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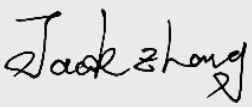
Test report No:
2390387R-RF-US-P03V02

SAR TEST REPORT

Product Name	POS
Trademark	Elo
Model and /or type reference	EMC-M100
FCC ID	RBWEMCM100
IC	10757B-EMCM100
Applicant´s name / address	Elo Touch Solutions, Inc 670 N. McCarthy Blvd., Suite 100, Milpitas, CA 95035, USA.
Test method requested, standard	FCC 47CFR §2.1093 IEEE Std 1528-2013 EN IEC/IEEE 62209-1528:2021 ANSI C95.1-2005 RSS-102 Measurement (SAR) Issue 5: 2015
Highest Measurement SAR 1g SAR (W/kg)	MAX SAR: **1.15** W/kg
Highest Simultaneous Transmission 1g SAR (W/kg)	MAX SAR: **0.55** W/kg
Verdict Summary	IN COMPLIANCE
Tested by (name / position & signature)	Tim Cao/Project Engineer 
Approved by (name / position & signature)	Jack Zhang/Manager 
Date of issue	2024-05-23
Report Version	V1.0
Report template No	Template_FCC SAR-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.
In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Dec. 26, 2023
Date (start test)	Jan. 15, 2024
Date (finish test)	Mar. 15, 2024

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	18 °C – 25 °C
Relative Humidity air	30% - 60%

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	:	Equipment Under Test
QP	:	Quasi-Peak
CAV	:	CISPR Average
AV	:	Average
CDN	:	Coupling Decoupling Network
SAC	:	Semi-Anechoic Chamber
OATS	:	Open Area Test Site
BW	:	Bandwidth
AM	:	Amplitude Modulation
PM	:	Pulse Modulation
HCP	:	Horizontal Coupling Plane
VCP	:	Vertical Coupling Plane
U_N	:	Nominal voltage
*T*x	:	Transmitter
*R*x	:	Receiver
N/A	:	Not Applicable
N/M	:	Not Measured

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
2390387R-RF-US-P03V02	V1.0	Initial issue of report.	2024-05-23

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with FCC 47CFR §2.1093, IEEE Std. 1528-2013, EN IEC/IEEE 62209-1528:2021, ANSI C95.1-2005, RSS - 102 Issue 5: 2015.
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.
7. DEKRA declines any responsibility with the following test data provided by customer that may affect the validity of result:
   - Chapter 1.1 General Description of the Item(s);
   - Chapter 1.2 Antenna Information.
   - Chapter 1.3 Antenna location diagram.
   - Chapter 1.4 Data Rate.
   - Chapter 1.5 Channel List.

1 General Information

1.1 General Description of the Item(s)

Product Name ..... :	POS
Model No. ..... :	EMC-M100
Trademark..... :	Elo
FCC ID..... :	RBWEMCM100
IC..... :	10757B-EMCM100
Hardware Version..... :	V1.00
Software Version..... :	T14
Manufacturer..... :	Elo Touch Solutions, Inc
Manufacturer Address ..... :	670 N. McCarthy Blvd., Suite 100, Milpitas, CA 95035, USA.
Factory..... :	ShuoGe Intelligent Technology Co.,Ltd.
Factory address ..... :	Room 308-310, Building 1, No.2 8th Road, Baiyang Street, Qiantang New Area,Hangzhou City, Zhejiang Province, P.R. China(310018)

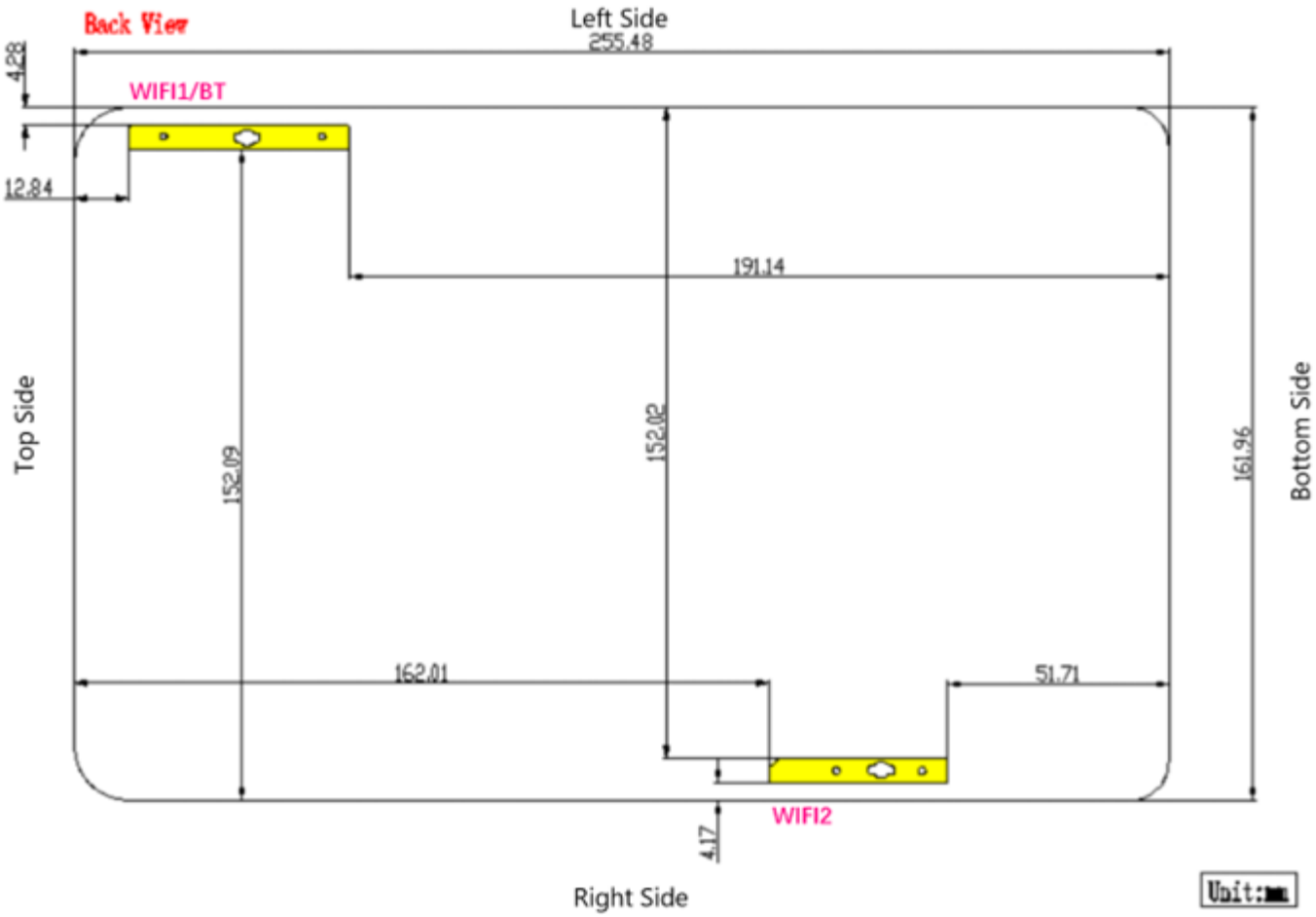
Wireless specification .....:	WIFI
Operating frequency range(s)	For 2.4G 2412~2462MHz
	For 5G 5.2GHz: 5180 ~ 5240 MHz 5.3GHz: 5260 ~ 5320MHz 5.6GHz: 5500 ~ 5700MHz 5.8GHz: 5745 ~ 5825MHz
Type of Modulation & Data Rate ....:	Refer to clause 1.4
Number of channel .....:	For2.4G: 802.11b/g/n(20MHz): 11 802.11n(40MHz): 7
	For 5G: 802.11a/n/ac(20MHz): 24 802.11n/ac(40MHz): 11 802.11ac(80MHz): 5
Wireless specification .....:	Bluetooth (BR/EDR&LE)
Operating frequency range(s)	2402~2480MHz
Type of Modulation .....:	FHSS: 1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK) LE : 1Mbps(GFSK); 2Mbps(GFSK);
Number of channel .....:	FHSS: 79 LE : 40
BT Channel Separation .....:	FHSS: 1MHz LE : 2MHz
BT Data Rate .....:	FHSS: 1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK) LE : 1Mbps(GFSK); 2Mbps(GFSK);
Operating temperature range.....:	-40℃ ~ 80℃

Rated power supply..... :	Voltage and Frequency	
	☐	AC: 220 - 240 V, 50/60 Hz
	☐	AC: 100 - 240 V, 50/60 Hz
	☒	Battery
	☐	Poe:
	☒	Adapter:
Adapter Model..... :	UES45LCP-SPC	
	Input: 100-240V ~ 50/60Hz,1.3A Output: 5.0V/3.0A,15.0W; 9.0V/3.0A, 27.0W; 12.0V/3.0A,36.0W; 15V/3.0A,45W; 20V/2.25A,45W Max	
Mounting position ..... :	☐	Tabletop equipment
	☐	Wall/Ceiling mounted equipment
	☐	Floor standing equipment
	☒	Hand-held/Portable equipment
	☐	Other:

1.2 Antenna Information

Antenna Delivery .....:	☒	1TX + 1RX		
	☒	2TX + 2RX		
	☐	Others:……		
Antenna technology.....:	☒	SISO		
	☒	MIMO	☒	CDD
			☐	Beam-forming
Antenna Type .....:	☐	External	☐	Dipole
			☐	Sectorized
	☒	Internal	☒	FPC
			☐	PCB
			☐	Metal Monopole Antenna
			☐	Ceramic chip
			☐	Others……..

1.3 Antenna location diagram



1.4 Data Rate

IEEE 802.11b

Modulation	Data Rate(Mb/s)
DSSS	1
DSSS	2
CCK	5.5
CCK	11

IEEE 802.11g

Modulation	R	Data Rate(Mb/s)
BPSK	1/2	6
BPSK	3/4	9
QPSK	1/2	12
QPSK	3/4	18
16-QAM	1/2	24
16-QAM	3/4	36
64-QAM	2/3	48
64-QAM	3/4	54

IEEE 802.11n

Spatial streames	MCS Index	Modulation	R	Data Rate(Mb/s)			
				800ns GI		400ns GI	
				20MHz	40MHz	20MHz	40MHz
1	0	BPSK	1/2	6.5	13.5	7.2	15.0
1	1	QPSK	1/2	13.0	27.0	14.4	30.0
1	2	QPSK	3/4	19.5	40.5	21.7	45.0
1	3	16-QAM	1/2	26.0	54.0	28.9	60.0
1	4	16-QAM	3/4	39.0	81.0	43.3	90.0
1	5	64-QAM	2/3	52.0	108.0	57.8	120.0
1	6	64-QAM	3/4	58.5	121.5	65.0	135.0
1	7	64-QAM	5/6	65.0	135.0	72.2	150.0
2	8	BPSK	1/2	13	27	14.4	30
2	9	QPSK	1/2	26	54	28.8	60
2	10	QPSK	3/4	39	81	43.4	90
2	11	16-QAM	1/2	52	108	57.8	120
2	12	16-QAM	3/4	78	162	86.6	180
2	13	64-QAM	2/3	104	216	115.6	240
2	14	64-QAM	3/4	117	243	130	270
2	15	64-QAM	5/6	130	270	144.4	300

IEEE 802.11a

Modulation	R	Data Rate(Mb/s)
BPSK	1/2	6
BPSK	3/4	9
QPSK	1/2	12
QPSK	3/4	18
16-QAM	1/2	24
16-QAM	3/4	36
64-QAM	2/3	48
64-QAM	3/4	54

IEEE 802.11n/ac

Spatial streames	MCS Index	Modulation	R	Data Rate(Mb/s)					
				400ns GI			800ns GI		
				20MHz	40MHz	80MHz	20MHz	40MHz	80MHz
1	0	BPSK	1/2	7.2	15	32.5	6.5	13.5	29.3
1	1	QPSK	1/2	14.4	30	65	13	27	58.5
1	2	QPSK	3/4	21.7	45	97.5	19.5	40.5	87.8
1	3	16-QAM	1/2	28.9	60	130	26	54	117
1	4	16-QAM	3/4	43.3	90	195	39	81	175.5
1	5	64-QAM	2/3	57.8	120	260	52	108	234
1	6	64-QAM	3/4	65	135	292.5	58.5	121.5	263.3
1	7	64-QAM	5/6	72.2	150	325	65	135	292.5
1	8	256QAM	3/4	86.7	180	390	78	162	351
1	9	256QAM	5/6	N/A	200	433.3	N/A	180	390
2	0	BPSK	1/2	14.4	30	65	13	27	58.6
2	1	QPSK	1/2	28.8	60	130	26	54	117
2	2	QPSK	3/4	43.4	90	195	39	81	175.6
2	3	16-QAM	1/2	57.8	120	260	52	108	234
2	4	16-QAM	3/4	86.6	180	390	78	162	351
2	5	64-QAM	2/3	115.6	240	520	104	216	468
2	6	64-QAM	3/4	130	270	585	117	243	526.6
2	7	64-QAM	5/6	144.4	300	650	130	270	585
2	8	256QAM	3/4	173.4	360	780	156	324	702
2	9	256QAM	5/6	N/A	400	866.6	N/A	360	780

Note : We have evaluated low/mid/high data rate, the blue font is the highest power data rate.

1.5 Channel List

IEEE 802.11b/g & IEEE 802.11n (20MHz) Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412 MHz	2	2417 MHz	3	2422 MHz	4	2427 MHz
5	2432 MHz	6	2437 MHz	7	2442 MHz	8	2447 MHz
9	2452 MHz	10	2457 MHz	11	2462 MHz	-	-

IEEE 802.11n(40MHz)Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	2422 MHz	4	2427 MHz	5	2432 MHz	6	2437 MHz
7	2442 MHz	8	2447 MHz	9	2452 MHz	-	-

Bluetooth Working Frequency of Each Channel: (For FHSS)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz	07	2409 MHz
08	2410 MHz	09	2411 MHz	10	2412 MHz	11	2413 MHz
12	2414 MHz	13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz	19	2421 MHz
20	2422 MHz	21	2423 MHz	22	2424 MHz	23	2425 MHz
24	2426 MHz	25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz	31	2433 MHz
32	2434 MHz	33	2435 MHz	34	2436 MHz	35	2437 MHz
36	2438 MHz	37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz	43	2445 MHz
44	2446 MHz	45	2447 MHz	46	2448 MHz	47	2449 MHz
48	2450 MHz	49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz	55	2457 MHz
56	2458 MHz	57	2459 MHz	58	2460 MHz	59	2461 MHz
60	2462 MHz	61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz	67	2469 MHz
68	2470 MHz	69	2471 MHz	70	2472 MHz	71	2473 MHz
72	2474 MHz	73	2475 MHz	74	2476 MHz	75	2477 MHz
76	2478 MHz	77	2479 MHz	78	2480 MHz	N/A	N/A

Bluetooth Working Frequency of Each Channel: (For LE)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz	03	2408 MHz
04	2410 MHz	05	2412 MHz	06	2414 MHz	07	2416 MHz
08	2418 MHz	09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz	15	2432 MHz
16	2434 MHz	17	2436 MHz	18	2438 MHz	19	2440 MHz
20	2442 MHz	21	2444 MHz	22	2446 MHz	23	2448 MHz

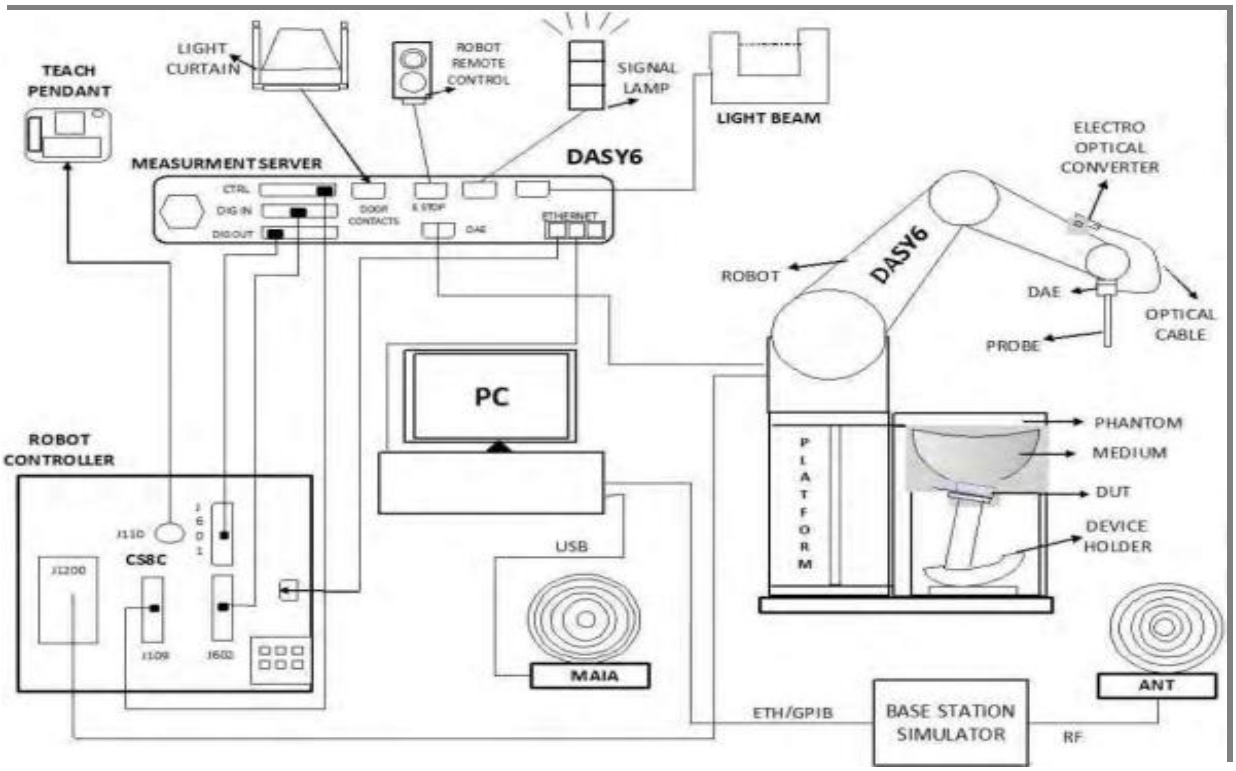
24	2450 MHz	25	2452 MHz	26	2454 MHz	27	2456 MHz
28	2458 MHz	29	2460 MHz	30	2462 MHz	31	2464 MHz
32	2466 MHz	33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz	39	2480 MHz

802.11a/n/ac(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
52	5260 MHz	56	5280 MHz	60	5300 MHz	64	5320 MHz
100	5500 MHz	104	5520 MHz	108	5540 MHz	112	5550 MHz
116	5580 MHz	120	5600 MHz	124	5620 MHz	128	5640 MHz
132	5660 MHz	136	5680 MHz	140	5700 MHz	149	5745 MHz
153	5765 MHz	157	5785 MHz	161	5805 MHz	165	5825 MHz
802.11n/ac(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	54	5270 MHz	62	5310 MHz
102	5510 MHz	110	5550 MHz	118	5590 MHz	126	5630 MHz
134	5670 MHz	151	5755 MHz	159	5795 MHz	N/A	N/A
802.11ac(80MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
42	5210 MHz	58	5290 MHz	106	5530MHz	122	5610 MHz
138	5690 MHz	155	5775 MHz	N/A	N/A	N/A	N/A

Note: The General Description of the Item, antenna information and Channel List in clause 1 are provided and confirmed by the client.

2 SAR MEASUREMENT SYSTEM

2.1 DASY6 System Description



The DASY6 system for performing compliance tests consists of the following items:
1. A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.
3. The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.
4. The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
5. A computer running Windows 11 and the DASY6 software.
6. Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
7. The phantom, the device holder and other accessories according to the targeted measurement.

2.1.1. Applications

Predefined procedures and evaluations for automated compliance testing with all worldwide standards, e.g., IEC/IEEE 62209-1528, KDB 865664 and others.

2.1.2. Area & Zoom Scan Procedures

First Area Scan is used to locate the approximate location(s) of the local peak SAR value(s). The measurement grid within an Area Scan is defined by the grid extent, grid step size and grid offset. Next, in order to determine the EM field distribution in a three-dimensional spatial extension, Zoom Scan is required. The Zoom Scan measures points and step size follow as below. The Zoom Scan is performed around the highest E-field value to determine the averaged SAR-distribution. The measure settings are referred to KDB 865664 D01v01r04:

			≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	½·δ·ln(2) mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
			When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
	Graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5·$\Delta z_{Zoom}(n-1)$ mm	
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 IEEE Std 1528-2013 for details.
* When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.

2.1.3. Uncertainty of Inter-/Extrapolation and Averaging

In order to evaluate the uncertainty of the interpolation, extrapolation and averaged SAR calculation algorithms of the Postprocessor, DASY6 allows the generation of measurement grids which are artificially predefined by analytically based test functions. Therefore, the grids of area scans and zoom scans can be filled with uncertainty test data, according to the SAR benchmark functions of IEC/IEEE 62209-1528.The three analytical functions shown in equations as below are used to describe the possible range of the expected SAR distributions for the tested handsets. The field gradients are covered by the spatially flat distribution f1, the spatially steep distribution f3 and f2 accounts for H-field cancellation on the phantom/tissue surface.

$$f_1(x,y,z) = Ae^{-\frac{z}{2a}}\cos^2\left(\frac{\pi}{2}\frac{\sqrt{x'^2+y'^2}}{5a}\right)$$

$$f_2(x,y,z) = Ae^{-\frac{z}{a}}\frac{a^2}{a^2+x'^2}\left(3-e^{-\frac{2z}{a}}\right)\cos^2\left(\frac{\pi}{2}\frac{y'}{3a}\right)$$

$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4}+x'^2+y'^2}\left(e^{-\frac{2z}{a}}+\frac{a^2}{2(a+2z)^2}\right)$$

2.2 DASY6 E-Field Probe

The SAR measurement is conducted with the dosimetric probe manufactured by SPEAG. The probe is specially designed and calibrated for use in liquid with high permittivity. The dosimetric probe has special calibration in liquid at different frequency.
SPEAG conducts the probe calibration in compliance with international and national standards (e.g. IEC/IEEE 62209-1528, etc.) under ISO 17025. The calibration data are in Appendix D.

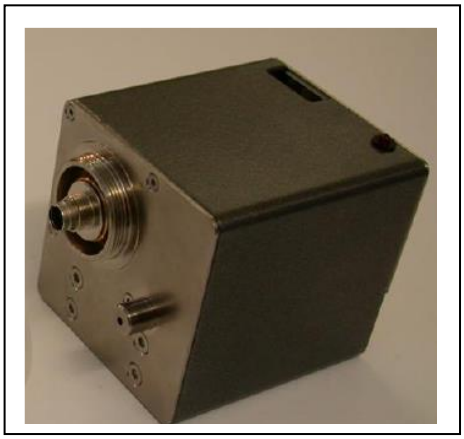
Model	EX3DV4	
Construction	Symmetrical design with triangular core Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, e.g., DGBE)	
Frequency	10 MHz to 6 GHz Linearity: ± 0.2 dB (30 MHz to 6 GHz)	
Directivity	± 0.3 dB in HSL (rotation around probe axis) ± 0.5 dB in tissue material (rotation normal to probe axis)	
Dynamic Range	10 µW/g to 100 mW/g Linearity: ± 0.2 dB (noise: typically < 1 µW/g)	
Dimensions	Overall length: 330 mm (Tip: 20 mm) Tip diameter: 2.5 mm (Body: 12 mm) Typical distance from probe tip to dipole centers: 1 mm	
Application	High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better 30%.	

2.3 Boundary Detection Unit and Probe Mounting Device

The DASY probes use a precise connector and an additional holder for the probe, consisting of a plastic tube and a flexible silicon ring to center the probe. The connector at the DAE is flexibly mounted and held in the default position with magnets and springs. Two switching systems in the connector mount detect frontal and lateral probe collisions and trigger the necessary software response.

2.4 DATA Acquisition Electronics (DAE) and Measurement Server

The data acquisition electronics (DAE) consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit.
Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock.
The input impedance of the DAE4 is 200M Ohm; the inputs are symmetrical and floating. Common mode rejection is above 80dB.



The DASY6 measurement server is based on a PC/104 CPU board with a 400MHz intel ULV Celeron, 128MB chipdisk and 128MB RAM. The necessary circuits for communication with the DAE electronics box, as well as the 16 bit AD converter system for optical detection and digital I/O interface are contained on the DASY6 I/O board, which is directly connected to the PC/104 bus of the CPU board.

2.5 Robot

The DASY6 system uses the high precision robots TX90 XL type out of the newer series from Stäubli SA (France). For the 6-axis controller DASY6 system, the CS8C robot controller version from Stäubli is used. The XL robot series have many features that are important for our application:

- High precision (repeatability 0.02 mm)
- High reliability (industrial design)
- Jerk-free straight movements
- Low ELF interference (the closed metallic construction shields against motor control fields)
- 6-axis controller

2.6 Light Beam Unit

The light beam switch allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm is measured, as well as the probe length and the horizontal probe offset. The software then corrects all movements, such that the robot coordinates are valid for the probe tip.
The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1 mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

2.7 Device Holder

The DASY6 device holder is designed to cope with different positions given in the standard. It has two scales for the device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (EPR).
Thus the device needs no repositioning when changing the angles.

The DASY6 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

The extension is lightweight and made of POM, acrylic glass and foam. It fits easily on the upper part of the mounting device in place of the phone positioned. The extension is fully compatible with the SAM Twin and ELI phantoms.

The DASY6 device holder has been made out of low-loss POM material having the following dielectric parameters: relative permittivity εr =3 and loss tangent δ = 0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

2.8 Phantom

SAM Twin Phantom

The SAM twin phantom is a fiberglass shell phantom with 2mm shell thickness (except the ear region where shell thickness increases to 6mm). It has three measurement areas:

- Left head
- Right head
- Flat phantom

The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections. A white cover is provided to tap the phantom during off-periods to prevent water evaporation and changes in the liquid parameters. On the phantom top, three reference markers are provided to identify the phantom position with respect to the robot.

ELI Phantom

The SAM phantom is a fiberglass shell phantom with 2mm shell thickness. It has one measurement areas:

- ELI phantom

The ELI phantom is intended for compliance testing of handheld and body-mounted wireless devices in the frequency range of 30 MHz to 7.125 GHz. ELI4 is fully compatible with standard and all known tissue simulating liquids.

3 TISSUE SIMULATING LIQUID

3.1 The composition of the tissue simulating liquid

Simulate 600MHz~10000MHz liquid, manufactured by SPEAG

Table F.1 – Suggested recipes for achieving target dielectric properties, 30 MHz to 900 MHz

Frequency (MHz)	30	50		144		450		835	900	
Recipe source number	3	3	2	2	3	2	4	2	2	4
Ingredients (% by weight)										
De-ionized water	48,30	48,30	53,53	55,12	48,30	48,53	56	50,36	50,31	56
Tween 20			44,70	43,31		49,51		48,39	48,34	
Oxidized mineral oil							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 temperature dependence										
Temp. (°C)			21	21		21	20	21	21	20
$\varepsilon_{\text{liquid temp. unc.}}$ (%)	0,8	0,1			0,1	0,1		0,04	0,04	
$\sigma_{\text{liquid temp. unc.}}$ (%)	2,8	2,8			2,6	4,2		1,6	1,6	

Table F.2 – Suggested recipes for achieving target dielectric properties, 1 800 MHz to 10 000 MHz

Frequency (MHz)	1 800		2 450	4 000	5 000	5 200	5 800	6 000	8 000	10 000
Recipe source number	2	4	4	4	4	1	1	4	5	5
Ingredients (% by weight)										
De-ionized water	54,23	56	56	56	56	65,53	65,53	56	67,8	66,0
Tween	45,27								31,1	33,0
Oxidized mineral oil		44	44	44	44			44		
Diethylenglycol monohexylether						17,24	17,24			
Triton X-100						17,24	17,24			
Diacetin										
DGBE										
NaCl	0,50									
Additives and salt										
Measured temperature dependence										
Temp. (°C)	21	20	20	20	20	22	22	20	20	20
$\varepsilon_{\text{liquid temp. unc.}}$ (%)	0,4					1,7	1,8			
$\sigma_{\text{liquid temp. unc.}}$ (%)	2,3					2,7	2,6			

NOTE 1 Multiple columns under a single frequency indicate optional recipes.

NOTE 2 Recipe source numbers: 1 verified by different labs, 2 Reference [59], 3 developed by IT'IS Foundation, 4 developed by IT'IS Foundation, 5 Reference [60].

NOTE 3 The values of $\varepsilon_{\text{liquid temp. unc.}}$ and $\sigma_{\text{liquid temp. unc.}}$ are liquid temperature uncertainties described in O.9.6, based on measurements of the applicable liquid recipes given above. These are not part of the original publications but have been subsequently developed by the project team.

NOTE 4 The recipes at 8 000 MHz and 10 000 MHz are sufficiently broadband that they cover the frequency range of 6 000 MHz to 10 000 MHz within a tolerance of ±10 % for permittivity and conductivity.

3.2 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using DASY6 Dielectric Probe Kit and Agilent Vector Network Analyzer E5071C

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
2450 MHz	Reference result ± 5% window	39.2 37.24 to 41.16	1.80 1.71 to 1.89	N/A
	20-02-2024	38.54	1.86	22.0
5250 MHz	Reference result ± 5% window	35.9 34.11 to 37.70	4.71 4.47 to 4.95	N/A
	25-02-2024	36.38	4.60	22.0
5600 MHz	Reference result ± 5% window	35.5 33.73 to 37.28	5.07 4.82 to 5.32	N/A
	01-03-2024	35.8	4.99	22.0
5750 MHz	Reference result ± 5% window	35.4 33.63 to 37.17	5.22 4.96 to 5.48	N/A
	15-03-2024	35.55	5.17	22.0

Head Tissue Simulant Measurement									
CH	Frequency (MHz)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
1	2412	1.81	38.70	1.77	39.27	2.43	-1.53	±5	WLAN2.4GHz
6	2437	1.84	38.92	1.79	39.22	2.96	-0.71	±5	WLAN2.4GHz
11	2462	1.87	38.50	1.81	39.18	3.54	-1.79	±5	WLAN2.4GHz
0	2402	1.80	38.73	1.76	39.29	2.39	-1.45	±5	Bluetooth
39	2441	1.85	38.58	1.79	39.22	3.24	-1.58	±5	Bluetooth
78	2480	1.89	38.44	1.83	39.15	3.44	-1.94	±5	Bluetooth
52	5260	4.62	36.37	4.72	35.94	-2.18	1.31	±5	WLAN5GHz
60	5300	4.65	36.30	4.76	35.90	-2.25	1.11	±5	WLAN5GHz
64	5320	4.68	36.28	4.78	35.87	-2.13	1.06	±5	WLAN5GHz
100	5500	4.87	35.97	4.97	35.63	-1.93	1.04	±5	WLAN5GHz
116	5580	4.97	35.87	5.05	35.53	-1.56	1.04	±5	WLAN5GHz
140	5700	5.11	35.64	5.17	35.40	-1.24	0.68	±5	WLAN5GHz
149	5745	5.16	35.56	5.22	35.36	-1.15	0.45	±5	WLAN5GHz
157	5785	5.20	35.53	5.26	35.32	-1.06	0.65	±5	WLAN5GHz
165	5825	5.25	35.44	5.30	35.28	-0.94	0.40	±5	WLAN5GHz

Note:

1. The delta (ε_r) and (σ) are within ±5%, delta SAR value was not calculated in this report.
2. As per IEC/IEEE 62209-1528 Annex F, the SAR correction factor is given by:

   $\Delta SAR = c_\varepsilon \Delta\varepsilon_r + c_\sigma \Delta\sigma$

   For the1g average SAR Cε and Cσ are given by:

   Cε = -7.854x10^-4f^3 + 9.402x10^-3f^2 – 2.742x10^-2f – 0.2026

   Cσ = 9.804x10^-3f^3 – 8.661x10^-2f^2 + 2.981x10^-2f + 0.7829

Where f is the frequency in GHz.

3.3 Tissue Dielectric Parameters for Head Phantoms

The head tissue dielectric parameters recommended by the IEC/IEEE 62209-1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head tissue parameters that have not been specified in IEC/IEEE 62209-1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in IEC/IEEE 62209-1528.

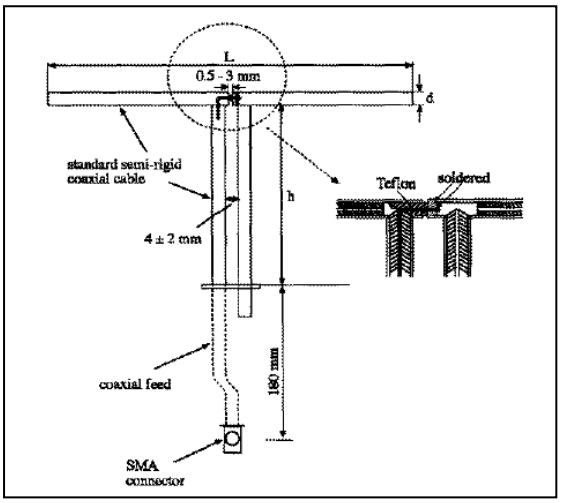
Target Frequency	Head	
(MHz)	ε_r	σ (S/m)
150	52.3	0.76
300	45.3	0.87
450	43.5	0.87
750	41.9	0.89
835	41.5	0.90
900	41.5	0.97
915	41.5	0.98
1450	40.5	1.20
1610	40.3	1.29
1800 – 2000	40.0	1.40
2450	39.2	1.80
2600	39.0	1.96
3000	38.5	2.40
5800	35.3	5.07

(ε_r = relative permittivity, σ = conductivity and ρ = 1000 kg/m^3)

4 SAR MEASUREMENT PROCEDURE

4.1 SAR System Validation

4.1.1. Validation Dipoles



The dipoles used is based on the IEC/IEEE 62209-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
750MHz	176.0	100.0	6.35
835MHz	161.0	89.8	3.6
900MHz	149.0	83.3	3.6
1800MHz	72.0	41.7	3.6
2000MHz	64.5	37.5	3.6
2600MHz	48.5	28.8	3.6
3500MHz	37.0	26.4	3.6
3700MHz	34.7	26.4	3.6
3900MHz	32.4	26.4	3.6
5000 to 6000MHz	20.6	40.3	3.6

4.1.2. Validation Result

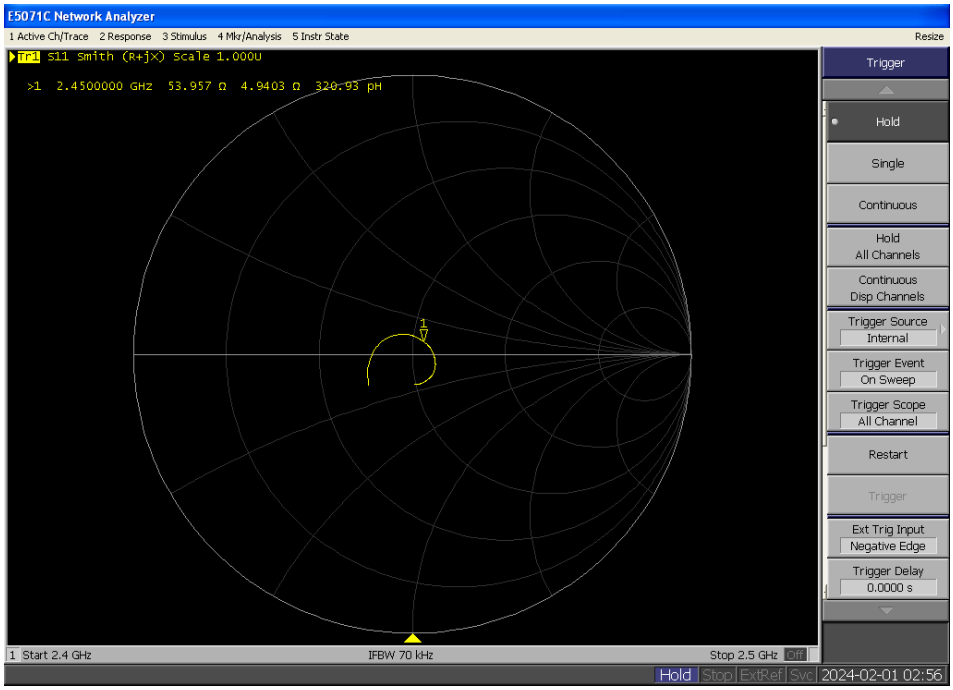
System Performance Check at 2450MHz, 5250MHz, 5600MHz, 5750MHz				
Validation Dipole: D2450V2, SN: 839				
2450 MHz	Reference result ± 10% window	52.60 47.34 to 57.86	24.30 21.87 to 26.73	N/A
	20-02-2024	51.20	23.72	22.0
Validation Dipole: D5GHzV2, SN: 1078				
5250 MHz	Reference result ± 10% window	76.00 68.40 to 83.60	21.60 19.44 to 23.76	N/A
	25-02-2024	77.00	21.70	22.0
Validation Dipole: D5GHzV2, SN: 1078				
5600 MHz	Reference result ± 10% window	79.50 71.55 to 87.45	22.40 20.16 to 24.64	N/A
	03-03-2024	78.60	22.00	22.0
Validation Dipole: D5GHzV2, SN: 1078				
5750 MHz	Reference result ± 10% window	75.70 68.13 to 83.27	21.30 19.17 to 23.43	N/A
	15-03-2024	73.30	20.80	22.0
Note: All SAR values are normalized to 1W forward power.				

4.1.3. Dipole Calibration Data

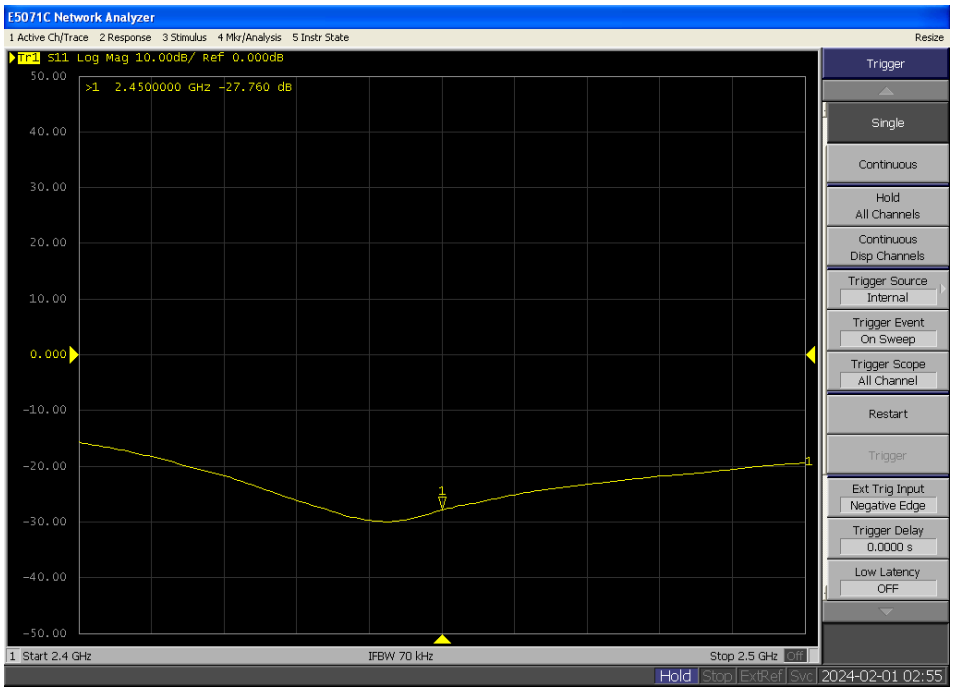
Impedance Plot for D2450V2

2450MHz Head

Calibrated impedance: 54.028 Ω; Measured impedance: 53.957 Ω (within 5Ω)



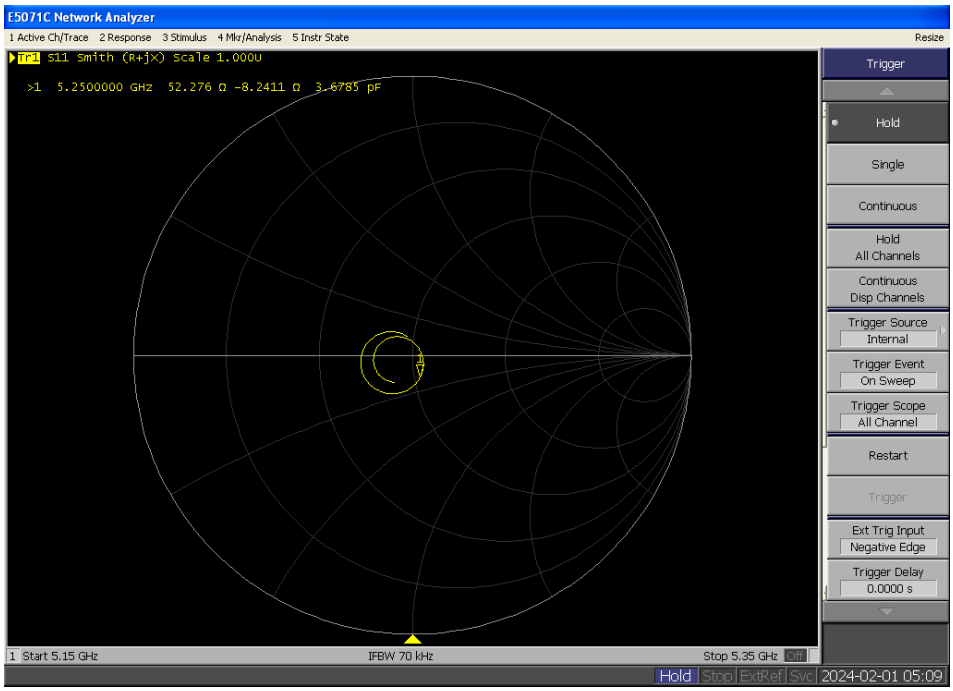
Calibrated return loss: -25.693 dB; Measured impedance: -27.760 dB (within 20%)



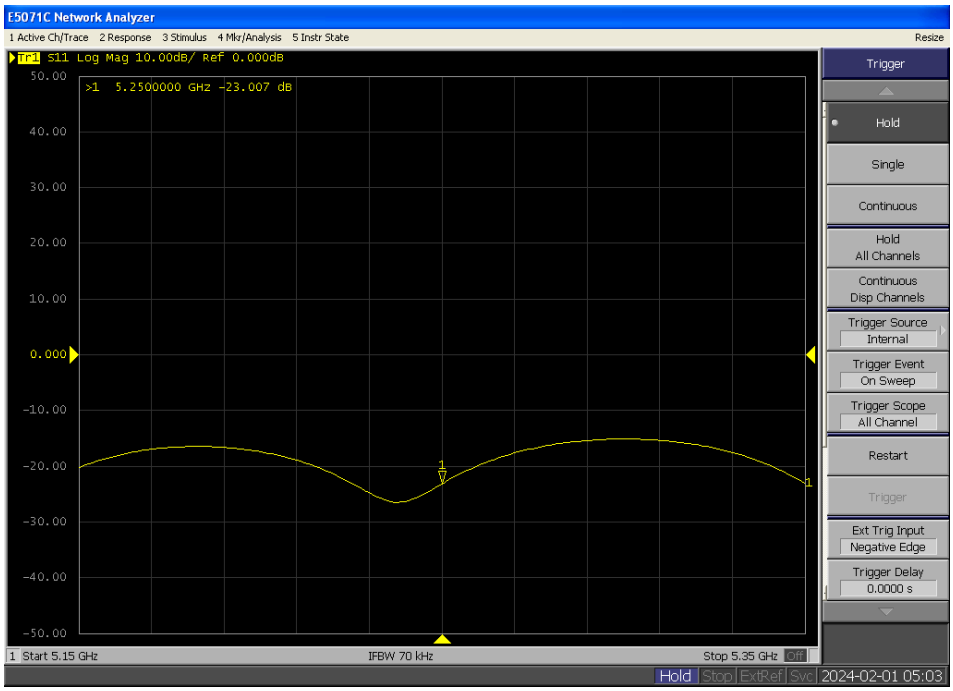
Impedance Plot for D5250V2

5250MHz Head

Calibrated impedance: 52.316 Ω; Measured impedance: 52.276 Ω (within 5Ω)



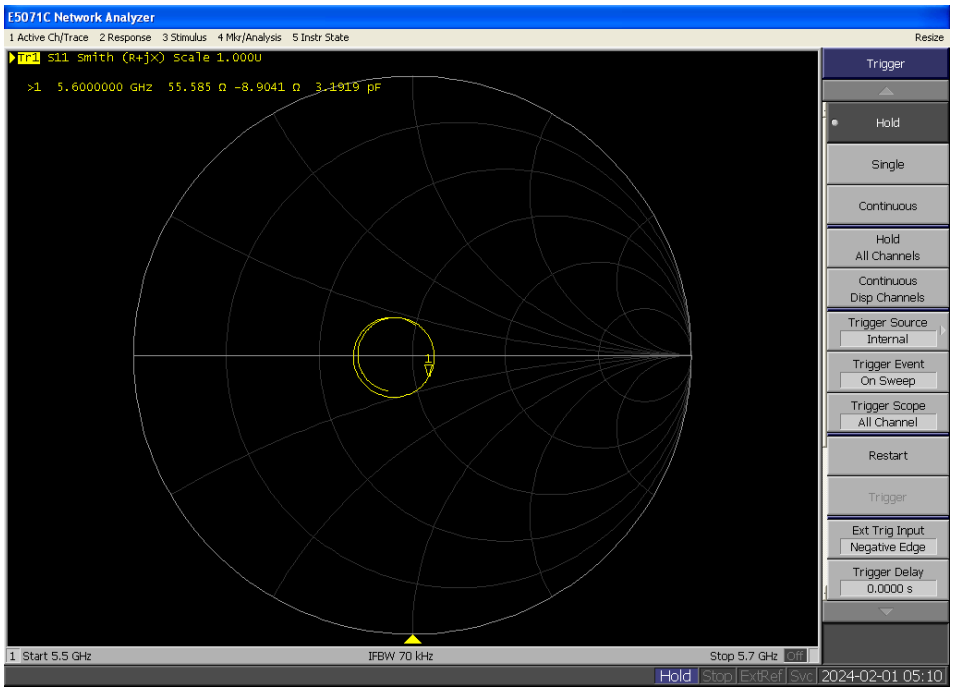
Calibrated return loss: -22.294 dB; Measured impedance: -23.007 dB (within 20%)



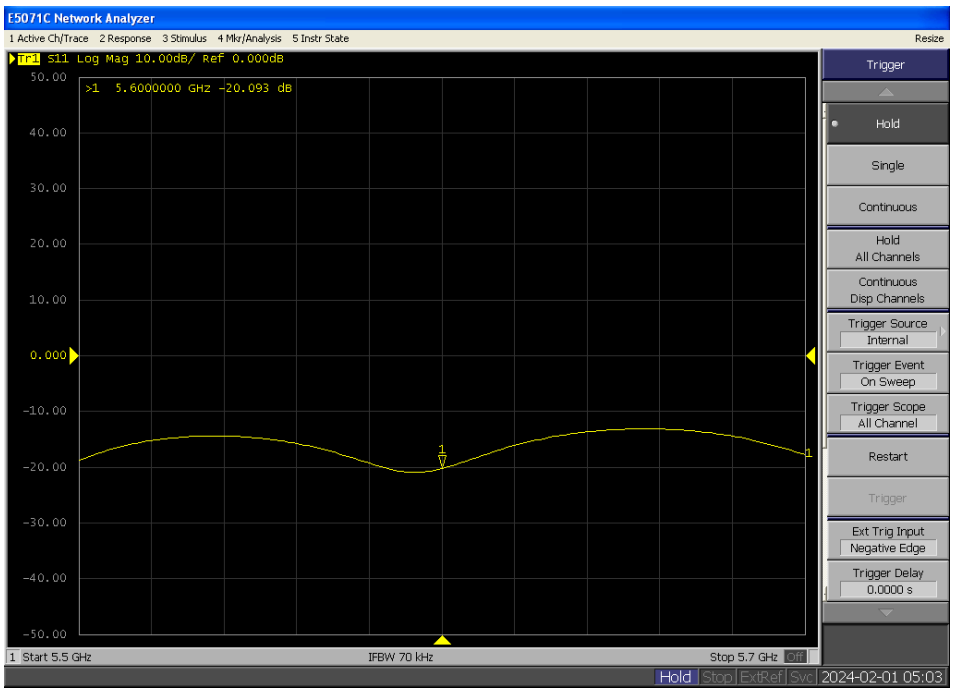
Impedance Plot for D5600V2

5600MHz Head

Calibrated impedance: 58.284 Ω; Measured impedance: 55.585 Ω (within 5Ω)



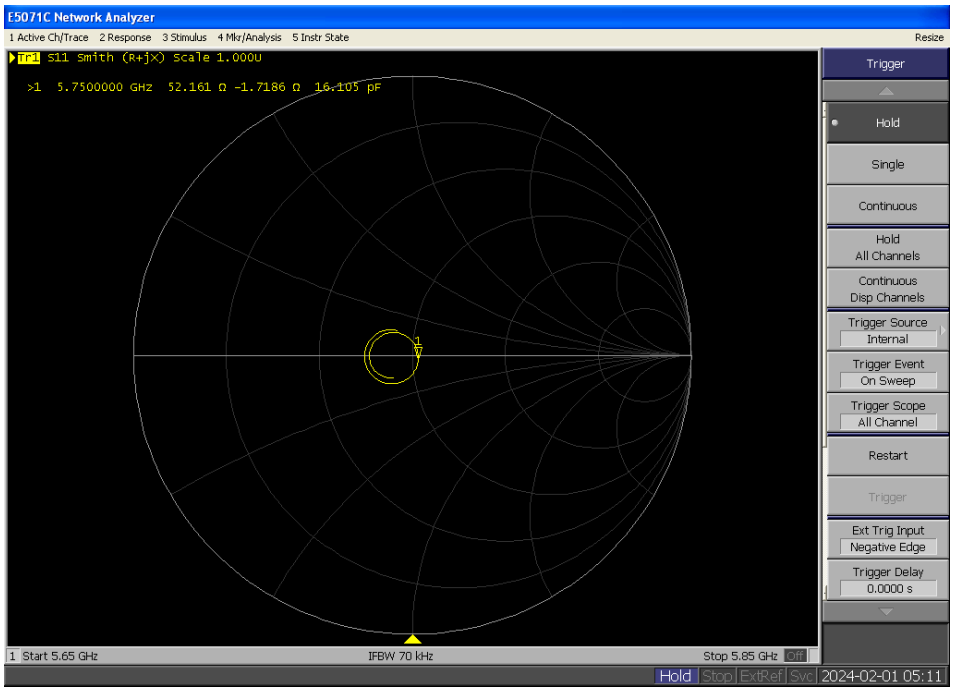
Calibrated return loss: -21.282 dB; Measured impedance: -20.093 dB (within 20%)



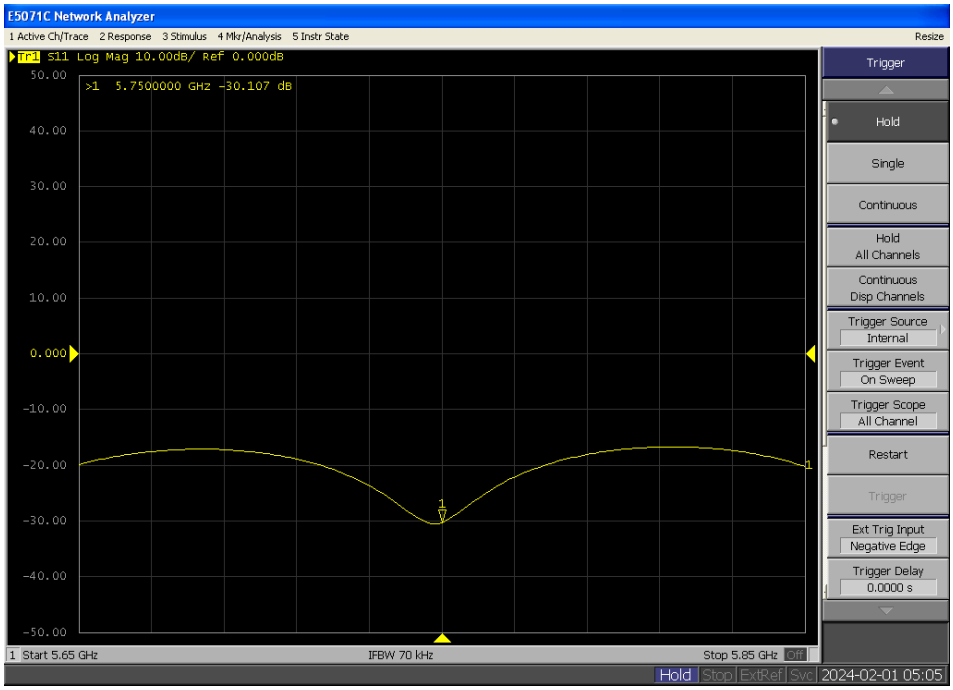
Impedance Plot for D5750V2

5750MHz Head

Calibrated impedance: 53.508 Ω; Measured impedance: 52.161 Ω (within 5Ω)



Calibrated return loss: -29.164 dB; Measured impedance: -30.107 dB (within 20%)



Note: Per KDB 450824 D02 requirements for dipole calibration, DEKRA Lab has adopted three years calibration interval. On annual basis, every measurement dipole has been evaluated and is in compliance with the following criteria:

1. There is no physical damage on the dipole;
2. System validation with specific dipole is within 10% of calibrated value;
3. Return-loss is within 20% of calibrated measurement (Show above);
4. Impedance is within 5Ω of calibrated measurement (Show above).

4.2 SAR Measurement Procedure

The DASY 6 calculates SAR using the following equation,

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

σ: represents the simulated tissue conductivity

ρ: represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at $1mm^2$) which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at $1mm^3$).

5 SAR EXPOSURE LIMITS

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 “Uncontrolled Environments” limits. These limits apply to a location which is deemed as “Uncontrolled Environment” which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or Body)	**1.60 W/kg**
Spatial Average SAR (whole Body)	**0.08 W/kg**
Spatial Peak SAR (10g for hands, feet, ankles and wrist)	**4.00 W/kg**

6 TEST EQUIPMENT LIST

Instrument	Manufacturer	Model No.	Serial No.	Cal.Date	Next Cal. Date	Firmware Version	Software Version
Stäubli Robot TX60L	Stäubli	TX60L	F10/5C90A1/A/01	N/A	N/A	N/A	N/A
Controller	Stäubli	SP1	S-0034	N/A	N/A	N/A	N/A
Dipole Validation Kits	Speag	D2450V2	839	2022.04.01	2025.03.31	N/A	N/A
Dipole Validation Kits	Speag	D5GHzV2	1078	2022.03.28	2025.03.27	N/A	N/A
SAM Twin Phantom	Speag	SAM	TP-1562	N/A	N/A	N/A	N/A
Device Holder	Speag	SD 000 H01 HA	N/A	N/A	N/A	N/A	N/A
Data Acquisition Electronic	Speag	DAE4	1220	2023.03.20	2024.03.19	N/A	N/A
E-Field Probe	Speag	EX3DV4	7761	2023.09.13	2024.09.12	N/A	N/A
SAR Software	Speag	DASY6	V5.2 Build 162	N/A	N/A	N/A	V16.2.4.2448
Power Amplifier	MVE	MPC1018.50	C30002D	2023.07.09	2024.07.08	N/A	N/A
Dual Directional Coupler	woken	0110A05A82Z-20	CMLC66W1A1	2023.07.23	2024.07.22	N/A	N/A
Tissue fluid test probe	SPEAG	DAK 3.5	1308	2023.02.10	2024.02.09	N/A	N/A
Vector Network	Agilent	E5071C	MY46103316	2023.08.26	2024.08.25	A.11.31	N/A
Signal Generator	R&S	SMBV100A	263697	2023.05.14	2024.05.13	V4.15.125.49	N/A
Power Meter	Keysight	N1912A	MY60300004	2023.08.26	2024.08.25	A2.06.01	N/A
Wideband Radio Communication Tester	R&S	CMW 500	170870	2023.05.20	2024.05.19	4.0.62.11	N/A
Temperature/Humidity Meter	Rites	RTS-8S	RF06	2023.05.19	2024.05.18	N/A	N/A
Temperaturer	LKM	DTM3000	3777	2023.07.08	2024.07.07	N/A	N/A

7 MEASUREMENT UNCERTAINTY

DASY6 SAR Uncertainty Measurement uncertainty for 300 MHz to 3 GHz averaged over 1 gram / 10 gram.								
Error Description	Uncert. value	Prob. Dist.	Div.	(ci) 1g	(ci) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(vi) veff
Measurement System								
Probe Calibration	±5.5%	N	1	1	1	±5.5%	±5.5%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.4%	R	$\sqrt{3}$	1	1	±0.2%	±0.2%	∞
Probe Positioning	±2.9%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Max. SAR Eval.	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom Uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.26	0.26	±0.6%	±0.7%	∞
Combined Std. Uncertainty						±10.6%	±10.5%	361
Expanded STD Uncertainty						±21.2%	±21.1%	

DASY6 SAR Uncertainty Measurement uncertainty for 3 GHz to 6 GHz averaged over 1 gram / 10 gram.								
Error Description	Uncert. value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	±6.65%	N	1	1	1	±6.65%	±6.65%	∞
Axial Isotropy	±4.7%	R	$\sqrt{3}$	0.7	0.7	±1.9%	±1.9%	∞
Hemispherical Isotropy	±9.6%	R	$\sqrt{3}$	0.7	0.7	±3.9%	±3.9%	∞
Boundary Effects	±2.0%	R	$\sqrt{3}$	1	1	±1.2%	±1.2%	∞
Linearity	±4.7%	R	$\sqrt{3}$	1	1	±2.7%	±2.7%	∞
System Detection Limits	±1.0%	R	$\sqrt{3}$	1	1	±0.6%	±0.6%	∞
Readout Electronics	±0.3%	N	1	1	1	±0.3%	±0.3%	∞
Response Time	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Integration Time	±2.6%	R	$\sqrt{3}$	1	1	±1.5%	±1.5%	∞
RF Ambient Noise	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
RF Ambient Reflections	±3.0%	R	$\sqrt{3}$	1	1	±1.7%	±1.7%	∞
Probe Positioner	±0.8%	R	$\sqrt{3}$	1	1	±0.5%	±0.5%	∞
Probe Positioning	±6.7%	R	$\sqrt{3}$	1	1	±3.9%	±3.9%	∞
Max. SAR Eval.	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Test Sample Related								
Device Positioning	±2.9%	N	1	1	1	±2.9%	±2.9%	145
Device Holder	±3.6%	N	1	1	1	±3.6%	±3.6%	5
Power Drift	±5.0%	R	$\sqrt{3}$	1	1	±2.9%	±2.9%	∞
Phantom and Setup								
Phantom Uncertainty	±4.0%	R	$\sqrt{3}$	1	1	±2.3%	±2.3%	∞
Liquid Conductivity (meas.)	±2.5%	N	1	0.78	0.71	±2.0%	±1.8%	∞
Liquid Permittivity (meas.)	±2.5%	N	1	0.26	0.26	±0.6%	±0.7%	∞
Combined Std. Uncertainty						±12.0%	±12.0%	784
Expanded STD Uncertainty						±24.0%	±23.9%	

8 CONDUCTED POWER MEASUREMENT

Wi-Fi 2.4G Power (Full Power)

2.4GHz WLAN				Ant 1			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.45	18.00	18.00	99.20
		6	2437	17.47	18.00	17.00	
		11	2462	16.93	18.00	16.50	
	802.11g 6Mbps	1	2412	15.61	17.00	16.50	98.10
		6	2437	15.95	17.00	16.00	
		11	2462	15.53	17.00	15.00	
	802.11n-HT20 MCS0	1	2412	13.91	15.00	15.00	97.96
		6	2437	13.73	15.00	14.00	
		11	2462	13.56	15.00	13.50	
	802.11n-HT40 MCS0	3	2422	13.78	15.00	13.00	94.00
		6	2437	13.47	15.00	13.00	
		9	2452	13.62	15.00	12.50	

2.4GHz WLAN				Ant 2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	17.26	18.00	18.00	99.20
		6	2437	17.06	18.00	16.50	
		11	2462	17.17	18.00	16.50	
	802.11g 6Mbps	1	2412	15.41	17.00	16.50	98.10
		6	2437	15.67	17.00	15.50	
		11	2462	15.70	17.00	15.50	
	802.11n-HT20 MCS0	1	2412	13.99	15.00	15.00	97.96
		6	2437	13.70	15.00	13.50	
		11	2462	13.73	15.00	13.50	
	802.11n-HT40 MCS0	3	2422	13.62	15.00	12.50	94.00
		6	2437	13.49	15.00	12.50	
		9	2452	13.54	15.00	12.50	

2.4GHz WLAN				Ant 1+2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	N/A			99.20
		6	2437				
		11	2462				
	802.11g 6Mbps	1	2412				98.10
		6	2437				
		11	2462				
	802.11n-HT20 MCS0	1	2412	16.71	17.00	15.00	97.96
		6	2437	16.36	17.00	13.50	
		11	2462	16.54	17.00	13.50	
	802.11n-HT40 MCS0	3	2422	16.33	17.00	12.50	94.00
		6	2437	16.12	17.00	12.50	
		9	2452	16.58	17.00	12.50	

Wi-Fi 5G Power (Full Power)

5GHz WLAN				Ant 1			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	15.27	16.00	15.50	98.10
		44	5220	15.13	16.00	16.00	
		48	5240	15.25	16.00	16.50	
		52	5260	15.21	16.00	16.00	
		60	5300	14.90	16.00	14.00	
		64	5320	15.00	16.00	14.50	
		100	5500	15.04	16.00	14.50	
		116	5580	15.47	16.00	15.50	
		140	5700	15.45	16.00	14.00	
		149	5745	15.48	16.00	14.00	
		157	5785	15.13	16.00	15.00	
		165	5825	15.06	16.00	15.50	
	802.11n-HT20 MCS0	36	5180	13.32	14.00	13.50	97.96
		44	5220	13.36	14.00	14.00	
		48	5240	13.33	14.00	14.50	
		52	5260	13.41	14.00	14.50	
		60	5300	13.30	14.00	12.50	
		64	5320	13.36	14.00	13.00	
		100	5500	13.16	14.00	13.00	
		116	5580	13.30	14.00	13.50	
		140	5700	13.32	14.00	12.00	
		149	5745	13.40	14.00	12.00	
		157	5785	13.12	14.00	13.00	
		165	5825	13.49	14.00	14.00	
	802.11n-HT40 MCS0	38	5190	13.29	14.00	13.00	96.94
		46	5230	13.35	14.00	13.50	
		54	5270	13.22	14.00	13.00	
		62	5310	13.29	14.00	12.00	
		102	5510	13.14	14.00	11.50	
		118	5590	13.13	14.00	13.00	
		134	5670	13.49	14.00	12.00	
		151	5755	13.17	14.00	11.50	
		159	5795	13.33	14.00	12.50	
		36	5180	13.33	14.00	13.50	98.48

	802.11ac-VHT20 MCS0	44	5220	13.16	14.00	14.00	
		48	5240	13.32	14.00	14.50	
		52	5260	13.46	14.00	14.50	
		60	5300	13.32	14.00	12.50	
		64	5320	13.33	14.00	13.00	
		100	5500	13.23	14.00	13.00	
		116	5580	13.29	14.00	13.50	
		140	5700	13.36	14.00	12.00	
		149	5745	13.42	14.00	12.00	
		157	5785	13.09	14.00	13.00	
		165	5825	13.47	14.00	14.00	
	802.11ac-VHT40 MCS0	38	5190	13.32	14.00	13.00	95.96
		46	5230	13.35	14.00	13.50	
		54	5270	13.12	14.00	13.00	
		62	5310	13.29	14.00	12.00	
		102	5510	13.11	14.00	11.50	
		118	5590	13.09	14.00	13.00	
		134	5670	13.49	14.00	12.00	
		151	5755	13.16	14.00	11.50	
		159	5795	13.23	14.00	12.50	
	802.11ac-VHT80 MCS0	42	5210	13.23	14.00	14.00	94.00
		58	5290	13.38	14.00	12.50	
		106	5530	13.48	14.00	12.50	
		112	5610	13.05	14.00	13.00	
		155	5775	13.40	14.00	13.00	

5GHz WLAN				Ant 2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5GHz WLAN	802.11a 6Mbps	36	5180	14.92	16.00	15.50	98.10
		44	5220	15.14	16.00	14.50	
		48	5240	15.36	16.00	15.00	
		52	5260	15.38	16.00	14.50	
		60	5300	15.19	16.00	15.00	
		64	5320	15.04	16.00	15.00	
		100	5500	15.00	16.00	15.00	
		116	5580	15.16	16.00	14.00	
		140	5700	15.14	16.00	16.00	
		149	5745	15.04	16.00	14.00	

		157	5785	15.16	16.00	13.50	
		165	5825	15.26	16.00	13.50	
	802.11n-HT20 MCS0	36	5180	12.87	14.00	14.00	97.96
		44	5220	13.08	14.00	12.50	
		48	5240	13.47	14.00	13.00	
		52	5260	12.91	14.00	12.00	
		60	5300	13.27	14.00	13.00	
		64	5320	13.02	14.00	13.00	
		100	5500	13.12	14.00	13.00	
		116	5580	13.21	14.00	12.00	
		140	5700	13.24	14.00	14.00	
		149	5745	13.30	14.00	12.00	
		157	5785	13.20	14.00	11.50	
		165	5825	13.40	14.00	11.50	
	802.11n-HT40 MCS0	38	5190	13.07	14.00	13.00	96.94
		46	5230	13.49	14.00	12.00	
		54	5270	13.23	14.00	11.50	
		62	5310	13.48	14.00	12.50	
		102	5510	13.16	14.00	12.00	
		118	5590	13.42	14.00	12.00	
		134	5670	13.26	14.00	13.50	
		151	5755	13.24	14.00	11.00	
		159	5795	13.23	14.00	10.50	
	802.11ac-VHT20 MCS0	36	5180	13.07	14.00	14.00	98.48
		44	5220	13.21	14.00	12.50	
		48	5240	13.36	14.00	13.00	
		52	5260	12.91	14.00	12.00	
		60	5300	13.16	14.00	13.00	
		64	5320	12.96	14.00	13.00	
		100	5500	13.07	14.00	13.00	
		116	5580	13.18	14.00	12.00	
		140	5700	13.13	14.00	14.00	
		149	5745	13.27	14.00	12.00	
		157	5785	13.19	14.00	11.50	
		165	5825	13.34	14.00	11.50	
	802.11ac-VHT40 MCS0	38	5190	13.01	14.00	13.00	95.96
		46	5230	13.44	14.00	12.00	
		54	5270	13.17	14.00	11.50	
		62	5310	13.42	14.00	12.50	
		102	5510	13.14	14.00	12.00	

		118	5590	13.43	14.00	12.00	
		134	5670	13.30	14.00	13.50	
		151	5755	13.28	14.00	11.00	
		159	5795	13.25	14.00	10.50	
	802.11ac-VHT80 MCS0	42	5210	13.42	14.00	13.00	94.00
		58	5290	13.46	14.00	12.50	
		106	5530	13.16	14.00	12.50	
		112	5610	13.42	14.00	12.50	
		155	5775	13.38	14.00	12.00	

5GHz WLAN				Ant 1+2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5GHz WLAN	802.11a 6Mbps	36	5180	N/A			98.10
		44	5220				
		48	5240				
		52	5260				
		60	5300				
		64	5320				
		100	5500				
		116	5580				
		140	5700				
		149	5745				
		157	5785				
		165	5825				
	802.11n-HT20 MCS0	36	5180	14.51	16.50	12.00	97.96
		44	5220	14.05	16.50	11.00	
		48	5240	13.76	16.50	11.00	
		52	5260	15.13	16.50	12.00	
		60	5300	16.26	16.50	12.50	
		64	5320	16.27	16.50	13.00	
		100	5500	16.26	16.50	13.00	
		116	5580	15.35	16.50	11.50	
		140	5700	15.64	16.50	12.00	
		149	5745	16.13	16.50	11.50	
		157	5785	15.51	16.50	11.50	
		165	5825	15.23	16.50	11.50	
	802.11n-HT40 MCS0	38	5190	16.36	16.50	13.00	96.94
		46	5230	15.43	16.50	11.50	

		54	5270	15.54	16.50	11.50	
		62	5310	16.25	16.50	12.00	
		102	5510	16.14	16.50	11.50	
		118	5590	15.61	16.50	11.50	
		134	5670	15.41	16.50	11.50	
		151	5755	16.06	16.50	11.00	
		159	5795	15.55	16.50	10.50	
	802.11ac-VHT20 MCS0	36	5180	14.47	16.50	12.00	98.48
		44	5220	14.37	16.50	11.00	
		48	5240	13.70	16.50	11.00	
		52	5260	15.21	16.50	12.00	
		60	5300	16.31	16.50	12.50	
		64	5320	16.37	16.50	13.00	
		100	5500	16.30	16.50	13.00	
		116	5580	15.37	16.50	11.50	
		140	5700	15.64	16.50	12.00	
		149	5745	16.46	16.50	12.00	
		157	5785	15.55	16.50	11.50	
		165	5825	15.24	16.50	11.50	
	802.11ac-VHT40 MCS0	38	5190	16.35	16.50	13.00	95.96
		46	5230	15.42	16.50	11.50	
		54	5270	15.59	16.50	11.50	
		62	5310	16.21	16.50	12.00	
		102	5510	16.07	16.50	11.50	
		118	5590	15.59	16.50	11.50	
		134	5670	15.86	16.50	12.00	
		151	5755	15.63	16.50	10.50	
		159	5795	15.46	16.50	10.50	
	802.11ac-VHT80 MCS0	42	5210	15.65	16.50	12.50	94.00
		58	5290	16.14	16.50	12.00	
		106	5530	16.12	16.50	12.00	
		112	5610	15.83	16.50	12.00	
		155	5775	15.58	16.50	11.50	

Bluetooth Power

Mode	Channel	Frequency (MHz)	Average power (dBm)			Duty cycle:	77.50
			1Mbps	2Mbps	3Mbps		
BR / EDR	CH 00	2402	11.69	9.29	8.98	PDF Factor :	1.290
	CH 39	2441	11.55	8.78	8.88		
	CH 78	2480	11.25	9.56	9.61	SAR Excel :	1.075
Tune-up Limit			12.00	10.00	10.00		

Mode	Channel	Frequency (MHz)	Average power (dBm)	
			1Mbps	2Mbps
LE	CH 00	2402	6.40	6.30
	CH 19	2440	4.72	5.46
	CH 39	2480	7.57	7.75
Tune-up Limit			8.00	8.00

Wi-Fi 2.4G Power (Sensor on)

2.4GHz WLAN				Ant 1			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	11.78	12.00	11.00	99.20
		6	2437	11.93	12.00	11.50	
		11	2462	11.76	12.00	10.50	
	802.11g 6Mbps	1	2412	11.39	12.00	11.00	98.10
		6	2437	11.76	12.00	11.50	
		11	2462	11.56	12.00	10.50	
	802.11n-HT20 MCS0	1	2412	11.19	12.00	11.00	97.96
		6	2437	11.29	12.00	11.50	
		11	2462	11.23	12.00	10.50	
	802.11n-HT40 MCS0	3	2422	11.18	12.00	9.50	94.00
		6	2437	11.36	12.00	10.50	
		9	2452	11.50	12.00	10.00	

2.4GHz WLAN				Ant 2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	11.23	12.00	11.50	99.20
		6	2437	11.78	12.00	11.00	
		11	2462	11.57	12.00	10.50	
	802.11g 6Mbps	1	2412	11.12	12.00	11.50	98.10
		6	2437	11.56	12.00	11.00	
		11	2462	11.47	12.00	11.00	
	802.11n-HT20 MCS0	1	2412	10.11	12.00	11.00	97.96
		6	2437	11.38	12.00	11.00	
		11	2462	11.35	12.00	11.00	
	802.11n-HT40 MCS0	3	2422	11.26	12.00	10.00	94.00
		6	2437	11.34	12.00	10.50	
		9	2452	11.17	12.00	10.50	

2.4GHz WLAN				Ant 1+2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
2.4GHz WLAN	802.11b 1Mbps	1	2412	N/A			99.20
		6	2437				
		11	2462				
	802.11g 6Mbps	1	2412				98.10
		6	2437				
		11	2462				
	802.11n-HT20 MCS0	1	2412	11.14	12.00	9.00	97.96
		6	2437	11.00	12.00	8.00	
		11	2462	11.31	12.00	8.00	
	802.11n-HT40 MCS0	3	2422	11.29	12.00	7.00	94.00
		6	2437	11.36	12.00	7.50	
		9	2452	11.05	12.00	7.00	

Wi-Fi 5G Power (Sensor on)

5GHz WLAN				Ant 1			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5.2GHz WLAN	802.11a 6Mbps	36	5180	11.55	12.50	11.00	98.10
		44	5220	11.86	12.50	12.00	
		48	5240	11.61	12.50	12.50	
		52	5260	12.13	12.50	13.00	
		60	5300	12.05	12.50	11.00	
		64	5320	12.02	12.50	11.00	
		100	5500	12.17	12.50	12.00	
		116	5580	12.02	12.50	12.50	
		140	5700	12.09	12.50	10.00	
		149	5745	12.23	12.50	10.50	
		157	5785	12.14	12.50	12.00	
		165	5825	12.09	12.50	13.00	
	802.11n-HT20 MCS0	36	5180	11.89	12.50	11.50	97.96
		44	5220	11.58	12.50	12.00	
		48	5240	11.79	12.50	13.00	
		52	5260	11.59	12.50	12.50	
		60	5300	11.65	12.50	10.50	
		64	5320	11.74	12.50	11.00	
		100	5500	11.62	12.50	11.00	
		116	5580	12.02	12.50	12.00	
		140	5700	11.64	12.50	10.00	
		149	5745	11.90	12.50	10.50	
		157	5785	11.88	12.50	11.50	
		165	5825	11.59	12.50	12.00	
	802.11n-HT40 MCS0	38	5190	11.78	12.00	11.00	96.94
		46	5230	11.79	12.00	11.50	
		54	5270	11.88	12.00	11.50	
		62	5310	11.55	12.00	10.00	
		102	5510	11.94	12.00	10.00	
		118	5590	11.74	12.00	11.50	
		134	5670	11.67	12.00	10.50	
		151	5755	11.91	12.00	10.00	
		159	5795	11.89	12.00	11.00	
		36	5180	11.82	12.50	11.50	98.48

	802.11ac-VHT20 MCS0	44	5220	11.63	12.50	12.00	
		48	5240	11.76	12.50	13.00	
		52	5260	11.65	12.50	12.50	
		60	5300	11.66	12.50	10.50	
		64	5320	11.74	12.50	11.00	
		100	5500	11.63	12.50	11.00	
		116	5580	12.01	12.50	12.00	
		140	5700	11.63	12.50	10.00	
		149	5745	11.92	12.50	10.50	
		157	5785	11.88	12.50	11.50	
		165	5825	11.53	12.50	12.00	
	802.11ac-VHT40 MCS0	38	5190	11.77	12.00	11.00	95.96
		46	5230	11.80	12.00	11.50	
		54	5270	11.86	12.00	11.50	
		62	5310	11.53	12.00	10.00	
		102	5510	11.97	12.00	10.00	
		118	5590	11.77	12.00	11.50	
		134	5670	11.78	12.00	10.50	
		151	5755	11.93	12.00	10.00	
		159	5795	11.91	12.00	11.00	
	802.11ac-VHT80 MCS0	42	5210	11.92	12.00	12.00	94.00
		58	5290	11.78	12.00	10.50	
		106	5530	11.85	12.00	10.50	
		112	5610	11.82	12.00	11.50	
		155	5775	11.93	12.00	11.50	

5GHz WLAN				Ant 2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5GHz WLAN	802.11a 6Mbps	36	5180	11.72	12.50	12.00	98.10
		44	5220	11.90	12.50	11.00	
		48	5240	11.67	12.50	11.00	
		52	5260	12.21	12.50	11.00	
		60	5300	11.98	12.50	11.50	
		64	5320	12.06	12.50	12.00	
		100	5500	12.23	12.50	12.50	
		116	5580	12.08	12.50	11.00	
		140	5700	12.11	12.50	13.00	
		149	5745	12.35	12.50	11.50	

		157	5785	12.21	12.50	10.50	
		165	5825	12.33	12.50	11.00	
	802.11n-HT20 MCS0	36	5180	11.55	12.50	12.00	97.96
		44	5220	11.76	12.50	11.00	
		48	5240	11.93	12.50	11.50	
		52	5260	11.96	12.50	11.00	
		60	5300	11.77	12.50	11.50	
		64	5320	11.98	12.50	12.00	
		100	5500	11.91	12.50	12.00	
		116	5580	12.07	12.50	11.00	
		140	5700	11.79	12.50	12.50	
		149	5745	11.66	12.50	10.50	
		157	5785	11.65	12.50	10.00	
		165	5825	11.80	12.50	10.00	
	802.11n-HT40 MCS0	38	5190	11.78	12.00	12.00	96.94
		46	5230	11.65	12.00	11.00	
		54	5270	11.45	12.00	10.50	
		62	5310	11.79	12.00	11.00	
		102	5510	11.54	12.00	11.00	
		118	5590	11.93	12.00	10.50	
		134	5670	11.75	12.00	12.00	
		151	5755	11.78	12.00	10.00	
		159	5795	11.61	12.00	9.00	
	802.11ac-VHT20 MCS0	36	5180	11.50	12.50	12.00	98.48
		44	5220	11.73	12.50	11.00	
		48	5240	11.89	12.50	11.50	
		52	5260	11.96	12.50	11.00	
		60	5300	11.69	12.50	11.50	
		64	5320	11.96	12.50	12.00	
		100	5500	11.82	12.50	12.00	
		116	5580	12.06	12.50	11.00	
		140	5700	11.56	12.50	12.50	
		149	5745	12.04	12.50	11.00	
		157	5785	11.98	12.50	10.50	
		165	5825	11.47	12.50	10.00	
	802.11ac-VHT40 MCS0	38	5190	11.59	12.00	12.00	95.96
		46	5230	11.78	12.00	11.00	
		54	5270	11.71	12.00	10.50	
		62	5310	11.95	12.00	11.00	
		102	5510	11.83	12.00	11.00	

		118	5590	11.79	12.00	10.50	
		134	5670	11.77	12.00	12.00	
		151	5755	11.67	12.00	10.00	
		159	5795	11.77	12.00	9.00	
	802.11ac-VHT80 MCS0	42	5210	11.77	12.00	12.00	94.00
		58	5290	11.83	12.00	11.00	
		106	5530	11.50	12.00	11.50	
		112	5610	11.91	12.00	11.00	
		155	5775	11.88	12.00	10.50	

5GHz WLAN				Ant 1+2			
	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Power Setting	Duty Cycle %
5GHz WLAN	802.11a 6Mbps	36	5180	N/A			98.10
		44	5220				
		48	5240				
		52	5260				
		60	5300				
		64	5320				
		100	5500				
		116	5580				
		140	5700				
		149	5745				
		157	5785				
		165	5825				
	802.11n-HT20 MCS0	36	5180	11.82	12.50	9.50	97.96
		44	5220	12.05	12.50	9.50	
		48	5240	11.74	12.50	9.50	
		52	5260	12.08	12.50	9.50	
		60	5300	11.82	12.50	8.50	
		64	5320	11.79	12.50	9.00	
		100	5500	12.12	12.50	9.00	
		116	5580	11.82	12.50	8.50	
		140	5700	12.06	12.50	8.50	
		149	5745	12.05	12.50	8.00	
		157	5785	11.75	12.50	8.00	
		165	5825	11.99	12.50	8.50	
	802.11n-HT40 MCS0	38	5190	11.74	12.50	9.00	96.94
		46	5230	11.67	12.50	9.00	

		54	5270	11.73	12.50	8.00	
		62	5310	11.80	12.50	8.00	
		102	5510	11.69	12.50	7.50	
		118	5590	11.82	12.50	8.50	
		134	5670	11.99	12.50	8.50	
		151	5755	11.91	12.50	7.00	
		159	5795	11.78	12.50	7.50	
	802.11ac-VHT20 MCS0	36	5180	11.74	12.50	9.50	98.48
		44	5220	11.95	12.50	9.50	
		48	5240	11.70	12.50	9.50	
		52	5260	12.01	12.50	9.50	
		60	5300	11.83	12.50	8.50	
		64	5320	11.79	12.50	9.00	
		100	5500	11.88	12.50	8.50	
		116	5580	11.79	12.50	8.50	
		140	5700	12.00	12.50	8.50	
		149	5745	11.70	12.50	7.50	
		157	5785	11.73	12.50	8.00	
		165	5825	11.97	12.50	8.50	
	802.11ac-VHT40 MCS0	38	5190	11.81	12.50	9.00	95.96
		46	5230	11.76	12.50	8.50	
		54	5270	11.72	12.50	8.00	
		62	5310	11.81	12.50	8.00	
		102	5510	11.72	12.50	7.50	
		118	5590	11.79	12.50	8.50	
		134	5670	11.81	12.50	8.50	
		151	5755	11.99	12.50	7.00	
		159	5795	11.95	12.50	7.50	
	802.11ac-VHT80 MCS0	42	5210	11.86	12.50	9.50	94.00
		58	5290	11.79	12.50	8.50	
		106	5530	11.98	12.50	8.00	
		112	5610	11.99	12.50	9.00	
		155	5775	11.90	12.50	8.50	

9 TEST RESULTS

9.1 SAR Test Results Summary

Band	Mode	Test Position	Gap (mm)	Channel	Frequency	Antenna	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dBm)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)
Body SAR Limit 1g 1.6(W/kg)														
WLAN 2.4G	802.11b_1Mbps	Back	0	6	2437	Ant 1	11.93	12.00	1.016	99.20	1.008	0.01	0.651	0.667
WLAN 2.4G	802.11b_1Mbps	Back	0	1	2412	Ant 1	11.78	12.00	1.052	99.20	1.008	-0.05	0.680	0.721
WLAN 2.4G	802.11b_1Mbps	Back	0	11	2462	Ant 1	11.76	12.00	1.057	99.20	1.008	0.12	0.709	0.755
WLAN 2.4G	802.11b_1Mbps	Back	0	6	2437	Ant 2	11.78	12.00	1.052	99.20	1.008	0.05	0.125	0.133
WLAN 2.4G	802.11b_1Mbps	Left Side	0	6	2437	Ant 1	11.93	12.00	1.016	99.20	1.008	0.10	1.050	1.076
WLAN 2.4G	802.11b_1Mbps	Left Side	0	1	2412	Ant 1	11.78	12.00	1.052	99.20	1.008	0.02	1.080	1.145
WLAN 2.4G	802.11b_1Mbps	Left Side	0	11	2462	Ant 1	11.76	12.00	1.057	99.20	1.008	0.15	1.080	1.150
WLAN 2.4G	802.11b_1Mbps	Left Side	0	1	2412	Ant 2	17.26	18.00	1.186	99.20	1.008	0.00	0.000	0.000
WLAN 2.4G	802.11b_1Mbps	Right Side	0	6	2437	Ant 1	17.47	18.00	1.130	99.20	1.008	0.00	0.000	0.000
WLAN 2.4G	802.11b_1Mbps	Right Side	0	6	2437	Ant 2	11.78	12.00	1.052	99.20	1.008	0.04	0.128	0.136
WLAN 2.4G	802.11b_1Mbps	Top Side	0	6	2437	Ant 1	17.47	18.00	1.130	99.20	1.008	-0.12	0.010	0.012
WLAN 2.4G	802.11b_1Mbps	Top Side	0	6	2437	Ant 2	17.26	18.00	1.186	99.20	1.008	0.00	0.000	0.000
WLAN 2.4G	802.11b_1Mbps	Bottom Side	0	6	2437	Ant 1	17.47	18.00	1.130	99.20	1.008	0.00	0.000	0.000
WLAN 2.4G	802.11b_1Mbps	Bottom Side	0	1	2412	Ant 2	17.26	18.00	1.186	99.20	1.008	0.00	0.000	0.000
WLAN 2.4G	802.11b_1Mbps	Back	10	6	2437	Ant 1	17.47	18.00	1.130	99.20	1.008	0.03	0.364	0.415
WLAN 2.4G	802.11b_1Mbps	Left Side	10	6	2437	Ant 1	17.47	18.00	1.130	99.20	1.008	-0.02	0.843	0.960
WLAN 2.4G	802.11b_1Mbps	Left Side	10	1	2412	Ant 1	17.45	18.00	1.135	99.20	1.008	0.14	0.792	0.906
WLAN 2.4G	802.11b_1Mbps	Left Side	10	11	2462	Ant 1	16.93	18.00	1.279	99.20	1.008	0.11	0.781	1.007
WLAN 2.4G	802.11b_1Mbps	Back	5	1	2412	Ant 2	17.26	18.00	1.186	99.20	1.008	0.01	0.140	0.167
WLAN 2.4G	802.11b_1Mbps	Right Side	5	1	2412	Ant 2	17.26	18.00	1.186	99.20	1.008	0.01	0.114	0.136
WLAN 2.4G	802.11n-HT40 MCS0	Back	0	6	2437	Ant 1+2	11.36	12.00	1.159	94.00	1.064	0.12	0.270	0.333
WLAN 2.4G	802.11n-HT40 MCS0	Left Side	0	6	2437	Ant 1+2	11.36	12.00	1.159	94.00	1.064	0.10	0.035	0.043
WLAN 2.4G	802.11n-HT40 MCS0	Right Side	0	6	2437	Ant 1+2	11.36	12.00	1.159	94.00	1.064	0.03	0.044	0.054
WLAN 2.4G	802.11n-HT40 MCS0	Top Side	0	6	2437	Ant 1+2	16.12	17.00	1.225	94.00	1.064	0.00	0.034	0.044
WLAN 2.4G	802.11n-HT40 MCS0	Bottom Side	0	6	2437	Ant 1+2	16.12	17.00	1.225	94.00	1.064	0.00	0.000	0.000
Bluetooth	DH5_1Mbps	Back	0	39	2441	Ant 1	11.93	12.00	1.016	77.50	1.290	0.12	0.163	0.214
Bluetooth	DH5_1Mbps	Back	0	00	2402	Ant 1	11.78	12.00	1.052	77.50	1.290	-0.03	0.144	0.195
Bluetooth	DH5_1Mbps	Back	0	78	2480	Ant 1	11.76	12.00	1.057	77.50	1.290	0.04	0.147	0.200
Bluetooth	DH5_1Mbps	Left Side	0	39	2441	Ant 1	11.93	12.00	1.016	77.50	1.290	0.01	0.158	0.207
Bluetooth	DH5_1Mbps	Right Side	0	39	2441	Ant 1	11.93	12.00	1.016	77.50	1.290	0.00	0.000	0.000
Bluetooth	DH5_1Mbps	Top Side	0	39	2441	Ant 1	11.93	12.00	1.016	77.50	1.290	0.00	0.000	0.000
Bluetooth	DH5_1Mbps	Bottom Side	0	39	2441	Ant 1	11.93	12.00	1.016	77.50	1.290	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	0	52	5260	Ant 1	12.13	12.50	1.089	98.10	1.019	0.15	0.469	0.520
WLAN 5G	802.11a_6Mbps	Back	0	60	5300	Ant 1	12.05	12.50	1.109	98.10	1.019	0.12	0.433	0.489
WLAN 5G	802.11a_6Mbps	Back	0	64	5320	Ant 1	12.02	12.50	1.117	98.10	1.019	0.03	0.453	0.516
WLAN 5G	802.11a_6Mbps	Back	0	52	5260	Ant 2	12.21	12.50	1.069	98.10	1.019	0.07	0.327	0.356
WLAN 5G	802.11a_6Mbps	Left Side	0	52	5260	Ant 1	12.13	12.50	1.089	98.10	1.019	0.17	0.965	1.071
WLAN 5G	802.11a_6Mbps	Left Side	0	60	5300	Ant 1	12.05	12.50	1.109	98.10	1.019	0.02	0.911	1.030
WLAN 5G	802.11a_6Mbps	Left Side	0	64	5320	Ant 1	12.02	12.50	1.117	98.10	1.019	-0.11	0.964	1.097
WLAN 5G	802.11a_6Mbps	Left Side	0	52	5260	Ant 2	15.21	16.00	1.199	98.10	1.019	0.00	0.000	0.000

WLAN 5G	802.11a_6Mbps	Right Side	0	52	5260	Ant 1	15.38	16.00	1.153	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Right Side	0	52	5260	Ant 2	12.21	12.50	1.069	98.10	1.019	**0.02**	**0.639**	**0.696**
WLAN 5G	802.11a_6Mbps	Right Side	0	60	5300	Ant 2	11.98	12.50	1.127	98.10	1.019	0.01	0.534	0.613
WLAN 5G	802.11a_6Mbps	Right Side	0	64	5320	Ant 2	12.06	12.50	1.107	98.10	1.019	-0.12	0.505	0.569
WLAN 5G	802.11a_6Mbps	Top Side	0	52	5260	Ant 1	15.21	16.00	1.199	98.10	1.019	0.12	0.388	0.474
WLAN 5G	802.11a_6Mbps	Top Side	0	52	5260	Ant 2	15.38	16.00	1.153	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	52	5260	Ant 1	15.21	16.00	1.199	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	52	5260	Ant 2	15.38	16.00	1.153	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	10	52	5260	Ant 1	15.21	16.00	1.199	98.10	1.019	0.03	0.265	0.324
WLAN 5G	802.11a_6Mbps	Left Side	10	52	5260	Ant 1	15.21	16.00	1.199	98.10	1.019	0.01	0.482	0.589
WLAN 5G	802.11a_6Mbps	Back	5	52	5260	Ant 2	15.38	16.00	1.153	98.10	1.019	-0.03	0.355	0.417
WLAN 5G	802.11a_6Mbps	Right Side	5	52	5260	Ant 2	15.38	16.00	1.153	98.10	1.019	0.01	0.578	0.679
WLAN 5G	802.11ac-VHT80 MCS0	Back	0	58	5290	Ant 1+2	11.79	12.50	1.178	94.00	1.064	0.02	0.158	0.198
WLAN 5G	802.11ac-VHT80 MCS0	Left Side	0	58	5290	Ant 1+2	11.79	12.50	1.178	94.00	1.064	0.09	0.264	0.331
WLAN 5G	802.11ac-VHT80 MCS0	Right Side	0	58	5290	Ant 1+2	11.79	12.50	1.178	94.00	1.064	0.01	0.408	0.511
WLAN 5G	802.11ac-VHT80 MCS0	Top Side	0	58	5290	Ant 1+2	16.14	16.50	1.086	94.00	1.064	-0.03	0.021	0.024
WLAN 5G	802.11ac-VHT80 MCS0	Bottom Side	0	58	5290	Ant 1+2	16.14	16.50	1.086	94.00	1.064	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	0	100	5500	Ant 1	12.17	12.50	1.079	98.10	1.019	0.02	0.454	0.499
WLAN 5G	802.11a_6Mbps	Back	0	116	5580	Ant 1	12.02	12.50	1.117	98.10	1.019	0.03	0.476	0.542
WLAN 5G	802.11a_6Mbps	Back	0	140	5700	Ant 1	12.09	12.50	1.099	98.10	1.019	0.12	0.493	0.552
WLAN 5G	802.11a_6Mbps	Back	0	100	5500	Ant 2	12.23	12.50	1.064	98.10	1.019	0.15	0.342	0.371
WLAN 5G	802.11a_6Mbps	Left Side	0	100	5500	Ant 1	12.17	12.50	1.079	98.10	1.019	0.05	0.915	1.006
WLAN 5G	802.11a_6Mbps	Left Side	0	116	5580	Ant 1	12.02	12.50	1.117	98.10	1.019	**0.16**	**0.973**	**1.107**
WLAN 5G	802.11a_6Mbps	Left Side	0	140	5700	Ant 1	12.09	12.50	1.099	98.10	1.019	0.09	0.967	1.083
WLAN 5G	802.11a_6Mbps	Left Side	0	116	5580	Ant 2	15.16	16.00	1.213	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Right Side	0	116	5580	Ant 1	15.47	16.00	1.130	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Right Side	0	100	5500	Ant 2	12.23	12.50	1.064	98.10	1.019	0.01	0.723	0.784
WLAN 5G	802.11a_6Mbps	Right Side	0	116	5580	Ant 2	12.08	12.50	1.102	98.10	1.019	**0.12**	**0.971**	**1.090**
WLAN 5G	802.11a_6Mbps	Right Side	0	140	5700	Ant 2	12.11	12.50	1.094	98.10	1.019	-0.12	0.890	0.992
WLAN 5G	802.11a_6Mbps	Top Side	0	100	5500	Ant 1	15.47	16.00	1.130	98.10	1.019	0.02	0.263	0.303
WLAN 5G	802.11a_6Mbps	Top Side	0	100	5500	Ant 2	15.16	16.00	1.213	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	116	5580	Ant 1	15.47	16.00	1.130	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	116	5580	Ant 2	15.16	16.00	1.213	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	10	116	5580	Ant 1	15.47	16.00	1.130	98.10	1.019	0.14	0.210	0.242
WLAN 5G	802.11a_6Mbps	Left Side	10	116	5580	Ant 1	15.47	16.00	1.130	98.10	1.019	-0.03	0.260	0.299
WLAN 5G	802.11a_6Mbps	Back	5	116	5580	Ant 2	15.16	16.00	1.213	98.10	1.019	0.03	0.365	0.451
WLAN 5G	802.11a_6Mbps	Right Side	5	100	5500	Ant 2	15.00	16.00	1.259	98.10	1.019	0.09	0.625	0.802
WLAN 5G	802.11a_6Mbps	Right Side	5	116	5580	Ant 2	15.16	16.00	1.213	98.10	1.019	0.01	0.633	0.783
WLAN 5G	802.11a_6Mbps	Right Side	5	140	5700	Ant 2	15.14	16.00	1.219	98.10	1.019	-0.02	0.679	0.843
WLAN 5G	802.11ac-VHT80 MCS0	Back	0	112	5610	Ant 1+2	11.99	12.50	1.125	94.00	1.064	0.01	0.164	0.196
WLAN 5G	802.11ac-VHT80 MCS0	Left Side	0	112	5610	Ant 1+2	11.99	12.50	1.125	94.00	1.064	0.11	0.281	0.336
WLAN 5G	802.11ac-VHT80 MCS0	Right Side	0	112	5610	Ant 1+2	11.99	12.50	1.125	94.00	1.064	0.03	0.407	0.487
WLAN 5G	802.11ac-VHT80 MCS0	Top Side	0	112	5610	Ant 1+2	15.83	16.50	1.167	94.00	1.064	-0.03	0.032	0.040
WLAN 5G	802.11ac-VHT80 MCS0	Bottom Side	0	112	5610	Ant 1+2	15.83	16.50	1.167	94.00	1.064	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	0	149	5745	Ant 1	12.23	12.50	1.064	98.10	1.019	0.02	0.447	0.485
WLAN 5G	802.11a_6Mbps	Back	0	157	5785	Ant 1	12.14	12.50	1.086	98.10	1.019	-0.03	0.423	0.468
WLAN 5G	802.11a_6Mbps	Back	0	165	5825	Ant 1	12.09	12.50	1.099	98.10	1.019	0.12	0.431	0.483
WLAN 5G	802.11a_6Mbps	Back	0	149	5745	Ant 2	12.35	12.50	1.035	98.10	1.019	0.05	0.235	0.248

WLAN 5G	802.11a_6Mbps	Left Side	0	149	5745	Ant 1	12.23	12.50	1.064	98.10	1.019	0.06	0.937	1.016
WLAN 5G	802.11a_6Mbps	Left Side	0	157	5785	Ant 1	12.14	12.50	1.086	98.10	1.019	0.02	0.850	0.941
WLAN 5G	802.11a_6Mbps	Left Side	0	165	5825	Ant 1	12.09	12.50	1.099	98.10	1.019	**0.02**	**0.991**	**1.110**
WLAN 5G	802.11a_6Mbps	Left Side	0	165	5825	Ant 2	15.26	16.00	1.186	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Right Side	0	149	5745	Ant 1	15.48	16.00	1.127	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Right Side	0	149	5745	Ant 2	12.35	12.50	1.035	98.10	1.019	0.02	0.907	0.957
WLAN 5G	802.11a_6Mbps	Right Side	0	157	5785	Ant 2	12.21	12.50	1.069	98.10	1.019	**0.16**	**0.974**	**1.061**
WLAN 5G	802.11a_6Mbps	Right Side	0	165	5825	Ant 2	12.33	12.50	1.040	98.10	1.019	0.03	0.806	0.854
WLAN 5G	802.11a_6Mbps	Top Side	0	149	5745	Ant 1	15.48	16.00	1.127	98.10	1.019	0.02	0.472	0.542
WLAN 5G	802.11a_6Mbps	Top Side	0	149	5745	Ant 2	12.35	12.50	1.035	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	149	5745	Ant 1	15.48	16.00	1.127	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Bottom Side	0	165	5825	Ant 2	15.26	16.00	1.186	98.10	1.019	0.00	0.000	0.000
WLAN 5G	802.11a_6Mbps	Back	10	149	5745	Ant 1	15.48	16.00	1.127	98.10	1.019	0.11	0.130	0.149
WLAN 5G	802.11a_6Mbps	Left Side	10	149	5745	Ant 1	15.48	16.00	1.127	98.10	1.019	0.03	0.190	0.218
WLAN 5G	802.11a_6Mbps	Back	5	165	5825	Ant 2	15.26	16.00	1.186	98.10	1.019	0.03	0.219	0.265
WLAN 5G	802.11a_6Mbps	Right Side	5	165	5825	Ant 2	15.26	16.00	1.186	98.10	1.019	0.09	0.430	0.520
WLAN 5G	802.11ac-VHT80 MCS0	Back	0	155	5775	Ant 1+2	11.90	12.50	1.148	94.00	1.064	0.01	0.127	0.155
WLAN 5G	802.11ac-VHT80 MCS0	Left Side	0	155	5775	Ant 1+2	11.90	12.50	1.148	94.00	1.064	0.13	0.267	0.326
WLAN 5G	802.11ac-VHT80 MCS0	Right Side	0	155	5775	Ant 1+2	11.90	12.50	1.148	94.00	1.064	0.12	0.480	0.586
WLAN 5G	802.11ac-VHT80 MCS0	Top Side	0	155	5775	Ant 1+2	15.58	16.50	1.236	94.00	1.064	-0.03	0.098	0.129
WLAN 5G	802.11ac-VHT80 MCS0	Bottom Side	0	155	5775	Ant 1+2	15.58	16.50	1.236	94.00	1.064	0.00	0.000	0.000

SAR Test Note:

1. Per KDB648474 D04y01r03.this device is considered a phablet since the display diagonal dimension > 15.0 cm or an overall diagonal dimension > 16.0 cm. Therefore, phablet SAR tests are required when wireless mode does not apply or if wireless router1g SAR >1.2W/kg.

2. The maximum output power specified for production units are determined for all applicable 802.11 transmission modes in each standalone and aggregated frequency band. Maximum output power is measured for the highest maximum output power configuration(s) in each frequency band according to the default power measurement procedures. For "Not required", SAR Test reduction was applied from KDB 248227 guidance, Sec. 2.1b), 1) when the same maximum power is specified for multiple transmission modes in a frequency band. The largest channel bandwidth, lowest or demodulation, lowest data rate and lowest order 802.11algin/ac mode is used for SAR measurement, on the highest measured output power channel in the initial test configuration, additional output power measurements were not necessary.

3. Per KDB 248227 D01v02r02, SAR test reduction is determined according to 802.11 transmission mode configurations and certain exposure conditions with multiple test positions. In the 2.4 GHz band, separate SAR procedures are applied to DSSS and OFDM configurations to simplify DSSS test requirements. For OFDM, in both 2.4 and 5 GHz bands, an initial test configuration must be determined for each standalone and aggregated frequency band, according to the transmission mode configuration with the highest maximum output power specified for production units to perform SAR measurements. If the same highest maximum output power applies to different combinations of channel bandwidths, modulations and data rates, additional procedures are applied to determine which test configurations require SAR measurement. When applicable, an initial test position may be applied to reduce the number of SAR measurements required for next to the ear, UMPC mini-tablet or hotspot mode

configurations with multiple test positions.

- 0.4 W/ka. SAR is repeated using the same wireless mode test configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions are tested For subsequent test position with equivalent test separation distance or when exposure is dominated by coupling conditions, the position for maximum coupling condition should be tested. When it is unclear, all equivalent conditions must be tested.
- For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, measure the SAR for positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤1.2 W/kg or all required test channels are considered.
- When the specified maximum output power is the same for both UNII 1 and UNII 2A, begin SAR measurements in UNII 2A with the channel with the highest measured output power. If the reported SAR for UNII 2A is ≤ 1.2 W/kg, SAR is not required for UNII 1; otherwise treat the remaining bands separately and test them independently for SAR.
- When the specified maximum output power is different between UNII 1 and UNII 2A, begin SAR with the band that has the higher specified maximum output. If the highest reported SAR for the band with the highest specified power is ≤ 1.2 W/kg, testing for the band with the lower specified output power is not required; otherwise test the remaining bands independently for SAR.

4. The Bluetooth duty cycle is 77.50%, Bluetooth SAR scaling need further consideration and the theoretical duty cycle is 100%, therefore the actual duty cycle will be scaled up to the theoretical value of Bluetooth reported SAR calculation.
5. The ratio is the difference in percentage between original and repeated measured SAR.
6. All measurement SAR result is scaled-up to account for tune-up tolerance and is compliant.

9.2 SAR Measurement Variability

Band	Mode	Test Position	Ch.	Antenna	Freq. (MHz)	Original 1g SAR (W/kg)	First 1g SAR (W/kg)	First Ratio SAR 1g
WLAN 2.4G	802.11b_1Mbps	Left Side	11	Ant 1	2462	1.08	1.03	4.9%
WLAN 5G	802.11a_6Mbps	Left Side	64	Ant 1	5320	0.964	0.954	1.0%
WLAN 5G	802.11a_6Mbps	Left Side	116	Ant 1	5580	0.973	0.965	0.8%
WLAN 5G	802.11a_6Mbps	Right Side	116	Ant 2	5580	0.971	0.966	0.5%
WLAN 5G	802.11a_6Mbps	Left Side	165	Ant 1	5825	0.991	0.988	0.3%
WLAN 5G	802.11a_6Mbps	Right Side	157	Ant 2	5785	0.974	0.971	0.3%

Note:

According to KDB 865664 D01v01r04, SAR measurement variability must be assessed for each frequency band, which is determined by the SAR probe calibration point and tissue-equivalent medium used for the device measurements. When both head and body tissue-equivalent media are required for SAR measurements in a frequency band, the variability measurement procedures should be applied to the tissue medium with the highest measured SAR, using the highest measured SAR configuration for that tissue-equivalent medium.

The following procedures are applied to determine if repeated measurements are required:

1. The original highest measured Reported SAR 1-g ≥ 0.80 W/kg, repeated that measurement once.

2. Perform a second repeated measurement the ratio of the largest to the smallest SAR for the original and first repeated measurements is <1.2 W/kg, or when the original or repeated measurement ≥ 1.45 W/kg (~10% from the 1-g SAR limit).

9.3 Simultaneous Transmission Analysis

NO.	Simultaneous Transmission Configurations	Body SAR
1.	2.4GHz WLAN Ant 1+2 + Bluetooth Ant 1	Yes
2.	5GHz WLAN Ant 1+2 + Bluetooth Ant 1	Yes

Reported SAR					
Exposure Position	**2.4GHz WLAN Ant 1+2**	**5GHz WLAN Ant 1+2**	**Bluetooth Ant 1**	**NO.4**	**NO.5**
				Summed	**Summed**
	1g SAR (W/kg)	**1g SAR (W/kg)**	**10g SAR (W/kg)**	**1g SAR (W/kg)**	**1g SAR (W/kg)**
Back	0.333	0.198	0.214	**0.55**	**0.41**
Left Side	0.043	0.336	0.207	**0.25**	**0.54**
Right Side	0.054	0.586		**0.05**	**0.59**
Top Side		0.129		**0.00**	**0.12**
Bottom Side				**0.00**	**0.00**

Note：

1. The maximum SAR summation is calculated based on the same configuration and test position.

2. If 1g-SAR scalar summation < 1.6 W/kg, simultaneous SAR measurement is not necessary.

Appendix A. SAR System Validation Data

Date: 20/02/2024

Test Laboratory: DEKRA Lab

System Check Head 2450MHz

DUT: Dipole D2450V2

Communication System: UID 0, CW; Communication System Band: D2450MHz; Duty Cycle: 1:1; Frequency: 2450 MHz; Medium parameters used: f = 2450 MHz; σ = 1.86 S/m; εr = 38.54; ρ = 1000 kg/m3 ; Phantom section: Flat Section ; Input Power=250mW

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(7.55, 7.31, 7.22) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

System Check Head 2450MHz/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 12.3 W/kg

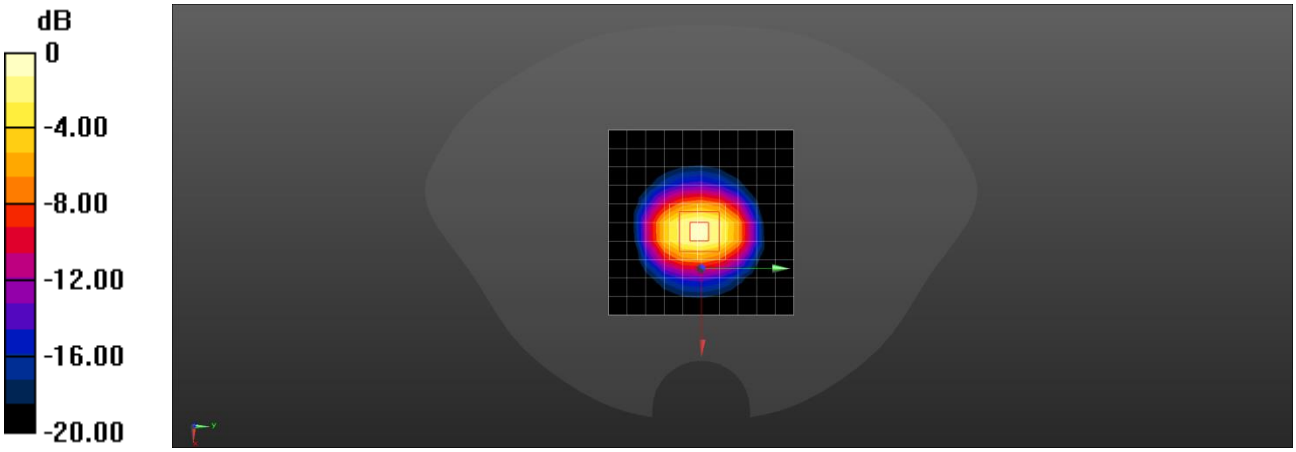
System Check Head 2450MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 81.98 V/m; Power Drift = -0.16 dB

Peak SAR (extrapolated) = 26.1 W/kg

SAR(1 g) = 12.8 W/kg; SAR(10 g) = 5.93 W/kg

Maximum value of SAR (measured) = 14.6 W/kg



0 dB = 14.6 W/kg = 11.64 dBW/kg

Date: 25/02/2024

Test Laboratory: DEKRA Lab

System Check Head 5250MHz

DUT: Dipole D5GHzV2

Communication System: UID 0, CW (0); Communication System Band: 5GHz; Duty Cycle: 1:1; Frequency: 5250 MHz;

Medium parameters used: f = 5250 MHz; σ = 4.6 S/m; εr = 36.38; ρ = 1000 kg/m3 ; Phantom section: Flat Section ;

Input Power=100mW

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.57, 5.5, 5.46) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

System Check Head 5250MHz/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 8.02 W/kg

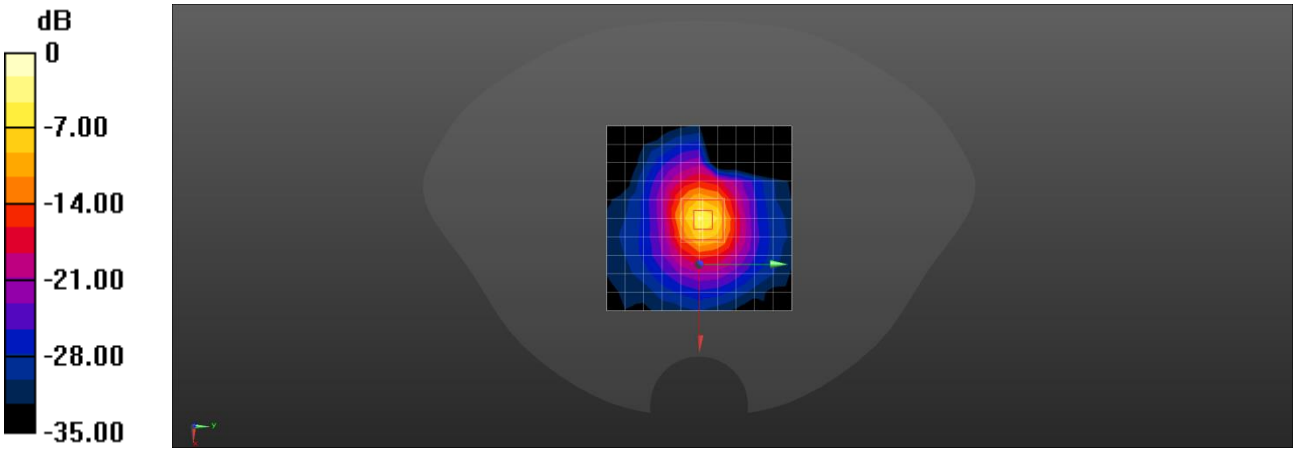
System Check Head 5250MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 42.33 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 33.7 W/kg

SAR(1 g) = 7.7 W/kg; SAR(10 g) = 2.17 W/kg

Maximum value of SAR (measured) = 20.2 W/kg



0 dB = 20.2 W/kg = 13.05 dBW/kg

Date: 03/03/2024

Test Laboratory: DEKRA Lab

System Check Head 5600MHz

DUT: Dipole D5GHzV2; Type: D5GHzV2

Communication System: UID 0, CW (0); Communication System Band: 5GHz; Duty Cycle: 1:1; Frequency: 5600 MHz;

Medium parameters used: f = 5600 MHz; σ = 4.99 S/m; εr = 35.8; ρ = 1000 kg/m3 ; Phantom section: Flat Section ;

Input Power=100mW

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(4.84, 4.73, 4.74) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

System Check Head 5600MHz/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 7.88 W/kg

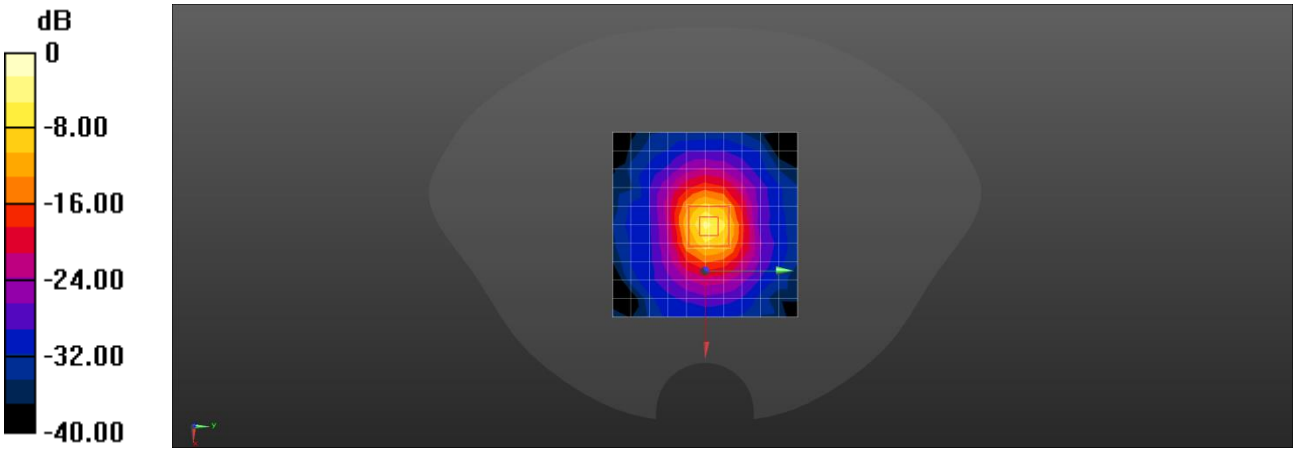
System Check Head 5600MHz/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 40.48 V/m; Power Drift = -0.04 dB

Peak SAR (extrapolated) = 37.5 W/kg

SAR(1 g) = 7.86 W/kg; SAR(10 g) = 2.2 W/kg

Maximum value of SAR (measured) = 21.1 W/kg



0 dB = 21.1 W/kg = 13.24 dBW/kg

Date: 15/03/2024

Test Laboratory: DEKRA Lab

System Check Head 5750MHz

DUT: Dipole D5GHzV2

Communication System: UID 0, CW (0); Communication System Band: 5GHz; Duty Cycle: 1:1; Frequency: 5750 MHz;

Medium parameters used: f = 5750 MHz; σ = 5.167 S/m; εr = 35.55; ρ = 1000 kg/m3 ; Phantom section: Flat Section ;

Input Power=100mW

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.1, 4.88, 4.91); Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

System Check Head 5750MHz/Area Scan (11x11x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 18.9 W/kg

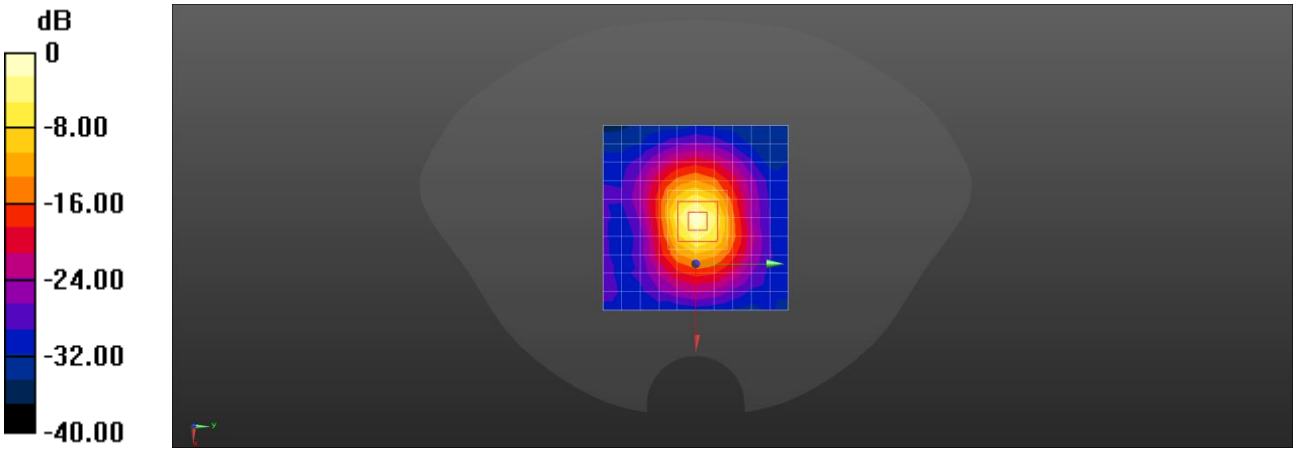
System Check Head 5750MHz/Zoom Scan (9x9x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 67.41 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 34.8 W/kg

SAR(1 g) = 7.33 W/kg; SAR(10 g) = 2.08 W/kg

Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.6 W/kg = 12.92 dBW/kg

Appendix B. SAR measurement Data

Date: 20/2/2024

Test Laboratory: DEKRA Lab

WLAN2.4GHz_802.11b 1Mbps_Back_CH11_2462MHz_Ant 1

DUT: TABLET_MT578

Communication System: UID 0, WIFI 2.4G (0); Communication System Band: 802.11b(20M); Duty Cycle: 1:1.008;

Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.874 S/m; εr = 38.504; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(7.55, 7.31, 7.22) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (11x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.992 W/kg

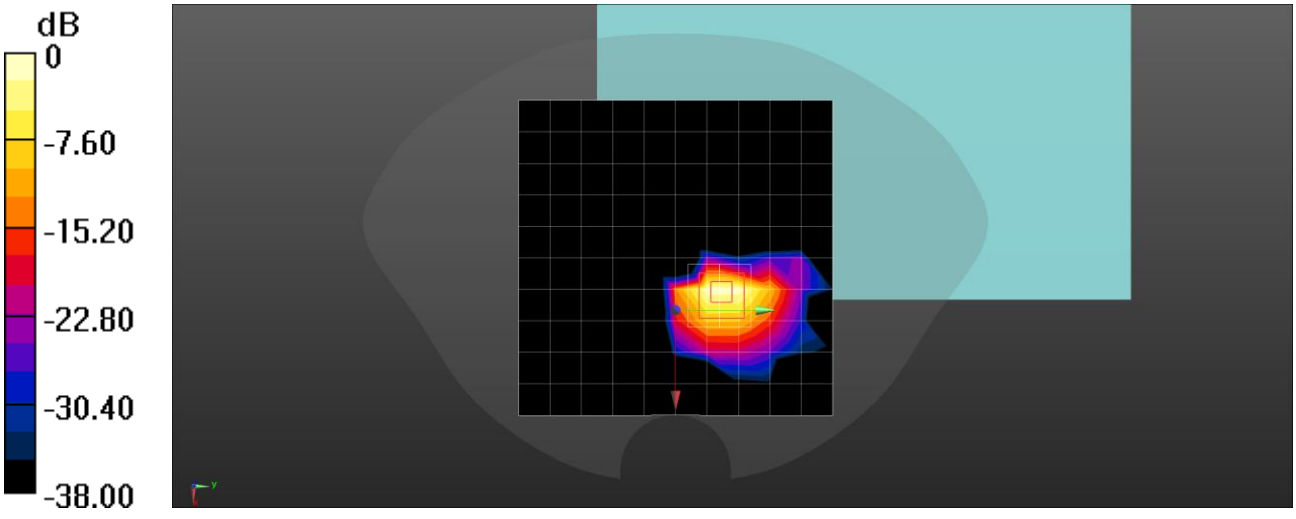
Zoom Scan (7x7x5)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.2950 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 1.66 W/kg

SAR(1 g) = 0.709 W/kg; SAR(10 g) = 0.279 W/kg

Maximum value of SAR (measured) = 1.23 W/kg



0 dB = 1.23 W/kg = 0.90 dBW/kg

Date: 20/2/2024

Test Laboratory: DEKRA Lab

WLAN2.4GHz_802.11b 1Mbps_Left side_CH11_2462MHz_Ant 1

DUT: TABLET_MT578

Communication System: UID 0, WIFI 2.4G (0); Communication System Band: 802.11b(20M); Duty Cycle: 1:1.008;

Frequency: 2462 MHz; Medium parameters used: f = 2462 MHz; σ = 1.874 S/m; εr = 38.504; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(7.55, 7.31, 7.22) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (11x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.78 W/kg

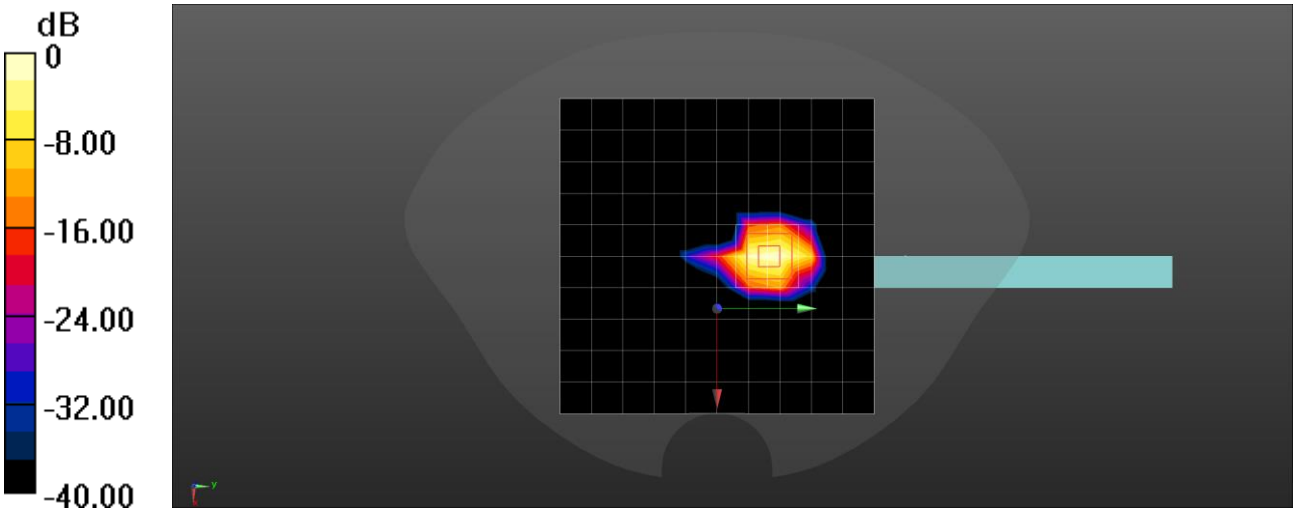
Zoom Scan (7x7x5)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 3.932 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 2.48 W/kg

SAR(1 g) = 1.08 W/kg; SAR(10 g) = 0.412 W/kg

Maximum value of SAR (measured) = 1.93 W/kg



0 dB = 1.93 W/kg = 2.86 dBW/kg

Date: 20/02/2024

Test Laboratory: DEKRA Lab

Bluetooth_DH5_1Mbps_Back_CH39_2441MHz

DUT: TABLET_MT578

Communication System: UID 0, Bluetooth (0); Communication System Band: BLE; Duty Cycle: 1:1.29; Frequency: 2480 MHz; Medium parameters used: f = 2480 MHz; σ = 1.853 S/m; εr = 38.576; ρ = 1000 kg/m3 ; Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(7.55, 7.31, 7.22) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (11x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.172 W/kg

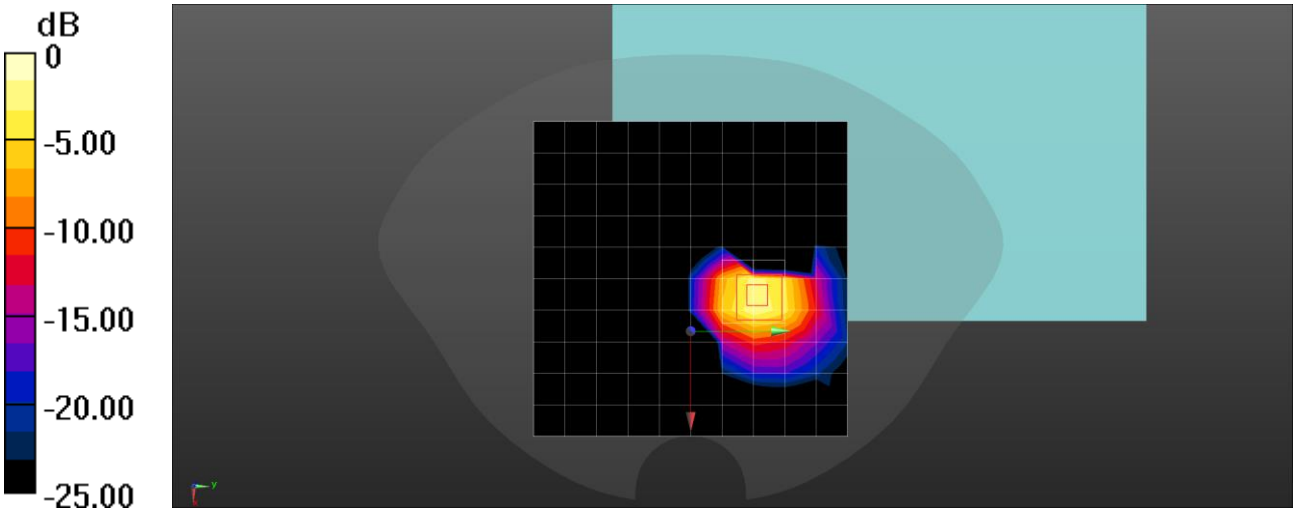
Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 0.8440 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.334 W/kg

SAR(1 g) = 0.163 W/kg; SAR(10 g) = 0.073 W/kg

Maximum value of SAR (measured) = 0.264 W/kg



0 dB = 0.264 W/kg = -5.78 dBW/kg

Date: 25/2/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Left Side_CH64_5320MHz_Ant 1

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5320 MHz; Medium parameters used: f = 5320 MHz; σ = 4.671 S/m; εr = 36.279; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.57, 5.5, 5.46) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.29 W/kg

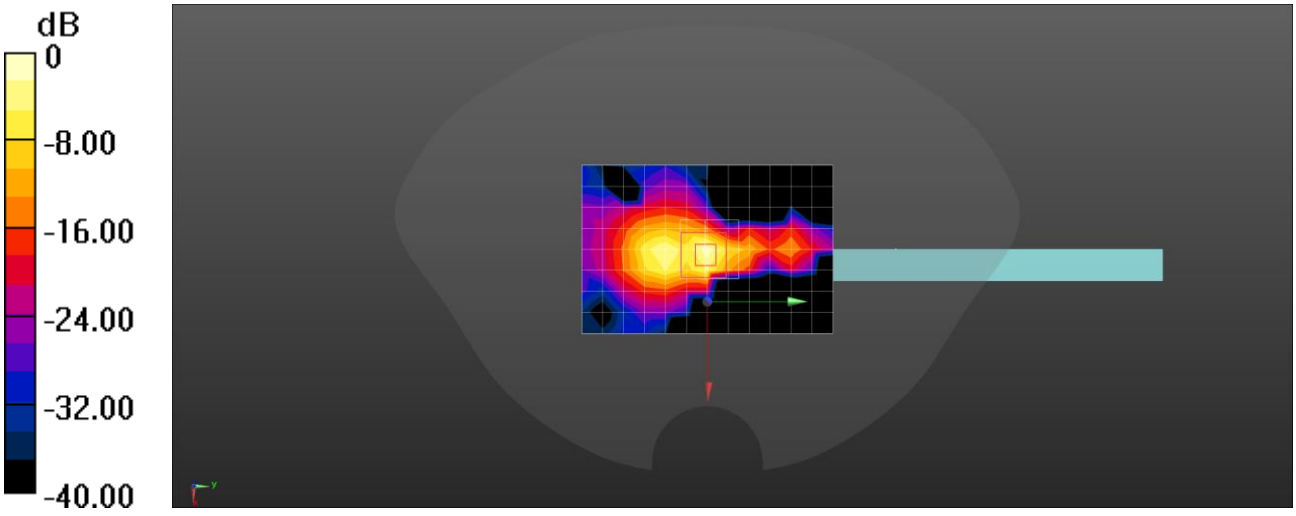
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 15.15 V/m; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 4.67 W/kg

SAR(1 g) = 0.964 W/kg; SAR(10 g) = 0.209 W/kg

Maximum value of SAR (measured) = 2.76 W/kg



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

Date/Time: 25/02/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Right Side_CH52_5260MHz_Ant 2

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5260 MHz; Medium parameters used: f = 5260 MHz; σ = 4.617 S/m; εr = 36.368; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.57, 5.5, 5.46); Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 1.13 W/kg

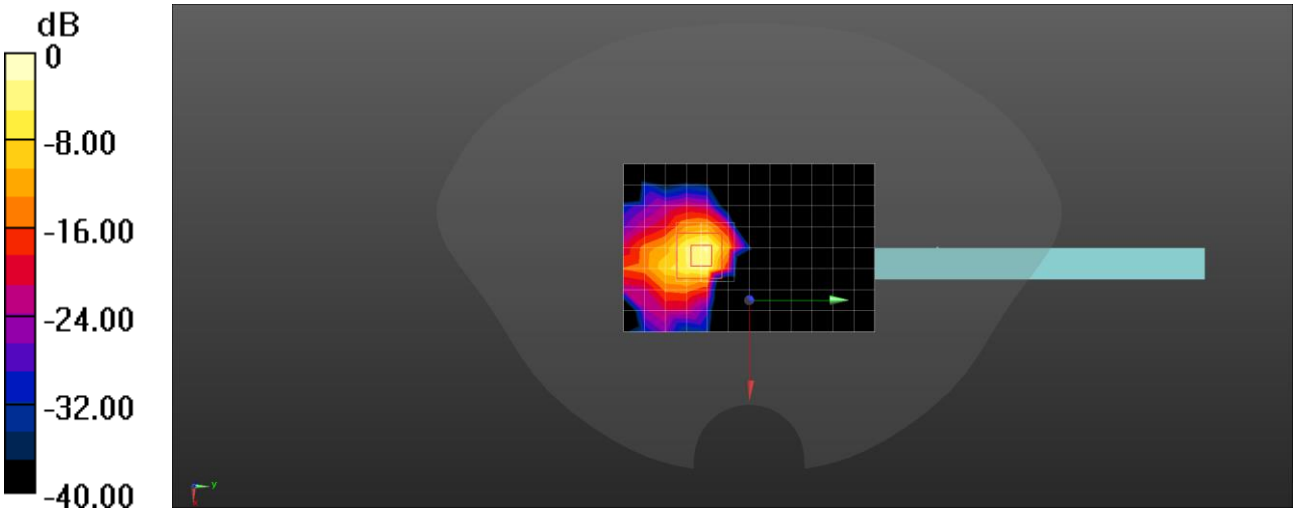
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 0.4550 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 3.06 W/kg

SAR(1 g) = 0.639 W/kg; SAR(10 g) = 0.144 W/kg

Maximum value of SAR (measured) = 1.81 W/kg



0 dB = 1.81 W/kg = 2.58 dBW/kg

Date: 03/03/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Left Side_CH116_5580MHz_Ant 1

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5580 MHz; Medium parameters used: f = 5580 MHz; σ = 4.971 S/m; εr = 35.869; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(4.84, 4.73, 4.74); Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.02 W/kg

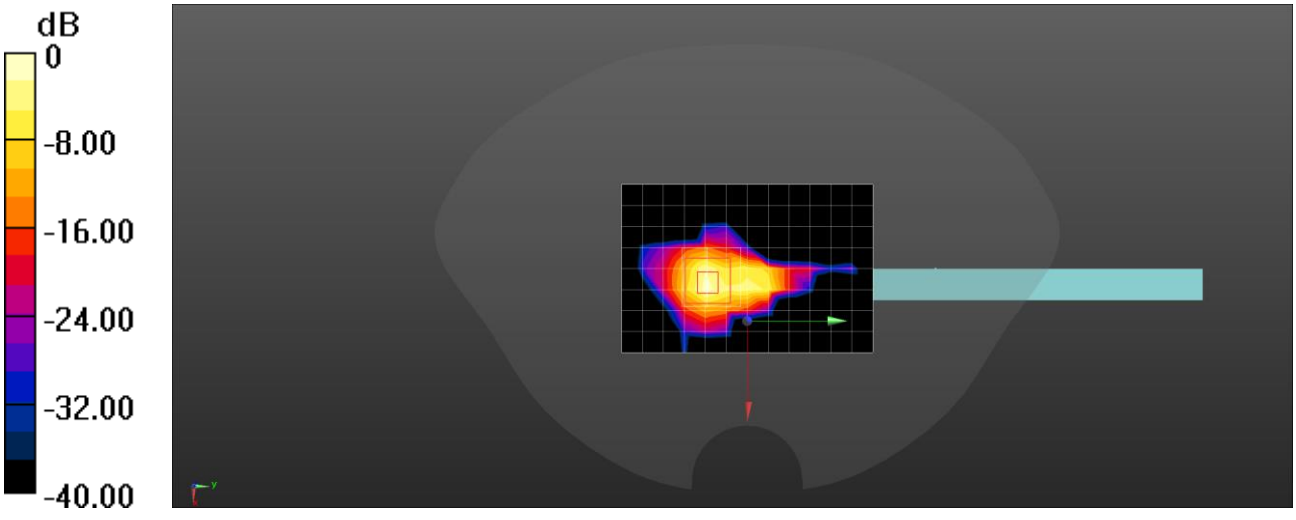
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 7.751 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 4.61 W/kg

SAR(1 g) = 0.973 W/kg; SAR(10 g) = 0.226 W/kg

Maximum value of SAR (measured) = 2.76 W/kg



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

Date: 03/03/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Right Side_CH116_5580MHz_Ant 2

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5580 MHz; Medium parameters used: f = 5580 MHz; σ = 4.971 S/m; εr = 35.869; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(4.84, 4.73, 4.74) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.42 W/kg

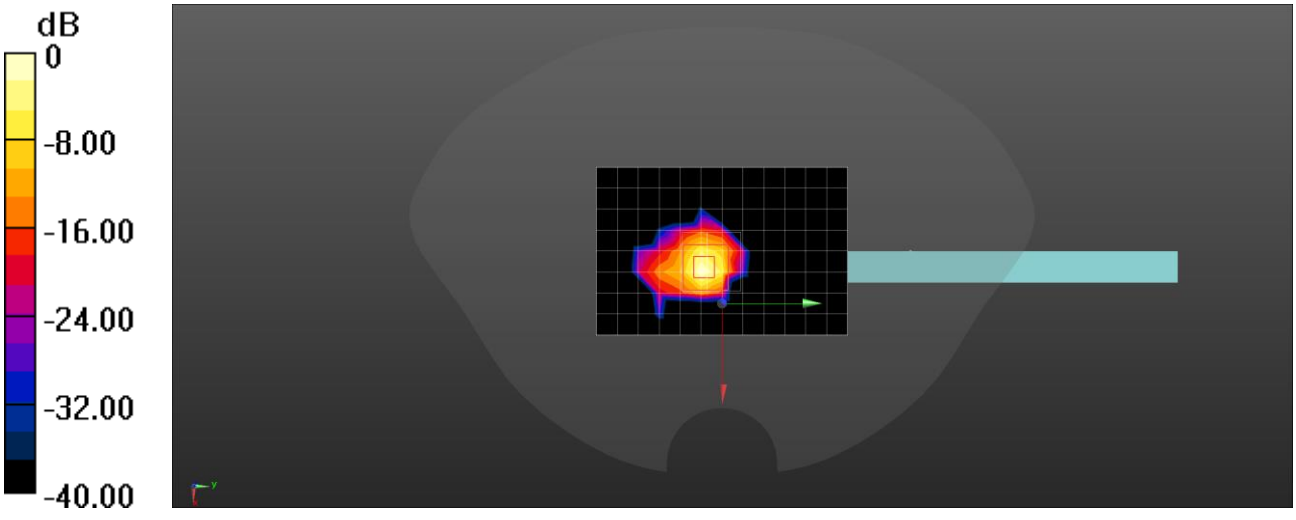
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 5.062 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 4.82 W/kg

SAR(1 g) = 0.971 W/kg; SAR(10 g) = 0.220 W/kg

Maximum value of SAR (measured) = 2.51 W/kg



0 dB = 2.51 W/kg = 4.00 dBW/kg

Date: 15/03/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Left Side_CH165_5825MHz_Ant 1

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5825 MHz; Medium parameters used: f = 5825 MHz; σ = 5.25 S/m; εr = 35.438; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.1, 4.88, 4.91) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (7x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.00 W/kg

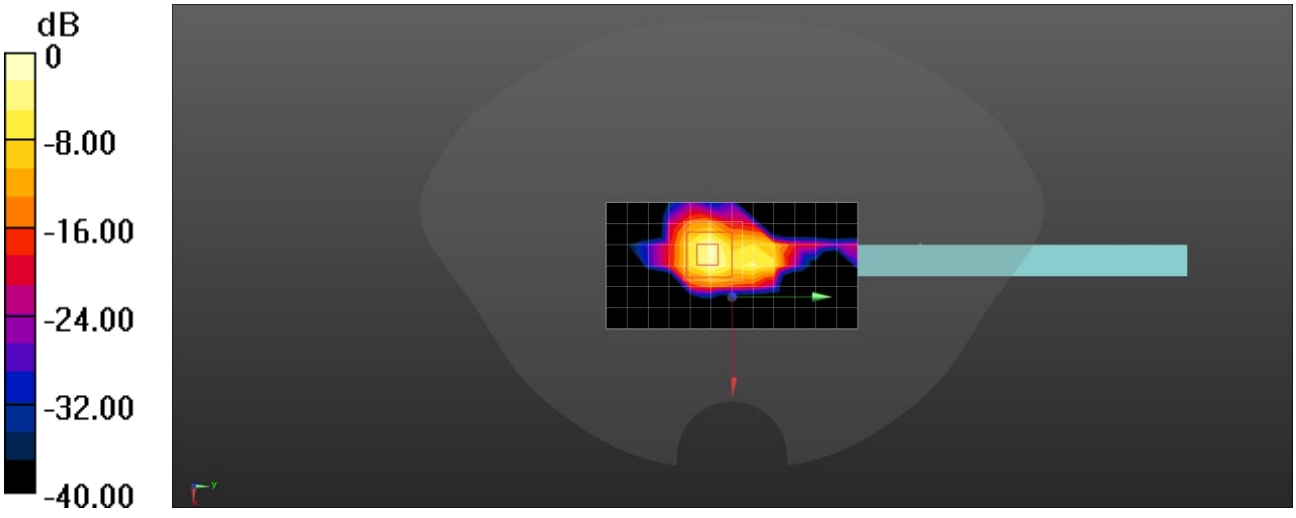
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.930 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 5.16 W/kg

SAR(1 g) = 0.991 W/kg; SAR(10 g) = 0.224 W/kg

Maximum value of SAR (measured) = 2.94 W/kg



0 dB = 2.94 W/kg = 4.68 dBW/kg

Date: 15/03/2024

Test Laboratory: DEKRA Lab

WLAN5GHz_802.11a 6Mbps_Right Side_CH157_5785MHz_Ant 2

DUT: TABLET_MT578

Communication System: UID 0, WIFI 5G (0); Communication System Band: 802.11a(20M); Duty Cycle: 1:1.019;

Frequency: 5785 MHz; Medium parameters used: f = 5785 MHz; σ = 5.204 S/m; εr = 35.531; ρ = 1000 kg/m3 ;

Phantom section: Flat Section

Ambient temperature (℃): 22.5, Liquid temperature (℃): 22.0

DASY5 Configuration:

- Probe: EX3DV4 - SN7761; ConvF(5.1, 4.88, 4.91) ; Calibrated: 13/9/2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1220; Calibrated: 20/3/2023
- Phantom: Twin-SAM V5.0; Type: QD 000 P40 CD; Serial: TP-1562
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (9x13x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (measured) = 2.23 W/kg

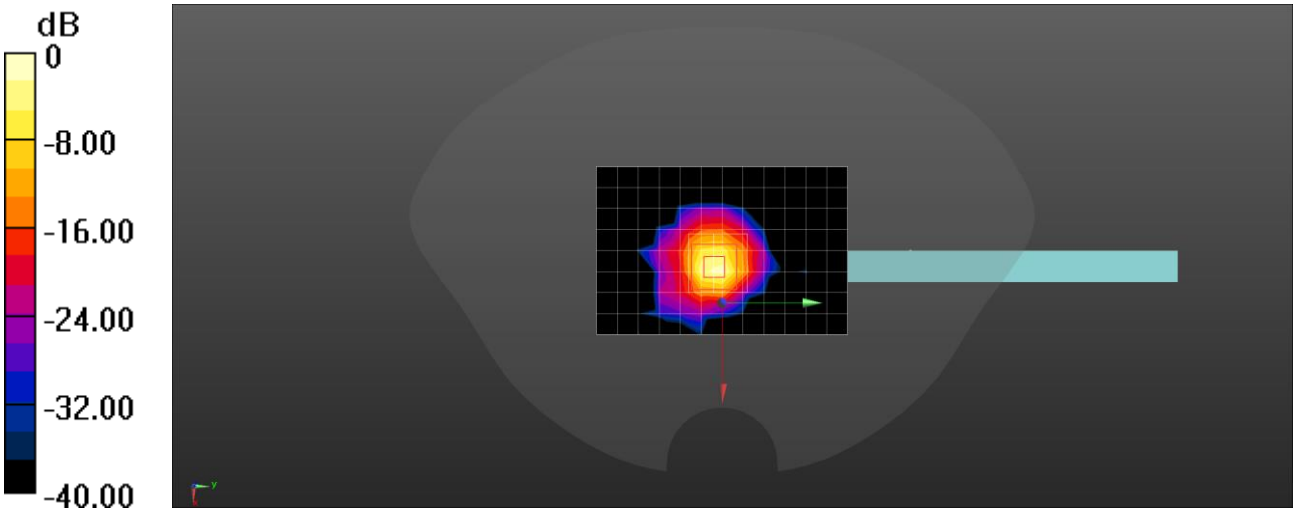
Zoom Scan (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 7.755 V/m; Power Drift = 0.16 dB

Peak SAR (extrapolated) = 5.09 W/kg

SAR(1 g) = 0.974 W/kg; SAR(10 g) = 0.215 W/kg

Maximum value of SAR (measured) = 2.87 W/kg



0 dB = 2.87 W/kg = 4.58 dBW/kg

Note: We evaluated all channels, antennas, and RB, providing data for only the worst channel mode.

Appendix C. Probe Calibration Data

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

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

Client	Dekra Suzhou	Certificate No.	EX-7761_Sep23

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7761
Calibration procedure(s)	QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6, QA CAL-25.v8 Calibration procedure for dosimetric E-field probes
Calibration date	September 13, 2023

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
OCP DAK-3.5 (weighted)	SN: 1249	20-Oct-22 (OCP-DAK3.5-1249_Oct22)	Oct-23
OCP DAK-12	SN: 1016	20-Oct-22 (OCP-DAK12-1016_Oct22)	Oct-23
Reference 20 dB Attenuator	SN: CC2552 (20x)	30-Mar-23 (No. 217-03809)	Mar-24
DAE4	SN: 660	16-Mar-23 (No. DAE4-660_Mar23)	Mar-24
Reference Probe ES3DV2	SN: 3013	06-Jan-23 (No. ES3-3013_Jan23)	Jan-24

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-22)	In house check: Jun-24
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by	Aidonia Georgiadou	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: September 13, 2023

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

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

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

Accreditation No.: SCS 0108

Glossary

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

Parameters of Probe: EX3DV4 - SN:7761

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc ($k = 2$)
Norm ($\mu V/(V/m)^2$) [A]	0.62	0.61	0.68	±10.1%
DCP (mV) [B]	107.9	109.9	108.1	±4.7%

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Max Unc[E] $k = 2$
0	CW	X	0.00	0.00	1.00	0.00	123.8	±1.6%	±4.7%
		Y	0.00	0.00	1.00		131.7		
		Z	0.00	0.00	1.00		128.2		
10352	Pulse Waveform (200Hz, 10%)	X	1.49	60.35	6.07	10.00	60.0	±3.4%	±9.6%
		Y	1.50	60.00	5.95		60.0		
		Z	1.45	60.35	6.39		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	20.00	74.00	9.00	6.99	80.0	±2.7%	±9.6%
		Y	1.02	60.00	5.06		80.0		
		Z	0.81	60.00	5.05		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.20	143.63	0.15	3.98	95.0	±3.1%	±9.6%
		Y	0.68	60.00	4.06		95.0		
		Z	0.09	132.31	0.06		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	6.92	159.98	12.10	2.22	120.0	±1.9%	±9.6%
		Y	15.04	148.39	0.01		120.0		
		Z	5.85	159.99	13.73		120.0		
10387	QPSK Waveform, 1 MHz	X	0.50	62.19	10.27	1.00	150.0	±5.0%	±9.6%
		Y	0.42	60.73	9.99		150.0		
		Z	0.52	61.86	10.36		150.0		
10388	QPSK Waveform, 10 MHz	X	1.23	64.29	12.69	0.00	150.0	±1.2%	±9.6%
		Y	1.26	65.10	13.06		150.0		
		Z	1.24	63.98	12.77		150.0		
10396	64-QAM Waveform, 100 kHz	X	1.83	66.04	16.68	3.01	150.0	±0.9%	±9.6%
		Y	1.79	65.41	16.18		150.0		
		Z	1.67	64.09	15.79		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.73	65.63	14.50	0.00	150.0	±3.0%	±9.6%
		Y	2.78	66.19	14.75		150.0		
		Z	2.73	65.32	14.44		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.76	65.43	14.84	0.00	150.0	±5.1%	±9.6%
		Y	3.77	65.93	15.00		150.0		
		Z	3.96	65.90	15.17		150.0		

Note: For details on UID parameters see Appendix

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Linearization 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.

Parameters of Probe: EX3DV4 - SN:7761

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms\,V^{-2}$	T2 $ms\,V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
x	10.9	78.78	33.07	3.82	0.00	4.93	0.65	0.00	1.01
y	9.8	68.53	31.49	10.46	0.00	4.90	0.73	0.00	1.01
z	11.9	86.75	33.70	3.52	0.00	4.96	0.00	0.10	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	27.6°
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.

Parameters of Probe: EX3DV4 - SN:7761

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 ($k = 2$)
450	43.5	0.87	10.32	10.32	10.32	0.16	1.30	±13.3%
750	41.9	0.89	9.48	9.03	9.03	0.41	1.27	±12.0%
835	41.5	0.90	9.30	8.98	8.83	0.39	1.27	±12.0%
900	41.5	0.97	9.06	8.36	8.53	0.38	1.27	±12.0%
1750	40.1	1.37	8.46	8.26	8.16	0.28	1.27	±12.0%
1900	40.0	1.40	8.39	8.14	8.04	0.30	1.27	±12.0%
2100	39.8	1.49	8.16	7.89	7.80	0.31	1.27	±12.0%
2300	39.5	1.67	8.00	7.77	7.66	0.32	1.27	±12.0%
2450	39.2	1.80	7.55	7.31	7.22	0.31	1.27	±12.0%
2600	39.0	1.96	7.50	7.28	7.20	0.30	1.27	±12.0%
3300	38.2	2.71	7.00	6.80	6.69	0.36	1.27	±14.0%
3500	37.9	2.91	6.99	6.77	6.68	0.35	1.27	±14.0%
3700	37.7	3.12	6.83	6.62	6.53	0.36	1.27	±14.0%
3900	37.5	3.32	6.54	6.36	6.30	0.37	1.27	±14.0%
4100	37.2	3.53	6.42	6.22	6.18	0.37	1.27	±14.0%
4200	37.1	3.63	6.41	6.21	6.16	0.38	1.27	±14.0%
4400	36.9	3.84	6.34	6.13	6.09	0.39	1.27	±14.0%
4600	36.7	4.04	6.26	6.05	6.01	0.40	1.27	±14.0%
4800	36.4	4.25	6.25	6.04	6.00	0.38	1.27	±14.0%
4950	36.3	4.40	6.01	5.76	5.74	0.41	1.36	±14.0%
5250	35.9	4.71	5.57	5.50	5.46	0.37	1.53	±14.0%
5600	35.5	5.07	4.84	4.73	4.74	0.36	1.75	±14.0%
5750	35.4	5.22	5.10	4.88	4.91	0.35	1.84	±14.0%

[C] Frequency validity above 300 MHz of ±100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ±50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4–9 MHz, and ConvF assessed at 13 MHz is 9–19 MHz. Above 5 GHz frequency validity can be extended to ±110 MHz.
[F] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% are used, the calibration uncertainties are 11.1% for 0.7 - 3 GHz and 13.1% for 3 - 6 GHz.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz and below ±2% for frequencies between 3–6 GHz at any distance larger than half the probe tip diameter from the boundary.

Parameters of Probe: EX3DV4 - SN:7761

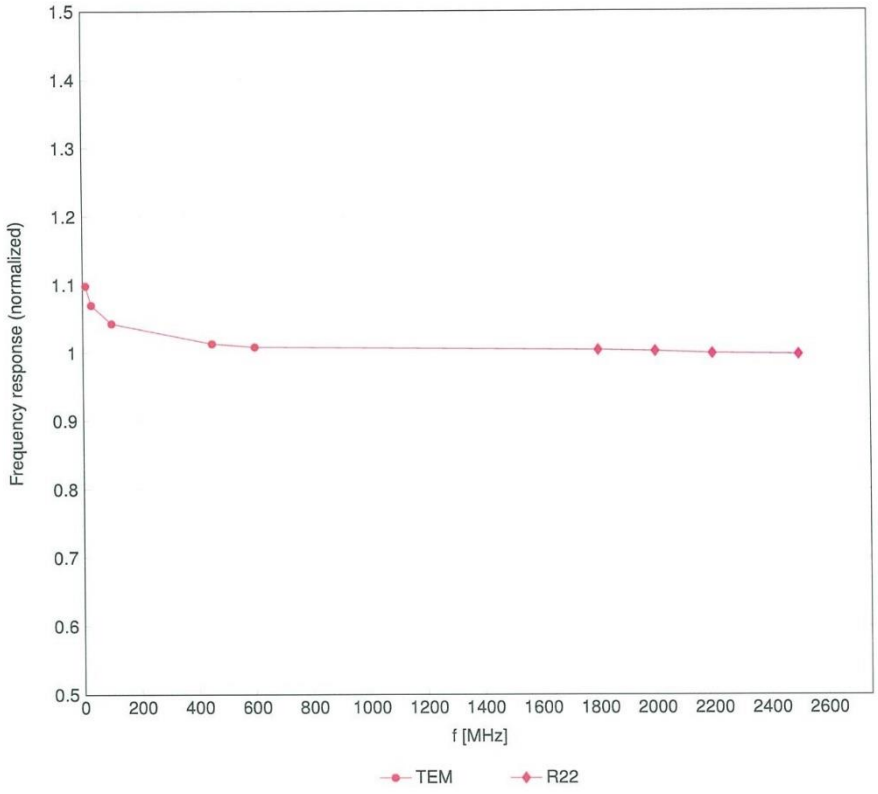
Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k = 2$)
6500	34.5	6.07	5.35	5.08	5.06	0.20	2.00	±18.6%

[C] Frequency validity at 6.5 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] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3–6 GHz; and below ±4% for frequencies between 6–10 GHz at any distance larger than half the probe tip diameter from the boundary.

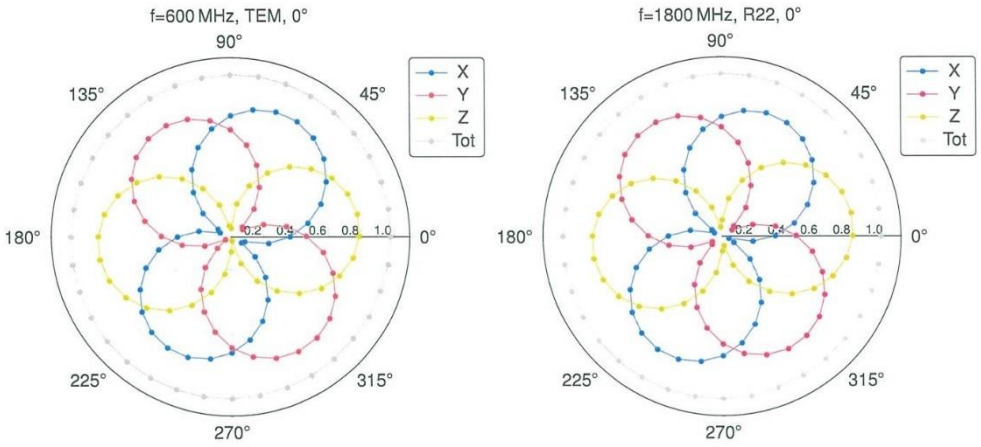
Frequency Response of E-Field

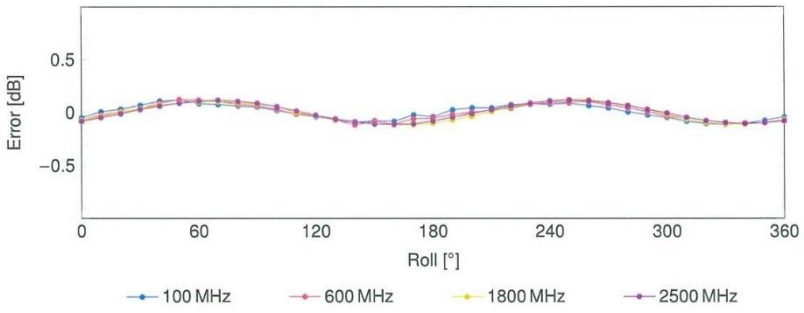
(TEM-Cell:ifi110 EXX, Waveguide:R22)



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

Receiving Pattern (ϕ), $\vartheta = 0°$

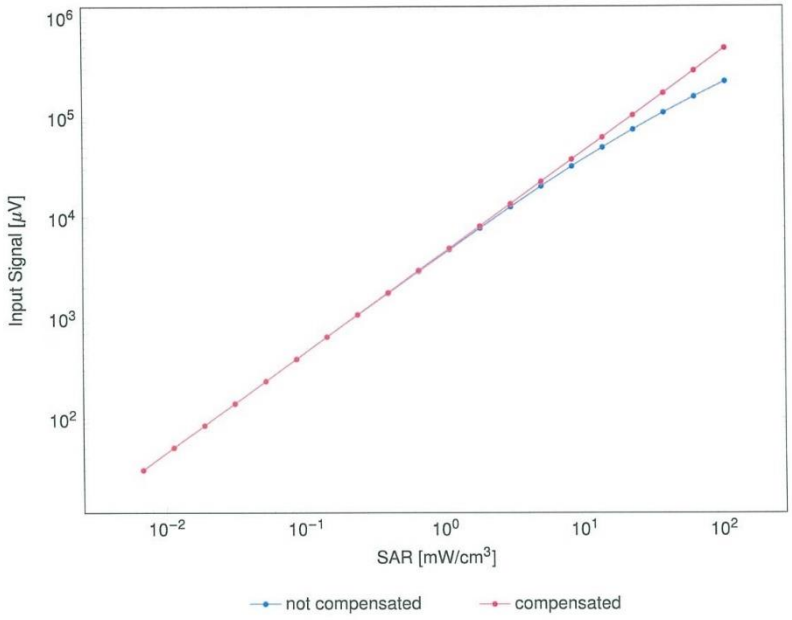


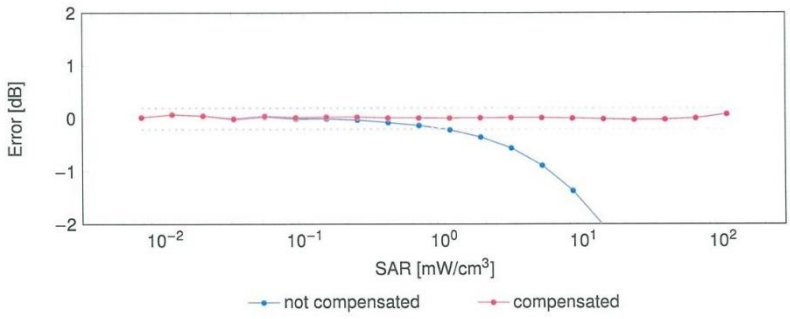


Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)

Dynamic Range f(SAR_{head})

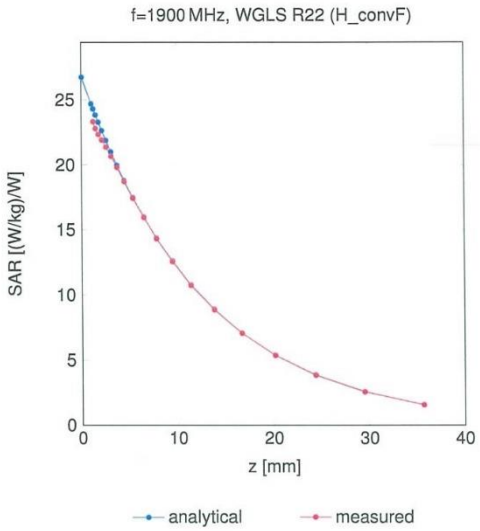
(TEM cell, f_{eval} = 1900 MHz)





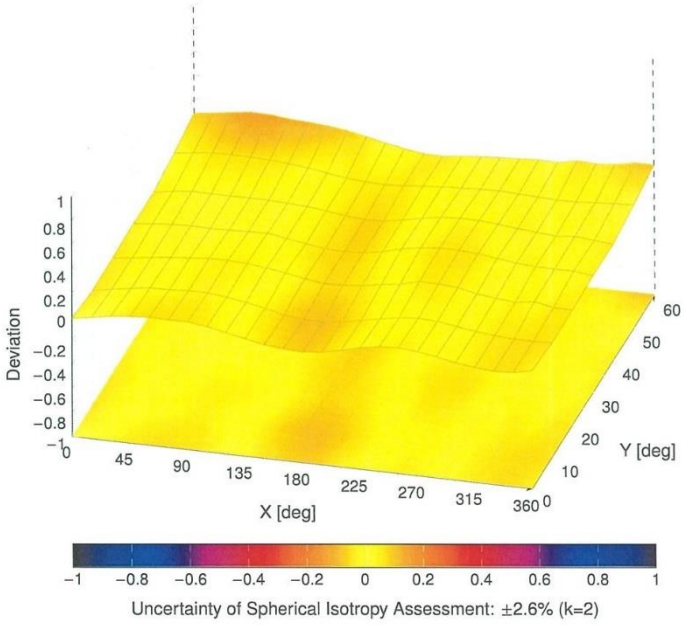
Uncertainty of Linearity Assessment: ±0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ,θ), f = 900 MHz



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

Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
0		CW	CW	0.00	±4.7
10010	CAB	SAR Validation (Square, 100 ms, 10 ms)	Test	10.00	±9.6
10011	CAC	UMTS-FDD (WCDMA)	WCDMA	2.91	±9.6
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	±9.6
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	±9.6
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	±9.6
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	±9.6
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	±9.6
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	±9.6
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	±9.6
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	±9.6
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	±9.6
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	±9.6
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	±9.6
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	±9.6
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	±9.6
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	±9.6
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	±9.6
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	±9.6
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	±9.6
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	±9.6
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	±9.6
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	±9.6
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	±9.6
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	±9.6
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	±9.6
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6
10062	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	±9.6
10063	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	±9.6
10064	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	±9.6
10065	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6
10066	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	±9.6
10067	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6
10068	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	±9.6
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	±9.6
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	±9.6
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	±9.6
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	±9.6
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	±9.6
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	±9.6
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	±9.6
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	±9.6
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	±9.6
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	±9.6
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	±9.6
10097	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6
10098	CAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6
10100	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	±9.6
10101	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10102	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10103	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6
10104	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	±9.6
10105	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6
10108	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	±9.6
10109	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10110	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6
10111	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10112	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6
10113	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-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	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10141	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6
10142	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10143	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6
10144	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6
10145	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	±9.6
10146	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	±9.6
10147	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6
10149	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10151	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6
10152	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10153	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6
10154	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6
10155	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10156	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	±9.6
10157	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10158	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6
10159	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6
10160	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	±9.6
10161	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10162	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	±9.6
10166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	±9.6
10167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	±9.6
10168	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.6
10169	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	±9.6
10170	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10171	AAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	±9.6
10172	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	±9.6
10173	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10174	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10175	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6
10176	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10177	CAJ	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6
10178	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10179	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10180	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10181	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	±9.6
10182	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10183	AAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10184	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10185	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6
10186	AAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	±9.6
10188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10189	AAG	LTE-FDD (SC-FDMA, 1 RB, 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
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

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k = 2$
10225	CAC	UMTS-FDD (HSPA+)	WCDMA	5.97	±9.6
10226	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6
10227	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6
10228	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6
10229	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10230	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10231	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	±9.6
10232	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10233	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10234	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6
10235	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10236	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10237	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6
10238	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10239	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10240	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6
10241	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6
10242	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6
10243	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	±9.6
10244	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10245	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6
10246	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6
10247	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6
10248	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6
10249	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6
10250	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6
10251	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6
10252	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	±9.6
10253	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	±9.6
10254	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	±9.6
10255	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	±9.6
10256	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	±9.6
10257	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	±9.6
10258	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	±9.6
10259	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	±9.6
10260	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	±9.6
10261	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	±9.6
10262	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	±9.6
10263	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	±9.6
10264	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	±9.6
10265	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10266	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	±9.6
10267	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	±9.6
10268	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10269	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	±9.6
10270	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	±9.6
10274	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	±9.6
10275	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	±9.6
10277	CAA	PHS (QPSK)	PHS	11.81	±9.6
10278	CAA	PHS (QPSK, BW 884 MHz, Rolloff 0.5)	PHS	11.81	±9.6
10279	CAA	PHS (QPSK, BW 884 MHz, Rolloff 0.38)	PHS	12.18	±9.6
10290	AAB	CDMA2000, RC1, SO55, 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	AAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	±9.6
10298	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	±9.6
10299	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	±9.6
10300	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10301	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC)	WiMAX	12.03	±9.6
10302	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	±9.6
10303	AAA	IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	12.52	±9.6
10304	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	11.86	±9.6
10305	AAA	IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	±9.6
10306	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10307	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols)	WiMAX	14.49	±9.6
10308	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, PUSC)	WiMAX	14.46	±9.6
10309	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, AMC 2x3, 18 symbols)	WiMAX	14.58	±9.6
10310	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	±9.6
10311	AAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	±9.6
10313	AAA	iDEN 1:3	iDEN	10.51	±9.6
10314	AAA	iDEN 1:6	iDEN	13.48	±9.6
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc duty cycle)	WLAN	1.71	±9.6
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6
10317	AAD	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	±9.6
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	±9.6
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	±9.6
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	±9.6
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	±9.6
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	±9.6
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	±9.6
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	±9.6
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	±9.6
10400	AAE	IEEE 802.11ac WiFi (20 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	±9.6
10401	AAE	IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	±9.6
10402	AAE	IEEE 802.11ac WiFi (80 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.53	±9.6
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	±9.6
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	±9.6
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	±9.6
10410	AAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	±9.6
10414	AAA	WLAN CCDF, 64-QAM, 40 MHz	Generic	8.54	±9.6
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	±9.6
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10417	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	±9.6
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	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	AAE	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	±9.6
10431	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	±9.6
10432	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
10433	AAD	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
10434	AAB	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	±9.6
10435	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10447	AAE	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	±9.6
10448	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	±9.6
10449	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	±9.6
10450	AAD	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	±9.6
10451	AAB	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	±9.6
10453	AAE	Validation (Square, 10 ms, 1 ms)	Test	10.00	±9.6
10456	AAC	IEEE 802.11ac WiFi (160 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	±9.6
10457	AAB	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	±9.6
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	±9.6
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	±9.6
10460	AAB	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	±9.6
10461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	±9.6
10463	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6
10464	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10465	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10466	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10467	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10468	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10469	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6
10470	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10471	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6

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10472	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10473	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10474	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10475	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10477	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10478	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10479	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10480	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	±9.6
10481	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10482	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	±9.6
10483	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	±9.6
10484	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	±9.6
10485	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	±9.6
10486	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6
10487	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	±9.6
10488	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±9.6
10489	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6
10490	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	±9.6
10493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10494	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10495	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	±9.6
10496	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10497	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6
10498	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	±9.6
10499	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.68	±9.6
10500	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6
10501	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	±9.6
10502	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	±9.6
10503	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6
10504	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6
10505	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10506	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10507	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.36	±9.6
10508	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10509	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	±9.6
10510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	±9.6
10511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6
10512	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10513	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	±9.6
10514	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	±9.6
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6
10518	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10519	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	±9.6
10520	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	±9.6
10521	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	±9.6
10522	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6
10523	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	±9.6
10524	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	±9.6
10525	AAC	IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle)	WLAN	8.36	±9.6
10526	AAC	IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle)	WLAN	8.42	±9.6
10527	AAC	IEEE 802.11ac WiFi (20 MHz, MCS2, 99pc duty cycle)	WLAN	8.21	±9.6
10528	AAC	IEEE 802.11ac WiFi (20 MHz, MCS3, 99pc duty cycle)	WLAN	8.36	±9.6
10529	AAC	IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc duty cycle)	WLAN	8.36	±9.6
10531	AAC	IEEE 802.11ac WiFi (20 MHz, MCS6, 99pc duty cycle)	WLAN	8.43	±9.6
10532	AAC	IEEE 802.11ac WiFi (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
10533	AAC	IEEE 802.11ac WiFi (20 MHz, MCS8, 99pc duty cycle)	WLAN	8.38	±9.6
10534	AAC	IEEE 802.11ac WiFi (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.45	±9.6
10535	AAC	IEEE 802.11ac WiFi (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6
10536	AAC	IEEE 802.11ac WiFi (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6
10537	AAC	IEEE 802.11ac WiFi (40 MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6
10538	AAC	IEEE 802.11ac WiFi (40 MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6
10540	AAC	IEEE 802.11ac WiFi (40 MHz, MCS6, 99pc duty cycle)	WLAN	8.39	±9.6

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10541	AAC	IEEE 802.11ac WiFi (40 MHz, MCS7, 99pc duty cycle)	WLAN	8.46	±9.6
10542	AAC	IEEE 802.11ac WiFi (40 MHz, MCS8, 99pc duty cycle)	WLAN	8.65	±9.6
10543	AAC	IEEE 802.11ac WiFi (40 MHz, MCS9, 99pc duty cycle)	WLAN	8.65	±9.6
10544	AAC	IEEE 802.11ac WiFi (80 MHz, MCS0, 99pc duty cycle)	WLAN	8.47	±9.6
10545	AAC	IEEE 802.11ac WiFi (80 MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6
10546	AAC	IEEE 802.11ac WiFi (80 MHz, MCS2, 99pc duty cycle)	WLAN	8.35	±9.6
10547	AAC	IEEE 802.11ac WiFi (80 MHz, MCS3, 99pc duty cycle)	WLAN	8.49	±9.6
10548	AAC	IEEE 802.11ac WiFi (80 MHz, MCS4, 99pc duty cycle)	WLAN	8.37	±9.6
10550	AAC	IEEE 802.11ac WiFi (80 MHz, MCS6, 99pc duty cycle)	WLAN	8.38	±9.6
10551	AAC	IEEE 802.11ac WiFi (80 MHz, MCS7, 99pc duty cycle)	WLAN	8.50	±9.6
10552	AAC	IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle)	WLAN	8.42	±9.6
10553	AAC	IEEE 802.11ac WiFi (80 MHz, MCS9, 99pc duty cycle)	WLAN	8.45	±9.6
10554	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle)	WLAN	8.48	±9.6
10555	AAD	IEEE 802.11ac WiFi (160 MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6
10556	AAD	IEEE 802.11ac WiFi (160 MHz, MCS2, 99pc duty cycle)	WLAN	8.50	±9.6
10557	AAD	IEEE 802.11ac WiFi (160 MHz, MCS3, 99pc duty cycle)	WLAN	8.52	±9.6
10558	AAD	IEEE 802.11ac WiFi (160 MHz, MCS4, 99pc duty cycle)	WLAN	8.61	±9.6
10560	AAD	IEEE 802.11ac WiFi (160 MHz, MCS6, 99pc duty cycle)	WLAN	8.73	±9.6
10561	AAD	IEEE 802.11ac WiFi (160 MHz, MCS7, 99pc duty cycle)	WLAN	8.56	±9.6
10562	AAD	IEEE 802.11ac WiFi (160 MHz, MCS8, 99pc duty cycle)	WLAN	8.69	±9.6
10563	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 99pc duty cycle)	WLAN	8.77	±9.6
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.25	±9.6
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.13	±9.6
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	±9.6
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.37	±9.6
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.10	±9.6
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.30	±9.6
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	±9.6
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	±9.6
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	±9.6
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	±9.6
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6
10583	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	±9.6
10584	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	±9.6
10585	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc duty cycle)	WLAN	8.70	±9.6
10586	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.49	±9.6
10587	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	±9.6
10588	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	±9.6
10589	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±9.6
10590	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6
10591	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 90pc duty cycle)	WLAN	8.63	±9.6
10592	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6
10593	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 90pc duty cycle)	WLAN	8.64	±9.6
10594	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6
10595	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 90pc duty cycle)	WLAN	8.74	±9.6
10596	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 90pc duty cycle)	WLAN	8.71	±9.6
10597	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6
10598	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc duty cycle)	WLAN	8.50	±9.6
10599	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 90pc duty cycle)	WLAN	8.79	±9.6
10600	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6
10601	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6
10602	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc duty cycle)	WLAN	8.94	±9.6
10603	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 90pc duty cycle)	WLAN	9.03	±9.6
10604	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 90pc duty cycle)	WLAN	8.76	±9.6
10605	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 90pc duty cycle)	WLAN	8.97	±9.6
10606	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6
10607	AAC	IEEE 802.11ac WiFi (20 MHz, MCS0, 90pc duty cycle)	WLAN	8.64	±9.6
10608	AAC	IEEE 802.11ac WiFi (20 MHz, MCS1, 90pc duty cycle)	WLAN	8.77	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10609	AAC	IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)	WLAN	8.57	±9.6
10610	AAC	IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle)	WLAN	8.78	±9.6
10611	AAC	IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.6
10612	AAC	IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6
10613	AAC	IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.6
10614	AAC	IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±9.6
10615	AAC	IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
10616	AAC	IEEE 802.11ac WiFi (40 MHz, MCS0, 90pc duty cycle)	WLAN	8.82	±9.6
10617	AAC	IEEE 802.11ac WiFi (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.81	±9.6
10618	AAC	IEEE 802.11ac WiFi (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6
10619	AAC	IEEE 802.11ac WiFi (40 MHz, MCS3, 90pc duty cycle)	WLAN	8.86	±9.6
10620	AAC	IEEE 802.11ac WiFi (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.87	±9.6
10621	AAC	IEEE 802.11ac WiFi (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6
10622	AAC	IEEE 802.11ac WiFi (40 MHz, MCS6, 90pc duty cycle)	WLAN	8.68	±9.6
10623	AAC	IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±9.6
10624	AAC	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.96	±9.6
10625	AAC	IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±9.6
10626	AAC	IEEE 802.11ac WiFi (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6
10627	AAC	IEEE 802.11ac WiFi (80 MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6
10628	AAC	IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle)	WLAN	8.71	±9.6
10629	AAC	IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6
10630	AAC	IEEE 802.11ac WiFi (80 MHz, MCS4, 90pc duty cycle)	WLAN	8.72	±9.6
10631	AAC	IEEE 802.11ac WiFi (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6
10632	AAC	IEEE 802.11ac WiFi (80 MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6
10633	AAC	IEEE 802.11ac WiFi (80 MHz, MCS7, 90pc duty cycle)	WLAN	8.83	±9.6
10634	AAC	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±9.6
10635	AAC	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6
10636	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6
10637	AAD	IEEE 802.11ac WiFi (160 MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6
10638	AAD	IEEE 802.11ac WiFi (160 MHz, MCS2, 90pc duty cycle)	WLAN	8.86	±9.6
10639	AAD	IEEE 802.11ac WiFi (160 MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6
10640	AAD	IEEE 802.11ac WiFi (160 MHz, MCS4, 90pc duty cycle)	WLAN	8.98	±9.6
10641	AAD	IEEE 802.11ac WiFi (160 MHz, MCS5, 90pc duty cycle)	WLAN	9.06	±9.6
10642	AAD	IEEE 802.11ac WiFi (160 MHz, MCS6, 90pc duty cycle)	WLAN	9.06	±9.6
10643	AAD	IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±9.6
10644	AAD	IEEE 802.11ac WiFi (160 MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.6
10645	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.11	±9.6
10646	AAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6
10647	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,7)	LTE-TDD	11.96	±9.6
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	±9.6
10652	AAF	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±9.6
10653	AAF	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	±9.6
10654	AAE	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	±9.6
10655	AAF	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	±9.6
10658	AAB	Pulse Waveform (200Hz, 10%)	Test	10.00	±9.6
10659	AAB	Pulse Waveform (200Hz, 20%)	Test	6.99	±9.6
10660	AAB	Pulse Waveform (200Hz, 40%)	Test	3.98	±9.6
10661	AAB	Pulse Waveform (200Hz, 60%)	Test	2.22	±9.6
10662	AAB	Pulse Waveform (200Hz, 80%)	Test	0.97	±9.6
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	±9.6
10671	AAC	IEEE 802.11ax (20 MHz, MCS0, 90pc duty cycle)	WLAN	9.09	±9.6
10672	AAC	IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle)	WLAN	8.57	±9.6
10673	AAC	IEEE 802.11ax (20 MHz, MCS2, 90pc duty cycle)	WLAN	8.78	±9.6
10674	AAC	IEEE 802.11ax (20 MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±9.6
10675	AAC	IEEE 802.11ax (20 MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±9.6
10676	AAC	IEEE 802.11ax (20 MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6
10677	AAC	IEEE 802.11ax (20 MHz, MCS6, 90pc duty cycle)	WLAN	8.73	±9.6
10678	AAC	IEEE 802.11ax (20 MHz, MCS7, 90pc duty cycle)	WLAN	8.78	±9.6
10679	AAC	IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±9.6
10680	AAC	IEEE 802.11ax (20 MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±9.6
10681	AAC	IEEE 802.11ax (20 MHz, MCS10, 90pc duty cycle)	WLAN	8.62	±9.6
10682	AAC	IEEE 802.11ax (20 MHz, MCS11, 90pc duty cycle)	WLAN	8.83	±9.6
10683	AAC	IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6
10684	AAC	IEEE 802.11ax (20 MHz, MCS1, 99pc duty cycle)	WLAN	8.26	±9.6
10685	AAC	IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6
10686	AAC	IEEE 802.11ax (20 MHz, MCS3, 99pc duty cycle)	WLAN	8.28	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10687	AAC	IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)	WLAN	8.45	±9.6
10688	AAC	IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)	WLAN	8.29	±9.6
10689	AAC	IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle)	WLAN	8.55	±9.6
10690	AAC	IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
10691	AAC	IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)	WLAN	8.25	±9.6
10692	AAC	IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)	WLAN	8.29	±9.6
10693	AAC	IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.6
10694	AAC	IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle)	WLAN	8.57	±9.6
10695	AAC	IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle)	WLAN	8.78	±9.6
10696	AAC	IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.91	±9.6
10697	AAC	IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.61	±9.6
10698	AAC	IEEE 802.11ax (40 MHz, MCS3, 90pc duty cycle)	WLAN	8.89	±9.6
10699	AAC	IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.82	±9.6
10700	AAC	IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.73	±9.6
10701	AAC	IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle)	WLAN	8.86	±9.6
10702	AAC	IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle)	WLAN	8.70	±9.6
10703	AAC	IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
10704	AAC	IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.6
10705	AAC	IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.6
10706	AAC	IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle)	WLAN	8.66	±9.6
10707	AAC	IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.32	±9.6
10708	AAC	IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6
10709	AAC	IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.6
10710	AAC	IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle)	WLAN	8.29	±9.6
10711	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN	8.39	±9.6
10712	AAC	IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)	WLAN	8.67	±9.6
10713	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	8.33	±9.6
10714	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	8.26	±9.6
10715	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	8.45	±9.6
10716	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.6
10717	AAC	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	8.48	±9.6
10718	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	8.24	±9.6
10719	AAC	IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9.6
10720	AAC	IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle)	WLAN	8.87	±9.6
10721	AAC	IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)	WLAN	8.76	±9.6
10722	AAC	IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.55	±9.6
10723	AAC	IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.6
10724	AAC	IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.90	±9.6
10725	AAC	IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.6
10726	AAC	IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle)	WLAN	8.72	±9.6
10727	AAC	IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.66	±9.6
10728	AAC	IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.6
10729	AAC	IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle)	WLAN	8.64	±9.6
10730	AAC	IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle)	WLAN	8.67	±9.6
10731	AAC	IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.6
10732	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	8.46	±9.6
10733	AAC	IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)	WLAN	8.40	±9.6
10734	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)	WLAN	8.25	±9.6
10735	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.6
10736	AAC	IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)	WLAN	8.27	±9.6
10737	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6
10738	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)	WLAN	8.42	±9.6
10739	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)	WLAN	8.29	±9.6
10740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	8.48	±9.6
10741	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle)	WLAN	8.40	±9.6
10742	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle)	WLAN	8.43	±9.6
10743	AAC	IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle)	WLAN	8.94	±9.6
10744	AAC	IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle)	WLAN	9.16	±9.6
10745	AAC	IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle)	WLAN	8.93	±9.6
10746	AAC	IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle)	WLAN	9.11	±9.6
10747	AAC	IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.6
10748	AAC	IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle)	WLAN	8.93	±9.6
10749	AAC	IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle)	WLAN	8.90	±9.6
10750	AAC	IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.6
10751	AAC	IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
10752	AAC	IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.6

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10753	AAC	IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±9.6
10754	AAC	IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle)	WLAN	8.94	±9.6
10755	AAC	IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle)	WLAN	8.64	±9.6
10756	AAC	IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle)	WLAN	8.77	±9.6
10757	AAC	IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle)	WLAN	8.77	±9.6
10758	AAC	IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)	WLAN	8.69	±9.6
10759	AAC	IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)	WLAN	8.58	±9.6
10760	AAC	IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle)	WLAN	8.49	±9.6
10761	AAC	IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6
10762	AAC	IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle)	WLAN	8.49	±9.6
10763	AAC	IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle)	WLAN	8.53	±9.6
10764	AAC	IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle)	WLAN	8.54	±9.6
10765	AAC	IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle)	WLAN	8.54	±9.6
10766	AAC	IEEE 802.11ax (160 MHz, MCS11, 99pc duty cycle)	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, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
10770	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	±9.6
10771	AAD	5G NR (CP-OFDM, 1 RB, 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	±9.6
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.6
10778	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	±9.6
10779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	±9.6
10780	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	±9.6
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
10783	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	±9.6
10784	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	±9.6
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
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	±9.6
10789	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	±9.6
10790	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	±9.6
10791	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	±9.6
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
10796	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	±9.6
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
10799	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±9.6
10801	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	±9.6
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
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	±9.6
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10810	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±9.6
10817	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
10821	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6
10823	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% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±9.6
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	±9.6
10828	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	±9.6
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	±9.6
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	±9.6
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	±9.6
10833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
10834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	±9.6
10835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
10836	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	±9.6
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	±9.6
10844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
10846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
10854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6
10856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	±9.6
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	±9.6
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	±9.6
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
10861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	±9.6
10863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	±9.6
10864	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-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
10868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	±9.6
10869	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10870	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	±9.6
10871	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10872	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	±9.6
10873	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6
10874	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
10875	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6
10876	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	±9.6
10877	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	±9.6
10878	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6
10879	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±9.6
10880	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	±9.6
10881	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10882	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	±9.6
10883	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	±9.6
10884	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	±9.6
10885	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	±9.6
10886	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
10887	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6
10888	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±9.6
10889	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	±9.6
10890	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	±9.6
10891	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	±9.6
10892	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6
10897	AAC	5G NR (DFT-s-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
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
10901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
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
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
10906	AAB	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
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-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	±9.6
10910	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6

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10911	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	±9.6
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% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10914	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	±9.6
10915	AAB	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6
10916	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% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	±9.6
10918	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	±9.6
10919	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	±9.6
10920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	±9.6
10921	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±9.6
10923	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10924	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10925	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	±9.6
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% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	±9.6
10928	AAC	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.6
10929	AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.6
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
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
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
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	±9.6
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.6
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	±9.6
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
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
10949	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	±9.6
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
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	±9.6
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	±9.6
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	±9.6
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 DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	±9.6
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	±9.6
10960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	±9.6
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	±9.6
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	±9.6
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	±9.6
10964	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
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	±9.6
10967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	±9.6
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	±9.6
10972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	±9.6
10973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	±9.6
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	±9.6
10978	AAA	ULLA BDR	ULLA	1.16	±9.6
10979	AAA	ULLA HDR4	ULLA	8.58	±9.6
10980	AAA	ULLA HDR8	ULLA	10.32	±9.6
10981	AAA	ULLA HDRp4	ULLA	3.19	±9.6
10982	AAA	ULLA HDRp8	ULLA	3.43	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc[E] $k=2$
10983	AAA	5G 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 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
11003	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	10.24	±9.6
11004	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	10.73	±9.6
11005	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.70	±9.6
11006	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.55	±9.6
11007	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.46	±9.6
11008	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.51	±9.6
11009	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.76	±9.6
11010	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.95	±9.6
11011	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.96	±9.6
11012	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.68	±9.6
11013	AAA	IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6
11014	AAA	IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle)	WLAN	8.45	±9.6
11015	AAA	IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6
11016	AAA	IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)	WLAN	8.44	±9.6
11017	AAA	IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle)	WLAN	8.41	±9.6
11018	AAA	IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle)	WLAN	8.40	±9.6
11019	AAA	IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
11020	AAA	IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)	WLAN	8.27	±9.6
11021	AAA	IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)	WLAN	8.46	±9.6
11022	AAA	IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)	WLAN	8.36	±9.6
11023	AAA	IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle)	WLAN	8.09	±9.6
11024	AAA	IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)	WLAN	8.42	±9.6
11025	AAA	IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)	WLAN	8.37	±9.6
11026	AAA	IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle)	WLAN	8.39	±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.

Appendix D. Dipole Calibration Data

In Collaboration with TTL speag CALIBRATION LABORATORY
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Client Dekra-CN Certificate No: Z22-60089

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 839
Calibration Procedure(s)	FF-Z11-003-01 Calibration Procedures for dipole validation kits
Calibration date:	April 1, 2022

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Reference Probe EX3DV4	SN 7307	26-May-21(SPEAG,No.EX3-7307_May21)	May-22
DAE4	SN 1556	12-Jan-22(CTTL-SPEAG,No.Z22-60007)	Jan-23
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
Signal Generator E4438C	MY49071430	13-Jan-22 (CTTL, No. J22X00409)	Jan-23
Network Analyzer E5071C	MY46110673	14-Jan-22 (CTTL, No.J22X00406)	Jan-23

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: April 6, 2022

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORMx,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-mounted 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) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

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Measurement Conditions

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

DASY Version	DASY52	52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
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	39.5 ± 6 %	1.79 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**52.6 W/kg ± 18.8 % (*k*=2)**
SAR averaged over 10 cm^3 (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	6.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.3 W/kg ± 18.7 % (*k*=2)**

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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.0Ω+ 3.60jΩ
Return Loss	- 25.7dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.067 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feed-point 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 feed-point may be damaged.

Additional EUT Data

Manufactured by	SPEAG

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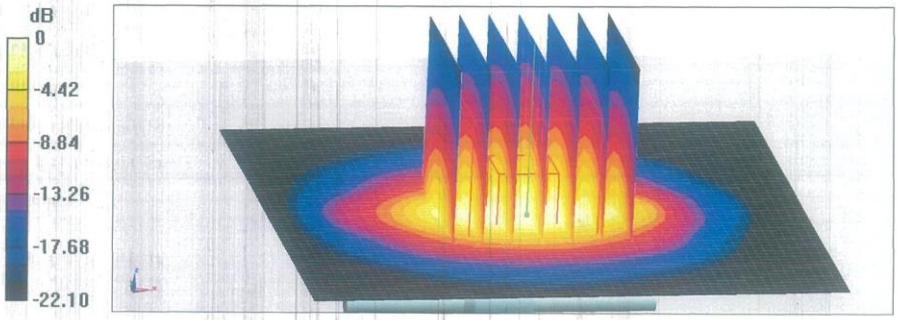
DASY5 Validation Report for Head TSL Date: 2022-04-01
Test Laboratory: CTTL, Beijing, China
DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 839
Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.79 S/m; ε_r = 39.52; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)
DASY5 Configuration:

- Probe: EX3DV4 - SN7307; ConvF(7.75, 7.75, 7.75) @ 2450 MHz; Calibrated: 2021-05-26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2022-01-12
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 106.0 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 26.6 W/kg
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.05 W/kg
Smallest distance from peaks to all points 3 dB below = 9 mm
Ratio of SAR at M2 to SAR at M1 = 49.3%
Maximum value of SAR (measured) = 21.7 W/kg



0 dB = 21.7 W/kg = 13.36 dBW/kg

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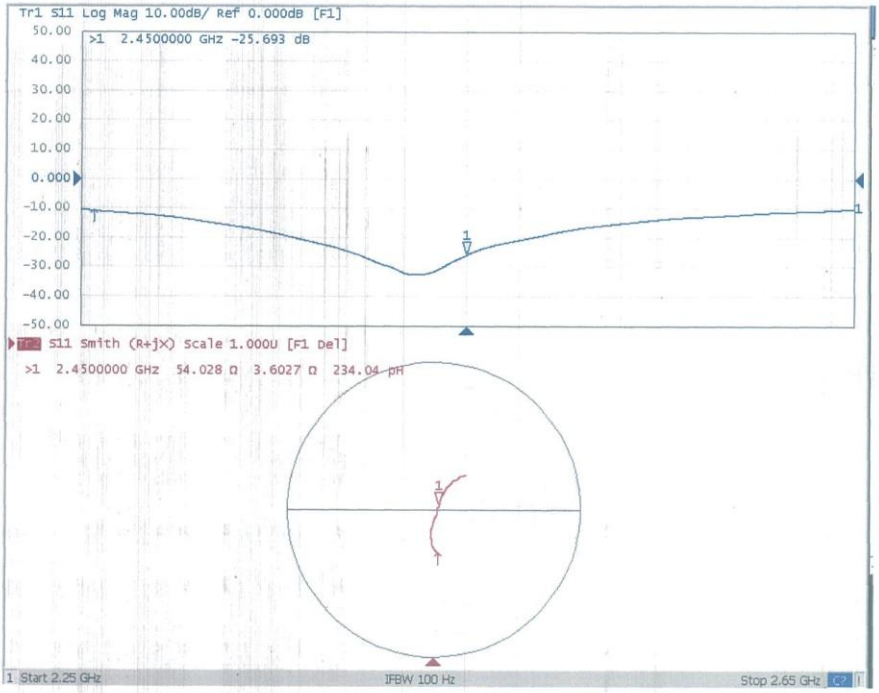
Impedance Measurement Plot for Head TSL



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CNAS 中国认可 国际互认 校准 CALIBRATION CNAS L0570

CAICT

Client Dekra-CN Certificate No: Z22-60092

CALIBRATION CERTIFICATE

Object D5GHzV2 - SN: 1078

Calibration Procedure(s) FF-Z11-003-01
Calibration Procedures for dipole validation kits

Calibration date: March 28, 2022

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
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DAE4	SN 1556	12-Jan-22(CTTL-SPEAG,No.Z22-60007)	Jan-23
Secondary Standards	**ID #**	**Cal Date (Calibrated by, Certificate No.)**	**Scheduled Calibration**
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Network Analyzer E5071C	MY46110673	14-Jan-22 (CTTL, No.J22X00406)	Jan-23

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: April 3, 2022