SAR EVALUATION REPORT

FCC 47 CFR § 2.1093
IEC/IEEE Std 62209-1528: 2020
IEC/IEEE 63195-1:2022

For

Acer Connect 5G Mobile Wi-Fi

MODEL NUMBER: M6E

REPORT NUMBER: 4791517585.3-1-SAR-2

ISSUE DATE: February 24, 2025

FCC ID: HLZM6E

Prepared for

Acer Incorporated
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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	February 24, 2025	Initial Issue	\

Note:

1) This test report is only published to and used by the applicant, and it is not for evidence purpose in China.
2) The measurement result for the sample received is <Pass> according to < IEEE Std. 1528>when <Simple Acceptance> decision rule is applied.

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1. Attestation of Test Results

Applicant Name	Acer Incorporated			
Address	8F, 88, Sec. 1, Xintai 5th Rd. Xizhi New Taipei City 221 Taiwan			
Manufacturer	Acer Incorporated			
Address	8F, 88, Sec. 1, Xintai 5th Rd. Xizhi New Taipei City 221 Taiwan			
EUT Name	Acer Connect 5G Mobile Wi-Fi			
Brand	ACER			
Model	M6E			
Sample Received Date	October 18, 2024			
Sample Status	Normal			
Sample ID	7722525			
Date of Tested	December 7, 2024~February 20, 2025			
Applicable Standards	FCC 47 CFR § 2.1093 IECIIEEE Std 62209-1528: 2020 IEC/IEEE 63195-1:2022 Published RF exposure KDB procedures			
Exposure Category	**SAR Limits (W/Kg)**		**Power Density Limits (mW/cm^2 over 4cm^2)**	
	Peak spatial-average (1g of tissue)	Extremities (hands, wrists, ankles, etc.) (10g of tissue)	APD (Absorbed Power Density)	IPD (Incident Power Density)
General population / Uncontrolled exposure	1.6	4	N/A	1.0

The Highest Reported SAR (W/kg)				
RF Exposure Conditions	**Equipment Class**			
	NII			
	The Highest Reported SAR (W/kg)	APD (mW/cm^2)	IPD (mW/cm^2)	
Body-worn	0.471	0.286	0.972	
Hotspot	0.471			
Simultaneous Transmission (1-g) Body-worn	1.593			
Simultaneous Transmission (1-g) Hotspot	1.597			
Test Results	Pass			

Prepared By: Burt Hu Burt Hu Laboratory Engineer	Reviewed By: Kebo Zhang Kebo Zhang Senior Project Engineer	Approved By: Stephen Guo Stephen Guo Laboratory Manager

2. Test Specification, Methods and Procedures

The tests documented in this report were performed in accordance with IEEE Std.1528-2013 the following FCC Published RF exposure KDB procedures:

- 447498 D01 General RF Exposure Guidance v06
- 865664 D01 SAR measurement 100 MHz to 6 GHz v01r04
- 865664 D02 RF Exposure Reporting v01r02
- 248227 D01 802.11 Wi-Fi SAR v02r02
- 941225 D07 UMPC Mini Tablet v01r02

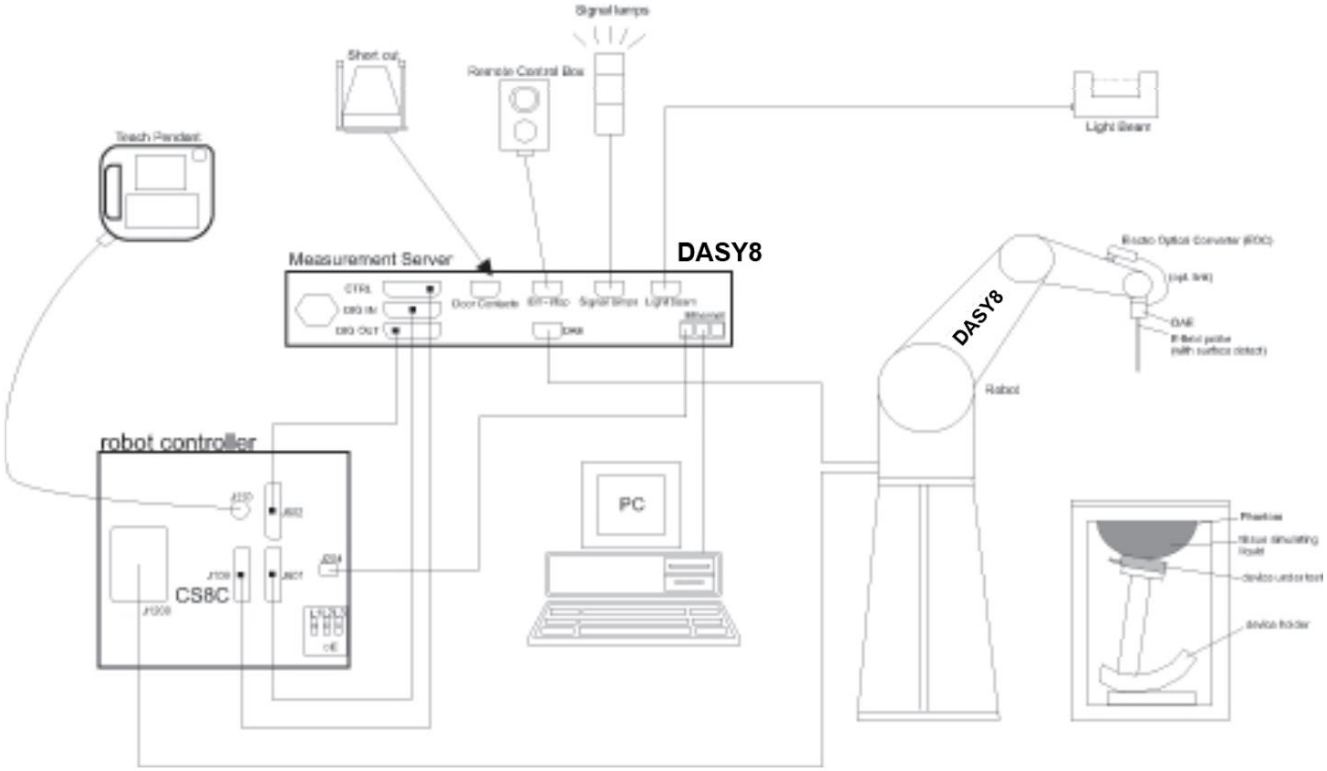
3. Facilities and Accreditation

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules. **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046. **VCCI (Registration No.: G-20192, C-20153, T-20155 and R-20202)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20192 and R-20202 Shielding Room B, the VCCI registration No. is C-20153 and T-20155
Description	All measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

4. SAR Measurement System & Test Equipment

4.1. SAR Measurement System

The DASY8 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- 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.
- 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.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win 10 and the DASY8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.2. SAR Scan Procedures

Step 1: Power Reference Measurement

The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to phantom surface. The minimum distance of probe sensors to surface is 2.1 mm. This distance cannot be smaller than the distance of sensor calibration points to probe tip as defined in the probe properties.

Step 2: Area Scan

The Area Scan is used as a fast scan in two dimensions to find the area of high field values, before doing a fine measurement around the hot spot. The sophisticated interpolation routines implemented in DASY software can find the maximum locations even in relatively coarse grids. When an Area Scan has measured all reachable points, it computes the field maximal found in the scanned area, within a range of the global maximum. The range (in dB) is specified in the standards for compliance testing. For example, a 2 dB range is required in IEC/IEEE 62209-1528:2020. If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

Area Scan Parameters extracted from IEC/IEEE 62209-1528:2020:

Table 3 – Area scan parameters

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	3 GHz $< f \leq 10$ GHz
Maximum distance between the measured points (geometric centre of the sensors) and the inner phantom surface (z_{M1} in Figure 20 in mm)	5 ± 1	$\delta \ln(2)/2 \pm 0{,}5$ [a]
Maximum spacing between adjacent measured points in mm (see O.8.3.1)[b]	20, or half of the corresponding zoom scan length, whichever is smaller	$60/f$, or half of the corresponding zoom scan length, whichever is smaller
Maximum angle between the probe axis and the phantom surface normal (α in Figure 20)[c]	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Tolerance in the probe angle	1°	1°

[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space.

[b] See Clause O.8 on how Δx and Δy may be selected for individual area scan requirements.

[c] The probe angle relative to the phantom surface normal is restricted due to the degradation in the measurement accuracy in fields with steep spatial gradients. The measurement accuracy decreases with increasing probe angle and increasing frequency. This is the reason for the tighter probe angle restriction at frequencies above 3 GHz.

Step 3: Zoom Scan

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure. When the measurement is done, the Zoom Scan evaluates the averaged SAR for 1 g and 10 g and displays these values next to the job's label.

Zoom Scan Parameters extracted from IEC/IEEE 62209-1528:2020:

Parameter	DUT transmit frequency being tested	
	$f \leq 3$ GHz	3 GHz $< f \leq 10$ GHz
Maximum distance between the closest measured points and the phantom surface (z_{M1} in Figure 20 and Table 3, in mm)	5	$\delta \ln(2)/2$ [a]
Maximum angle between the probe axis and the phantom surface normal (α in Figure 20)	5° (flat phantom only) 30° (other phantoms)	5° (flat phantom only) 20° (other phantoms)
Maximum spacing between measured points in the x- and y-directions (Δx and Δy, in mm)	8	$24/f$ [b]
For uniform grids: Maximum spacing between measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	5	$10/(f-1)$
For graded grids: Maximum spacing between the two closest measured points in the direction normal to the phantom shell (Δz_1 in Figure 20, in mm)	4	$12/f$
For graded grids: Maximum incremental increase in the spacing between measured points in the direction normal to the phantom shell ($R_z = \Delta z_2/\Delta z_1$ in Figure 20)	1,5	1,5
Minimum edge length of the zoom scan volume in the x- and y-directions (L_z in O.8.3.2, in mm)	30	22
Minimum edge length of the zoom scan volume in the direction normal to the phantom shell (L_h in O.8.3.2 in mm)	30	22
Tolerance in the probe angle	1°	1°

[a] δ is the penetration depth for a plane-wave incident normally on a planar half-space.

[b] This is the maximum spacing allowed, which might not work for all circumstances.

Step 4: Power drift measurement

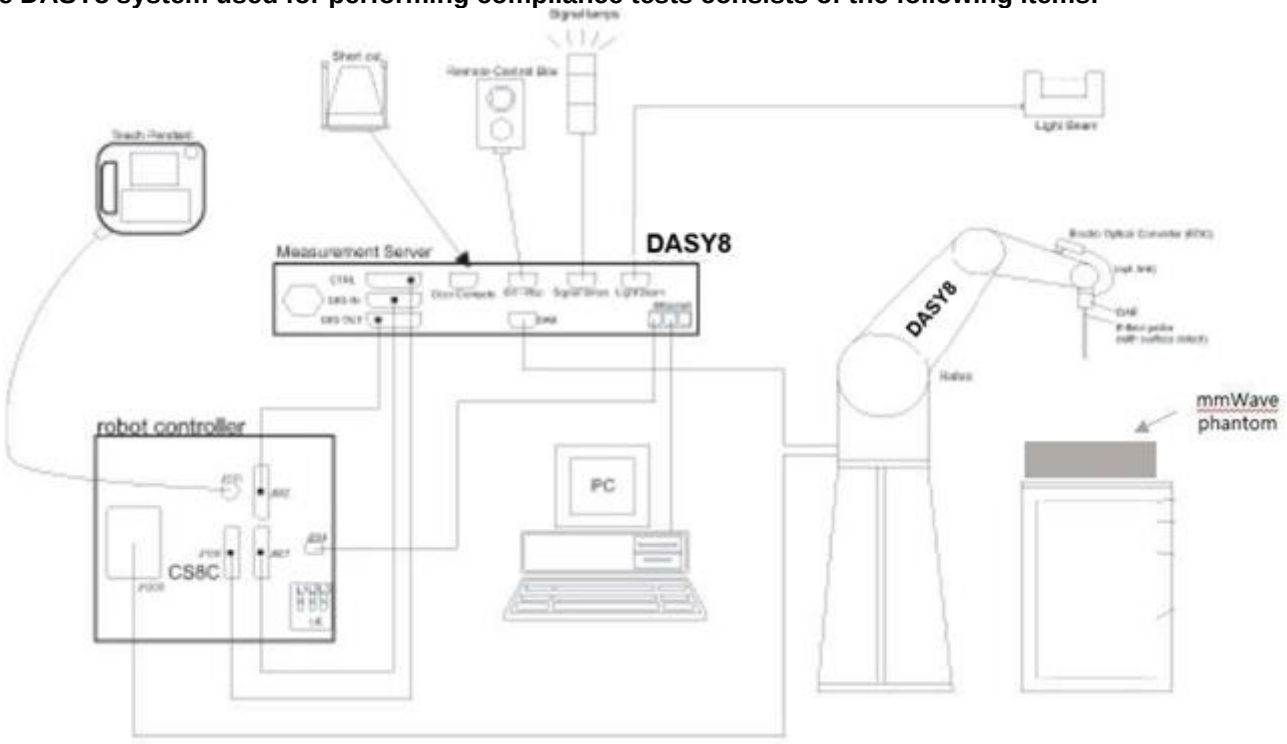
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in Db from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1.

Step 5: Z-Scan (FCC only)

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be greater than the step size in Z-direction.

4.3. Incident Power Density Measurement System

The DASY8 system used for performing compliance tests consists of the following items:



- A standard high precision 6-axis robot with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).
- An isotropic Field probe optimized and calibrated for the targeted measurement.
- 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.
- 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.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.
- A computer running Win 10 and the DASY8 software.
- Remote control and teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.
- The phantom, the device holder and other accessories according to the targeted measurement.

4.4. Power Density Scan Procedures

Step 1: Power Reference Measurement
The Power Reference Measurement and Power Drift Measurements are for monitoring the power drift of the device under test in the batch process. The minimum distance of probe sensors to surface determines the closest measurement point to devise under test.

Step 2: 5G Scan
The steps in the X, Y, and Z directions are specified in terms of fractions of the signal wavelength ,lambda. Area Scan Parameters extracted from SPEAG, 5G Module V1.2 Application Note.

Recommended settings for measurement of verification sources

Frequency [GHz]	Grid step	Grid extent X/Y [mm]	Measurement points
10	0.125 ($\frac{\lambda}{8}$)	60/60	18 × 18
30	0.25 ($\frac{\lambda}{4}$)	60/60	26 × 26
45	0.25 ($\frac{\lambda}{4}$)	42/42	28 × 28
60	0.25 ($\frac{\lambda}{4}$)	32.5/32.5	28 × 28
90	0.25 ($\frac{\lambda}{4}$)	30/30	38 × 38

The minimum distance of probe sensors to verification source surface, horn antenna, is 10 mm.

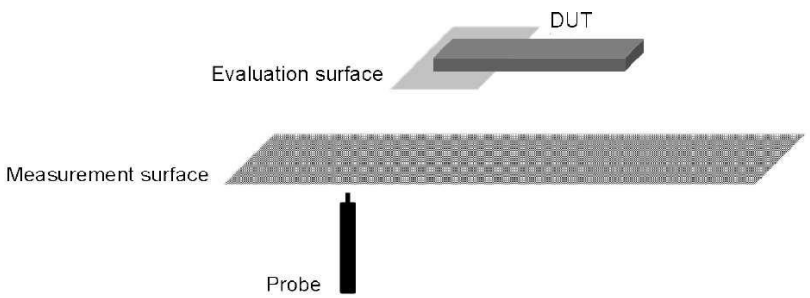
Per equipment manufacturer guidance for 6 - 10GHz, Power density was measured at d=2mm and d=M5mm using same grid size and grid step size for some frequencies and surfaces. The integrated power Density (iPD) was calculated based on these measurements. Since iPD ratio between the two distances is < 1dB, the grid step was sufficient for determining compliance at d=2mm.

Step 3: Power drift measurement
The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 1. When the drift is larger than ± 5 %, test is repeated from step1.

4.5. Total Field and Power Flux Density Reconstruction(measurement distance)

Reconstruction algorithms are used to project or transform the measured fields from the measurement surface to the evaluation surface (below fig) in order to determine power density or to compute spatial-average and/or local power density with known uncertainty.

Manufacture has 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 EUmmWVx 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- and H-fields, as well as of the power density, on measurement planes.



4.6. Test Equipment

The measuring equipment used to perform the tests documented in this report has been calibrated in accordance with the manufacturers' recommendations and is traceable to recognized national standards.

Name of equipment	Manufacturer	Type/Model	Serial No.	Cal. Due Date
ENA Network Analyzer	Keysight	E5080A	MY55100583	2025.09.27
Dielectric Probe kit	SPEAG	SM DAK 040 SA	1155	2025.02.27
DC power supply	Keysight	E36103A	MY55350020	2025.09.27
Vector Signal Generator	Rohde & Schwarz	SMW200A	1412.0000K02-102983-sZ	2025.09.27
BI-Directional Coupler	KRYTAR	1850	54733	2025.09.27
Peak and Average Power Sensor	Keysight	E9325A	MY62220002	2025.09.27
Peak and Average Power Sensor	Keysight	E9325A	MY62220003	2025.09.27
Dual Channel PK Power Meter	Keysight	N1912A	MY55416024	2025.09.27
Amplifier	CORAD TECHNOLOGY LTD	AMF-4D-00400600-50-30P	1983561	NCR
Dosimetric E-Field Probe	SPEAG	EX3DV4	7683	2025.07.02
5G probe	SPEAG	EummWV4	9533	2025.08.22
Data Acquisition Electronic	SPEAG	DAE4	1739	2025.01.22
Data Acquisition Electronic	SPEAG	DAE4	1318	2025.10.08
Dipole Kit 6.5 GHz	SPEAG	D6.5GHzV2	1080	2025.08.01
Verification kit	SPEAG	5G verification source_10GHz	2044	2025.08.19
Software	SPEAG	DASY8	N/A	NCR
Phantom	SPEAG	mmWave	1103	NCR
Thermometer	/	GX-138	150709653	2025.10.7
Thermometer	VICTOR	ITHX-SD-5	18470005	2025.10.7

Note:

1) Per KDB865664D01 v01r04 requirements for dipole calibration, the test laboratory has adopted three-year extended calibration interval. Each measured dipole is expected to evaluate with the following criteria at least on annual interval in Appendix C.

a) There is no physical damage on the dipole;

b) System check with specific dipole is within 10% of calibrated value;

c) The most recent return-loss result, measured at least annually, deviates by no more than 20% from the previous measurement.

d) The most recent measurement of the real or imaginary parts of the impedance, measured at least annually is within 5Ω from the previous measurement.

2) Network analyzer probe calibration against air, distilled water and a shorting block performed before measuring liquid parameters.

5. Measurement Uncertainty

5.1.Uncertainty budget list (4MHz to 10GHz)

Symbol	Input quantity X_i (source of uncertainty)	Unc. (±)	Prob. Dist. PDF$_i$	Unc. a(x_i)	c_i (1g)	c_i (10g)	Ui (1g) (%)	Ui (10g) (%)
Measurement system errors								
CF	Probe calibration	18.6	N (k = 2)	2	1	1	9.3	9.3
CF_{drift}	Probe calibration drift	1.7	R	√3	1	1	1.0	1.0
LIN	Probe linearity and detection limit	0.6	R	√3	1	1	0.3	0.3
BBS	Broadband signal	0.5	R	√3	1	1	0.3	0.3
ISO	Probe isotropy	0.5	R	√3	1	1	0.3	0.3
DAE	Other probe and data acquisition errors	2.4	N	1	1	1	2.4	2.4
AMB	RF ambient and noise	3.0	R	√3	1	1	1.7	1.7
Δ_{xyz}	Probe positioning errors	0.5	N	1	0.33	0.33	0.2	0.2
DAT	Data processing errors	4.0	R	√3	1	1	2.3	2.3
Phantom and device (DUT or validation antenna) errors								
LIQ(σ)	Measurement of phantom conductivity(σ)	2.5	N	1	0.78	0.71	2.0	1.8
LIQ(Tc)	Temperature effects (medium)	2.7	R	√3	0.78	0.71	1.2	1.1
EPS	Shell permittivity	14.0	R	√3	0.5	0.5	4.0	4.0
DIS	Distance between the radiating element of the DUT and the phantom medium	2.0	N	1	2	2	4.0	4.0
Dxyz	Repeatability of positioning the DUT or source against the phantom	2.9	N	1	1	1	2.9	2.9
H	Device holder effects	3.6	N	1	1	1	3.6	3.6
MOD	Effect of operating mode on probe sensitivity	2.4	R	√3	1	1	1.4	1.4
TAS	Time-average SAR	0.0	R	√3	1	1	0.0	0.0
RF_{drift}	Variation in SAR due to drift in output of DUT	2.5	N	1	1	1	2.5	2.5
VAL	Validation antenna uncertainty (validation measurement only)	0.0	N	1	1	1	0.0	0.0
P_{in}	Uncertainty in accepted power (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Corrections to the SAR result (if applied)								
C(ε',σ)	Phantom deviation from target (ε',σ)	1.9	N	1	1	0.84	1.9	1.6
C(*R*)	SAR scaling	0.0	R	√3	1	1	0.0	0.0
u(ΔSAR)	Combined uncertainty	\					14.36	14.26
U	Expanded uncertainty and effective degrees of freedom (k = 2)	\					28.73	28.53

5.2.Incident Power Density Measurement Uncertainty

Error Description	Uncertainty value(±dB)	Probe Dist.	Divisor	(Ci)	Std. Unc. (±dB)	(Vi)
Uncertainty terms dependent on the measurement system						
Calibration	0.49	Normal	1	1	0.49	Infinity
Probe correction	0.00	Rectangular	1.73	1	0.00	Infinity
Frequency response (BW =< 1 GHz)	0.20	Rectangular	1.73	1	0.12	Infinity
Sensor cross coupling	0.00	Rectangular	1.73	1	0.00	Infinity
Isotropy	0.50	Rectangular	1.73	1	0.29	Infinity
Linearity	0.20	Rectangular	1.73	1	0.12	Infinity
Probe scattering	0.00	Rectangular	1.73	1	0.00	Infinity
Probe positioning offset	0.30	Rectangular	1.73	1	0.17	Infinity
Probe positioning repeatability	0.04	Rectangular	1.73	1	0.02	Infinity
Sensor mechanical offset	0.00	Rectangular	1.73	1	0.00	Infinity
Probe spatial resolution	0.00	Rectangular	1.73	1	0.00	Infinity
Field impedance dependance	0.00	Rectangular	1.73	1	0.00	Infinity
Amplitude and phase drift	0.00	Rectangular	1.73	1	0.00	Infinity
Amplitude and phase noise	0.04	Rectangular	1.73	1	0.02	Infinity
Measurement area truncation	0.10	Rectangular	1.73	1	0.06	Infinity
Data acquisition	0.03	Normal	1.00	1	0.03	Infinity
Sampling	0.00	Rectangular	1.73	1	0.00	Infinity
Field reconstruction	0.60	Rectangular	1.73	1	0.35	Infinity
Forward transformation	0.00	Rectangular	1.73	1	0.00	Infinity
Power density scaling	-	Rectangular	1.73	1	-	Infinity
Spatial averaging	0.10	Rectangular	1.73	1	0.06	Infinity
System detection limit	0.04	Rectangular	1.73	1	0.02	Infinity
Uncertainty terms dependent on the DUT and environmental factors						
Probe coupling with DUT	0.00	Rectangular	1.73	1	0.00	Infinity
Modulation response	0.40	Rectangular	1.73	1	0.23	Infinity
Integration time	0.00	Rectangular	1.73	1	0.00	Infinity
Response time	0.00	Rectangular	1.73	1	0.00	Infinity
Device holder influence	0.10	Rectangular	1.73	1	0.06	Infinity
DUT alignment	0.00	Rectangular	1.73	1	0.00	Infinity
RF ambient conditions	0.04	Rectangular	1.73	1	0.02	Infinity
Ambient reflections	0.04	Rectangular	1.73	1	0.02	Infinity
Immunity / secondary reception	0.00	Rectangular	1.73	1	0.00	Infinity
Drift of the DUT	0.22	Rectangular	1.73	1	0.13	Infinity
Combined Std. Uncertainty					0.76	Infinity
Expanded Standard Uncertainty (95%)					1.53	

6. Device Under Test (DUT) Information

6.1. DUT Description

DUT is a Connect 5G Mobile Wi-Fi that supports 2.4 / 5/6 GHz Wi-Fi wireless and WCDMA/LTE/NR technology.	
DUT Dimension	Overall (Length x Width x Height): 140 mm x 86 mm x 19.05 mm

6.2. Wireless Technology

Wireless technologies	Frequency bands	Operating mode
LTE	FDD Band2 FDD Band4 FDD Band5 FDD Band7 FDD Band12 FDD Band13 FDD Band14 FDD Band17 FDD Band25 FDD Band26 FDD Band30 FDD Band66 FDD Band71 TDD Band41 TDD Band42 TDD Band48	QPSK 16QAM ☐ Rel. 10 Does not support Carrier Aggregation (CA) ☒ Rel. 10 Carrier Aggregation (Downlink only) ☐ Rel. 11 Carrier Aggregation (2 Uplink and 2 Downlinks)
NR	FDD n2 FDD n5 FDD n7 FDD n66 FDD n71 TDD n38 TDD n41 TDD n77 TDD n78	DFT-s-OFDM: Pi/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
W-CDMA (UMTS)	Band II Band VI Band V	UMTS Rel. 99 (Data) HSDPA (Rel. 5) HSUPA (Rel. 6)
Wi-Fi	2.4GHz	b/g/n HT20/11n HT40/ax HE20/ax HE40
Wi-Fi	5GHz	a20/n HT20/HT40/ac VHT20/VHT40/VHT80/ax HE20/HE40/HE80
Wi-Fi	6GHz	ax HE20/HE40/HE80

7. Conducted Output Power Measurement and tune-up tolerance

7.1. Test Results of 6GHz Wi-Fi

Mode	Freq(MHz)	Av Power (dBm)			Tune up (dBm)
		ANT7	ANT8	MIMO	
802.11AX 20M	5955	1.28	0.52	3.93	5.0
	6175	1.43	1.15	4.30	5.0
	6415	0.50	1.93	4.28	5.0
	6435	0.48	1.81	4.21	5.0
	6475	-0.31	1.95	3.98	5.0
	6515	-0.34	2.15	4.09	5.0
	6535	-0.43	1.96	3.94	5.0
	6715	1.06	1.27	4.18	5.0
	6855	0.78	1.41	4.12	5.0
	6875	0.23	1.07	3.68	5.0
	7015	0.90	1.62	4.29	5.0
	7095	1.75	-0.60	3.74	5.0
	7115	2.04	-0.10	4.11	5.0
802.11AX 40M	5965	4.42	3.45	6.97	7.5
	6165	4.21	4.21	7.22	7.5
	6405	3.14	4.41	6.83	7.5
	6445	3.03	4.69	6.95	7.5
	6485	2.34	4.77	6.73	7.5
	6525	2.64	4.82	6.88	7.5
	6565	2.66	4.53	6.71	7.5
	6725	3.81	3.71	6.77	7.5
	6845	3.27	3.97	6.64	7.5
	6885	3.10	4.56	6.90	7.5
	7005	3.54	4.43	7.02	7.5
	7085	4.82	2.71	6.90	7.5
802.11AX 80M	5985	8.19	8.23	11.22	12.0
	6145	8.37	8.00	11.20	12.0
	6385	7.63	8.56	11.13	12.0
	6465	7.28	9.26	11.39	12.0
	6545	7.60	8.85	11.28	12.0
	6705	7.90	7.81	10.87	12.0
	6785	8.55	7.96	11.28	12.0
	6865	7.69	8.57	11.16	12.0
	6945	7.10	8.82	11.05	11.5
	7025	7.82	7.99	10.92	11.5

Note:
1) The output power of the device was set to transmit at maximum power for all tests.

2) As per KDB 447498 D01 sec.4.1.d) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

RU

Mode	Freq(MHz)	RU size	RU Index	Av Power (dBm)			Tune up (dBm)
				ANT7	ANT8	MIMO	
802.11AX 20M	5955	26	0	-6.19	-7.41	-3.75	-3.5
		52	37	-3.26	-4.44	-0.80	-0.5
		106	53	-0.49	-1.52	2.04	2.5
		SU	/	1.28	0.52	3.93	4.0
	6175	26	4	-5.76	-6.22	-2.97	-2.5
		52	38	-3.89	-4.23	-1.05	-0.5
		106	53	-0.94	-1.04	2.02	2.5
		SU	/	1.43	1.15	4.30	5.0
	6415	26	8	-7.32	-6.36	-3.80	-3.5
		52	40	-4.52	-3.35	-0.89	-0.5
		106	54	-1.47	-0.18	2.23	2.5
		SU	/	0.50	1.93	4.28	4.5
	6435	26	0	-7.07	-6.32	-3.67	-3.5
		52	37	-4.09	-3.46	-0.75	-0.5
		106	53	-1.18	-0.31	2.29	2.5
		SU	/	0.48	1.81	4.21	4.5
	6475	26	4	-6.99	-5.11	-2.94	-2.5
		52	38	-5.05	-3.09	-0.95	-0.5
		106	53	-1.91	0.01	2.17	2.5
		SU	/	-0.31	1.95	3.98	4.0
	6515	26	8	-7.74	-5.63	-3.55	-3.0
		52	40	-5.47	-3.19	-1.17	-1.0
		106	54	-2.81	-0.22	1.69	2.0
		SU	/	-0.34	2.15	4.09	4.5
	6535	26	0	-7.78	-5.59	-3.54	-3.0
		52	37	-5.15	-3.06	-0.97	-0.5
		106	53	-2.30	0.09	2.07	2.5
		SU	/	-0.43	1.96	3.94	-4.5
	6715	26	4	-5.62	-5.76	-2.68	-2.0
		52	38	-3.92	-3.99	-0.94	-0.5
		106	53	-1.55	-1.38	1.55	2.0
		SU	/	1.06	1.27	4.18	4.5
	6855	26	8	-7.31	-6.68	-3.97	-3.5
		52	40	-4.58	-3.87	-1.20	-1.0
		106	54	-1.08	-0.47	2.25	2.5
		SU	/	0.78	1.41	4.12	4.5
	6875	26	0	-7.23	-7.06	-4.13	-4.0
		52	37	-4.21	-3.74	-0.96	-0.5

		106	53	-1.42	-0.76	1.93	2.0
		SU	/	0.23	1.07	3.68	4.0
	7015	26	4	-6.67	-5.54	-3.06	-2.5
		52	38	-4.44	-3.13	-0.73	-0.5
		106	53	-1.60	-0.36	2.07	2.5
		SU	/	0.90	1.62	4.29	4.5
	7095	26	8	-5.99	-8.03	-3.88	-3.5
		52	40	-2.92	-5.46	-1.00	-0.5
		106	54	-0.11	-2.19	1.98	2.0
		SU	/	1.75	-0.60	3.74	4.04
	7115	26	8	-6.49	-9.07	-4.58	-4.0
		52	40	-3.11	-5.36	-1.08	-0.5
		106	54	-0.04	-2.11	2.06	2.5
		SU	/	2.04	-0.10	4.11	4.5
802.11AX 40M	5965	SU	/	4.42	3.45	6.97	7.5
	6165	SU	/	4.21	4.21	7.22	7.5
	6405	SU	/	3.14	4.41	6.83	7.5
	6445	SU	/	3.03	4.69	6.95	7.5
	6485	SU	/	2.34	4.77	6.73	7.5
	6525	SU	/	2.64	4.82	6.88	7.5
	6565	SU	/	2.66	4.53	6.71	7.5
	6725	SU	/	3.81	3.71	6.77	7.5
	6845	SU	/	3.27	3.97	6.64	7.5
	6885	SU	/	3.10	4.56	6.90	7.5
	7005	SU	/	3.54	4.43	7.02	7.5
	7085	SU	/	4.82	2.71	6.90	7.5
802.11AX 80M	5985	SU	/	8.19	8.02	11.12	12.0
	6145	SU	/	8.37	8.00	11.20	12.0
	6385	SU	/	7.63	8.56	11.13	12.0
	6465	SU	/	7.28	9.26	11.39	12.0
	6545	SU	/	6.45	8.55	10.64	12.0
	6705	SU	/	7.90	7.81	10.87	12.0
	6785	SU	/	8.55	7.96	11.28	12.0
	6865	SU	/	7.69	8.57	11.16	12.0
	6945	SU	/	7.10	8.82	11.05	11.5
	7025	SU	/	7.82	7.99	10.92	11.5

Note:
1) The output power of the device was set to transmit at maximum power for all tests.
2) As per KDB 447498 D01 sec.4.1.d) at the maximum rated output power and within the tune-up tolerance range specified for the product, but not more than 2 dB lower than the maximum tune-up tolerance limit.

7.2. Duty Cycle

Test Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)
802.11 ax 80M	0.29	0.33	0.8788	87.88

802.11 ax 80M 5985MHz

8. Test Configuration

8.1.6GHz Wi-Fi SAR Test Requirements

6GHz Wi-Fi operating modes are tested independently according to the service requirements in each frequency band for each antenna. ax20/ ax40/ ax80 MIMO modes are tested on the maximum average output power mode.

8.2.Repeated measurements

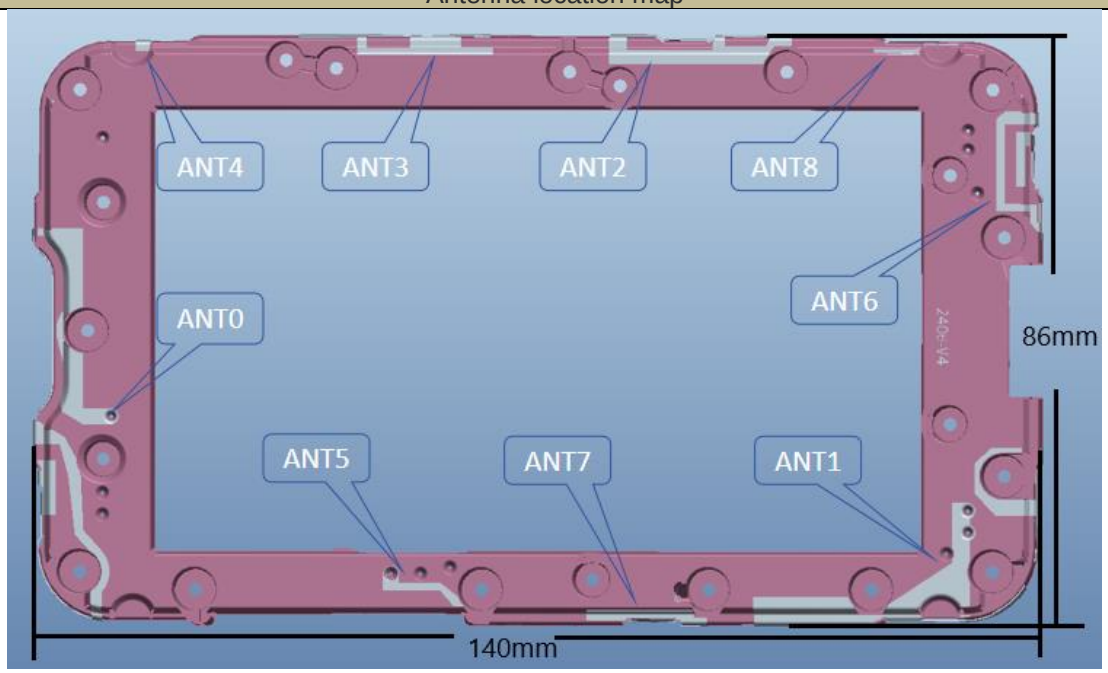
Repeated measurements are required only when the measured SAR is ≥ 0.80 W/kg.18 If the measured SAR value of the initial repeated measurement is < 1.45 W/kg with ≤ 20% variation, only one repeated measurement is required to reaffirm that the results are not expected to have substantial variations, which may introduce significant compliance concerns. A second repeated measurement is required only if the measured result for the initial repeated measurement is within 10% of the SAR limit and vary by more than 20%, which are often related to device and measurement setup difficulties. The following procedures are applied to determine if repeated measurements are required. The same procedures should be adapted for measurements according to extremity and occupational exposure limits by applying a factor of 2.5 for extremity exposure and a factor of 5 for occupational exposure to the corresponding SAR thresholds.19 The repeated measurement results must be clearly identified in the SAR report. All measured SAR, including the repeated results, must be considered to determine compliance and for reporting according to KDB Publication 690783.

1) Repeated measurement is not required when the original highest measured SAR is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥ 1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

9. Antenna location diagram

Refer to the diagram inside the device which attached below for the specific details of the antenna-to-edges distances.

Antenna location map



ANT0: W2,W4,W5,B2,B4,B5,B7,B12,B13,B14,B17,B25,B26,B30,B66,B71,CCn2,n5,n7,n66,n71
ANT1: Receive only
ANT2: Receive only
ANT3: B38,B41, n38,n41
ANT4: B42, B42,n77,n78
ANT5: Receive only
ANT6: Receive only
ANT7: Wi-Fi
ANT8: Wi-Fi
EN-DC In this state, some LTE bands are reallocated as follows:
ANT0: B38,B41

10.RF Exposure Conditions

Wireless technologies	RF Exposure Conditions	DUT-to-User Separation
WLAN	SAR-Body-worn & Hotspot	10 mm
WLAN	IPD	2 mm

11.Dielectric Property Measurements & System Check

11.1.Dielectric Property Measurements

The temperature of the tissue-equivalent medium used during measurement must also be within 18°C to 25°C and within ± 2°C of the temperature when the tissue parameters are characterized.
The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements. The parameters should be re-measured after each 3 – 4 days of use; or earlier if the dielectric parameters can become out of tolerance; for example, when the parameters are marginal at the beginning of the measurement series.
Tissue dielectric parameters were measured at the low, middle and high frequency of each operating frequency range of the test device.

Tissue Dielectric Parameters

Refer to Table 2 within the IEC/IEEE Std 62209-1528: 2020

Target Frequency (MHz)	Tissue parameters	
	ε_r	σ (S/m)
5800	35.3	5.27
6000	35.1	5.48
6500	34.5	6.07
7000	33.9	6.65
7500	33.3	7.24
8000	32.7	7.84
8500	32.1	8.46

IEC/IEEE Std 62209-1528: 2020
Refer to Table 3 within the IEC/IEEE Std 62209-1528: 2020 Dielectric Property Measurements Results:

Liquid	Freq.	Liquid Parameters				Deviation(%)		Limit (%)	Temp. (℃)	Test Date
		Measured		Target						
		ε_r	σ	ε_r	σ	ε_r	σ			
Head 6500	5950	34.300	5.280	35.15	5.43	-2.42	-2.76	±5	22.8	December 26, 2024
	6500	34.300	5.800	34.50	6.07	-0.58	-4.45			
	7000	34.400	6.420	33.90	6.65	1.47	-3.46			

11.2.System Check

SAR system verification is required to confirm measurement accuracy, according to the tissue dielectric media, probe calibration points and other system operating parameters required for measuring the SAR of a test device. The system verification must be performed for each frequency band and within the valid range of each probe calibration point required for testing the device. The same SAR probe(s) and tissue-equivalent media combinations used with each specific SAR system for system verification must be used for device testing. When multiple probe calibration points are required to cover substantially large transmission bands, independent system verifications are required for each probe calibration point. A system verification must be performed before each series of SAR measurements using the same probe calibration point and tissue-equivalent medium. Additional system verification should be considered according to the conditions of the tissue-equivalent medium and measured tissue dielectric parameters, typically every three to four days when the liquid parameters are re-measured or sooner when marginal liquid parameters are used at the beginning of a series of measurements.

System Performance Check Measurement Conditions:

- The measurements were performed in the flat section of the TWIN SAM or ELI phantom, shell thickness: 2.0 ±0.2 mm (bottom plate) filled with Body or Head simulating liquid of the following parameters.
- The depth of tissue-equivalent liquid in a phantom must be ≥ 15.0 cm for SAR measurements ≤ 3 GHz and ≥ 10.0 cm for measurements > 3 GHz.
- The DASY system with an E-Field Probe was used for the measurements.
- The dipole was mounted on the small tripod so that the dipole feed point was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10 mm (above 1GHZ) and 15 mm (below 1GHz) from dipole center to the simulating liquid surface.
- For area scan, standard grid spacing for head measurements is 15 mm in x- and y- dimension (≤2GHz), 12 mm in x- and y-dimension (2-4 GHz) and 10 mm in x- and y- dimension (4-6GHz).
- For zoom scan, Δx_{zoom}, Δy_{zoom} ≤ 2 GHz - ≤ 8 mm, 2-4 GHz - ≤ 5 mm and 4-6 GHz-≤ 4 mm; Δz_{zoom} ≤ 3 GHz - ≤ 5 mm, 3-4 GHz- ≤ 4 mm and 4-6 GHz-≤ 2 mm.
- Distance between probe sensors and phantom surface was set to 3 mm except for 5 GHz band. For 5 GHz band, Distance between probe sensors and phantom surface was set to 2.5 mm
- The dipole input power (forward power) was set to 100 mW or 250 mW depend on the certificate of the dipoles.
- The results are normalized to 1 W input power.

System Check Results

The 1-g and 10-g SAR measured with a reference dipole, using the required tissue-equivalent medium at the test frequency, must be within 10% of the manufacturer calibrated dipole SAR target.

T.S. Liquid		Measured Results		Target (Ref. value)	Delta (%)	Limit (%)	Temp. (℃)	Test Date
		Zoom Scan (W/Kg)	Normalize to 1W (W/Kg)					
Head 6500	1-g	29.700	297.00	294.00	1.02	±10	22.8	December 26, 2024
	10-g	5.720	57.20	54.60	4.76			

12.IPD (Incident Power Density) System with Dielectric Property

12.1.Dielectric Property

Media is air so Relative Permittivity (er) and Conductivity (o) is 1.

12.2.System Check

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. Thel 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.

Reference Target PD Values

Frequency (GHz)	Distance (mm)	Measured 4cm^2 (W/m^2)	Target 4cm^2 (W/m^2)	Delta (%)	Limit (dB)	Temp. (℃)	Test Date
10	10	163.30	183.00	-0.49	±0.66	22.4	January 3, 2025

13.Measured and Reported (Scaled) SAR and APD Results

SAR Test Reduction criteria are as follows：

●Reported SAR(W/kg) for Wi-Fi Measured SAR* Maximum Output Power scaling factor Duty Cycle scaling factor

●Duty Cycle scaling factor = 1 / Duty cycle (%)

SAR Test Reduction criteria are as follows:

KDB 447498 D01 General RF Exposure Guidance:

A）Per KDB447498 D01, all SAR measurement results are scaled to the maximum tune-up tolerance limit to demonstrate SAR compliance.

B）Testing of other required channels within the operating mode of a frequency band is not required when the reported 1-g or 10-g SAR for the mid-band or highest output power channel is:

- ≤ 0.8 W/kg or 2.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≤ 100 MHz.
- ≤ 0.6 W/kg or 1.5 W/kg, for 1-g or 10-g respectively, when the transmission band is between 100 MHz and 200 MHz.
- ≤ 0.4 W/kg or 1.0 W/kg, for 1-g or 10-g respectively, when the transmission band is ≥ 200 MHz.

Per KDB865664 D01 v01r04:

For each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/Kg; if the deviation among the repeated measurement is ≤ 20%, and the measured SAR <1.45W/Kg, only one repeated measurement is required.

13.1.SAR Test Results of U-NII-5

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured	Pwr. Drift	Scaled (W/Kg)	Plot No.
					Tune-up	Meas.			1-g (W/Kg)			
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	7	12.0	11.22	87.88	1.14	0.241	0.02	0.328	
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	39	12.0	11.20	87.88	1.14	0.260	-0.14	0.356	
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	87	12.0	11.13	87.88	1.14	**0.339**	-0.05	0.471	1
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	7	12.0	11.22	87.88	1.14	0.144	-0.10	0.196	
Hotspot	802.11 ax 80M	Left Edge	10	7	12.0	11.22	87.88	1.14	0.234	-0.11	0.319	
Hotspot	802.11 ax 80M	Right Edge	10	7	12.0	11.22	87.88	1.14	0.164	-0.04	0.223	
Hotspot	802.11 ax 80M	Top Edge	10	7	12.0	11.22	87.88	1.14	0.027	0.13	0.037	
Hotspot	802.11 ax 80M	Bottom Edge	10	7	12.0	11.22	87.88	1.14	0.099	-0.05	0.135	

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.2.APD Test Results of U-NII-5

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured APD (mW/cm^2 over $4cm^2$)	Plot No.
					Tune-up	Meas.				
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	7	12.0	11.22	87.88	1.14		
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	39	12.0	11.20	87.88	1.14		
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	87	12.0	11.13	87.88	1.14	0.283	
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	7	12.0	11.22	87.88	1.14		
Hotspot	802.11 ax 80M	Left Edge	10	7	12.0	11.22	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	7	12.0	11.22	87.88	1.14		
Hotspot	802.11 ax 80M	Top Edge	10	7	12.0	11.22	87.88	1.14		
Hotspot	802.11 ax 80M	Bottom Edge	10	7	12.0	11.22	87.88	1.14		

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.3.SAR Test Results of U-NII-6

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured	Pwr. Drift	Scaled (W/Kg)	Plot No.
					Tune-up Limit	Meas.			1-g (W/Kg)			
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	103	12.0	11.39	87.88	1.14	**0.303**	0.01	0.397	2
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	103	12.0	11.39	87.88	1.14	0.199	-0.09	0.261	
Hotspot	802.11 ax 80M	Left Edge	10	103	12.0	11.39	87.88	1.14	0.244	-0.14	0.320	
Hotspot	802.11 ax 80M	Right Edge	10	103	12.0	11.39	87.88	1.14	0.268	-0.13	0.351	
Hotspot	802.11 ax 80M	Top Edge	10	103	12.0	11.39	87.88	1.14	0.066	0.16	0.086	
Hotspot	802.11 ax 80M	Bottom Edge	10	103	12.0	11.39	87.88	1.14	0.176	0.09	0.230	

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.4.APD Test Results of U-NII-6

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured APD (mW/cm^2 over $4cm^2$)	Plot No.
					Tune-up	Meas.				
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	103	12.0	11.39	87.88	1.14	0.260	
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	103	12.0	11.39	87.88	1.14		
Hotspot	802.11 ax 80M	Left Edge	10	103	12.0	11.39	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	103	12.0	11.39	87.88	1.14		
Hotspot	802.11 ax 80M	Top Edge	10	103	12.0	11.39	87.88	1.14		
Hotspot	802.11 ax 80M	Bottom Edge	10	103	12.0	11.39	87.88	1.14		

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.5.SAR Test Results of U-NII-7

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured	Pwr. Drift	Scaled (W/Kg)	Plot No.
					Tune-up Limit	Meas.			1-g (W/Kg)			
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	119	12.0	11.28	87.88	1.14	0.255	-0.11	0.342	
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	119	12.0	11.28	87.88	1.14	0.289	-0.18	0.388	
Hotspot	802.11 ax 80M	Left Edge	10	119	12.0	11.28	87.88	1.14	0.225	-0.15	0.302	
Hotspot	802.11 ax 80M	Right Edge	10	119	12.0	11.28	87.88	1.14	0.296	-0.01	0.398	
Hotspot	802.11 ax 80M	Right Edge	10	167	12.0	11.28	87.88	1.14	0.311	-0.10	0.418	
Hotspot	802.11 ax 80M	Right Edge	10	183	12.0	11.16	87.88	1.14	**0.326**	-0.12	0.450	3
Hotspot	802.11 ax 80M	Top Edge	10	119	12.0	11.28	87.88	1.14	0.035	-0.01	0.047	
Hotspot	802.11 ax 80M	Bottom Edge	10	119	12.0	11.28	87.88	1.14	0.164	0.06	0.220	

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.6.APD Test Results of U-NII-7

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured APD (mW/cm^2 over $4cm^2$)	Plot No.
					Tune-up	Meas.				
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	119	12.0	11.28	87.88	1.14		
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	119	12.0	11.28	87.88	1.14		
Hotspot	802.11 ax 80M	Left Edge	10	119	12.0	11.28	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	119	12.0	11.28	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	167	12.0	11.28	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	183	12.0	11.16	87.88	1.14	0.286	
Hotspot	802.11 ax 80M	Top Edge	10	119	12.0	11.28	87.88	1.14		
Hotspot	802.11 ax 80M	Bottom Edge	10	119	12.0	11.28	87.88	1.14		

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.7.SAR Test Results of U-NII-8

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured	Pwr. Drift	Scaled (W/Kg)	Plot No.
					Tune-up Limit	Meas.			1-g (W/Kg)			
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	199	11.5	11.05	87.88	1.14	0.291	0.07	0.367	
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	199	11.5	11.05	87.88	1.14	0.217	-0.02	0.274	
Hotspot	802.11 ax 80M	Left Edge	10	199	11.5	11.05	87.88	1.14	0.198	0.03	0.250	
Hotspot	802.11 ax 80M	Right Edge	10	199	11.5	11.05	87.88	1.14	**0.293**	0.15	0.370	4
Hotspot	802.11 ax 80M	Right Edge	10	215	11.5	10.92	87.88	1.14	0.286	-0.13	0.372	
Hotspot	802.11 ax 80M	Top Edge	10	199	11.5	11.05	87.88	1.14	0.067	0.18	0.085	
Hotspot	802.11 ax 80M	Bottom Edge	10	199	11.5	11.05	87.88	1.14	0.092	0.02	0.116	

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

13.8.APD Test Results of U-NII-8

RF Exposure Condition	Test Mode	Test Position	Dist. (mm)	Channel	Pwr. (dBm)		DC. (%)	duty cycle scaling factor	Measured APD (mW/cm^2 over $4cm^2$)	Plot No.
					Tune-up	Meas.				
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	199	11.5	11.05	87.88	1.14		
Body-worn & Hotspot	802.11 ax 80M	Back Surface	10	199	11.5	11.05	87.88	1.14		
Hotspot	802.11 ax 80M	Left Edge	10	199	11.5	11.05	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	199	11.5	11.05	87.88	1.14		
Hotspot	802.11 ax 80M	Right Edge	10	215	11.5	10.92	87.88	1.14	0.269	
Hotspot	802.11 ax 80M	Top Edge	10	199	11.5	11.05	87.88	1.14		
Hotspot	802.11 ax 80M	Bottom Edge	10	199	11.5	11.05	87.88	1.14		
Body-worn & Hotspot	802.11 ax 80M	Front Surface	10	199	11.5	11.05	87.88	1.14		

Note:

1) The SAR testing was set to transmit at maximum power for all tests.

14.IPD (Incident Power density) Results

RF Exposure Condition	Test Position	Mode	Ch./Freq.(MHz)	Gap (mm)	Grid Step (A)	Normal psPD (mW/cm^2)	Total psPD (mW/cm^2)	Pwr. Drift	Duty Cycle	Duty Cycle Scaling Factor	Conducted Power(dBm)	Tune up Limit(dBm)	Scaling Factor	Scailing factor for Measurement Uncertainty per IEC 62479	Reported Normal psPD (mW/cm^2)	Reported Total psPD (mW/cm^2)	Plot No.
Body-worn & Hotspot	Front Surface	802.11 ax 80M	87	2mm	0.043	0.2140	0.2930	0.11	87.88	1.138	11.13	12.0	1.222	1.530	0.456	0.623	5
Body-worn & Hotspot	Front Surface	802.11 ax 80M	103	2mm	0.044	0.2490	0.485	-0.05	87.88	1.138	11.39	12.0	1.151	1.530	0.499	0.972	6
Hotspot	Right Edge	802.11 ax 80M	183	2mm	0.047	0.2090	0.4120	0.11	87.88	1.138	11.16	12.0	1.213	1.530	0.442	0.871	7
Hotspot	Right Edge	802.11 ax 80M	199	2mm	0.047	0.2950	0.5030	0.16	87.88	1.138	11.05	11.5	1.109	1.530	0.569	0.972	8
Body-worn & Hotspot	Front Surface	802.11 ax 80M	7	2mm	0.041	0.2370	0.4320	-0.04	87.88	1.138	11.22	12.0	1.197	1.530	0.494	0.900	
Body-worn & Hotspot	Front Surface	802.11 ax 80M	87	9.4mm	0.043	0.0664	0.1430	-0.08	87.88	1.138	11.13	12.0	1.222	1.530	0.141	0.304	

Note:

1) 10 W/m²= 1.0 mW/cm²
2) Per TCBC workshop guide, Incident power density results were scaled according to IEC 62479:2010 for the portion of the measurement uncertainty > 30%. Total expanded uncertainty of 2.65 dB (84.1%) was used to determine the psPD measurement scaling factor.
3) Power density test data were scaled to tune-up limit using measurement system tool.
4) Grid Step setting were using the automatic grid step function of measurement system tool.
5) Per manufacturer guide, Incident power density was measured at d-2mm and d-Lamda/5mm using the same grid size and grid step size for some frequencies and surfaces. iPD(integrated Power Density) was calculated based on these measurements. Since iPD ratio between the two distance is < 1dB, the grid step was sufficient for determining compliance at d=2mm.
6) The initial test position for iPD was determined using the worst-case 1-g SAR.

15.Simultaneous Transmission SAR Analysis

Simultaneous transmission possibilities			
No.	Simultaneous TX Combination	Body- worn	Hotspot
1	WWAN (single antenna / EN-DC) + Wi-Fi (SISO/MIMO)	Y	Y

SN:		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
RF Exposure Condition	Test Position	LTE Band 2	LTE Band 4	LTE Band 5	LTE Band 7	LTE Band 12	LTE Band 13	LTE Band 14	LTE Band 17	LTE Band 25	LTE Band 26	LTE Band 30	LTE Band 38	LTE Band 40	LTE Band 41	LTE Band 48	LTE Band 66	LTE Band 71	NR n2	NR n5	NR n7
Body-worn & Hotspot	Front Surface	0.535	0.751	0.663	0.527	0.579	0.491	0.738	0.518	0.567	0.614	0.452	0.596	0.329	0.384	0.310	0.889	0.311	0.499	0.526	0.806
	Back Surface	0.455	0.367	0.779	0.482	0.632	0.522	0.779	0.558	0.637	0.750	0.555	0.509	0.457	0.263	0.409	0.659	0.345	0.459	0.580	0.507
Hotspot	Left Edge	0.074	0.061	0.418	0.078	0.260	0.278	0.427	0.243	0.125	0.328	0.072	0.453	0.652	0.302	0.662	0.128	0.155	0.077	0.288	0.428
	Right Edge	0.395	0.394	0.302	0.337	0.313	0.260	0.387	0.289	0.595	0.265	0.038	0.030	0.008	0.019	0.038	0.672	0.201	0.391	0.410	0.412
	Top Edge	0.622	0.239	0.089	0.406	0.039	0.045	0.070	0.036	0.715	0.069	0.847	0.094	0.176	0.047	0.263	0.379	0.035	0.551	0.093	0.402
	Bottom Edge	0.025	0.029	0.032	0.084	0.021	0.021	0.034	0.021	0.032	0.028	0.003	0.037	0.127	0.022	0.063	0.049	0.017	0.021	0.033	0.098

SN:		21	22	23	24	38	39	40	41	37	27	28	29	30	31	25	26	42	70	71	72
RF Exposure Condition	Test Position	NR n38	NR n41	NR n66	NR n71	NR n77 (Block A)	NR n77 (Block C)	NR n78 (Block A)	NR n78 (Block C)	L B41-ANT 0 END C	2.4G Wi-Fi ANT 7	2.4G Wi-Fi ANT 8	U-NII-2A	U-NII-2C	U-NII-3	N77max	N78max	WLAN max	N78 ENDC max	N77 ENDC + WLAN max	N78 ENDC + WLAN max
Body-worn & Hotspot	Front Surface	0.589	0.676	0.818	0.205	0.698	0.395	0.650	0.494	0.088	0.235	0.374	0.426	0.551	0.375	0.698	0.650	0.551	0.374	0.421	0.340
	Back Surface	0.583	0.618	0.703	0.201	0.777	0.767	1.165	0.812	0.098	0.359	0.417	0.295	0.274	0.197	0.777	1.165	0.417	0.664	0.603	0.611
Hotspot	Left Edge	0.606	0.447	0.065	0.067	0.543	0.167	0.771	0.486	0.016	0.030	0.265	0.490	0.787	0.533	0.543	0.771	0.787	0.444	0.352	0.405
	Right Edge	0.051	0.058	0.677	0.104	0.047	0.130	0.070	0.115	0.028	0.343	0.013	0.920	0.444	0.379	0.130	0.115	0.920	0.087	0.097	0.074
	Top Edge	0.108	0.102	0.375	0.034	0.307	0.368	0.362	0.493	0.609	0.014	0.043	0.052	0.044	0.030	0.368	0.493	0.077	0.374	0.301	0.302
	Bottom Edge	0.023	0.040	0.056	0.016	0.010	0.060	0.023	0.039	0.011	0.055	0.307	0.063	0.165	0.157	0.060	0.039	0.307	0.029	0.050	0.024

SN:		43	44	45	46	47	48	49	52	53	54	55	56	57	58
RF Exposure Condition	Test Position	WCDMA B2	WCDMA B4	WCDMA B5	LTE B5 ENDC	LTE 26 ENDC	LTE 66 ENDC	NR n66 ENDC	NR n78A ENDC	NR n78C ENDC	LTE B2 ENDC+WLAN	LTE B4 ENDC+WLAN	LTE B5 ENDC+WLAN	LTE B12 ENDC+WLAN	LTE B25 ENDC+WLAN
Body-worn & Hotspot	Front Surface	0.590	0.710	0.405	0.392	0.399	0.743	0.639	0.370	0.374	0.358	0.663	0.312	0.500	0.388
	Back Surface	0.582	0.764	0.458	0.452	0.490	0.550	0.543	0.664	0.621	0.304	0.325	0.360	0.572	0.437
Hotspot	Left Edge	0.102	0.193	0.293	0.247	0.213	0.107	0.050	0.444	0.367	0.049	0.055	0.197	0.225	0.085
	Right Edge	0.456	0.511	0.245	0.179	0.173	0.561	0.525	0.040	0.087	0.264	0.350	0.142	0.270	0.408
	Top Edge	0.719	0.707	0.079	0.053	0.045	0.316	0.290	0.208	0.374	0.416	0.212	0.042	0.033	0.494
	Bottom Edge	0.025	0.027	0.034	0.019	0.018	0.041	0.044	0.013	0.029	0.016	0.026	0.016	0.018	0.022

SN:		59	60	61	62	63	64	65	66	67	68	36	32	33	34	35
RF Exposure Condition	Test Position	LTE B26 ENDC+WLAN	LTE B66 ENDC+WLAN	NR n2 ENDC+WLAN	NR n38 ENDC+WLAN	NR n41 ENDC+WLAN	NR n66 ENDC+WLAN	NR n77A ENDC+WLAN	NR n77C ENDC+WLAN	NR n78A ENDC+WLAN	NR n78C ENDC+WLAN	L B38-ANT 0 ENDC	U-NII-5	U-NII-6	U-NII-7	U-NII-8
Body-worn & Hotspot	Front Surface	0.309	0.554	0.379	0.395	0.365	0.528	0.421	0.323	0.340	0.321	0.090	0.471	0.397	0.342	0.367
	Back Surface	0.380	0.458	0.348	0.391	0.355	0.454	0.504	0.603	0.611	0.563	0.087	0.196	0.261	0.388	0.274
Hotspot	Left Edge	0.165	0.089	0.059	0.414	0.263	0.042	0.352	0.137	0.405	0.295	0.014	0.319	0.320	0.302	0.250
	Right Edge	0.133	0.435	0.236	0.034	0.031	0.397	0.030	0.097	0.037	0.074	0.023	0.223	0.351	0.450	0.372
	Top Edge	0.035	0.263	0.420	0.072	0.057	0.243	0.199	0.301	0.190	0.302	0.308	0.037	0.086	0.047	0.085
	Bottom Edge	0.014	0.034	0.016	0.015	0.022	0.036	0.007	0.050	0.012	0.024	0.013	0.135	0.230	0.220	0.116

15.1.Analysis for WWAN single band & WLAN

RF Exposure Condition	Test Position	WWAN max	WLAN max	SUM
Body-worn & Hotspot	Front Surface	0.889	0.551	1.440
	Back Surface	1.165	0.417	1.582
Hotspot	Left Edge	0.771	0.787	1.558
	Right Edge	0.677	0.920	1.597
	Top Edge	0.936	0.077	1.013
	Bottom Edge	0.127	0.307	0.434

15.2.EN-DC

SN:		1+22	1+23	1+24	1+25	1+70	2+18	2+22	3+18	46+49	46+25	46+70	4+70	5+22
RF Exposure Condition	**Test Position**	DC_2A_n41A	DC_2A_n66A	DC_2A_n71A	DC_2A_n77A	DC_2A_n78A	DC_4A_n2A	DC_4A_n41A	DC_5A_n2A	DC_5A_n66A	DC_5A_n77A	DC_5A_n78A	DC_7A_n78A	DC_12A_n41A
Body-worn & Hotspot	**Front Surface**	1.211	1.353	0.740	1.233	0.909	1.250	1.427	1.162	1.031	1.090	0.766	0.901	1.255
	Back Surface	1.073	1.158	0.656	1.232	1.119	0.826	0.985	1.238	0.995	1.229	1.116	1.146	1.250
Hotspot	**Left Edge**	0.521	0.139	0.141	0.617	0.518	0.138	0.508	0.495	0.297	0.790	0.691	0.522	0.707
	Right Edge	0.453	1.072	0.499	0.525	0.482	0.785	0.452	0.693	0.704	0.309	0.266	0.424	0.371
	Top Edge	0.724	0.997	0.656	0.990	0.996	0.790	0.341	0.640	0.343	0.421	0.427	0.780	0.141
	Bottom Edge	0.065	0.081	0.041	0.085	0.054	0.050	0.069	0.053	0.063	0.079	0.048	0.113	0.061

SN:		5+23	5+25	9+25	47+25	47+70	11+25	36+70	37+25	37+70	48+18	48+21	48+22	48+24	48+25	48+70	17+49
RF Exposure Condition	**Test Position**	DC_12A_n66A	DC_12A_n77A	DC_25A_n77A	DC_26A_n77A	DC_26A_n78A	DC_30A_n77A	DC_38A_n78A	DC_41A_n77A	DC_41A_n78A	DC_66A_n2A	DC_66A_n38A	DC_66A_n41A	DC_66A_n71A	DC_66A_n77A	DC_66A_n78A	DC_71A_n66A
Body-worn & Hotspot	**Front Surface**	1.397	1.277	1.265	1.097	0.773	1.147	0.464	0.786	0.462	1.242	1.332	1.419	0.948	1.441	1.117	0.844
	Back Surface	1.335	1.409	1.414	1.267	1.154	1.328	0.751	0.875	0.762	1.009	1.133	1.168	0.751	1.327	1.214	0.744
Hotspot	**Left Edge**	0.325	0.803	0.668	0.756	0.657	0.614	0.458	0.559	0.460	0.184	0.713	0.554	0.174	0.650	0.551	0.117
	Right Edge	0.990	0.443	0.725	0.303	0.260	0.168	0.110	0.158	0.115	0.952	0.612	0.619	0.665	0.691	0.648	0.629
	Top Edge	0.414	0.407	1.083	0.413	0.419	1.304	0.682	0.977	0.983	0.867	0.424	0.418	0.350	0.684	0.690	0.324
	Bottom Edge	0.077	0.081	0.092	0.078	0.047	0.063	0.042	0.071	0.040	0.062	0.064	0.081	0.057	0.101	0.070	0.060

15.3.EN-DC & WLAN max

SN:		54+63+42	54+64+42	54+17+42	54+71+42	54+72+42	55+61+42	55+63+42	56+61+42	56+64+42	56+71+42	56+72+42	4+72+42	57+63+42	57+64+42
RF Exposure Condition	Test Position	DC_2A_N41a+WLANmax	DC_2A_n66A+WLANmax	DC_2A_n71A+WLANmax	DC_2A_n77A+WLANmax	DC_2A_n78A+WLANmax	DC_4A_n2A+WLANmax	DC_4A_n41A+WLANmax	DC_5A_n2A+WLANmax	DC_5A_n66A+WLANmax	DC_5A_n77A+WLANmax	DC_5A_n78A+WLANmax	DC_7A_n78A+WLANmax	DC_12A_n41A+WLANmax	DC_12A_n66A+WLANmax
Body-worn & Hotspot	Front Surface	1.274	1.437	1.220	1.330	1.249	1.593	1.579	1.242	1.391	1.284	1.203	1.418	1.416	1.579
	Back Surface	1.076	1.175	1.066	1.324	1.332	1.090	1.097	1.125	1.231	1.380	1.388	1.510	1.344	1.443
Hotspot	Left Edge	1.099	0.878	0.991	1.188	1.241	0.901	1.105	1.043	1.026	1.336	1.389	1.270	1.275	1.054
	Right Edge	1.215	1.581	1.385	1.281	1.258	1.506	1.301	1.298	1.459	1.159	1.136	1.331	1.221	1.587
	Top Edge	0.550	0.736	0.528	0.794	0.795	0.709	0.346	0.539	0.362	0.420	0.421	0.785	0.167	0.353
	Bottom Edge	0.345	0.359	0.340	0.373	0.347	0.349	0.355	0.339	0.359	0.373	0.347	0.415	0.347	0.361

SN:		57+71+42	58+71+42	59+71+42	59+72+42	11+71+42	36+72+42	37+71+42	37+72+42	60+61+42	60+62+42	60+63+42	60+24+42	60+71+42	60+72+42	17+64+42
RF Exposure Condition	Test Position	DC_12A_n77A+WLANmax	DC_25A_n77A+WLANmax	DC_26A_n77A+WLANmax	DC_26A_n78A+WLANmax	DC_30A_n77A+WLANmax	DC_38A_n78A+WLANmax	DC_41A_n77A+WLANmax	DC_41A_n78A+WLANmax	DC_66A_n2A+WLANmax	DC_66A_n38A+WLANmax	DC_66A_n41A+WLANmax	DC_66A_n71A+WLANmax	DC_66A_n77A+WLANmax	DC_66A_n78A+WLANmax	DC_71A_n66A+WLANmax
Body-worn & Hotspot	Front Surface	1.472	1.360	1.281	1.200	1.421	0.981	1.060	0.979	1.484	1.500	1.470	1.310	1.526	1.445	1.390
	Back Surface	1.592	1.457	1.400	1.408	1.571	1.115	1.118	1.126	1.223	1.266	1.230	1.076	1.478	1.486	1.216
Hotspot	Left Edge	1.364	1.224	1.304	1.357	1.210	1.206	1.155	1.208	0.935	1.290	1.139	0.943	1.228	1.281	0.984
	Right Edge	1.287	1.425	1.150	1.127	1.055	1.017	1.045	1.022	1.591	1.389	1.386	1.459	1.452	1.429	1.518
	Top Edge	0.411	0.872	0.413	0.414	1.314	0.687	0.987	0.988	0.760	0.412	0.397	0.374	0.641	0.642	0.355
	Bottom Edge	0.375	0.379	0.371	0.345	0.360	0.344	0.368	0.342	0.357	0.356	0.363	0.357	0.391	0.365	0.360

Appendixes

Refer to separated files for the following appendixes.

4791517585.3-1-SAR-2_App A Photo

4791517585.3-1-SAR-2_App B System Check Plots

4791517585.3-1-SAR-2_App C Highest Test Plots

4791517585.3-1-SAR-2_App D Cal. Certificates

---------End of Report---------