :	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-DAM, UL Sub)	LTE-TDD	8.57	+9.8
10473	AAA	LTE-TDD (SC-FDMA, 1 RB, 15MHz, QPSK, UL Sub)	LTE-TOD	7.82	±9.6
10474	AAG.	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 18-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	19.5
1D478	AAC	LTE-TDD (SC-FDMA, 1 RB. 20MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	±9.6
10478	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9.6
10.480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 18-QAM, UL Sub)	LTE-TDD	8.18	±9.6
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 84-QAM, UL Sub)	LTE-TDD	B.45	19.6
10482	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TED	7.71	±9.6
10483	AAA	LTE-TDD (SC-FDMA, 50% RB, 3MHz, 16-QAM, 5ub)	LTE-TOD	8.39	±9.6
10484	AAB	LTE-TBD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	+9.6
10485	AAB	LTE-TDD (SC-FDMA, 50% R8, 5MHz, QPSK, UL Sub)	LTE-TDD	7.59	±9.6
10486	AAB	LTE-TDD (SC-FDMA, 50% RB, 5MHz, 16-QAM, UL Sub)	LTE-TED	8.38	±9.6
10487	AAC	LTE-TDD (SC-FDMA, 50% RB, 5MHz, 64-QAM, UL Sub)	LTE-TDO	8.60	±9.8
10468	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	±0.0 ±9.6
	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)		8.31	
10489			LTE-TOD		±9.6
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 04-GAM, UL Sub)	LTE-TDD	8.54	±9.8
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9,6
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15MHz, 16-QAM, UL Sub)	LTE-TOD	8,4t	±9.6
10.493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TOD	8.55	±9.6
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	±9,8
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	±0,6
10496	AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TOD	8.54	±9.6
10497	AAE	LTE-TDD (SC-FDMA, 100% R8, 1.4 MHz, QPSK, UL Sub)	LTE-TOD	7.67	±8,6
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% R8, 1.4 MHz, 64-QAM, UL Sob)	LTE-TOD	8.68	±9.6
10500	AAF	LTE-TDD (SC-FDMA, 100% R8, 3MHz, QPSK, UL Sub)	LTE-TOD	7.67	±9.6
10501	AAF.	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8,44	±8.6
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDO	8,52	2,9.6
10503	AAB	LTE-TDD (SC-FDMA, 100% RB, 5MHz, QPSK, UL Sub)	LTE-TDD	7,72	±9.6
10504	AAB	LTE-TDD (SC-FDMA, 100% RB, 5MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	±9,6
10505	AAC	LTE-TDD (SC-FDMA, 100% RB, SMHz, 64-QAM, UL Sub)	LTE-TDD	8.54	±9.6
10506	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDO	2.74	±9.6
10507	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 18-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% R8, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8,49	±9.6
10511	AAF	LTE-TDD (SC-FDMA, 100% R8, 15 MHz, 64-QAM, UL Sub)	LTE-TOD	8.51	±9,8
10512	AAF	LTE-TDD (SC-FDMA, 100% R8, 20 MHz, QPSK, UL Sub)	LTE-TOD	7.74	±9.8
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	19.6
10514	AAE	LTE-TDD (SC-FDMA, 100% R8, 20 MHz, 64-QAM, UL Sub)	LTE-TDO	8.45	+9.6
10515	AAE	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WEAN	1.58	±9.8
10516	AAE	IEEE 802.11b WIFI 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WEAN	1.57	19.6
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)	WEAN	8.23	19.6
10519	AAF	IEEE 602.11a/h WIFI 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	19.6
10520	AAB	IEEE 802.11wh 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	19.6
10522	AAB	IEEE 902.11a/h WIFI 5 GHz (OF DM, 24 Mops, 1900 dc)	WLAN	8.45	19.6
10523	AAG	IEEE 802.11a/h WIFISGHz (OFDM, 30 Mbps, 99pc dc)	WLAN	8.08	
0524	AAC	IEEE 802.11a/h WIFI 5 GHz (OF DM, 45 Mbps, 99pc dc)	WLAN	8.08	±9.6
0525	AAC	IEEE 802.11ac WFI (20 MHz, MCS0, 99bc dc)	WLAN		±9.6
0526	AAF	IEEE 802.11ac WIFI (20 MHz, MCSU, 99pc dc) IEEE 802.11ac WIFI (20 MHz, MCS1, 99pc dc)	WLAN	8.35	±9.6
0.527	AAF	IEEE 802.11ac WiFi (20 MHz, MCS1, Sept dc)	WLAN	8.42	19.6
0528	AAF	IEEE 602.11ac WiFI (20 MHz, MCS2, 99pc dc) IEEE 802.11ac WiFI (20 MHz, MCS3, 99pc dc)	and other parts	8.21	±9.6
	AAF		WLAN	8,36	19.6
0529	AAF	IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc dc)	WEAN	8.36	±9.6
10531	AAF	IEEE 802.11ac WIFI (20.MHz, MCS6, 99pc dc)	WLAN	8.43	±9,6
10532	A DOUGH	IEEE 802.11ac WIFI (20 MHz, MCS7, 99pc do)	WLAN	8.29	±9.6
10533	AAE	IEEE 802 11ac WiFi (20 MHz, MCS8, 99pc dc)	WLAN	8.38	±9.6
10534	AAE	IEEE 802.11ac WIFI (40 MHz, MCS0, 99pc dc)	WLAN	8,45	±9;6
10535	AAE	IEEE 802.11ac WIFI (40 MHz, MCS1, 99pc dc)	WLAN	8.45	±9.6
10536	AAF	IEEE 802.11ac WIFi (40 MHz, MCS2, 99pc dc)	WLAN	9.32	+9.6
10537	AAF	IEEE 802.11ac WIFI (40 MHz, MCS3, 99pc dc)	WLAN	B.44	±9.6
10538	AAF	IEEE 802.11ac WIFI (40 MHz, MCS4, 99pc dc)	WLAN	8.54	±9.6
10540	AAA.	IEEE 802.11ac WIFI (40 MHz, MCS8, 99pc dc)	WLAN	8.39	±9.6

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UID	Bev	Communication System Name	Group	PAR (dB)	Unc ^E N =
10541	AAA.	IEEE 802.11ac WIFI (40 MHz, MCS7, 99pc dc)	WLAN	8.46	±9.6
10542	AAA	IEEE 802 11ac WIFI (40 MHz, MCS8, 99pc do)	WLAN	6.65	±8.6
10543	AAC	IEEE 802,11ac WiFi (40 MHz, MC59, 99pc dc)	WLAN	8.85	±9.6
10544	AAC	IEEE 802.11ac WIFI (80 MHz, MCS0, 99pc dc)	WLAN	8.47	±9.6
10545	AAC	IEEE 802.11ac WIFI (80 MHz, MCS1, 99pc dc)	WLAN	8.55	±9.9
10546	AAG	IEEE 802.11ac WIFI (80 MHz, MCS2, 99pc dc)	WLAN	8.35	±9.6
10547	AAC	IEEE 802.11ac WFI (80 MHz, MCS3, 99pc dc)	WLAN	5.49	+9.6
10548	AAC	IEEE 802,11ac WFI (80 MHz, MCS4, 99pc dc)	WLAN	8.37	+9.6
10550	AAG	IEEE 802,11ac WFI (80 MHz, MCS8, 99pc dc)	WLAN	8.38	±9.6
	AAC	IEEE 802.11 ac WFI (80 MHz, MCS7, 99pc dc)	WLAN	8.50	±9.6
10551	AAC	IEEE 802.11ac WFI (80 MHz, MCS8, 98pc dc)	WLAN	8,42	+9.6
and the second second		IEEE 802.11 ac WFr (80 MHz, MCS9, 990c dc)	WLAN	8.45	±9.6
10553	AAG		WLAN	8.48	±9.6
10554	AAG	IEEE 802.11ac WFI (180 MHz, MCS0, 99pc dc)	WLAN	8.47	±9.6
10.555	AAC	IEEE 802.11ac WIFI (160 MHz, MCS1, 99pc dc)	WLAN	8.50	±9.6
10556	AAC	IEEE 802.11ac WIFi (160 MHz, MCS2, 99pc dc)	and the second se	and the second se	
10557	AAC	IEEE 802.11ac WIFI (160 MHz, MCS3, 99pc dc)	WLAN	8.52	=9.6
10.658	AAC	IEEE 802.11ac WIFi (160 MHz, MCS4, 99pc dc)	WLAN	8,61	±9.6
10.580	AAC	IEEE 802.11ac WIFI (160 MHz, MCS6, 99pc dc)	WLAN	8,73	±9.6
10561	AAC	IEEE 602.11ac WIFI (160 MHz, MCS7, 99pc dc)	WLAN	8.56	±9,6
10582	AAC	IEEE 802.11ac WIFI (160 MHz, MCS8, 99pc do)	WLAN	8.69	±9.6
10563	AAC	IEEE 802.11ac WiFi (160 MHz, 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
10.565	AAC	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	±9.6
10568	AAC	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	6.13	±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 dd)	WLAN	8.37	±9.6
10569	AAC	IEEE 802.11g W/FI.2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	+9.6
10.670	AAC.	IEEE 802,11g WFI 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	19.6
10579	AAC	IEEE 802.11b WIFI 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WEAN	1.98	±9.6
10574	AAC	IEEE 802.11b WIFI 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	+9.6
10675	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	±9.6
1057B	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 802.110 WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	19.6
10579	AAD	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.38	19.6
10580	AAD	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	19.6
10581	AAD	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	19.6
10582	AAD	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 46 Mops, 90pc dc)	WLAN	8.67	19.6
10583	AAD	IEEE 802.11a/h WFI 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	19.6
	AAD		and the second sec	and the second se	
10584		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	B.70	19.6
10586	AAD	IEEE 802.11a/h WIFI 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	±9.6
10587	AAA	IEEE 802.11wh WIFI 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	±9.6
10588	AAA	IEEE 802.11a/h WIF) 5 GHz (OFDM, 36 Mbps, 90pb dc)	WLAN	8.78	±9.6
10588	AAA	IEEE 802.11a/h WIFI 5 GHz (OFDM, 48 Mbps, 80pc dc)	WLAN	B.35	19.6
10580	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, 20 MHz, MCS0, 90pc dc)	WEAN	8.63	+9.6
10592	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 60pc dc)	WLAN	B.79	19.6
10583	AAA	IEEE 002.11n (HT Mixed, 20 MHz, MCS2, 90pc dc)	WI,AN	8.64	±9.6
10584	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc dc)	WLAN	8.74	+9.6
10595	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 90pc do)	WLAN	8.74	19.6
10566	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 90pc dc)	WLAN	8.71	±9.6
10587	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc dc)	WLAN	8.72	±9.6
10.588	AAA	IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc dc)	WEAN	8.50	+9.6
10599	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 90pc dc)	WLAN	8.79	19.6
00801	AAA	IEEE 002.11n (HT Mood, 40 MHz, MCS1, 90pc dc)	WLAN	6.88	19.6
10601	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 90pc dc)	WLAN	8.82	±9.6
10602	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc do)	WLAN	8.94	19.6
10.603	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 90pc do)	WLAN	8.03	19.6
10804	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MC85, 90pc dc)	WLAN	8.76	19.6
10605	AAA	IEEE 802.11n (HT Mixed, 40 MHz, MC56, 90pc dc)	WLAN	8.97	19.6
10.606	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 90pc dc)	WLAN	8.82	
10807	AAC	IEEE 802.11ac WiFi (20 MHz, MCS0, 90pc dc)	WLAN		19.6
			and the second of the second se	8.64	19.6
10.608	AAC	IEEE 802.11ac WiFI (20 MHz, MCS1, 90pc dc)	WLAN	8.77	±9,6

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10609	AAC	IEEE 802.11ac WIFI (20 MHz, MCS2, 90pc.do)	WLAN	8.57	±0.6
10610	AAC	IEEE 802.11ac WFI (20 MHz, MCS3, 90pc dc)	WLAN	8.78	±8.6
10611	AAC	IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc do)	WLAN	B.70	+9.6
10612	AAC	IEEE 802.11ac WFI (20 MHz, MCS5, 90pc dc)	WLAN	8.77	±9.6
10613	AAC	IEEE 802.11ac WFI (20 MHz, MCS6, 90pc dc)	WLAN	8.94	±9.6
10614	AAC	IEEE 802.11ac WFi (20 MHz, MCS7, 90pc dc)	WLAN	B.59	±9.6
10615	AAC	IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc dc)	WLAN	8.82	±9.6
10616	AAC	IEEE 802.11ac WIFI (40 MHz, MCS8, 90pc dc)	WLAN	8.82	+9,6
10617	AAC	IEEE 802.11ac WIFI (40 MHz, MCS1, 90pc dc)	WLAN	8.81	±9.6
10618	AAC	IEEE 802,11ac WFI (40 MHz, MCS2, 90pc dc)	WLAN	8.58	±9.6
10619	AAC	IEEE 802.11ac WFI (40 MHz, MCS3, 90pc dc)	WLAN	8.88	±8.6
10820	AAC	IEEE 802.11ac WFi (40 MHz, MCS4, 90pc dcl	WLAN	8.87	±9.6
10621	AAC	IEEE 802.11ac WFI (40 MHz, MCS5, 90pc dc)	WLAN	8.77	=9.0
10622	AAC	IEEE 802.11ac WIFI (40 MHz, MCS8, 90pc dc)	WLAN	8.68	±9.6
10623	AAC	IEEE 802.11ac WFI (40 MHz, MCS7, 90pc dc)	WLAN	8.82	±9.6
0824	AAC	IEEE 802.11 ad WIFI (40 MHz, MCISB, 90pc dc)	WLAN	8.96	±0.0- ±9.0
0625	AAG	IEEE 802.11ac WFI (40 MHz, MCS9, 90pc dc)	WLAN	8.96	±9.6
0826	AAC	IEEE 802.11ac WFI (90 MHz, MCS0, 90pc dc)	WLAN	8,83	and the second se
10627	AAC	IEEE 802.11 ac WFI (80 MHz, MCS0, 9000 dc)			±9.6
0628	AAC		WLAN WEAN	8.88	±9,6
10629	AAG	IEEE 802.11ac WFI (80 MHz, MCS2, 90pc dc)	WLAN	8.71	±9.8
0630	AAC	IEEE 802.11ac WFI (80 MHz, MCS3, 90pc dc)	WLAN	8.85	±9.6
10830	AAC	IEEE 802.11ac WFF (80 MHz, MCS4, 90pc dc)	WLAN	8.72	8.8±
0631	AAG	IEEE 802.11ac WIF (80 MHz, MCS5, 90pc dc)	WLAN	8.81	±9.6
a strange of the	and a state of the	IEEE 802.11ac WIFI (80 MHz, MCS6, 90pc dc)	WLAN	8.74	±9.6
10633	AAC	IEEE 802.11ac WFI (80 MHz, MCS7, 90pc dc)	WLAN	8.83	±9.6
10634	AAC	IEEE 802.11ad WFF (80 MHz, MCS8, 90pc dc)	WLAN	8.80	±9.6
	AAC	IEEE 802.11ao WIFI (80 MHz, MCS9; 90pc dc)	WLAN	8.81	土泉,后
10636	AAG	IEEE 802.11ac WIFI (160 MHz, MCS0, 90pc dc)	WLAN	8.83	±9.8
10637	AAC	IEEE 802,11ac WIFi (160 MHz, MCS1, 90pc dc)	WLAN	8.79	±9.8
0.638	AAC	IEEE 802.11ao WIFI (160 MHz, MCS2, 90pc dc)	WLAN	8.85	±9.6
0.639	AAC	IEEE 802.11ac WIFI (160 MHz, MCS3, 90pc dc)	WLAN	8.85	+9.8
0.640	AAC	IEEE 802.11ac WIFI (160 MHz, MCS4, 90pc dc)	WLAN	6.98	+9.6
0641	AAC.	IEEE 802 11ac WiFi (160 MHz, MCS5, 90pc dc)	WLAN	9.06	±9.6
0642	AAC:	IEEE 802.11ac WiFi (160 MHz, MCS6, 90pc dc)	WLAN	9.06	±9,6
10.643	AAC	IEEE 802.11ac WIFI (160 MHz, MCS7, 90pc dc)	WLAN	8.89	±9.6
10644	AAC	IEEE 802.11ec WIFI (160 MHz, MCS8, 90pc dc)	WLAN	9,05	士田,日
0645	,AAC	IEEE 802 11ac WIFI (160 MHz, MCS9, 90pc dc)	WLAN	9,11	±9.6
10646	AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub-2,7)	LTE-TOD	11,96	±9.6
10647	AAC	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub~2,7)	LTE-TDD	11.96	3,6±
0648	AAC:	CDMA2000 (1x Advanced)	CDMA2000	3.45	±9.6
0652	AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±9.6
0653	AAG	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TOD	7.42	+9.8
0.654	AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	±9.6
0.655	AAC	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	19.6
0.658	AAC	Pulse Waveform (200 Hz, 10%)	Test	10.00	±9.6
0659	AAC	Pulse Waveform (200 Hz, 20%)	Test	6.99	+9.6
0880	AAC	Pulse Waveform (200 Hz, 40%)	Test	3.98	±9.6
0661	AAC	Pulse Waveform (200 Hz, 60%)	Test	2.22	19.6
0.685	AAC	Pulse Waveform (200 Hz, 80%)	Test	0.97	+9.6
0670	AAC	Blaktooth Low Energy	Bluetooth	2.19	+9.6
0671	AAD	IEEE 802.11ax (20 MHz, MCS0, 90pc dd)	WLAN	8.08	±9.6
0672	AAD	IEEE 802.11ax (20 MHz, MCS1, 90pc dc)	WLAN	8.57	±9.6
0673	AAD	IEEE 802.11ax (20 MHz, MCS2, 90pc dc)	WLAN	8.78	±9.6
0674	AAD	IEEE 802.11ax (20 MHz, MCS3, 90pc dc)	WLAN	8.74	±9.6
0675	AAD	IEEE 802.11ax (20 MHz, MC54, 90pc dc)	WLAN	8.90	±9.6
0676	AAD	IEEE 802.11ax (20 MHz, MCS5, 90pc dc)	WLAN	8.77	+9.6
0677	AAD	IEEE 802.11ex (20 MHz, MCS6, 90pc dc)	WLAN	8.73	+9.6
0878	AAD	IEEE 802.11ax (20 MHz, MCS7, 90pc do)	WLAN	8.78	±9.6
0679	AAD	IEEE 802.11ax (20 MHz, MCS8, 90pc dc)	WLAN	8.89	±9.6
0680	AAD	IEEE 802.11ax (20 MHz, MCS9, 90pc do)	WLAN	8.80	+9.6
0.681	EAA	IEEE 802.11ex (20 MHz, MCS10, 80pc dc)	WLAN	8.62	+9.6
0882	AAF	IEEE 802.11ax (20 MHz, MCS11, 90pc dc)	WLAN		
0683	AAA	IEEE 802.11ax (20 MHz, MCS0, 99pc dc)	WLAN	8.83	3.9.6
0684	AAC	IEEE 802.11ax (20 MHz, MCSU, 99pc dc)		8.42	±9.6
0685	AAC	IEEE 602.11aa (20 MHz, MCS2, 99pc dc)	WLAN WLAN	8.26	+9.6
0686	AAC	IEEE 802.11ax (20 MHz, MC53, 99pc dc)		8,33	土 19.6
- wanted	sough -	to any other to day the market whereast where the	WLAN	8.28	±0.6

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0687	AAE	IEEE 802.11ax (20 MHz, MC54, 99pc dc)	WLAN	8.45	±9.6
0688	AAE	IEEE 802.11ax (20 MHz, MCS5, 99pc dc)	WLAN	8.29	±9.8
0689	AAD	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	±9.8
0690	AAE	IEEE 802.11ax (20 MHz, MCS7, 99pc dol	WLAN	8.29	3.9.6
0691	AAB	IEEE 802.11ax (20 MHz, MCS8, 99pc dc)	WLAN	8.25	+8.6
0692	AAA	IEEE 802 11ax (20 MHz, MCS9, 99pc dc)	WLAN	8.29	±9.6
An orthographic second			WLAN	8.25	+9.6
0693	AAA	IEEE 802.11ax (20 MHz, MCS10, 99pc dc)		and the second se	
0694	AAA	IEEE 802.11ax (20 MHz, MCS11, 99pc dc)	WLAN	8.57	±9.6
10695	AAA	IEEE 802.11a# (40 MHz, MCS0, 90pc dc)	WLAN	8.78	±9,6
0695	AAA	IEEE 802.11ax (40 MHz, MC51, 90pc dc)	WLAN	B.91	±9.6
0.697	AAA	IEEE 802.11ax (40 MHz, MCS2, 90pc dc)	WLAN	8.61	±9.6
86901	AAA	IEEE 802.11sx (40 MHz, MCS3, 93pc dd)	WEAN	8.89	±8,6
0699	AAA	IEEE 802.11ax (40 MHz, MC54, 90pc dc)	WLAN	8,82	±9.6
0700	AAA	IEEE 802.11ax (40 MHz, MCS5, 90pc dc)	WLAN	8.73	±9,6
0701	AAA	IEEE 802.11ax (40 MHz, MCS6, 90pc dc)	WLAN	6.86	±9,6
0702	AAA	IEEE 802.11ax (40 MHz, MCS7, 90pc dc)	WLAN	B.70	+8.6
0703	AAA	IEEE 802.11ax (40 MHz, MCS8, 90pc dc)	WLAN	8.82	±9.8
0704	AAA	IEEE 802.11ax (40 MHz, MCS9, 90pc dc)	WLAN	8.56	±9.6
0705	AAA	IEEE 802.11ax (40 MHz, MCS10, 90pc dc)	WLAN	8.69	±9.6
0706	AAC	IEEE 802.11as (40 MHz, MCS11, 90pc dc)	WLAN	8.66	±9.6
0707	AAC	IEEE 802.11ax (40 MHz, MCS0, 99pc dc)	WLAN	8.32	+9.6
0708	AAC	IEEE 802.11ax (40 MHz, MCS1, 99pc dc)	WLAN	B.55	+8.6
0708	AAC	IEEE 802.11ax (40 MHz, MCS1, sape de)	WLAN	8.33	10.0
0710	AAC	IEEE 802.11ax (40 MHz, MC32, 98pc dc)	WLAN	8.29	±9.6
0710	AAC	IEEE 802.11ax (40 MHz, MC33, 99pc dc) IEEE 802.11ax (40 MHz, MC34, 99pc dc)	WLAN	8.39	±9.0 ±9.6
	1.1.1.1.1.1.1				
10712	AAC	IEEE 802.11 ax (40 MHz, MCS5, 99pc dc)	WLAN	8.67	±9.6
10713	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc dc)	WI, AN	8.33	±9.6
10714	AAC	IEEE 802.11 ax (40 MHz, MCS7, 99pc dc)	WLAN	8.26	:±9.6
10715	AAG	IEEE 802.11ax (40 MHz, MCS8, 99pc do)	WLAN	B.45	±8.6
10718	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc dc)	WLAN	8.30	±9.6
10717	AAG	IEEE 802.11ax (40 MHz, MCS10, 99pc dc)	WLAN	8,48	+9.6
1071B	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc dc)	WLAN	8.24	+9.6
10719	AAC	IEEE 802.11ax (80 MHz, MCS0, 90pc do)	WEAN	8.81	±9.6
10.720	AAC	IEEE 802.11 Ax (80 MHz, MCS1, 90pc dc)	WLAN	8,87	±9.6
10721	AAC	IEEE 802.11ax (80 MHz, MCS2, 90pc dc)	WLAN	8.76	±9.6
0722	AAC	IEEE 802.11ax (80 MHz, MCS3, 90pc dc)	WLAN	8.55	19.6
10723	AAG	IEEE 802.11ax (80 MHz, MCS4, 90pc dc)	WLAN	8.70	19.6
10724	AAC	IEEE 802.11ax (80 MHz, MCS5, 90pc dc)	WLAN	8.90	+9.6
10725	AAC	IEEE 802.11ax (80 MHz, MCS6, 90pc dc)	WLAN	8.74	+9.6
0726	AAC.	IEEE 802.11ax (80 MHz, MCS7, 90pc do)	WLAN	8.72	±9.6
10727	AAG	IEEE 802.11ax (80 MHz, MC58, 90pc dc)	WLAN	8.05	19.6
0728	AAC	IEEE 802.118# (80 MHz, MCS9, 90pc dc)	WLAN	B.65	19.6
10729	AAC	IEEE 802.11ax (80 MHz, MCS10, 90pc dc)	WLAN	B.64	19.6
0730	AAC	IEEE 802.11ax (80 MHz, MCS11, 90pt dc)	WLAN	8.67	
	AAG	structure destanciant and a fact that has been a barrier of the structure of		the second se	±9.6
10731	AAC	IEEE 802.11 ax (80 MHz, MCS0, 99pc dc)	WLAN	B.42	+9.6
		IEEE 802.11ax (80 MHz, MCS1, 99pc dc)	WLAN	B.46	±9,6
0733	AAC	IEEE 802 11 ax (80 MHz, MCS2, 99pc dc)	WLAN	B,40	±9.6
0734	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc dc)	WLAN	8.25	±9.6
0735	AAC	IEEE 802.11ax (80 MHz, MCS4, 98pc dc)	WLAN	B.33	±9.6
0738	AAC.	IEEE 802.11ax (80 MHz, MCS5, 99pc dc)	WLAN	6.27	主税,8
0737	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc dc)	WLAN	8,36	±9,6
0.738	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc dc)	WLAN	8,42	+9.6
0738	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc dc)	WLAN	B.29	±9.6
0740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc dc)	WLAN	8.48	主9.6
0741	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc dc)	WLAN	B.40	+9.6
0.742	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc dc)	WLAN	B.43	+9.6
0743	A/IC	IEEE 802.11ax (160 MHz, MCS0, 90pc dc)	WLAN	6.94	±9.6
0744	AAC	IEEE 802.11ax (160 MHz, MCS1, 90pc dc)	WLAN	0.16	±9.6
0745	AAC	IEEE 802.11ax (190 MHz, MCS2, 90pc dc)	WLAN	8.93	+9.6
0746	AAC	IEEE 802.11ax (160 MHz, MCS3, 90pc dc)	WLAN	9,11	and the second se
10747	AAC	IEEE 802.114x (160 MHz, MCS4, 90pc dc)	WLAN		±8,6
0748	AAC		the second se	9:04	±0.6
0749		IEEE 802.11ax (160 MHz, MCS5, 90pp dc)	WLAN	8.93	±9.6
	AAC	IEEE 802.11ax (160 MHz, MCS6, 90pc dc)	WLAN	8.90	±9.6
0750	AAC	IEEE 802.11ax (160 MHz, MCS7, 90pc dc)	WLAN	8.79	±8.6
0751	AAC	IEEE 802.11ex (160 MHz, MCS8; 90pc dc)	WLAN	8.82	±9,6
0752	AAC	IEEE 802.11ax (160 MHz; MCS9, 90pc dc)	WLAN	8.81	±9.6

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10753	AAG	IEEE 802.11ax (160 MHz, MCS10, 90pc dc)	WLAN	9,00	±9.6
10754	AAC	IEEE 802.11ax (160 MHz, MCS11, 90pc dc)	WLAN	8.94	±9.6
10.755	AAC	IEEE 802.11ax (180 MHz, MCS0, 99pc dc)	WLAN	8.84	±9.8
10756	AAG	IEEE 802.11ax (160 MHz, MCS1, 99pc dd)	WLAN	8.77	3.6±
10757	AAG	IEEE 802.11ax (160 MHz, MCS2, 99pc dc)	WLAN	8.77	:9.6
10758	AAC	IEEE 802.11ex (160 MHz, MCS3, 99pc dc)	WEAN.	8.89	19.6
10759	AAG	IEEE 802.11ax (160 MHz, MCS4, 99pc dc)	WLAN	8.58	±9,6
10760	AAG	IEEE 802.11ax (160 MHz, MCS5, 99pc dc)	WEAN	8.49	±9.6
10761	AAG	IEEE 802.11ex (160 MHz, MCS6, 99pc dc)	WLAN	8.58	土泉,有
10762	AAC	IEEE 802.11ax (160 MHz, MCS7, 99pc dc)	WLAN	8,49	±9.6
10763	AAG	IEEE 802.11ax (160 MHz, MCS8, 99pc dc)	WEAN	8.53	±9.6
10764	AAC	IEEE 802.11ax (160 MHz, MCS9, 99pc dc)	WLAN	8.54	±8.6
10765	AAC	IEEE 802,11ax (160 MHz, MCS10, 99pc dc)	WLAN	8.54	±9,6
10766	AAC	IEEE 802.11ax (160 MHz, 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, OPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
10769	AAG	5G NR (CP-OFDM, 1 RB, 15MHz, OPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
10770	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, OPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10771	AAC	5G NR (CP-OFDM, 1 RB, 25MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10772	AAG	5G NR (CP-OFDM, 1 RB, 30 MHz, OPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6
10773	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	53 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	±9.8
10775	AAC	5G NR (CP-OFDM, 50% R8, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6
10776	AAG	5G NR (CP-OFDM, 50% R8, 10 MHz, OPSK, 15 kHz)	5G-NR FR1 TDD	6.30	±9.6
10777	AAC	5G NR (CP-OFOM, 50% R8, 15 MRz, QPSK, 15 kHz)	5G NR FR1 TDD	8.90	±9.6
10778	AAC	5G NR (CP-OFDM, 50% R8, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	±9.8
10779	AAC	5G NR (CP-OFDM, 50% R8, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	±9.8
10780	AAC	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	53 NR FR1 TDD	8.38	±9.8
10781	AAC	5G NR (CP-OFDM, 50% R8, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	+9.6
10782	AAC	5G NR (CP-OFDM, 50% R8, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	±9.6
10783	AAC	5G NR (CP-OFDM, 100% R8, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	19.6
10784	AAC	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	50 NR FR1 TDD	8.29	+9.6
10785	AAC	5G NR (CP-OFDM, 109% R8, 15 MHz, QPSK, 15 kHz)	SG NR FR1 TDD	8.40	±9.6
10.786	AAC	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR: TDD	8.35	29.6
10787	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	19.6
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% R8, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TOD	8.37	19.6
10790	AAC	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	19.6
10791	AAC	5G NR (CP-OFDM, 1 RB, 5MHz, QPSK, 30 kHz)	50 NR FR1 TDD	7.83	+9.6
10792	AAC	5G NR (CP-OFDM, 1 RB, 10 MHz, GPSK, 30 kHz)	SG NR FR1 TDD	7.92	19.5
10793	DAA	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	±9.6
10794	AAG	5G NR (CP-OFOM, 1 RB, 20 MHz, GPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6
10795	AAC	5G NR (CP-OFDM, 1 RB, 25 MHz, CPSK, 30 kHz)	5G NR FR1 TDD	7.64	19.6
10786	AAC	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	19.6
10797	AAC	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	19.6
10798	AAC	5G NR (CP-OFDM, 1 RE, 50 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	7.89	19.6
10799	AAC	5G NR (CP-OFDM, 1 RE, 60 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	7.93	19.8
10801	AAC	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	7.89	20.0
10802	AAC	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	±9.6 ±9.6
10.883	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	19.6
10805	AAD	5G NR (CP OFDM, 50% RB, 10 MHz, QPSK, 30 MHz)	SG NR FR1 TDD	8.34	±10.6 ±9.6
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	
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 ±9.6
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 MHz)	5G NR FRI TDD	8.34	±9.6
10817	AAD	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TOD	8.35	±9.6 ±9.6
10818	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, CPSK, 30 kHz)	5G NR FRI TDD	8.34	in the second se
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, CPSK, 30 MHz)	5G NR FR1 TDD	8.33	±8.6
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, CP SK, 30 kHz)	5G NR FR1 TDD	8.33	29.6
10821	AAC	5G NR (CP-OFDM, 100% RB, 25 MHz, CPSK, 30 kHz)			±9.6
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, GPSK, 30 kHz)	5G NR FR1 TDD	8,41	:9.6
10823	AAC	5G NR (CP-OFDM, 100% RB, 30 MHz, CPSK, 30 kHz) 5G NR (CP-OFDM, 100% RB, 40 MHz, CPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6
10824	AAD	5G NR (CP-OPDM, 100% R8, 40 MHz, CPSK, 30 KHz) 5G NR (CP-OPDM, 100% R8, 50 MHz, CPSK, 30 KHz)	5G NR FR1 TDD	8.38	±9.6
the second s	AAD		5G NR FR1 TDD	8.39	:0.6
10825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, GPSK, 30 kHz)	5G NR FR1 TDD	8.41	±8.8
10827	0.000 PV //	5G NR (CP-OFDM, 100% RB, 80 MHz, OPSK, 30 kHz)	SG NR FR1 TDD	8.42	20.6
10828	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, GPSK, 30 kHz)	5G NR FR1 TDD	8.43	±9.6

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10.829	AAD	5G NR (CP-OFDM, 100% R8, 100 MHz, QP5K, 30 kHz)	50 NR FR1 TDD	8.40	±9.6
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, OPSK, 60 kHz)	5G NR FR1 TDD	7,63	±9.6
10831	AAD	5G NR (CP-OFOM, 1 RB, 15 MHz, OPSK, 60 kHz)	SG NR FR1 TDD	7.73	+8.6
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	7,74	#9.6
and the second second	AAD		50 NR FR1 TDD	7,70	19.6
0833	10.00	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	and the local set of a first set of the set of the local		
10834	AAD	53 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)	50 NR FR1 TDD	7,68	#9,8
10837	AAD	5G NR (CP-OFDM, 1 AB, 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)	SG NR FR1 TDD	7.71	±9.6
10843	AAD	50 NR (CP-OFDM, 50% RB, 15 MHz, OPSK, 60 kHz)	5G NR FRI TDD	8.49	19.6
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, CPSK, 60 kHz)	5G NR FR1 TDD	8.41	+9.6
	1.				
10854	AAD	50 NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	50 NR FR1 TOD	8.34	±9.8
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	+9.6
10856	DAA,	5G NR (CP-OFDM, 100% RB, 20 MHz, GPSK, 60 kHz)	5G NR FR1 TOD	8.37	土印印
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	50 NR FR1 TDD	8,35	±9.6
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, GPSK, 60 kHz)	5G NR FR1 TDO	8.36	+8.6
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, GPBK, 60 kHz)	5G NR FR1 TDD	8.34	19.6
0880	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	SG NR FR1 TDD	8.41	±9.8
10881	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TOD	8.40	±9.8
10863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	
10864	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, GPSK, 60 MHz) 5G NR (CP-OFDM, 100% RB, 90 MHz, GPSK, 60 MHz)	SG NR FR1 TDD	8.41	+9.6
the second se	and the second se				±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-6-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±0.6
10868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.88	19.6
10869	AAD	5G NR (DFT=: OFDM, 1 R8, 100 MHz, OPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.8
0870	AAD	5G NR (DFT=-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	50 NR FR2 TDD	5.80	±9.6
10871	AAD	5G NR (DFT-e-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	+9.6
10872	AAD	5G NR (DFT-e-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	±9.6
10873	AAD	5G NR (DFT=-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6
10874	AAD	5G NR (DFT-6-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	
	AAD		the second standard standard in the second standard sta		±8.6
10875	111111	5G NR (CP-OFDM, 1 R8, 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	6.30	#9.8
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	50 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; 84QAM, 120 kHz)	5G NR FR2 TDD	8.12	#8,6
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==OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	SG NR FR2 TDD	5.75	+9.6
10882	AAD.	5G NR (DFT-s-OFDM, 100% R8, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	±9.6
0883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TOD	8.57	19.6
0884	AAD	5G NR (DFT-e-OFDM, 100% R8, 50 MHz, 160 AM, 120 kHz)	5G NR FR2 TDD	6.53	
0885	AAD	SG NR (DFTs-OFDM, 10075 HB, 50 MHz, 54QAM, 120 KHz)			±9.8
	AAD.		5G NR FR2 TDD	8.61	±9.8
0886	and the second second	5G NR (DFT+-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
0887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, GPSK, 120 kHz)	5G NR FR2 TDD	7.78	÷9.6
0.888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±9.6
0.889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	±9.6
0.680	(LAA)	5G NR (CP-OFDM, 100% R8, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TOD	8.40	+9.6
1680	(JA,A	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	19.6
0892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 84QAM, 120 kHz)	5G NR FR2 TDD	8.41	19.6
0897	AAD	5G NR (DFT=-OFDM, 1 RB, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0898	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	±8.6
0899	AAD	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, OPSK, 30 kHz)	SG NR FRI TOD		
0900	AAD	5G NR (DFT=8-OFDM, 1 RB, 20 MHz, QPSK, 30 KHz) 5G NR (DFT=8-OFDM, 1 RB, 20 MHz, QPSK, 30 KHz)	SG NR FRI TDD	5.67	±9.6
	1.			5.68	19.6
0901	AAD	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0.905	AAD	5G NR (DFTs-OFDM, 1 R8, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0903	,AAD	5G NR (DFT-II-OFDM, 1 R8, 40 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	5.68	±9.6
0904	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9,6
0905	AAD	5G NR (DFT=-OFDM, 1 R8, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0906	AAD	5G NR (DFT-9-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0907	AAD	5G NR (DFT+-OFDM, 50% RB, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	the second se
0908	AAD	50 NR (DFT=0-OFDM, 50% RB, 10 MHz, QPSK, 30 NHz)	and the local distance of the local distance		±9.6
0909			5G NR FR1 TDD	5.93	±9.6
interest in the second	AAD	5G NR (DFT= OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	±9.6
0910	AAD	5G NR (DFT=-CIFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6

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10911	AAD	5G NR (DFT-8-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)	SG NR FR1 TDD	5.84	19.6
10914	AAD	5G NR (DFT-8-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	19.6
10915	AAD	5G NR (DFT-e-OFDM, 50% R8, 66 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	5.83	+9.6
0916	AAD	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	53 NR FR1 TDD	5.87	+9.6
10917	AAD	5G NR (DFT-9-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FRI TDD	5.94	19.6
10918	AAD	5G NR (DFT-s-OFDM, 100% RB, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	+9.8
10918	AAD	5G NR (DFTs-OFDM, 100% RB, 10 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	5.86	+9.8
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+0-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	+9.6
10922	AAD	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±9.6
0923	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)	50 NR FR1 TDD	5.95	±9.6
10926	AAD	5G NR (DFT-CFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10927	AAD	5G NR (DFT-6-OFDM, 100% RB, 80 MHz, QPSK, 30 KHz)	5G NR FR1 TDD	5.94	+9.6
	AAD	5G NR (DFT=DOFDM, 10Hs HB, 50HHz, OPSK, 15 KHz)	5G NR FR1 FDD	5.52	±9.6
10928	AAD	5G NR (DFT=CFDM, 1 R8, 10 MHz, CPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.6
	1.1.2.2		5G NR FR1 FDD	5.52	and the second second
10930	AAD	5G NR (DFT-e-OFDM, 1 RB, 15 MHz, OPSK, 15 kHz)		5.51	±9.6
10931	AAD	SG NR (DFT-s-OFDM, 1 RB, 20 MHz, OPSK, 15 kHz)	5G NR FR1 FDD 5G NR FR1 FDD	5.51	±9.8 ±9.8
10932		5G NR (DFT-s-OFDM, 1 RB, 25 MHz, OPSK, 15 kHz)	and impleichers that would perfection have	5.51	
10933	AAA	5G NR (DFT+-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD		±9.6
10934	AAA	5G NR (DFT+-OFDM, 1 RB, 40 MHz, OPSK, 15 kHz)	5G NR FRI FDD	5.51	8.6±
10835	AAA	SG NR (DFT=OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5,51	±9.6
10938	AAC	5G NR (DFTs-OFDM, 50% RB, 5MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	±9.6
10937	AAB	50 NR (DFT-6-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5,77	±8.8
10938	AAB	SG 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=+OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.88	±9,6
10941	AAB	53 NR (DFT-6-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	50 NR FR1 FDD	5.83	±9.6
10942	AAB	5G NR (DFT-e-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 FRI FDD	5.8t	±9.6
10945	AAB	5G NR (DFT-6-DFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.6
10946	AAC	50 NR (DFT-s-OFDM, 100% RB, 15MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	#9,6
10947	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 MHz)	5G NR FR1 FDD	5.87	#8,6
10948	AAB	5G NR (DFTs-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	±9,6
10949	AAB.	5G NR (DFT-a-OFDM, 100% RB, 30 MHz, OPSK, 15 kHz)	5G NR FR1 FDD	5,87	±9.6
10950	A,AB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	SG NR FR1 FDD	5.94	#8.6
10.951	AAB	5G NR (DFT-9-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	±8,6
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
10:054	AAB	5G NR DE (CP-OFDM, TM 3.1, 15 MHz, 84-QAM, 15 kHz)	5G NR FR1 FDD	8.29	±9,6
10955	AAB.	5G NR DE (CP-OFDM, TM 3.1, 20 MHz, 84-QAM, 15 kHz)	5G NR FR1 FDD	8,42	± 9.6
10956	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-GAM, 30 kHz)	5G NR FR1 FDD	8.14	±9,6
10957	AAC	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 84-QAM, 30 kHz)	5G NR FR1 FDD	8.31	±9.6
10958	AAB	50 NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	6.61	±9.6
10959	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 54-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 WHz)	5G NR FR1 TDD	9.32	±9.8
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, 54-QAM, 15 kHz)	5G NR FR1 TDD	9,40	±9.6
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 84-QAM, 15 kHz)	5G NR FR1 TDD	9.55	±9.8
10964	AAB	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	±9.6
0965	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	53 NR DL (CP-DFDM, TM 3.1, 15 MHz, 64-DAM, 30 kHz)	5G NR FR1 TDD	0.55	±9.6
10.967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	53 NR FR1 TDD	9.42	±9.6
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	50 NR FR1 TDD	9.49	±9.6
10972	AAB	6G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	+9.6
10973	AAB	5G NR (DFT-6-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	±9.8
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	53 NR FR1 TDD	10.28	±9.8
10978	AAA	ULLA BOR	ULLA	2.23	19.8
10979	AAA	ULLA HDR4	ULLA	7.02	19.6
10960	AAA	ULLA HDR8	ULLA	8.82	19.6
10981	AAA	ULLA HDRp4	ULLA	1.50	±9.6
10982	AAA	ULLA HDRp8	ULLA	1.44	±9.6

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June 30, 2022

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E A = 2
10983	AAA	53 NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.31	±9.6
10984	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.42	±9.6
10985	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 HHz)	5G NR FR1 TDD	9.54	±9.8
10986	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.50	±9.6
10987	AAA.	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz)	50 NR FR1 TDD	9.53	±9,8
10988	AAA	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.38	±9.6
10989	AAA	5G NR DL (CP-OEDM, TM 3 1, 80 MHz, 54-QAM, 30 kHz)	5G NR FR1 TDD	9.33	+9.6
10990	AAA	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz)	53 NR FR1 TDD	9.52	±9.6

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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Attachment 6. – Dipole Calibration Data



Iultilateral Agreement for the re ilient HCT (Dymstec)	Caral Building of a standard and all					
them the for (by more of			Certifie	ate No: D24	150V2	2-743_May22
CALIBRATION C	CERTIFICATI		-	당 당	자	화의자
Object	D2450V2 - SN:74	13	2	71 21:	Ł	n
object	DENJUYE - DIAIT	i g	재	52176213	3	171 1921
			11	20226	-	2672 620
Calibration procedure(s)	QA CAL-05,v11		-	Contraction of the second seco	240	26.24 0.00
Calibration date:	May 31, 2022		==(0	0-200	1.23	31255
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All calibrations have been conduc Calibration Equipment used (M&T	ted in the closed laborator		wing pa	ges and are pa 2 ± 3)°C and hi	art of the	e certificate.
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All calibrations have been conduc Calibration Equipment used (M&T Primary Standards Power meter NRP Power sensor NRP-291	ted in the closed laborator E critical for calibration) ID # SN; 104778 SN; 103244	Cal Date (Certificate No.) 04-Apr-22 (No. 217-03525/ 04-Apr-22 (No. 217-03525/	wing pa ature (2 03524)	ges and are pa	Schedu Apr-23 Apr-23	e certificate. < 70%
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Certificate No: D2450V2-743_May22

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



S

- Schweizerischer Kalibrierdienst
- C Service suisse d'étalonnage
- Servizio svizzero di taratura

Accreditation No.: SCS 0108

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

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%.

Certificate No: D2450V2-743_May22

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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	
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	38.3 ± 6 %	1.84 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	-	

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	53.2 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	6.26 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.7 Ω + 5.9 jΩ
Return Loss	- 22.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.160 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

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DASY5 Validation Report for Head TSL

Date: 31.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:743

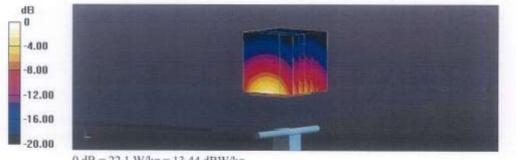
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz; $\sigma = 1.84$ S/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.96, 7.96, 7.96) @ 2450 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- 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=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 116.2 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 27.0 W/kg SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.26 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) = 22.1 W/kg



0 dB = 22.1 W/kg = 13.44 dBW/kg

Certificate No: D2450V2-743_May22

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Impedance Measurement Plot for Head TSL

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	48-811	-				>	1	2.450000 (GHIZ	-22.9	328 dB
10.00 5.00 0.00 -5.00 -10.00 -15.00 -25.00	42 311						1	2.450000 0	3Hz	-22.9	128 dB

Certificate No: D2450V2-743_May22

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Coughausstrasse 43, 8004 Zurich,		Mandoll Care		s Calibration Service	
The Swiss Accreditation Service Multilateral Agreement for the rec	is one of the signatorie		Accreditat	tion No.: 303 0100	
Client HCT (Dymstec)			cate No: D5G	GHzV2-1253_May2	2
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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

Accreditation No.: SCS 0108

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

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%.

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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	34.9 ± 6 %	4.52 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.10 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	80.4 W/kg ± 19.9 % (k=2)
CAP supposed over 40 cm ³ (40 c) of the d Ter		
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.31 W/kg

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	34.4 ± 6 %	4.87 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.1 W/kg ± 19.9 % (k=2)
548		
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.37 W/kg

Certificate No: D5GHzV2-1253_May22



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	34.2 ± 6 %	5.02 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	-	-

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.06 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.9 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.29 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	49.5 Ω - 3.2 jΩ	
Return Loss	- 29.8 dB	

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	52.2 Ω + 3.1 jΩ	
Return Loss	- 28.5 dB	

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	53.6 Ω + 2.9 jΩ	
Return Loss	- 27.0 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.196 ns	
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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	
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DASY5 Validation Report for Head TSL

Date: 31.05.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1253

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz

Medium parameters used: f = 5250 MHz; $\sigma = 4.52 \text{ S/m}$; $\varepsilon_r = 34.9$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: f = 5600 MHz; $\sigma = 4.87 \text{ S/m}$; $\epsilon_r = 34.4$; $\rho = 1000 \text{ kg/m}^3$, Medium parameters used: f = 5750 MHz; $\sigma = 5.02 \text{ S/m}$; $\varepsilon_r = 34.2$; $\rho = 1000 \text{ kg/m}^3$ 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: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 02.05.2022
- 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 = 75.61 V/m; Power Drift = 0.04 dB Peak SAR (extrapolated) = 28.5 W/kg SAR(1 g) = 8.10 W/kg; SAR(10 g) = 2.31 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 69.6% Maximum value of SAR (measured) = 18.4 W/kg

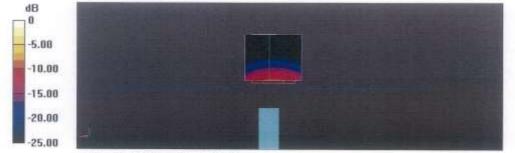
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 75.75 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 31.2 W/kg SAR(1 g) = 8.28 W/kg; SAR(10 g) = 2.37 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 66.7% Maximum value of SAR (measured) = 19.7 W/kg

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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 = 73.51 V/m; Power Drift = 0.06 dB Peak SAR (extrapolated) = 32.3 W/kg SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.29 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 65.3% Maximum value of SAR (measured) = 19.2 W/kg



0 dB = 19.7 W/kg = 12.94 dBW/kg

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		6	X			n Li Alt Ri	5 250000 GHz 8 5196 pF 5 500000 GHz 8 8 480 pH 5 750000 GHz 80 782 pH 5 500000 GHz	48,45 -3,194 52,23 3,148 53,51 2,910 17,338 112,6
Ch I Avg = 20 Start 5.0000 GHz -	2	/	X	Ø	Į		Store	£.00000 G
Start 5.00000 GH2						1) 3) 2) R)	5 250000 GHz 5 400000 GHz 5 50000 GHz 5 500000 GHz	28.771 (38.424 26.970 (-35.220 (

Impedance Measurement Plot for Head TSL

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