TEST REPORT

Applicant:	Xiaomi Communications Co., Ltd.
Address:	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Equipment Type:	Mobile Phone
Model Name:	24115RA8EG
Brand Name:	Redmi
FCC ID:	2AFZZRA8E
Test Standard:	FCC 47 CFR Part 2.1093 (refer to section 3.1)
Maximum PD:	7.52 W/m^2
Sample Arrival Date:	Aug. 13, 2024
Test Date：	Sep. 16, 2024 - Oct. 08, 2024
Date of Issue:	Oct. 08, 2024

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Zhang Jiwei **Checked by:** Xu Rui **Approved by:** Tolan Tu

(Testing Director)

Zhang Jiwei _____ Xu Rui _____ Tolan Tu _____

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Sep. 26, 2024	Initial Issue
Rev. 02	Oct. 08, 2024	Supplement Section 9 PD testing and update test photos

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☐ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☑ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1196.

1.3 Test Environment Condition

Ambient Temperature	18℃ to 25℃
Ambient Relative Humidity	30% to 70%

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.2 Manufacturer Information

Manufacturer	Xiaomi Communications Co., Ltd.
Address	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

2.3 General Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Model Name Under Test	24115RA8EG
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	13510016U
Software Version	Xiaomi HyperOS 1.0
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A
EUT ID	S54
IMEI Number	S54: IMEI1:863541070055529, IMEI2:863541070055537

2.4 Ancillary Equipment

Please refer the document “BL-SZ2470686-AW EUT external photo.pdf”.

2.5 Technical Information

Network and Wireless connectivity	2G Network GSM/GPRS/EDGE 850/900/1800/1900 3G Network WCDMA/HSDPA/HSUPA Band 1/2/4/5/8 4G Network FDD LTE Band 1/2/3/4/5/7/8/12/13/17/20/26/28/32/66 TDD LTE Band 38/40/41/42/48 LTE CA Uplink (UL): CA_3C, CA_7C, CA_38C, CA_40C, CA_1A-3A, CA_1A-7A, CA_1A-8A, CA_1A-20A, CA_3A-7A, CA_3A-20A, CA_7A-20A, CA_7A-28A, CA_2A-4A, CA_4A-5A, CA_4A-7A LTE CA Downlink (DL): CA_20A-32A 5G Network SA: NR n1/n2/n3/n5/n7/n8/n12/n20/n26/n28/n38/n40/n41/n48/n66/n77/n78 NSA(EN-DC): DC_20A_n1A, DC_28A_n1A, DC_3A_n1A, DC_7A_n1A, DC_8A_n1A, DC_40A_n1A, DC_5A_n1A, DC_42A_n1A, DC_1A_n3A, DC_20A_n3A, DC_7A_n3A, DC_8A_n3A, DC_5A_n3A, DC_28A_n3A, DC_1A_n7A, DC_3A_n7A, DC_5A_n7A, DC_20A_n7A, DC_28A_n7A, DC_1A_n8A, DC_7A_n8A, DC_1A_n20A, DC_3A_n20A, DC_7A_n20A, DC_1A_n28A, DC_3A_n28A, DC_7A_n28A, DC_20A_n28A, DC_41A_n28A, DC_1A_n38A, DC_3A_n38A, DC_8A_n38A, DC_20A_n38A, DC_28A_n38A, DC_1A_n40A, DC_3A_n40A, DC_5A_n40A, DC_8A_n40A, DC_28A_n40A, DC_1A_n41A, DC_3A_n41A, DC_8A_n41A, DC_20A_n41A, DC_28A_n41A, DC_1A_n77A, DC_3A_n77A, DC_8A_n77A, DC_28A_n77A, DC_40A_n77A, DC_1A_n78A, DC_3A_n78A, DC_5A_n78A, DC_7A_n78A, DC_8A_n78A, DC_20A_n78A, DC_28A_n78A, DC_38A_n78A, DC_40A_n78A, DC_41A_n78A, DC_26A_n78A, DC_2A_n78A, DC_4A_n78A, DC_66A_n78A, DC_2A_n66A, DC_5A_n66A, DC_7A_n66A, DC_7A_n5A, DC_2A_n77A, DC_4A_n41A, DC_66A_n41, DC_66A_n38A, DC_4A_n38A, DC_4A_n7A, DC_66A_n7A Bluetooth (BR+EDR+BLE) WIFI 802.11a, 802.11b, 802.11g, 802.11n(HT20/40), 802.11ac(VHT20/40/80/160) and 802.11ax(HE20/40/80/160) GPS, GLONASS, Galileo, BDS, QZSS, NFC

The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	6G WIFI	
Frequency Range	802.11ax(HE20/HE40/HE80/HE160)	5925 MHz ~ 6425 MHz
		6425 MHz ~ 6525 MHz
		6525 MHz ~ 6875 MHz
		6875 MHz ~ 7125 MHz
Antenna Type	WIFI: PIFA Antenna	
Hotspot Function	N/A	
Exposure Category	General Population/Uncontrolled exposure	
Product Type	Portable Device	
EUT Type	☒ Production unit	☐ Identical prototype

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2.1093	Radio frequency radiation exposure evaluation: portable devices
2	ANSI C95.1-1992	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz
3	47 CFR Part 1.1310	Radiofrequency radiation exposure limits
4	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01
5	FCC KDB 865664 D02 v01r02	RF Exposure Reporting
6	KDB 248227 D01 v02r02	SAR Guidance for IEEE 802.11 (Wi-Fi) Transmitters
7	IEC TR 63170:2018	Measurement procedure for the evaluation of power density related to human exposure to radio frequency fields from wireless communication devices operating between 6 GHz and 100 GHz
8	IEC/IEEE 62209-1528:2020	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)
9	IEC/IEEE 63195-1:2022	Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz)-Part 1: Measurement procedure

3.2 Device Category and SAR Limit

This device belongs to portable device category because its radiating structure is allowed to be used within 20 centimeters of the body of the user.

Limit for General Population/Uncontrolled exposure should be applied for this device, it is power density for frequencies between 1.5GHz and 100 GHz is 1.0 mW/cm^2= 10 W/m^2

Table of Exposure Limits:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW / cm ^{2})	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f^2	6
30-300	61.4	0.163	1.0	6
300-1,500	/	/	f/300	6
1,500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f^2	30
30-300	27.5	0.073	0.2	30
300-1,500	/	/	f/1500	30
1,500-100,000	/	/	1.0	30
*f = frequency in MHz * = Plane-wave equivalent power density*				

NOTE:

General Population/Uncontrolled Exposure: Locations where there is the exposure of individuals who have no knowledge or control of their exposure. General population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity.

Occupational/Controlled Exposure: Locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

3.3 Test Result Summary

3.3.1 Highest Power Density

Equipment Class	Band	Maximum Scaled PD (W/m^2)	Maximum Report PD (W/m^2)
		Body	Body
U-NII-5/6/7/8	6G WIFI	7.52	**7.52**
Limit (W/m2)		10	
Verdict		Pass	

3.4 Test Uncertainty

For PTP measurement method: DASY8 uncertainty budget in compliance with IEC/IEEE 63195-1 for the cases indicated in the refrence table.

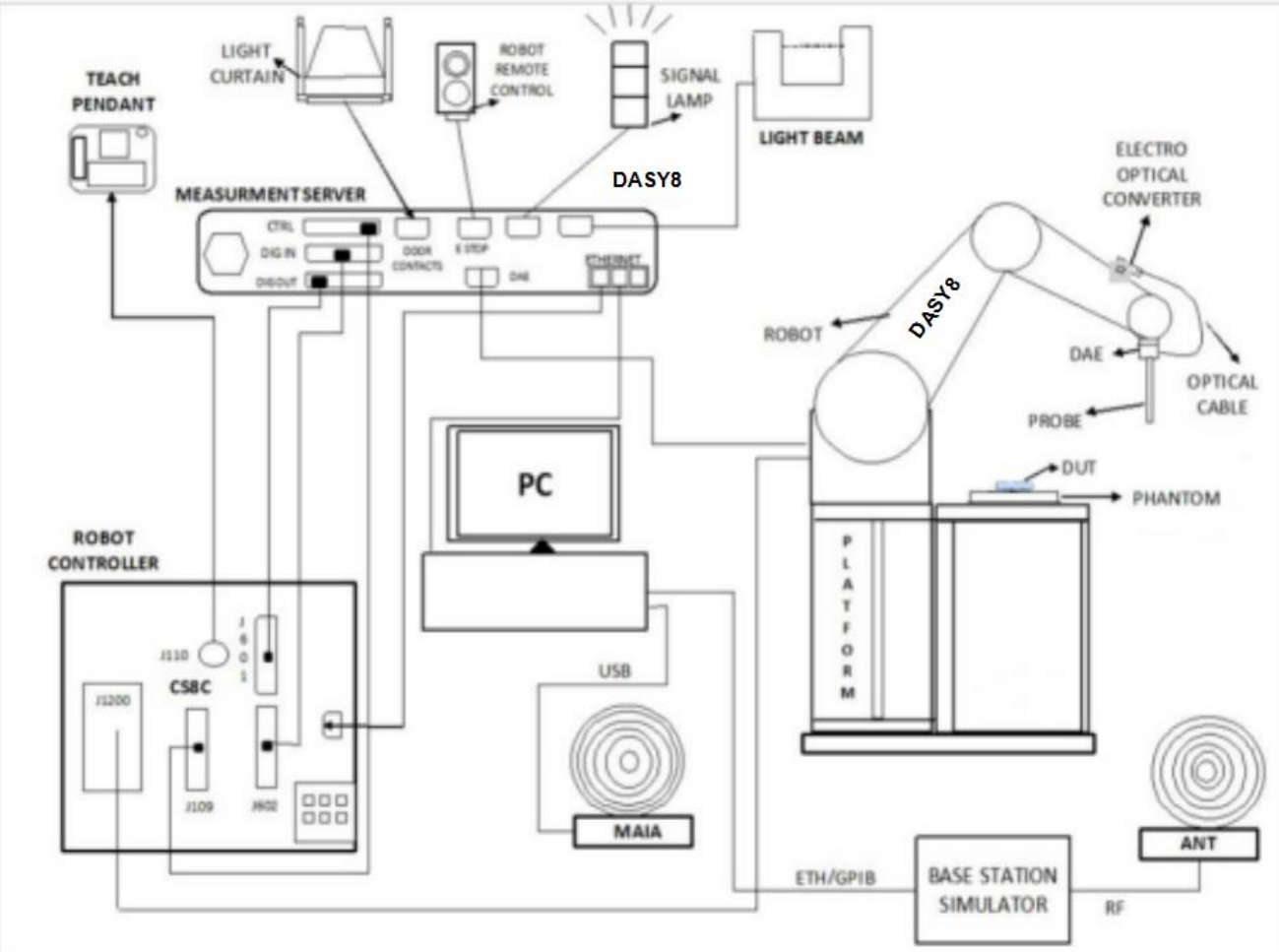
DASY8 Uncertainty Budget for PD (avg ≥1 cm2) Evaluation Distances to the Antennas ≥ λ/5 in Compliance with IEC/IEEE 63195							
Error Description		Unc. Value (±dB)	Probab. Distri.	Div.	(c_i)	Std. Unc. (±dB)	(vi) veff
Uncertainty terms dependent on the measurement system							
CAL	Calibration	0.49	N	1	1	0.49	∞
COR	Probe correction	0	R	1.732	1	0	∞
FRS	Frequency response (BW ≤ 1 GHz)	0.2	R	1.732	1	0.12	∞
SCC	Sensor cross coupling	0	R	1.732	1	0	∞
ISO	Isotropy	0.5	R	1.732	1	0.29	∞
LIN	Linearity	0.2	R	1.732	1	0.12	∞
PSC	Probe scattering	0	R	1.732	1	0	∞
PPO	Probe positioning offset	0.3	R	1.732	1	0.17	∞
PPR	Probe positioning repeatability	0.04	R	1.732	1	0.02	∞
SMO	Sensor mechanical offset	0	R	1.732	1	0	∞
PSR	Probe spatial resolution	0	R	1.732	1	0	∞
FLD	Field impedance dependence	0	R	1.732	1	0	∞
APD	Amplitude and phase drift	0	R	1.732	1	0	∞
APN	Amplitude and phase noise	0.04	R	1.732	1	0.02	∞
TR	Measurement area truncation	0	R	1.732	1	0	∞
DAQ	Data acquisition	0.03	N	1	1	0.03	∞
SMP	Sampling	0	R	1.732	1	0	∞
REC	Field reconstruction	0.6	R	1.732	1	0.35	∞
TRA	FTE/MEO	0 (0.7)	R	1.732	1	0 (0.4)	∞
SCA	Power density scaling	–	R	1.732	1	–	∞
SAV	Spatial averaging	0.1	R	1.732	1	0.06	∞
SDL	System detection limit	0.04	R	1.732	1	0.02	∞
Uncertainty terms dependent on the DUT and environmental factors							
PC	Probe coupling with DUT	0	R	1.732	1	0	∞
MOD	Modulation response	0.4	R	1.732	1	0.23	∞

IT	Integration time	0	R	1.732	1	0	∞
RT	Response time	0	R	1.732	1	0	∞
DH	Device holder influence	0.14	R	1.732	1	0.08	∞
DA	DUT alignment	0	R	1.732	1	0	∞
AC	RF ambient conditions	0.04	R	1.732	1	0.02	∞
AR	Ambient reflections	0.04	R	1.732	1	0.02	∞
MSI	Immunity / secondary reception	0	R	1.732	1	0	∞
DRI	Drift of the DUT	–	R	1.732	1	–	∞
Combined Std Uncertainty (w/ FTE/MEO)			–	–	–	0.75	∞
Expanded Std Uncertainty (w/ FTE/MEO)			–	–	–	**1.50 (1.71)**	–

4 MEASUREMENT SYSTEM

4.1 DASY Power Density System

4.1.1 DASY PD System Diagram



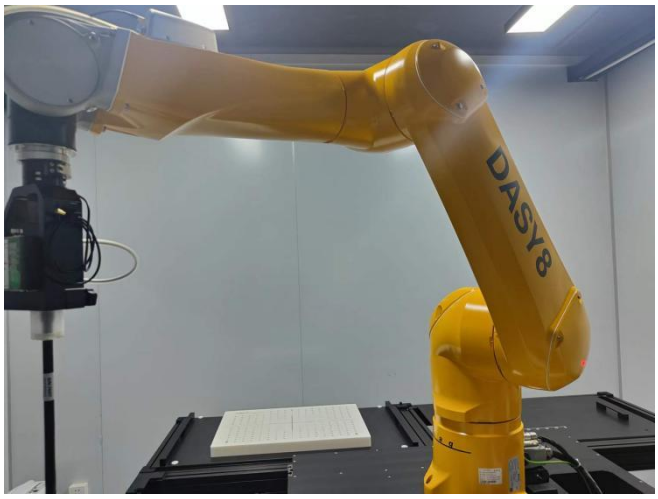
The DASY system for performing compliance tests consists of the following items:

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software. An arm extension for accommodating the data acquisition electronics (DAE).
2. A dosimetric probe, i.e. an isotropic E-field probe optimized and calibrated for usage in tissue simulating liquid. The probe is equipped with an optical surface detector system.
3. A data acquisition electronic (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.
4. A unit to operate the optical surface detector which is connected to the EOC.
5. The Electro-Optical Coupler (EOC) performs the conversion from the optical into a digital electric signal of the DAE. The EOC is connected to the DASY measurement server.
6. The DASY measurement server, which performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation.

7. DASY software and SEMCAD data evaluation software.
8. Remote control with teach panel and additional circuitry for robot safety such as warning lamps, etc.
9. The generic twin phantom enabling the testing of left-hand and right-hand usage.
10. The device holder for handheld mobile phones.
11. Tissue simulating liquid mixed according to the given recipes.
12. System validation dipoles allowing to validate the proper functioning of the system.

4.1.2 Robot

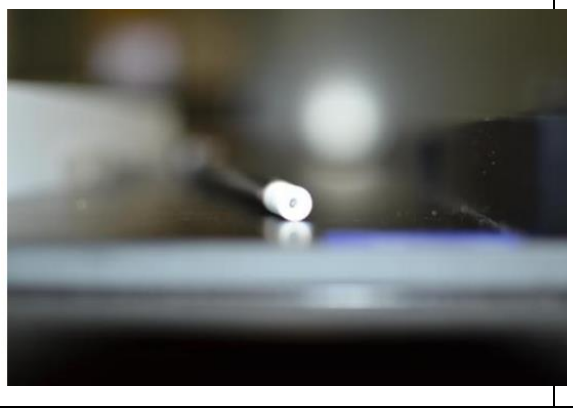
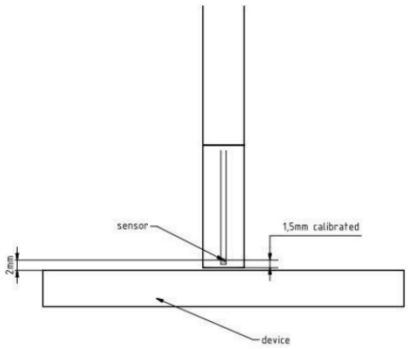
The Dasy SAR system uses the high precision robots. Symmetrical design with triangular core Built-in optical fiber for surface detection system For the 6-axis controller system, Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents). The robot series have many features that are important for our application:



- High precision
  (repeatability ±0.02 mm)
- High reliability
  (industrial design)
- Low maintenance costs
  (virtually maintenance free due to direct drive gears; no belt drives)
- Jerk-free straight movements
  (brush less synchron motors; no stepper motors)
- Low ELF interference
  (motor control _elds shielded via the closed metallic construction shields)

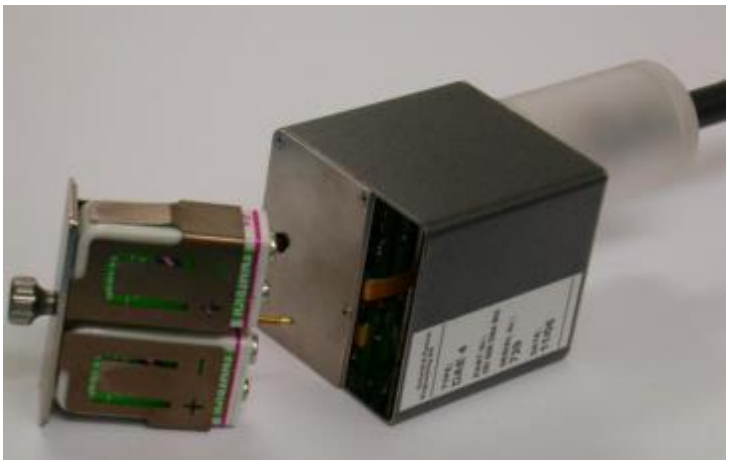
4.1.3 EUmmWave Probe / E-Field 5G Probe

The EUmmWave3 probe design allows measurements at distances as small as 2mm

Frequency	750 MHz – 110 GHz
Probe Overall Length	320 mm
Probe Body Diameter	8.0 mm
Tip Length	23.0 mm
Tip Diameter	8.0 mm
Probe's two dipoles length	0.9 mm – Diode loaded
Dynamic Range	< 20 V/m – 10000 V/m with PRE-10 (min < 50 V/m – 3000 V/m)
Position Precision	< 0.2 mm
Distance between diode sensors and probe's tip	1.5 mm
Minimum Mechanical separation between probe tip and a Surface	0.5 mm
Applications	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in < 2 mm distance from device (free-space) Power density, H-field and far-field analysis using total field reconstruction.
Compatibility	cDASY6 + 5G-Module SW1.0 and higher
	

4.1.4 Data Acquisition Electronics

The data acquisition electronics (DAE) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converte and a command decoder with a 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.



- Input Impedance: 200MOhm
- The Inputs: Symmetrical and Floating
- Commom Mode Rejection: Above 80dB

5 SYSTEM VERIFICATION

5.1 Purpose of System Check

The system performance check verifies that the system operates within its specifications. System and operator errors can be detected and corrected. It is recommended that the system performance check be performed prior to any usage of the system in order to guarantee reproducible results. The system performance check uses normal Power Density measurements in a simplified setup with a well characterized source.This setup was selected to give a high sensitivity to all parameters that might fail or vary over time. The system check does not intend to replace the calibration of the components, but indicates situations where the system uncertainty is exceeded due to drift or failure.

5.2 System Check Setup

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the user’s manual and calibration facility recommendation. The 0.66 dB deviation threshold represents the expanded uncertainty for system performance checks using SPEAG’s mmWave verification sources. The same spatial resolution and measurement region used in the source calibration was applied during the system check.
The measured power density distribution of verification source was also confirmed through visual inspection to have no noticeable differences, both spatially (shape) and numerically (level) from the distribution provided by the manufacturer, per November 2017 TCBC Workshop Notes.

6 POWER DENSITY MEASUREMENT PROCEDURE

6.1 Computation of the Electric Field Polarization Ellipse

For the numerical description of an arbitrarily oriented ellipse in three-dimensional space, five parameters are needed: the semi-major axis (a), the semi-minor axis (b), two angles describing the orientation of the normal vector of the ellipse (ϕ , θ), and one angle describing the tilt of the semi-major axis (Ψ). For the two
extreme cases, i.e. circular and linear polarizations, three parameters only (a, ϕ and θ) are sufficient for
the description of the incident field.

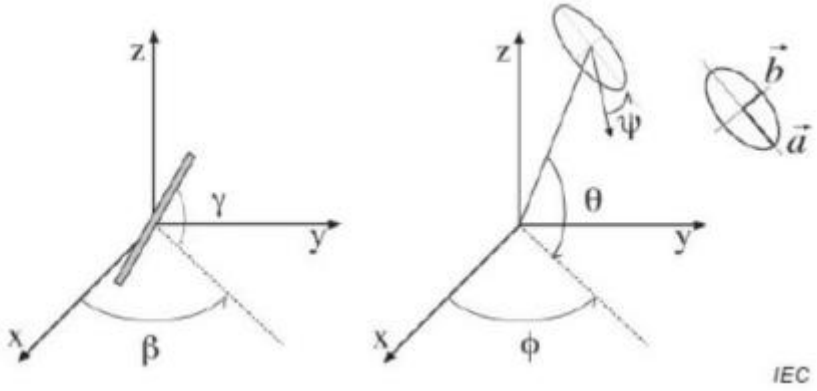


Illustration of the angles used for the numerical description of the sensor and the orientation of an ellipse in 3-D space

For the construction of the ellipse parameters from measured data, the problem can be reformulated as a nonlinear search problem. The semi-major and semi-minor axes of an elliptical field can be express as functions of the three angles (ϕ , θ and Ψ). The parameters can be uniquely determined towards minimizing the error based on least-squares for the given set of angles and the measured data. In this way, the numbers of three parameters is reduced from five to three, which means that least three sensors readings are necessary to gain sufficient information for the reconstruction of ellipse parameters.
However, to suppress the noise and increase the reconstruction accuracy, it is desirable to have an over determined system of equations. The solution to use a probe consisting of two sensors angled by γ 1 and γ 2 toward the probe axis and to perform measurements at three angular positions of the probe, i.e. at β 1, β 2 and β 3, results in over determination of two. If there is a need for more information or increased accuracy, more rotation angles can be added.
The reconstruction of ellipse parameters can be separated into linear and non-linear parts that are best solved by the givens algorithm combined with a downhill simplex algorithm. To minimize the mutual coupling, sensor angles are set with a 90° shift (γ 1= γ 2+90°), and, to simplify, the first rotation angle of the probe (β 1) can be set to 0° .

6.2 Total Field and Power Flux Density Reconstruction

Computation of the power density in general requires knowledge of the electric and magnetic field amplitudes and phases in the plane of incidence. Reconstruction of these quantities from pseudo-vector E-field measurements is feasible, as they are constrained by Maxiwell,s equations. The SPEAG have developed a reconstruction approach based on the Gerchberg-Saxton algorithm, which benefits from the availability of the E-Field polarization ellipse information obtained with the EUmmWV2 probe. This reconstruction algorithm, together with the ability of the probe to measure extremely close to the source without perturbing the field, permits reconstruction of the E-field and H-field, as well as of the power density, on measurement planes located as near as λ /5 away.

6.3 Power Flux Density Averaging

The average of the reconstructed power density is evaluated over a circular area in each measurement plane. The area of the circle is defined by the user; the default is 1cm2. The computed peak average value
is displayed in the box at the top right. Note that the average is evaluated only for grid points where the averaging circle is completely filed with values; for points at the edge where the averaging circle is only partly filled with values, the average power density is set to zero. Two average power density values are computed.

6.4 Measurement Workflow: Incident Power Density Measurements with DASY8 Module mmWave

The incident power density must be measured for the test configuration producing the highest SAR value. The
measurement procedure is summarized below:

1. Perform a system performance check at 10 GHz.
2. Determine the optimal grid resolution to be used for subsequent measurements.
3. Assess the incident power for the configuration to be tested.
4. Calculate the additional reconstruction uncertainty at 2mm and compute the total measurement uncertainty.
5. Adjust the incident psPD results by the amount that the measurement uncertainty exceeds 30%

7 CONDUCTED RF OUPUT POWER

7.1 WIFI

7.1.1 6G WIFI-Full power(ANT11)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	9.08	9.50	No
		45	6175	8.76	9.50	No
		93	6415	8.55	9.50	No
		97	6435	9.06	9.50	No
		105	6475	8.75	9.50	No
		113	6515	8.68	9.50	No
		117	6535	8.82	9.50	No
		153	6715	8.77	9.50	No
		181	6855	8.74	9.50	No
		185	6875	8.88	9.50	No
		213	7015	8.81	9.50	No
		233	7115	8.88	9.50	No
	802.11ax40	3	5965	8.84	9.50	No
		43	6165	8.85	9.50	No
		91	6405	9.08	9.50	No
		99	6445	8.98	9.50	No
		107	6485	8.88	9.50	No
		115	6525	8.57	9.50	No
		123	6565	8.97	9.50	No
		155	6725	8.87	9.50	No
		179	6845	8.87	9.50	No
		187	6885	9.02	9.50	No
		211	7005	8.58	9.50	No
		227	7085	8.90	9.50	No
	802.11ax80	7	5985	8.92	9.50	No
		39	6145	8.78	9.50	No
		87	6385	8.78	9.50	No
		103	6465	8.58	9.50	No
		119	6545	8.76	9.50	No
		135	6625	9.00	9.50	No
		151	6705	8.81	9.50	No
		167	6785	8.68	9.50	No
		183	6865	8.75	9.50	No
		199	6945	8.68	9.50	No
		215	7025	8.71	9.50	No

	802.11ax160	15	6025	**9.33**	9.50	Yes
		47	6185	8.86	9.50	Yes
		79	6345	8.61	9.50	Yes
		111	6505	8.65	9.50	Yes
		143	6665	8.57	9.50	Yes
		175	6825	8.87	9.50	Yes
		207	6985	8.99	9.50	Yes

7.1.2 6G WIFI-Level1&2&3&4(ANT11)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	9.08	9.50	No
		45	6175	8.76	9.50	No
		93	6415	8.55	9.50	No
		97	6435	9.06	9.50	No
		105	6475	8.75	9.50	No
		113	6515	8.68	9.50	No
		117	6535	8.82	9.50	No
		153	6715	8.77	9.50	No
		181	6855	8.74	9.50	No
		185	6875	8.88	9.50	No
		213	7015	8.81	9.50	No
		233	7115	8.88	9.50	No
	802.11ax40	3	5965	8.84	9.50	No
		43	6165	8.85	9.50	No
		91	6405	9.08	9.50	No
		99	6445	8.98	9.50	No
		107	6485	8.88	9.50	No
		115	6525	8.57	9.50	No
		123	6565	8.97	9.50	No
		155	6725	8.87	9.50	No
		179	6845	8.87	9.50	No
		187	6885	9.02	9.50	No
		211	7005	8.58	9.50	No
		227	7085	8.90	9.50	No
	802.11ax80	7	5985	8.92	9.50	No
		39	6145	8.78	9.50	No
		87	6385	8.78	9.50	No
		103	6465	8.58	9.50	No
		119	6545	8.76	9.50	No
		135	6625	9.00	9.50	No
		151	6705	8.81	9.50	No
		167	6785	8.68	9.50	No
		183	6865	8.75	9.50	No
		199	6945	8.68	9.50	No
		215	7025	8.71	9.50	No
	802.11ax160	15	6025	**9.33**	9.50	Yes
		47	6185	8.86	9.50	Yes
		79	6345	8.61	9.50	Yes
		111	6505	8.65	9.50	Yes

		143	6665	8.57	9.50	Yes
		175	6825	8.87	9.50	Yes
		207	6985	8.99	9.50	Yes

7.1.3 6G WIFI-Full power(ANT15)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	8.70	9.50	No
		45	6175	8.86	9.50	No
		93	6415	8.74	9.50	No
		97	6435	8.96	9.50	No
		105	6475	8.87	9.50	No
		113	6515	8.83	9.50	No
		117	6535	8.78	9.50	No
		153	6715	8.56	9.50	No
		181	6855	8.92	9.50	No
		185	6875	8.79	9.50	No
		213	7015	8.94	9.50	No
		233	7115	8.71	9.50	No
	802.11ax40	3	5965	8.97	9.50	No
		43	6165	8.73	9.50	No
		91	6405	9.03	9.50	No
		99	6445	9.01	9.50	No
		107	6485	8.81	9.50	No
		115	6525	8.69	9.50	No
		123	6565	8.80	9.50	No
		155	6725	8.68	9.50	No
		179	6845	8.65	9.50	No
		187	6885	9.03	9.50	No
		211	7005	8.64	9.50	No
		227	7085	8.92	9.50	No
	802.11ax80	7	5985	8.92	9.50	No
		39	6145	8.63	9.50	No
		87	6385	8.80	9.50	No
		103	6465	9.03	9.50	No
		119	6545	8.81	9.50	No
		135	6625	8.85	9.50	No
		151	6705	9.05	9.50	No
		167	6785	8.75	9.50	No
		183	6865	8.91	9.50	No
		199	6945	9.08	9.50	No
		215	7025	8.64	9.50	No
	802.11ax160	15	6025	**9.06**	9.50	Yes
		47	6185	8.52	9.50	Yes
		79	6345	8.81	9.50	Yes
		111	6505	8.71	9.50	Yes

		143	6665	8.71	9.50	Yes
		175	6825	8.60	9.50	Yes
		207	6985	8.96	9.50	Yes

7.1.4 6G WIFI-Level1&2&3&4(ANT15)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	8.70	9.50	No
		45	6175	8.86	9.50	No
		93	6415	8.74	9.50	No
		97	6435	8.96	9.50	No
		105	6475	8.87	9.50	No
		113	6515	8.83	9.50	No
		117	6535	8.78	9.50	No
		153	6715	8.56	9.50	No
		181	6855	8.92	9.50	No
		185	6875	8.79	9.50	No
		213	7015	8.94	9.50	No
		233	7115	8.71	9.50	No
	802.11ax40	3	5965	8.97	9.50	No
		43	6165	8.73	9.50	No
		91	6405	9.03	9.50	No
		99	6445	9.01	9.50	No
		107	6485	8.81	9.50	No
		115	6525	8.69	9.50	No
		123	6565	8.80	9.50	No
		155	6725	8.68	9.50	No
		179	6845	8.65	9.50	No
		187	6885	9.03	9.50	No
		211	7005	8.64	9.50	No
		227	7085	8.92	9.50	No
	802.11ax80	7	5985	8.92	9.50	No
		39	6145	8.63	9.50	No
		87	6385	8.80	9.50	No
		103	6465	9.03	9.50	No
		119	6545	8.81	9.50	No
		135	6625	8.85	9.50	No
		151	6705	9.05	9.50	No
		167	6785	8.75	9.50	No
		183	6865	8.91	9.50	No
		199	6945	9.08	9.50	No
		215	7025	8.64	9.50	No
	802.11ax160	15	6025	**9.06**	9.50	Yes
		47	6185	8.52	9.50	Yes
		79	6345	8.81	9.50	Yes
		111	6505	8.71	9.50	Yes

		143	6665	8.71	9.50	Yes
		175	6825	8.60	9.50	Yes
		207	6985	8.96	9.50	Yes

7.1.5 6G WIFI-Full power(MIMO)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	11.90	12.50	No
		45	6175	11.82	12.50	No
		93	6415	11.66	12.50	No
		97	6435	12.02	12.50	No
		105	6475	11.82	12.50	No
		113	6515	11.77	12.50	No
		117	6535	11.81	12.50	No
		153	6715	11.68	12.50	No
		181	6855	11.84	12.50	No
		185	6875	11.85	12.50	No
		213	7015	11.89	12.50	No
		233	7115	11.81	12.50	No
	802.11ax40	3	5965	11.92	12.50	No
		43	6165	11.80	12.50	No
		91	6405	12.07	12.50	No
		99	6445	12.01	12.50	No
		107	6485	11.86	12.50	No
		115	6525	11.64	12.50	No
		123	6565	11.90	12.50	No
		155	6725	11.79	12.50	No
		179	6845	11.77	12.50	No
		187	6885	12.04	12.50	No
		211	7005	11.62	12.50	No
		227	7085	11.92	12.50	No
	802.11ax80	7	5985	11.93	12.50	No
		39	6145	11.72	12.50	No
		87	6385	11.80	12.50	No
		103	6465	11.82	12.50	No
		119	6545	11.80	12.50	No
		135	6625	11.94	12.50	No
		151	6705	11.94	12.50	No
		167	6785	11.73	12.50	No
		183	6865	11.84	12.50	No
		199	6945	11.89	12.50	No
		215	7025	11.69	12.50	No
	802.11ax160	15	6025	**12.21**	12.50	Yes
		47	6185	11.70	12.50	Yes
		79	6345	11.72	12.50	Yes
		111	6505	11.69	12.50	Yes

		143	6665	11.65	12.50	Yes
		175	6825	11.75	12.50	Yes
		207	6985	11.99	12.50	Yes

7.1.6 6G WIFI-Level1&2&3&4(MIMO)

Band (GHz)	Mode	Channel	Freq. (MHz)	Average Power (dBm)	Tune-up Power Limit (dBm)	SAR Test Require.
6 (5.925~7.125)	802.11ax20	1	5955	11.90	12.50	No
		45	6175	11.82	12.50	No
		93	6415	11.66	12.50	No
		97	6435	12.02	12.50	No
		105	6475	11.82	12.50	No
		113	6515	11.77	12.50	No
		117	6535	11.81	12.50	No
		153	6715	11.68	12.50	No
		181	6855	11.84	12.50	No
		185	6875	11.85	12.50	No
		213	7015	11.89	12.50	No
		233	7115	11.81	12.50	No
	802.11ax40	3	5965	11.92	12.50	No
		43	6165	11.80	12.50	No
		91	6405	12.07	12.50	No
		99	6445	12.01	12.50	No
		107	6485	11.86	12.50	No
		115	6525	11.64	12.50	No
		123	6565	11.90	12.50	No
		155	6725	11.79	12.50	No
		179	6845	11.77	12.50	No
		187	6885	12.04	12.50	No
		211	7005	11.62	12.50	No
		227	7085	11.92	12.50	No
	802.11ax80	7	5985	11.93	12.50	No
		39	6145	11.72	12.50	No
		87	6385	11.80	12.50	No
		103	6465	11.82	12.50	No
		119	6545	11.80	12.50	No
		135	6625	11.94	12.50	No
		151	6705	11.94	12.50	No
		167	6785	11.73	12.50	No
		183	6865	11.84	12.50	No
		199	6945	11.89	12.50	No
		215	7025	11.69	12.50	No
	802.11ax160	15	6025	**12.21**	12.50	Yes
		47	6185	11.70	12.50	Yes
		79	6345	11.72	12.50	Yes
		111	6505	11.69	12.50	Yes

		143	6665	11.65	12.50	Yes
		175	6825	11.75	12.50	Yes
		207	6985	11.99	12.50	Yes

8 ANTENNA LOCATION

For antenna location and support bands please refer the document “BL-SZ2470686-AI EUT internal photo.pdf”.

Antenna	Front Side(mm)	Back Side(mm)	Left Edge(mm)	Right Edge(mm)	Top Edge(mm)	Bottom Edge(mm)
Ant.0	<25	<25	<25	>25	>25	<25
Ant.1	<25	<25	<25	>25	<25	>25
Ant.2	<25	<25	<25	>25	<25	>25
Ant.3	<25	<25	>25	<25	>25	<25
Ant.4	<25	<25	<25	>25	<25	>25
Ant.5	<25	<25	>25	<25	>25	>25
Ant.6	<25	<25	<25	>25	<25	>25
Ant.7	<25	<25	>25	<25	<25	>25
Ant.8	<25	<25	<25	>25	<25	>25
Ant.9	<25	<25	>25	<25	<25	>25
Ant.11	<25	<25	>25	<25	<25	>25
Ant.15	<25	<25	>25	<25	<25	>25

Note: 1.Per KDB 941225 D06,When the overall length and width of a device is > 9 cm *5 cm, a test separation distance of 10 mm is required for hotspot mode SAR measurements and hotspot mode SAR is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.

9 TEST RESULT OF POWER DENSITY

9.1.1 WIFI 6GHz SAR

Antenna	Band	Power Reduction	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Power Drift (dB)	10 g Meas SAR (W/kg)	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Scaling Factor	10 g Scaled SAR (W/kg)	Measured APD (W/m²)	Scaled APD (W/m²)
Specific																	
Ant.11	6G	Level3&4	802.11ax (HE160)	Front Side	0	15	6025	0.02	0.068	9.33	9.50	1.040	99.34	1.007	0.071	1.490	1.560
	6G	Level3&4	802.11ax (HE160)	Back Side	0	15	6025	-0.13	0.187	9.33	9.50	1.040	99.34	1.007	0.196	4.120	4.315
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	15	6025	0.14	0.212	9.33	9.50	1.040	99.34	1.007	0.222	4.950	5.184
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	15	6025	-0.10	0.047	9.33	9.50	1.040	99.34	1.007	0.049	0.984	1.031
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	47	6185	-0.11	0.163	8.86	9.50	1.159	99.34	1.007	0.190	3.800	4.435
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	79	6345	0.10	0.134	8.61	9.50	1.227	99.34	1.007	0.166	3.640	4.498
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	111	6505	-0.03	0.114	8.65	9.50	1.216	99.34	1.007	0.140	2.900	3.551
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	143	6665	0.14	0.095	8.57	9.50	1.239	99.34	1.007	0.119	2.460	3.069
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	175	6825	-0.09	0.072	8.87	9.50	1.156	99.34	1.007	0.084	1.700	1.979
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	207	6985	-0.12	0.052	8.99	9.50	1.125	99.34	1.007	0.059	1.290	1.461
Ant.15	6G	Level3&4	802.11ax (HE160)	Front Side	0	15	6025	-0.10	0.130	9.06	9.50	1.107	99.34	1.007	0.145	3.030	3.378
	6G	Level3&4	802.11ax (HE160)	Back Side	0	15	6025	-0.05	0.079	9.06	9.50	1.107	99.34	1.007	0.088	1.760	1.962
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	15	6025	-0.02	0.035	9.06	9.50	1.107	99.34	1.007	0.039	1.090	1.215
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	15	6025	0.06	0.264	9.06	9.50	1.107	99.34	1.007	0.294	6.400	**7.134**
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	47	6185	-0.08	0.145	8.52	9.50	1.253	99.34	1.007	0.183	3.920	4.946
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	79	6345	0.14	0.115	8.81	9.50	1.172	99.34	1.007	0.136	2.870	3.387
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	111	6505	0.02	0.107	8.71	9.50	1.199	99.34	1.007	0.129	2.580	3.115
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	143	6665	0.06	0.138	8.71	9.50	1.199	99.34	1.007	0.167	3.260	3.936
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	175	6825	0.09	0.063	8.60	9.50	1.230	99.34	1.007	0.078	1.710	2.118
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	207	6985	-0.01	0.042	8.96	9.50	1.132	99.34	1.007	0.048	1.020	1.163
MIMO	6G	Level3&4	802.11ax (HE160)	Front Side	0	15	6025	0.05	0.119	12.21	12.50	1.069	99.34	1.007	0.128	2.620	2.820
	6G	Level3&4	802.11ax (HE160)	Back Side	0	15	6025	-0.03	0.184	12.21	12.50	1.069	99.34	1.007	0.198	4.080	4.392
	6G	Level3&4	802.11ax (HE160)	Right Edge	0	15	6025	-0.05	0.199	12.21	12.50	1.069	99.34	1.007	0.214	4.520	4.866
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	15	6025	0.03	0.238	12.21	12.50	1.069	99.34	1.007	0.256	5.560	5.985
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	47	6185	-0.01	0.160	11.70	12.50	1.202	99.34	1.007	0.194	4.000	4.842
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	79	6345	0.15	0.134	11.72	12.50	1.197	99.34	1.007	0.162	3.530	4.255
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	111	6505	-0.07	0.116	11.69	12.50	1.205	99.34	1.007	0.141	3.060	3.713
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	143	6665	0.06	0.136	11.65	12.50	1.216	99.34	1.007	0.167	3.760	4.604
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	175	6825	-0.05	0.072	11.75	12.50	1.189	99.34	1.007	0.086	1.750	2.095
	6G	Level3&4	802.11ax (HE160)	Top Edge	0	207	6985	-0.06	0.053	11.99	12.50	1.125	99.34	1.007	0.060	1.220	1.382

9.1.2 WIFI 6GHz PD

Antenna	Band	Power Reduction	Mode	Position	Dist. (mm)	Ch.	Freq. (MHz)	Grip step (λ)	Averaging Area [cm2]	Power Drift (dB)	Meas Total psPD [W/m2]	Meas. Power (dBm)	Max. tune-power (dBm)	Scaling Factor	Duty Cycle (%)	Duty cycle Factor	Meas. uncertainty Scaling Factor	Scaled Total psPD [W/m2]	Meas. No.
Body																			
Ant.11	6G	Level3&4	802.11ax (HE160)	Front Side	2	15	6025	0.0625	4.00	-0.09	0.998	9.33	9.50	1.040	99.34	1.007	1.545	1.615	/
	6G	Level3&4	802.11ax (HE160)	Back Side	2	15	6025	0.0625	4.00	0.09	2.060	9.33	9.50	1.040	99.34	1.007	1.545	3.333	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	15	6025	0.0625	4.00	0.11	0.689	9.33	9.50	1.040	99.34	1.007	1.545	1.115	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	15	6025	0.0625	4.00	0.05	4.650	9.33	9.50	1.040	99.34	1.007	1.545	**7.524**	1#
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	79	6345	0.0625	4.00	0.08	3.800	8.61	9.50	1.227	99.34	1.007	1.545	7.254	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	111	6505	0.0625	4.00	-0.02	3.750	8.65	9.50	1.216	99.34	1.007	1.545	7.095	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	143	6665	0.0625	4.00	0.01	3.660	8.57	9.50	1.239	99.34	1.007	1.545	7.055	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	207	6985	0.0625	4.00	0.00	3.320	8.99	9.50	1.125	99.34	1.007	1.545	5.811	/
Ant.15	6G	Level3&4	802.11ax (HE160)	Front Side	2	15	6025	0.0625	4.00	-0.02	1.050	9.06	9.50	1.107	99.34	1.007	1.545	1.808	/
	6G	Level3&4	802.11ax (HE160)	Back Side	2	15	6025	0.0625	4.00	0.06	0.635	9.06	9.50	1.107	99.34	1.007	1.545	1.094	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	15	6025	0.0625	4.00	0.03	0.290	9.06	9.50	1.107	99.34	1.007	1.545	0.499	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	15	6025	0.0625	4.00	-0.04	1.490	9.06	9.50	1.107	99.34	1.007	1.545	**2.566**	2#
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	79	6345	0.0625	4.00	-0.04	1.340	8.81	9.50	1.172	99.34	1.007	1.545	2.443	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	111	6505	0.0625	4.00	0.07	1.320	8.71	9.50	1.199	99.34	1.007	1.545	2.462	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	143	6665	0.0625	4.00	0.07	1.250	8.71	9.50	1.199	99.34	1.007	1.545	2.332	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	207	6985	0.0625	4.00	0.00	1.250	8.96	9.50	1.132	99.34	1.007	1.545	2.201	/
MIMO	6G	Level3&4	802.11ax (HE160)	Front Side	2	15	6025	0.0625	4.00	0.09	1.010	12.21	12.50	1.069	99.34	1.007	1.545	1.680	/
	6G	Level3&4	802.11ax (HE160)	Back Side	2	15	6025	0.0625	4.00	-0.03	2.000	12.21	12.50	1.069	99.34	1.007	1.545	3.326	/
	6G	Level3&4	802.11ax (HE160)	Top Edge	2	15	6025	0.0625	4.00	-0.02	1.450	12.21	12.50	1.069	99.34	1.007	1.545	2.412	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	15	6025	0.0625	4.00	-0.07	4.420	12.21	12.50	1.069	99.34	1.007	1.545	**7.351**	3#
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	79	6345	0.0625	4.00	-0.08	3.650	11.72	12.50	1.197	99.34	1.007	1.545	6.797	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	111	6505	0.0625	4.00	0.08	3.540	11.69	12.50	1.205	99.34	1.007	1.545	6.637	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	143	6665	0.0625	4.00	-0.08	3.380	11.65	12.50	1.216	99.34	1.007	1.545	6.395	/
	6G	Level3&4	802.11ax (HE160)	Right Edge	2	207	6985	0.0625	4.00	-0.07	3.060	11.99	12.50	1.125	99.34	1.007	1.545	5.356	/

Note: According to FCC test guidance and equipment manufacturer guidance, power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of 2.66 dB (84.5%) was used to determine the psPD measurement scaling factor.

Fre. Band	Mode	Power Reduction	Antenna	Position	Dist. (mm)	Grid Step(λ)	Ch.	Freq. (MHz)	IPDn	IPD ratio (≥-1)
6G	802.11ax (HE160)	Level3&4	Ant.11	Right Edge	2	0.0625	15	6025	2.53	2.16
6G	802.11ax (HE160)	Level3&4	Ant.11	Right Edge	9.96	0.0625	15	6025	1.54	

10 SIMULTANEOUS TRANSMISSION

The fields generated by the antennas can be correlated or uncorrelated. At different frequencies, fields are always uncorrelated, and the aggregate power density contributions can be summed according to spatially averaged values of corresponding sources at any point in space, r, to determine the total exposure ratio (TER). Assuming I sources, the TER at each point in space is equal to

$$TER^{uncorr}(r) = \sum_{i=1}^{I} ER_i = \sum_{i=1}^{I} \frac{S_{av,i}(r, f_i)}{S_{lim}(f_i)}$$

Where Sav,i is the power density for the source I operating at a frequency fi and Slim is the power density limit as specified by the relevant standard.
Exposure from transmitters operating above and below 6GHz, where 6GHz denotes the transmission frequency where the basic restrictions change from being defined in terms of SAR to being defined in terms of power density, therefore uncorrelated and the TER is determined as

$$TER^{uncorr}(r) = \sum_{i=1}^{I} ER_i = \sum_{i=1}^{I} \frac{S_{av,i}(r, f_i)}{S_{lim}(f_i)}$$

According to the FCC guidance in TCBC workshop and IEC TR 63170, the total exposure ratio calculated by taking ratio of maximum reported SAR divided by SAR limit and adding it to maximum measured power density by its limit. Numerical sum of the ratios should be less or equal to 1. Therefore the simultaneous transmission should be follows:

$$TER = \sum_{n=1}^{N} \frac{SAR_n}{SAR_{n,limit}} + \sum_{n=1}^{N} \frac{S_{m,avg}}{S_{m,limit}} < 1$$

10.1 Simultaneous Transmission Mode Considerations

No.	Simultaneous Tx Combination	Head	Body-worn	Hotspot	Specific
1	6G WIFI SISO1 + BT1	Yes	Yes	Yes	Yes
2	6G WIFI SISO2 + BT1	Yes	Yes	Yes	Yes
3	6G WIFI MIMO + BT1	Yes	Yes	Yes	Yes
4	6G WIFI SISO1 + BT2	Yes	Yes	Yes	Yes
5	6G WIFI SISO2 + BT2	Yes	Yes	Yes	Yes
6	6G WIFI MIMO + BT2	Yes	Yes	Yes	Yes
7	WWAN + 6G WIFI SISO1	Yes	Yes	Yes	Yes
8	WWAN + 6G WIFI SISO2	Yes	Yes	Yes	Yes
9	WWAN + 6G WIFI MIMO	Yes	Yes	Yes	Yes
10	WWAN + 6G WIFI SISO1+ BT1	Yes	Yes	Yes	Yes
11	WWAN + 6G WIFI SISO2+ BT1	Yes	Yes	Yes	Yes
12	WWAN + 6G WIFI MIMO+ BT1	Yes	Yes	Yes	Yes
13	WWAN + 6G WIFI SISO1+ BT2	Yes	Yes	Yes	Yes
14	WWAN + 6G WIFI SISO2+ BT2	Yes	Yes	Yes	Yes
15	WWAN + 6G WIFI MIMO+ BT2	Yes	Yes	Yes	Yes

Note:
1. For WLAN 6GHz doesn't support wireless router capability.
2.Since this device is considered a phablet and there is no different PD limit on different exposure conditions, therefore select highest
phablet SAR at 0 mm test distance and configurations evaluate power density. Since there is no different PD limit on different exposure conditions, therefore the PD test was performed of a 2mm separation between Probe sensor and EUT surface to cover allexposure conditions of phablet.
3.The WLAN6GHz Sim-Tx analysis guidance with other transmitters was based on SAR test results. Thesimultaneous transmission and test exemption analysis were compliant with KDB 447498. For the devicedoes not support FR2 or other MPE field measurement, therefore in the SAR report has no TER analysis according to KDB 987594 requirement.

11 TEST EQUIPMENTS LIST

Description	Manufacturer	Model	Serial No./Version	Cal. Date	Cal. Due
PC	Dell	N/A	N/A	N/A	N/A
Test System	Speag	DASY8 mmWave	V2.4.0.44	N/A	N/A
Verification Source	Speag	10GHz	SN: 2010	2024/06/19	2025/06/18
EUmmW Probe	Speag	EUmmWV4	SN: 9607	2024/02/12	2025/02/12
Data Acquisition Electronicsr	Speag	DAE4	SN: 1711	2024/03/18	2025/03/18
Signal Generator	R&S	SMB100A	177746	2024/04/24	2025/04/24
Power Meter	R&S	NRVD-B2	835843/014	2024/08/08	2025/08/07
Power Sensor	R&S	NRV-Z4	100381	2024/08/08	2025/08/07
Power Sensor	R&S	NRV-Z2	100211	2024/08/08	2025/08/07
Thermometer	Elitech	RC-4HC	EF7239002652	2023/11/17	2024/11/17
Power Amplifier	mini-circuits	ZVA-183W-S+	505102223	N/A	N/A

ANNEX A SIMULATING LIQUID VERIFICATION RESULT

The system was verified to be within ±0.66 dB of the power density targets on the calibration certificate according to the test system specification in the users manual and calibration facility recommendation.

Date	Freq. (GHz)	Meas. Forward Power (dBm)	Measured PD 4 cm^2 (W/m^2)	Normalized PD 4 cm^2 (W/m^2)	Target Forward PD 4 cm^2 (W/m^2)	Deviation (dB)
2024.09.16	10	21.5	179	200.8	183.00	0.40
2024.09.17	10	21.5	184	206.5	183.00	0.52
2024.10.08	10	21.5	178	199.7	183.00	0.38
Note1: The tolerance limit of System validation ±0.66dB.						
Note2: According the verification source 10GHz calibration report the target forward power is 22.00dBm.						
Note3: Normalized PD 4 cm^2= Measured PD 4 cm^2 *10^(0.1*(Target Forward power- Meas. Forward Power))						

System Performance Check Data (10GHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
5G Verification Source 10GHz, SPEAG	100.0 x 100.0 x 130.0	5G Verification Source 10GHz

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	Front, 10.00	10000.0Validation band, 10000	1.0	22.3

Hardware Setup

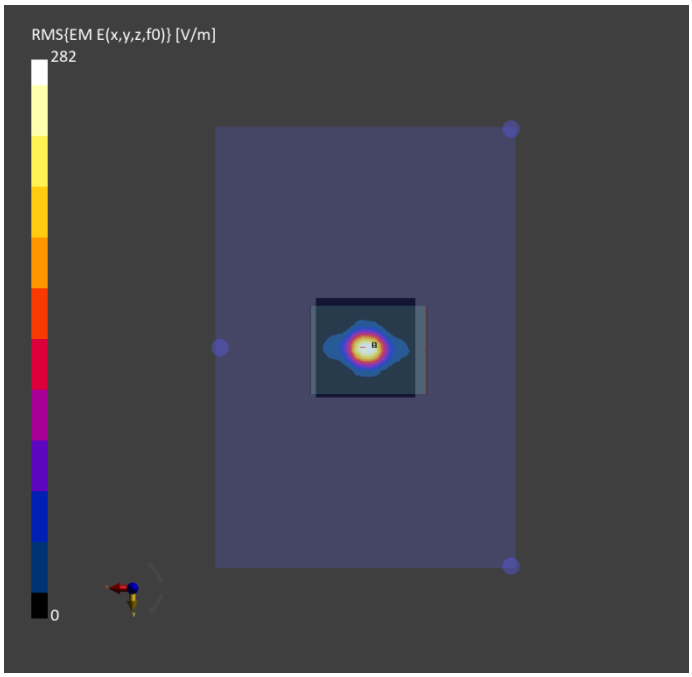
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	---Air	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	25.0 x 25.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-09-16
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	174
psPDtot+ [W/m^2]	179
psPDmod+ [W/m^2]	182
E_{max} [V/m]	282
Power Drift [dB]	0.03


RMS{EM E(x,y,z,f0)} [V/m]
282
0

System Performance Check Data (10GHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
5G Verification Source 10GHz, SPEAG	100.0 x 100.0 x 130.0	5G Verification Source 10GHz

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	Front, 10.00	10000.0Validation band, 10000	1.0	22.3

Hardware Setup

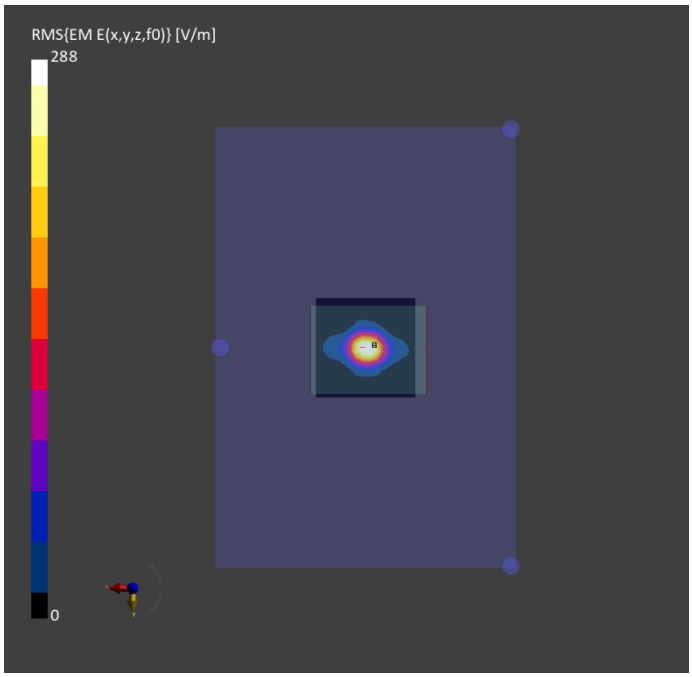
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	---Air	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	25.0 x 25.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-09-17
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	178
psPDtot+ [W/m^2]	184
psPDmod+ [W/m^2]	188
E_{max} [V/m]	288
Power Drift [dB]	0.05


RMS{EM E(x,y,z,f0)} [V/m]
288
0

System Performance Check Data (10GHz)

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	DUT Type
5G Verification Source 10GHz, SPEAG	100.0 x 100.0 x 130.0	5G Verification Source 10GHz

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	Front, 10.00	10000.0Validation band, 10000	1.0	22.3

Hardware Setup

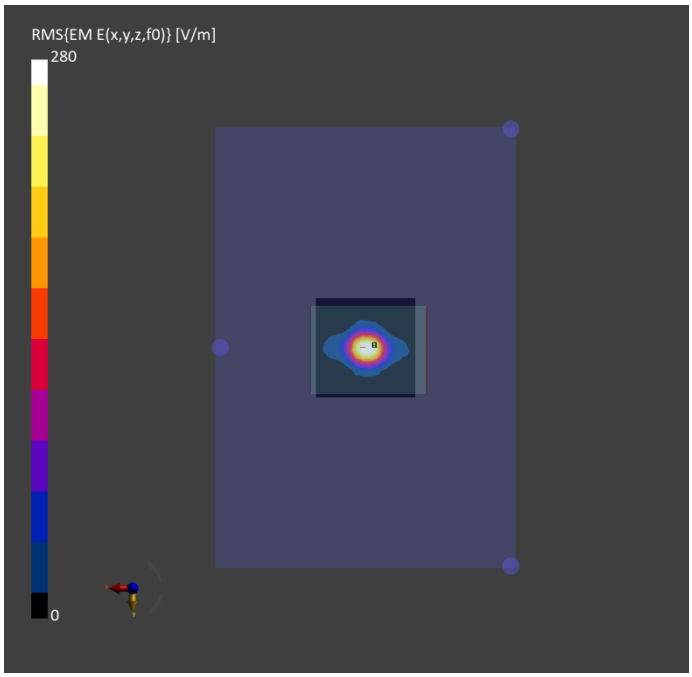
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	---Air	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	25.0 x 25.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-10-08
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	175
psPDtot+ [W/m^2]	178
psPDmod+ [W/m^2]	181
E_{max} [V/m]	280
Power Drift [dB]	-0.02


RMS{EM E(x,y,z,f0)} [V/m]
280
0

ANNEX B POWER DENDITY TEST DATA

Meas.1 Body Plane with Right Edge 2mm on 15 Channel in IEEE802.11ax160 mode with Antenna 11

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
,, **O16U**	162.0 x 75.0 x 10.0	863541070055529	Phone

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	EDGE RIGHT, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0	22.3

Hardware Setup

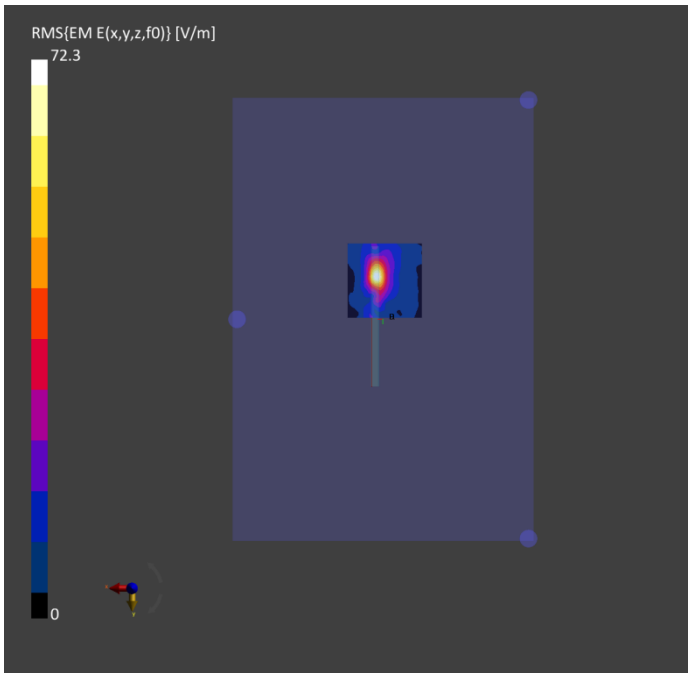
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	Air---	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	80.0 x 80.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-09-16
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	3.55
psPDtot+ [W/m^2]	4.65
psPDmod+ [W/m^2]	5.32
E_{max} [V/m]	72.3
Power Drift [dB]	0.05


RMS{EM E(x,y,z,f0)} [V/m]
72.3
0

Meas.2 Body Plane with Top Edge 2mm on 15 Channel in IEEE802.11ax160 mode with Antenna 15

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
,, **O16U**	162.0 x 75.0 x 10.0	863541070055529	Phone

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	EDGE TOP, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0	22.3

Hardware Setup

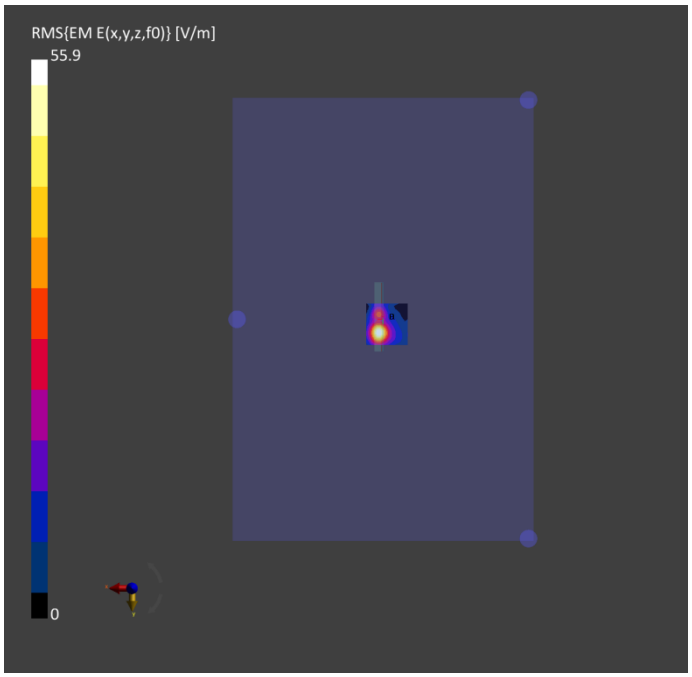
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	Air---	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	25.0 x 25.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-09-16
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	1.24
psPDtot+ [W/m^2]	1.49
psPDmod+ [W/m^2]	1.99
E_{max} [V/m]	55.9
Power Drift [dB]	-0.04



Meas.3 Body Plane with Right Edge 2mm on 15 Channel in IEEE802.11ax160 mode with Antenna MIMO

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
,, **O16U**	162.0 x 75.0 x 10.0	863541070055529	Phone

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	Ambient temperature[℃]
5G Air	EDGE RIGHT, 2.00	U-NII-5	WLAN, 10755-AAC	6025.0, 15	1.0	22.3

Hardware Setup

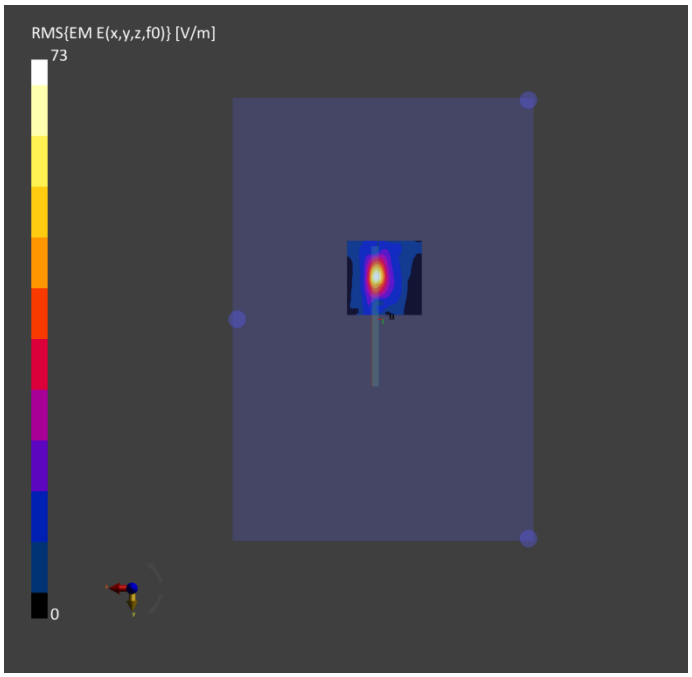
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave- 1083	Air---	EUmmWV4 - SN9607_F1-55GHz, 2024-02-12	DAE4 Sn1711, 2024-03-18

Scan Setup

	5G Scan
Grid Extents [mm]	80.0 x 80.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	N/A

Measurement Results

	5G Scan
Date	2024-09-17
Avg. Area [cm^2]	4.00
psPDn+ [W/m^2]	3.55
psPDtot+ [W/m^2]	4.42
psPDmod+ [W/m^2]	5.00
E_{max} [V/m]	73.0
Power Drift [dB]	-0.07



ANNEX C EUT EXTERNAL PHOTOS

Please refer the document “BL-SZ2470686-AW.pdf”.

ANNEX D POWER DENSITY TEST SETUP PHOTOS

Please refer the document “BL-SZ2470686-AS-1.pdf”.

ANNEX E POWER DENSITY CALIBRATION REPORT

Please refer the document “BL-SZ2470686-AC-1.pdf”.

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