FCC WLAN 6GHz RF Exposure

Applicant	**:**	**Sonim Technologies, Inc.**
Equipment	**:**	**Mobile Hotspot**
Brand Name	**:**	**Sonim**
Model Name	**:**	**H500V**
FCC ID	**:**	**WYPH500V**
Standard	**:**	**FCC 47 CFR Part 2 (2.1093)**

We, Sporton International Inc. (Kunshan), would like to declare that the tested sample has been evaluated in accordance with the test procedures given in 47 CFR Part 2.1093 and FCC KDB and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (Kunshan), the test report shall not be reproduced except in full.

Si Zhang

Approved by: Si Zhang

ilac-MRA ACCREDITED Cert #5145.02

Sporton International Inc. (Kunshan)
No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China

Table of Contents

History of this test report

Report No.	Version	Description	Issued Date
FA4O1001-01	01	Initial issue of report	Dec. 02, 2024

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Sonim Technologies, Inc., Mobile Hotspot, H500V**, are as follows.

Band	Reported SAR		Measured APD	Scaled PD	Simultaneous transmission with other transmitters
	Body (1g SAR W/kg)	Highest Simultaneous Transmission 1g SAR (W/kg)	Body (W/m^2)	psPD (W/m^2)	Highest Total Exposure Ratio (Ratio ≤ 1)
WLAN 6GHz	<0.10	1.16	0.31	0.99	0.31
Date of Testing:	2024/11/23 ~ 2024/11/26				

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for Partial-Body 1g SAR) and Power density exposure limits (1 mW/cm^2 = 10 W/m^2) specified in FCC 47 CFR part 2 (2.1093), ANSI/IEEE C95.1-1992 and FCC 47 CFR Part1.1310, and had been tested in accordance with the measurement methods and procedures specified in IEEE 1528-2013 and FCC KDB publications.

2. Administration Data

Sporton International Inc. (Kunshan) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Testing Laboratory			
Test Firm	Sporton International Inc. (Kunshan)		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	SAR04-KS	CN1257	314309

Applicant	
Company Name	Sonim Technologies, Inc.
Address	4445 Eastgate Mall, Suite 200, San Diego, CA 92121, USA

Manufacturer	
Company Name	Sonim Technologies, Inc.
Address	4445 Eastgate Mall, Suite 200, San Diego, CA 92121, USA

3. Guidance Applied

The Specific Absorption Rate (SAR) testing specification, method, and procedure for this device is in accordance with the following standards.

- FCC 47 CFR Part 2 (2.1093)
- ANSI/IEEE C95.1-1992
- IEEE 1528-2013
- IEC/IEEE 62209-1528:2020
- IEC TR 63170:2018
- IEC 62479:2010
- FCC KDB 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB 865664 D02 SAR Reporting v01r02
- FCC KDB 447498 D01 General RF Exposure Guidance v06
- FCC KDB 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB 941225 D06 Hotspot Mode SAR v02r01
- SPEAG DASY6 System Handbook
- SPEAG DASY6 Application Note (Interim Procedure for Device Operation at 6GHz-10GHz)

4. Equipment Under Test (EUT) Information

4.1 General Information

Product Feature & Specification	
Equipment Name	Mobile Hotspot
Brand Name	Sonim
Model Name	H500V
FCC ID	WYPH500V
IMEI Code	351966690000416
Wireless Technology and Frequency Range	WLAN 6GHz U-NII-5: 5925 MHz ~ 6425 MHz WLAN 6GHz U-NII-7: 6525 MHz ~ 6875 MHz
Mode	WLAN 6GHz 802.11a/ax HE20/HE40/HE80/HE160
HW Version	V2.0
SW Version	H50.0-01-5.4.0-15.08.00

Remark:
1. The 6GHz WLAN can transmit in SISO/MIMO antenna mode and MIMO SAR can represent SISO SAR.

5. RF Exposure Limits

5.1 Uncontrolled Environment

Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure. The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be 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.

5.2 Controlled Environment

Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation). In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. The 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.

5.3 RF Exposure limit for below 6GHz

Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

1. Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

5.4 RF Exposure limit for above 6GHz

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310. The unit of power density evaluation is W/m^2 or mW/cm^2.

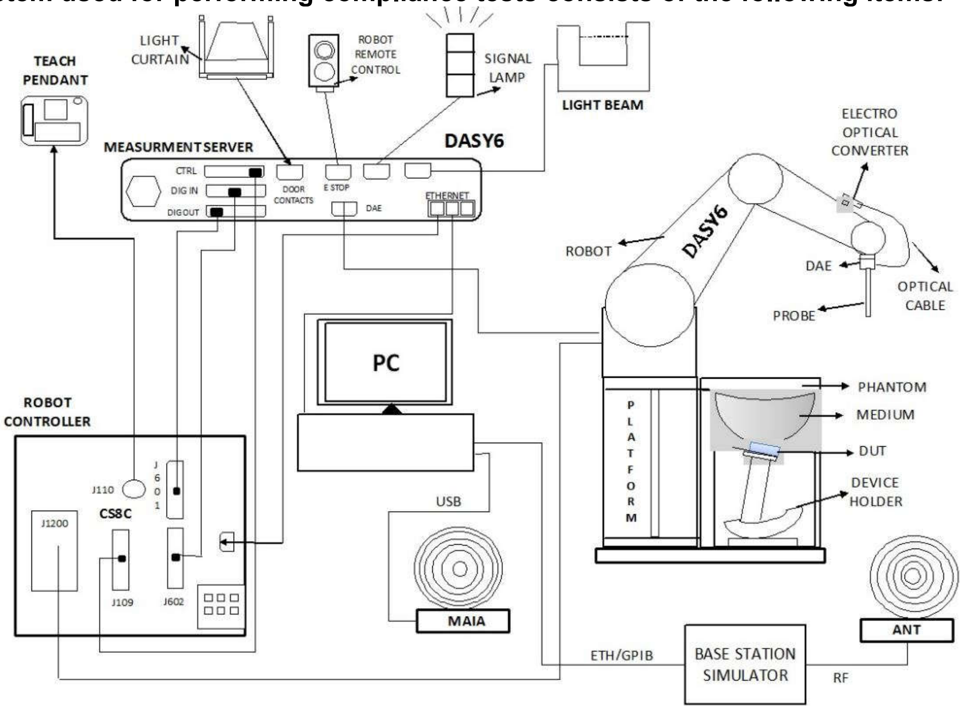
Peak Spatially Averaged Power Density was evaluated over a square area of $4cm^2$ per interim FCC Guidance for near-field power density evaluations per October 2018 TCB Workshop notes

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 Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

Note: 1.0 mW/cm^2 is 10 W/m^2

6. System Description and Setup

The DASY 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 Windows 10 and the DASY6(1) 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.
  Note: 1. DASY6 software used: DASY6 mmWave V3.0.0.841 and older generations and used the developed Plane-to-Plane Phase Reconstruction (PTP-PR) Algorithm which was used in PD measurement.

7. Test Equipment List

Manufacturer	Name of Equipment	Type/Model	Serial Number	Calibration	
				Last Cal.	Due Date
SPEAG	6500MHz System Validation Kit	D6.5GHzV2	1031	2023/2/22	2026/2/21
SPEAG	5G Verification Source	10GHz	2002	2024/2/12	2025/2/11
SPEAG	Data Acquisition Electronics	DAE4	1649	2024/7/3	2025/7/2
SPEAG	Data Acquisition Electronics	DAE4	1358	2024/5/23	2025/5/22
SPEAG	Dosimetric E-Field Probe	EX3DV4	7706	2024/1/24	2025/1/23
SPEAG	EUmmWV Probe Tip Protection	EUmmWV4	9432	2023/12/13	2024/12/12
SPEAG	mmWave Phantom	mmWave	1065	NCR	NCR
SPEAG	SAM Twin Phantom	SAM Twin	TP-2024	NCR	NCR
Testo	Thermo-Hygrometer	HTC-1	55011	2024/1/4	2025/1/3
Rohde & Schwarz	Signal Generator	SMB100A	100455	2024/1/2	2025/1/1
Keysight	Preamplifier	83017A	MY57280106	2024/4/18	2025/4/17
Agilent	ENA Series Network Analyzer	E5071C	MY46112129	2024/7/4	2025/7/3
SPEAG	Dielectric Probe Kit	DAK-3.5	1071	2024/2/19	2025/2/18
Rohde & Schwarz	Power Meter	NRVD	102081	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRV-Z5	100538	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRV-Z5	100539	2024/7/4	2025/7/3
Rohde & Schwarz	Power Sensor	NRP50S	101385	2024/10/15	2025/10/14
R&S	BLUETOOTH TESTER	CBT	100641	2024/1/2	2025/1/1
Rohde & Schwarz	Spectrum Analyzer	FSV7	101631	2024/10/11	2025/10/10
TES	DIGITAC THERMOMETER	TYPE-K	220305411	2024/1/4	2025/1/3
Agilent	Dual Directional Coupler	778D	20500	Note 1	
Agilent	Dual Directional Coupler	11691D	MY48151020	Note 1	
ET Industries	Dual Directional Coupler	C-058-10	N/A	Note 1	
ATM	Dual Directional Coupler	C122H-10	P610410z-02	Note 1	
MCL	Attenuation1	BW-S10W5+	N/A	Note 1	
MCL	Attenuation2	BW-S10W5+	N/A	Note 1	
MCL	Attenuation3	BW-S10W5+	N/A	Note 1	
mini-circuits	amplifier	ZVE-3W-83+	162601250	Note 1	

General Note:

1. Prior to system verification and validation, the path loss from the signal generator to the system check source and the power meter, which includes the amplifier, cable, attenuator and directional coupler, was measured by the network analyzer. The reading of the power meter was offset by the path loss difference between the path to the power meter and the path to the system check source to monitor the actual power level fed to the system check source.
2. The dipole calibration interval can be extended to 3 years with justification according to KDB 865664 D01. The dipoles are also not physically damaged, or repaired during the interval. The justification data in appendix C can be found which the return loss is < -20dB, within 20% of prior calibration, the impedance is within 5 ohm of prior calibration for each dipole.

8. SAR System Verification

8.1 SAR Tissue Verification

The tissue dielectric parameters of tissue-equivalent media used for SAR measurements must be characterized within a temperature range of 18℃ to 25℃, measured with calibrated instruments and apparatuses, such as network analyzers and temperature probes. The temperature of the tissue-equivalent medium during SAR measurement must also be within 18℃ to 25℃ and within ± 2℃ of the temperature when the tissue parameters are characterized. The tissue dielectric measurement system must be calibrated before use. The dielectric parameters must be measured before the tissue-equivalent medium is used in a series of SAR measurements.
The liquid tissue depth was at least 15cm in the phantom for all SAR testing

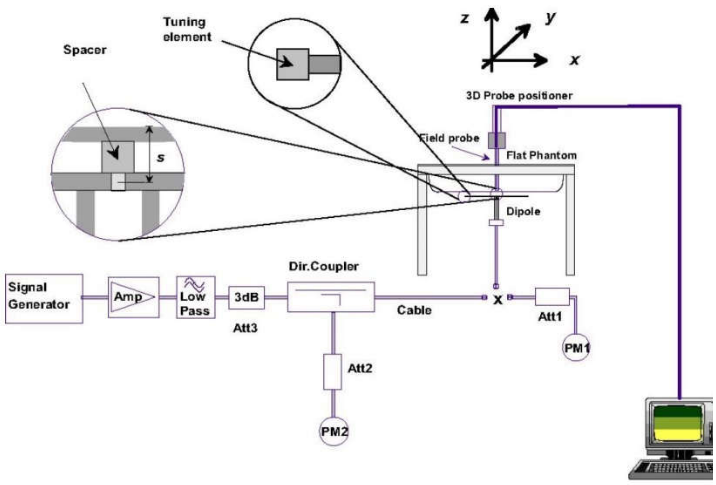
<Tissue Dielectric Parameter Check Results>

Frequency (MHz)	Tissue Type	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (ε_r)	Conductivity Target (σ)	Permittivity Target (ε_r)	Delta (σ) (%)	Delta (ε_r) (%)	Limit (%)	Date
6500	Head	22.8	6.15	34.7	6.07	34.50	1.32	0.58	±5	2024/11/23

8.2 SAR System Performance Check Results

Comparing to the original SAR value provided by SPEAG, the verification data should be within its specification of 10 %. Below table shows the target SAR and measured SAR after normalized to 1W input power. The table below indicates the system performance check can meet the variation criterion and the plots can be referred to Appendix A of this report.

Date	Frequency (MHz)	Tissue Type	Input Power (mW)	Dipole S/N	Probe S/N	DAE S/N	Measured 1g SAR (W/kg)	Targeted 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)
2024/11/23	6500	Head	50	1031	7706	1649	14.9	297	298	0.34



System Performance Check Setup

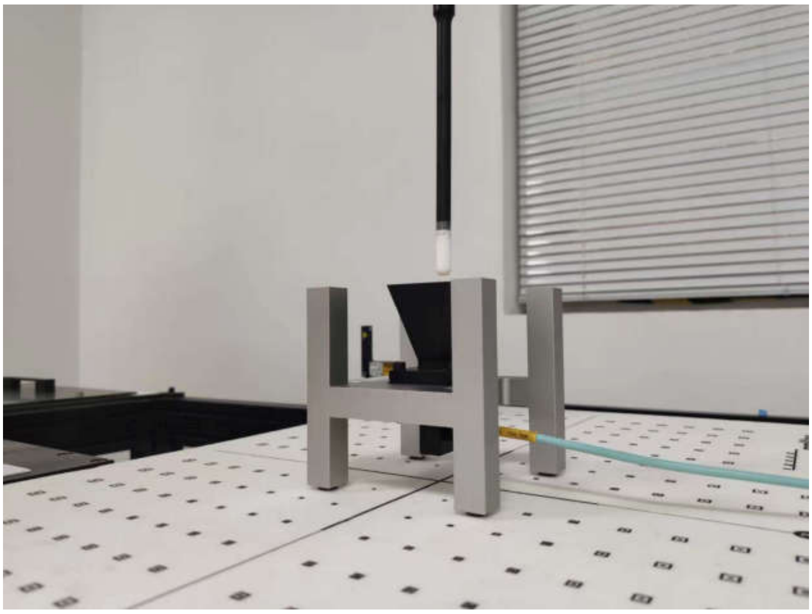
Setup Photo

8.3 PD System Verification Results

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.

Frequency (GHz)	5G Verification Source	Probe S/N	DAE S/N	Distance (mm)	Input Power (mW)	Measured 4 cm^2 (W/m^2)	Normalized(1) 4 cm^2 (W/m^2)	Targeted 4 cm^2 (W/m^2)	Deviation (dB)	Date
10	10GHz_2002	9432	1358	10	100	99.5	157.7	179	-0.55	2024/11/23

Note: (1) means the measured PD was normalized to Prad power which can be referred to DASY Calibration Certificate in appendix C.



System Verification Setup Photo

9. RF Exposure Positions

9.1 Body SAR Testing for Device

The FCC has provided guidance in FCC KDB Publication 941225 D06 v02r01 where SAR test considerations for handsets (L x W ≥ 9 cm x 5 cm) are based on a composite test separation distance of 10mm from the front, back and edges of the device containing transmitting antennas within 2.5cm of their edges, determined form general mixed use conditions for this type of devices. Since the hotspot SAR results may overlap with the body-worn accessory SAR requirements, the more conservative configurations can be considered, thus excluding some body-worn accessory SAR tests.

When the user enables the personal wireless router functions for the handset, actual operations include simultaneous transmission of both the WIFI transmitter and another licensed transmitter. Both transmitters often do not transmit at the same transmitting frequency and thus cannot be evaluated for SAR under actual use conditions due to the limitations of the SAR assessment probes. Therefore, SAR must be evaluated for each frequency transmission and mode separately and spatially summed with the WIFI transmitter according to FCC KDB Publication 447498 D01v06 publication procedures.

<EUT Setup Photos>

Please refer to Appendix D for the test setup photos.

9.2 Miscellaneous Testing Considerations

- Evaluate SAR using 6-7 GHz parameters per IEC/IEEE 62209-1528:2020.
- Per procedures of KDB Pubs. 447498 and 248227.
- Where supported by the test system, also report estimated absorbed (epithelial) power density (for reference purposes only, not specifically for compliance) and estimated incident PD, derived from measured SAR.
- In addition, for the highest SAR test configurations evaluate incident PD using the mmw near-field probe and total-field/power-density reconstruction method (10 mm closest meas. plane)

Adjust measured results per amount that measurement uncertainty exceeds 30 % (see e.g. IEC 62479:2010)

10. WLAN 6GHz Output Power (Unit: dBm)

The detailed conducted power table can refer to Appendix E.

General Note:

1. The 6GHz WLAN can transmit in SISO/MIMO antenna mode, for SISO mode power is less than per chain power of MIMO mode. For WLAN SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power, SAR and PD for MIMO was evaluated by making a measurement with both antennas transmitting simultaneously.
2. When the same maximum power is specified for multiple transmission modes in a frequency band, the largest channel bandwidth, lowest order modulation, lowest data rate and lowest order 802.11a/g/n/ac mode is used for SAR measurement, on the highest measured output power channel for each frequency band.
3. Per 201904 TCBC workshops, General principles of FCC KDB Publication 248227 D01 can be applied to determine the SAR Initial Test Configurations and test reduction for 802.11ax SAR testing. For the table below the 802.11ax maximum power is SU (non-OFDMA), and the SU maximum power also higher than RU (OFDMA)
4. In applying the test guidance, the IEEE 802.11 mode with the maximum output power (out of all modes) should be considered for testing
5. For modes with the same maximum output power, the guidance from section 5.3.2 a) of FCC KDB Publication 248227 D01 should be applied, with 802.11ax being considered as the highest 802.11 mode for the appropriate frequency bands
6. 802.11 ax supports both full tone size mode and partial tone size mode, after verification on partial tone size mode that partial size tone mode power will not be higher than full tone size mode, therefore, full tone mode power was chosen to be measured in this report.
7. For the conducted power measurement is MIMO chains transmitting simultaneously and measured the separately conducted power for both chains and then based on the conducted power of two SISO antennas respectively to calculate sum of the power for MIMO mode.

11. Antenna Location

The detailed antenna location information can refer to SAR Test Setup Photos.

12. RF Exposure Test Results

General Note:

1. Per KDB 447498 D01v06, the reported SAR is the measured SAR value adjusted for maximum tune-up tolerance.
   a. Tune-up scaling Factor = tune-up limit power (mW) / EUT RF power (mW), where tune-up limit is the maximum rated power among all production units.
   b. For SAR testing of WLAN signal with non-100% duty cycle, the measured SAR is scaled-up by the duty cycle scaling factor which is equal to "1/(duty cycle)"
   c. For WLAN: Reported SAR(W/kg)= Measured SAR(W/kg)* Duty Cycle scaling factor * Tune-up scaling factor
2. Per KDB 447498 D01v06, for each exposure position, 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
3. Per KDB 865664 D01v01r04, for each frequency band, repeated SAR measurement is required only when the measured SAR is ≥0.8W/kg.
4. Per FCC guidance, SAR was performed using 6.5 GHz SAR probe calibration factors.
5. Per October 2020 TCB Workshop Interim procedures, start instead with a minimum of 5 test channels across the full band, then adapt and apply conducted power and SAR test reduction procedures of KDB Pub. 248227 v02r02.
6. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.

WLAN SAR Note:

1. When the reported SAR of the test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position to measure the subsequent next closet/smallest test separation distance and maximum coupling test position on the highest maximum output power channel, until the report SAR is ≤ 0.8 W/kg or all required test position are tested.
2. For all positions / configurations, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions / configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested.
3. The 6GHz WLAN can transmit in SISO/MIMO antenna mode, for SISO mode power is less than per chain power of MIMO mode. For WLAN SISO & MIMO mode, the whole testing has assessed only MIMO mode by referring to their higher conducted power, so only chose MIMO mode to perform SAR testing. Per KDB 248227, SAR for MIMO was evaluated by following the simultaneous SAR provisions from KDB 447498 by making a SAR measurement with both antennas transmitting simultaneously.
4. During SAR testing the WLAN 6GHz transmission was verified using a spectrum analyzer.
5. When SAR testing for 802.11ax is required
   a. If the maximum output power is highest for OFDMA scenarios, choose the tone size with the maximum number of tones and the highest maximum output power
   b. Otherwise, consider the fully allocated channel for SAR testing
   c. When SAR testing is required on RU sizes less than the fully allocated channel, use the RU number closest to the middle of the channel, choosing the higher RU number when two RUs are equidistant to the middle of the channel.

12.1 Body SAR Test Result

<WLAN SAR>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Power Drift (dB)	Measured 1g SAR (W/kg)	Reported 1g SAR (W/kg)	Measured APD (W/m^2)
	WLAN6GHz	802.11ax-HE160 MCS0	Front	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	0.08	0.011	0.013	0.094
	WLAN6GHz	802.11ax-HE160 MCS0	Back	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	0.01	0.027	0.033	0.224
	WLAN6GHz	802.11ax-HE160 MCS0	Left Side	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	0.03	0.000	0.000	0.000
01	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	-0.08	0.033	**0.040**	**0.305**
	WLAN6GHz	802.11ax-HE160 MCS0	Top Side	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	-0.08	0.024	0.029	0.188
	WLAN6GHz	802.11ax-HE160 MCS0	Bottom Side	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	-0.05	0.013	0.016	0.115
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	47	6185	9.09	9.98	1.227	100	1.000	0.1	0.026	0.032	0.225
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	-0.18	0.023	0.030	0.204
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	143	6665	8.77	9.39	1.152	100	1.000	0.1	0.010	0.012	0.07

12.2 PD Test Result

Power Density General Notes:

1. The manufacturer has confirmed that the devices tested have the same physical, mechanical and thermal characteristics and are within operational tolerances expected for production units.
2. Batteries are fully charged at the beginning of the measurements.
3. Absorbed power density (APD) using a 4cm^2 averaging area is reported based on SAR measurements.
4. Power density was calculated by repeated E-field measurements on two measurement planes separated by λ/4.
5. The device was configured to transmit continuously at the required data rate, channel bandwidth and signal modulation, using the highest transmission duty factor supported by the test mode tools.
6. Per FCC 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 2.68 dB (85.4%) was used to determine the psPD measurement scaling factor.
7. Per April 2021 TCB Workshop, For the highest SAR test configurations also measure incident PD (total) using power-density reconstruction method in 10 mm closest measurement plane. Select highest SAR at 10 mm test distance and configurations evaluate power density, so the PD test was performed of a 10mm separation between Probe sensor and EUT surface to cover body exposure condition of this device.
8. IPD is measured for all edges and surfaces of the device with a transmitting antenna located within 25 mm from that surface or edge.
9. Per October 2020 TCB Workshop, PTP-PR algorithm was used during psPD measurement and calculations.

<WLAN PD>

Plot No.	Band	Mode	Test Position	Gap (mm)	Antenna	Ch.	Freq. (MHz)	Average Power (dBm)	Tune-Up Limit (dBm)	Tune-up Scaling Factor	Duty Cycle %	Duty Cycle Scaling Factor	Grid Step (λ)	Scaling Factor for measurement uncertainty	Power Drift (dB)	Normal psPD (W/m^2)	Scaled Normal psPD (W/m^2)	Total psPD (W/m^2)	Scaled Total psPD (W/m^2)
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	15	6025	9.13	9.98	1.217	100	1.000	0.25	1.5535	0.08	0.246	0.47	0.276	0.522
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	47	6185	9.09	9.98	1.227	100	1.000	0.25	1.5535	0.01	0.200	0.38	0.315	0.600
01	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	-0.01	0.461	0.94	0.484	**0.992**
	WLAN6GHz	802.11ax-HE160 MCS0	Right Side	10mm	Ant 1+2	143	6665	8.77	9.39	1.152	100	1.000	0.25	1.5535	-0.08	0.394	0.71	0.403	0.721
	WLAN6GHz	802.11ax-HE160 MCS0	Front	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	0.03	0.158	0.32	0.171	0.351
	WLAN6GHz	802.11ax-HE160 MCS0	Back	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	0.08	0.134	0.27	0.184	0.377
	WLAN6GHz	802.11ax-HE160 MCS0	Left Side	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	0.01	0.164	0.34	0.175	0.359
	WLAN6GHz	802.11ax-HE160 MCS0	Top Side	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	0.09	0.137	0.28	0.179	0.367
	WLAN6GHz	802.11ax-HE160 MCS0	Bottom Side	10mm	Ant 1+2	79	6345	8.78	9.98	1.319	100	1.000	0.25	1.5535	-0.07	0.185	0.38	0.191	0.392

13. Simultaneous Transmission Analysis

No.	Simultaneous Transmission Configurations	Mobile Hotspot
		Body
1.	WWAN + WLAN2.4GHz + WLAN6GHz	Yes
2.	WWAN + 5G FR2 + WLAN2.4GHz + WLAN6GHz	Yes

General Note:

1. For simultaneously transmission SAR analysis, the WWAN/WLAN2.4GHz bands test SAR results are leverage from original SAR test report SZ24060210S01 and the 5G FR2 test results are leverage from original test report SZ24060210S02 to do Simultaneous transmission analysis.
2. According to the EUT characteristic, WLAN 6GHz and WLAN 2.4GHz can transmit simultaneously.
3. The reported SAR summation is calculated based on the same configuration and test position
4. WLAN6GHz MIMO SAR can represent SISO SAR to do co-located SAR analysis.
5. Considering n260/n261 transmitter with WLAN can transmit simultaneously, the basic restrictions are on SAR and power density, and summation of these quantities should follow below formula and the simultaneous transmission analysis was following below step.
   i) Use the standalone SAR according original report to collocate with n260/n261 transmitter power density at each exposure positions, if the result < 1, additional analysis is not necessary.
   ii) The [∑ of (the highest measured or estimated SAR for each standalone antenna configuration, adjusted for maximum tune-up tolerance) / 1.6 W/kg] + [∑ of MPE ratios] is ≤ 1.0.
6. This device is enabled with Qualcomm® Smart Transmit feature to control and manage transmitting power in real time and to ensure that the time-averaged RF exposure from WWAN is in compliance with FCC requirements. Since the device enabled with Qualcomm® Smart Transmit feature, 4G LTE/5G NR FR1 and 5G mmW NR simultaneous transmission scenario does not need to be evaluated under Total Exposure Ratio (TER).
7. For simultaneously analysis, since the SAR summation of 3 transmitters can cover others combination of 2 transmitters, therefore in this section did not additional to evaluate 2TX combination of simultaneously transmission.
8. Per KDB 447498 D01v06, simultaneous transmission SAR is compliant if,
   iii) 1g Scalar SAR summation < 1.6W/kg.
   iv) SPLSR = (SAR1 + SAR2)^1.5 / (min. separation distance, mm), and the peak separation distance is determined from the square root of [(x1-x2)2 + (y1-y2)2 + (z1-z2)2], where (x1, y1, z1) and (x2, y2, z2) are the coordinates of the extrapolated peak SAR locations in the zoom scan.
   v) If SPLSR ≤ 0.04 for 1g SAR , simultaneously transmission SAR measurement is not necessary.
   vi) Simultaneously transmission SAR measurement, and the reported multi-band 1g SAR < 1.6W/kg.

13.1 5G NR + LTE + WLAN + BT Sim-Tx analysis

In 5G NR + LTE + WLAN + BT simultaneous transmission, 5G NR and LTE transmission are managed and controlled by Qualcomm® Smart Transmit, while the RF exposure from WLAN and BT radios is managed using legacy approach, i.e., through a fixed power back-off if needed.

Since WLAN and BT do not employ time-averaging, 1gSAR and 10gSAR measurement for WLAN and BT need to be conducted at their corresponding rated power following current FCC test procedures to determine reported SAR values.

Smart Transmit current implementation assumes hotspots from 5G NR and LTE are collocated. Therefore, for a total of 100% exposure margin, if LTE uses x%, then the exposure margin left for 5G NR is capped to (100-x)%. Thus, the compliance equation for LTE + 5G NR is

$$x\% * A + (100-x)\% * B \leq 1.0,$$

Where, A is normalized reported time-averaged SAR exposure ratio from LTE, and A ≤ 1.0; B is normalized reported time-averaged exposure ratio from 5G NR (i.e., PD exposure for mmW NR or SAR exposure for sub6 NR), and B ≤1.0.

Let C = normalized reported SAR exposure ratio from WLAN+BT, then for compliance,

$$x\% * A + (100-x)\% * B + C \leq 1.0 \qquad (1)$$

$$x\% * A + (100-x)\% * B \leq x\% * \max(A, B) + (100-x)\% * \max(A, B) \leq \max(A, B)$$

$$x\% * A + (100-x)\% * B + C \leq \max(A, B) + C \leq 1.0 \qquad (2)$$

if A + C ≤ 1.0 and B + C ≤ 1.0 can be proven, then "x% * A + (100-x)% * B + C ≤ 1.0". Therefore simultaneous transmission analysis for 5G NR + LTE + WLAN + BT can be performed in two steps

Step 1: Prove total exposure ratio (TER) of LTE + WLAN + BT < 1
Step 2: Prove total exposure ratio (TER) of 5G NR + WLAN + BT < 1

Else, if A + C > 1.0 and/or B + C > 1.0, then the followings need to hold true for compliance:

i. A and C are decoupled based on the SPLSR criteria , and
ii. (100-x)% * B + C ≤ 1.0, and
iii. x% * A + (100-x)% * B ≤ 1.0

Note iii. is covered in Part 2 report; i. and ii. should be addressed in Part 2 report.

13.2 Body Exposure Conditions

WWAN Band	Exposure Position	1	2	3	4	5	WWAN+2.4G(MAX)+6G(MAX)
		WWAN	2.4GHz WLAN WIFI 1	2.4GHz WLAN WIFI 2	2.4GHz WLAN MIMO	6GHz WLAN MIMO	Summed
		1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)	1g SAR (W/kg)
WCDMA II	Front	0.728	0.220	0.414	0.088	0.013	1.16
	Back	0.644	0.261	0.147	0.055	0.033	0.94
	Left side			0.023	0.049		0.05
	Right side	0.307	0.294		0.127	0.040	0.64
	Top side	0.797		0.192	0.049	0.029	1.02
	Bottom side		0.124		0.046	0.016	0.14
WCDMA IV	Front	0.440	0.220	0.414	0.088	0.013	0.87
	Back	0.474	0.261	0.147	0.055	0.033	0.77
	Left side			0.023	0.049		0.05
	Right side	0.302	0.294		0.127	0.040	0.64
	Top side	0.780		0.192	0.049	0.029	1.00
	Bottom side		0.124		0.046	0.016	0.14
WCDMA V	Front	0.342	0.220	0.414	0.088	0.013	0.77
	Back	0.281	0.261	0.147	0.055	0.033	0.58
	Left side	0.200		0.023	0.049		0.25
	Right side		0.294		0.127	0.040	0.33
	Top side	0.106		0.192	0.049	0.029	0.33
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 2	Front	0.339	0.220	0.414	0.088	0.013	0.77
	Back	0.539	0.261	0.147	0.055	0.033	0.83
	Left side			0.023	0.049		0.05
	Right side	0.322	0.294		0.127	0.040	0.66
	Top side	0.452		0.192	0.049	0.029	0.67
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 5	Front	0.292	0.220	0.414	0.088	0.013	0.72
	Back	0.235	0.261	0.147	0.055	0.033	0.53
	Left side	0.141		0.023	0.049		0.19
	Right side		0.294		0.127	0.040	0.33
	Top side	0.149		0.192	0.049	0.029	0.37
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 7	Front	0.226	0.220	0.414	0.088	0.013	0.65
	Back	0.366	0.261	0.147	0.055	0.033	0.66
	Left side			0.023	0.049		0.05
	Right side	0.277	0.294		0.127	0.040	0.61
	Top side	0.741		0.192	0.049	0.029	0.96
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 12	Front	0.312	0.220	0.414	0.088	0.013	0.74
	Back	0.259	0.261	0.147	0.055	0.033	0.55
	Left side	0.157		0.023	0.049		0.21
	Right side		0.294		0.127	0.040	0.33
	Top side	0.151		0.192	0.049	0.029	0.37
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 13	Front	0.300	0.220	0.414	0.088	0.013	0.73
	Back	0.252	0.261	0.147	0.055	0.033	0.55
	Left side	0.143		0.023	0.049		0.19
	Right side		0.294		0.127	0.040	0.33
	Top side	0.140		0.192	0.049	0.029	0.36
	Bottom side		0.124		0.046	0.016	0.14
LTE Band 48	Front	0.297	0.220	0.414	0.088	0.013	0.72
	Back	0.665	0.261	0.147	0.055	0.033	0.96

	Left side	0.797		0.023	0.049		0.85
	Right side	0.319	0.294		0.127	0.040	0.65
	Top side			0.192	0.049	0.029	0.22
	Bottom side	0.224	0.124		0.046	0.016	0.36
LTE Band 66	Front	0.367	0.220	0.414	0.088	0.013	0.79
	Back	0.361	0.261	0.147	0.055	0.033	0.66
	Left side			0.023	0.049		0.05
	Right side	0.311	0.294		0.127	0.040	0.65
	Top side	0.497		0.192	0.049	0.029	0.72
	Bottom side	0.317	0.124		0.046		0.44
5G NR n2	Front	0.311	0.220	0.414	0.088	0.013	0.74
	Back	0.532	0.261	0.147	0.055	0.033	0.83
	Left side			0.023	0.049		0.05
	Right side	0.224	0.294		0.127	0.040	0.56
	Top side	0.493		0.192	0.049	0.029	0.71
	Bottom side	0.590	0.124		0.046	0.016	0.73
5G NR n5	Front	0.210	0.220	0.414	0.088	0.013	0.64
	Back	0.155	0.261	0.147	0.055	0.033	0.45
	Left side	0.120		0.023	0.049		0.17
	Right side		0.294		0.127	0.040	0.33
	Top side	0.055		0.192	0.049	0.029	0.28
	Bottom side		0.124		0.046	0.016	0.14
5G NR n48	Front	0.072	0.220	0.414	0.088	0.013	0.50
	Back	0.150	0.261	0.147	0.055	0.033	0.44
	Left side			0.023	0.049		0.05
	Right side	0.267	0.294		0.127	0.040	0.60
	Top side			0.192	0.049	0.029	0.22
	Bottom side	0.068	0.124		0.046	0.016	0.21
5G NR n66	Front	0.319	0.220	0.414	0.088	0.013	0.75
	Back	0.376	0.261	0.147	0.055	0.033	0.67
	Left side			0.023	0.049		0.05
	Right side	0.163	0.294		0.127	0.040	0.50
	Top side	0.509		0.192	0.049	0.029	0.73
	Bottom side	0.101	0.124		0.046	0.016	0.24
5G NR n77	Front	0.190	0.220	0.414	0.088	0.013	0.62
	Back	0.326	0.261	0.147	0.055	0.033	0.62
	Left side	0.776		0.023	0.049		0.83
	Right side	0.240	0.294		0.127	0.040	0.57
	Top side			0.192	0.049	0.029	0.22
	Bottom side	0.171	0.124		0.046	0.016	0.31
5G NR n78	Front	0.095	0.220	0.414	0.088	0.013	0.52
	Back	0.184	0.261	0.147	0.055	0.033	0.48
	Left side			0.023	0.049		0.05
	Right side	0.294	0.294		0.127	0.040	0.63
	Top side			0.192	0.049	0.029	0.22
	Bottom side	0.084	0.124		0.046	0.016	0.22

< mmWave(5G FR2) + WLAN 2.4GHz SISO/MIMO+WLAN 6GHz MIMO>

Exposure Position	Power Density (W/m2)		Maximum Reported SAR (W/kg)		Total Exposure Ratio SAR/1.6 + PD/10	
	1	2	3	4	Summation	Summation
	n260	n261	WLAN 2.4GHz	WLAN6GHz	1+3+4	2+3+4
Front	0.408	0.053	0.414	0.013	0.31	0.27
Back	0.187	0.255	0.261	0.033	0.20	0.21
Left	0.065	0.076	0.049		0.04	0.04
Right	0.041	0.045	0.294	0.040	0.21	0.21
Top	0.028	0.030	0.192	0.029	0.14	0.14
Bottom	1.020	1.530	0.124	0.016	0.19	0.24

Test Engineer： Martin Li, Varus Wang, Light Wang, Ricky Gu

14. Uncertainty Assessment

Declaration of Conformity:
The test results with all measurement uncertainty excluded is presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

The component of uncertainly may generally be categorized according to the methods used to evaluate them. The evaluation of uncertainly by the statistical analysis of a series of observations is termed a Type An evaluation of uncertainty. The evaluation of uncertainty by means other than the statistical analysis of a series of observation is termed a Type B evaluation of uncertainty. Each component of uncertainty, however evaluated, is represented by an estimated standard deviation, termed standard uncertainty, which is determined by the positive square root of the estimated variance.

A Type A evaluation of standard uncertainty may be based on any valid statistical method for treating data. This includes calculating the standard deviation of the mean of a series of independent observations; using the method of least squares to fit a curve to the data in order to estimate the parameter of the curve and their standard deviations; or carrying out an analysis of variance in order to identify and quantify random effects in certain kinds of measurement.

A type B evaluation of standard uncertainty is typically based on scientific judgment using all of the relevant information available. These may include previous measurement data, experience, and knowledge of the behavior and properties of relevant materials and instruments, manufacture's specification, data provided in calibration reports and uncertainties assigned to reference data taken from handbooks. Broadly speaking, the uncertainty is either obtained from an outdoor source or obtained from an assumed distribution, such as the normal distribution, rectangular or triangular distributions indicated in table below.

Uncertainty Distributions	Normal	Rectangular	Triangular	U-Shape
Multi-plying Factor[(a)]	1/k[(b)]	$1/\sqrt{3}$	$1/\sqrt{6}$	$1/\sqrt{2}$

(a) standard uncertainty is determined as the product of the multiplying factor and the estimated range of variations in the measured quantity

(b) κ is the coverage factor

Standard Uncertainty for Assumed Distribution

The combined standard uncertainty of the measurement result represents the estimated standard deviation of the result. It is obtained by combining the individual standard uncertainties of both Type A and Type B evaluation using the usual "root-sum-squares" (RSS) methods of combining standard deviations by taking the positive square root of the estimated variances.

Expanded uncertainty is a measure of uncertainty that defines an interval about the measurement result within which the measured value is confidently believed to lie. It is obtained by multiplying the combined standard uncertainty by a coverage factor. Typically, the coverage factor ranges from 2 to 3. Using a coverage factor allows the true value of a measured quantity to be specified with a defined probability within the specified uncertainty range. For purpose of this document, a coverage factor two is used, which corresponds to confidence interval of about 95 %. The DASY uncertainty Budget is shown in the following tables.

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

Uncertainty Budget According to IEC/IEEE 62209-1528 (Frequency band: 4 MHz - 10 GHz range)							
Error Description	**Uncert. Value (±%)**	**Prob. Dist.**	**Div.**	**(Ci) 1g**	**(Ci) 10g**	**Standard Uncertainty (1g) (±%)**	**Standard Uncertainty (10g) (±%)**
Measurement System errors							
Probe calibration	18.6	N	2	1	1	9.3	9.3
Probe calibration drift	1.7	R	1.732	1	1	1.0	1.0
Probe linearity and detection Limit	4.7	R	1.732	1	1	2.7	2.7
Broadband signal	2.8	R	1.732	1	1	1.6	1.6
Probe isotropy	7.6	R	1.732	1	1	4.4	4.4
Other probe and data acquisition errors	2.4	N	1	1	1	2.4	2.4
RF ambient and noise	1.8	N	1	1	1	1.8	1.8
Probe positioning errors	0.006	N	1	0.5	0.5	0.0	0.0
Data processing errors	4.0	N	1	1	1	4.0	4.0
Phantom and Device Errors							
Measurement of phantom conductivity (σ)	2.5	N	1	0.78	0.71	2.0	1.8
Temperature effects (medium)	5.4	R	1.732	0.78	0.71	2.4	2.2
Shell permittivity	14.0	R	1.732	0.5	0.5	4.0	4.0
Distance between the radiating element of the DUT and the phantom medium	2.0	N	1	2	2	4.0	4.0
Repeatability of positioning the DUT or source against the phantom	1.0	N	1	1	1	1.0	1.0
Device holder effects	3.6	N	1	1	1	3.6	3.6
Effect of operating mode on probe sensitivity	2.4	R	1.732	1	1	1.4	1.4
Time-average SAR	1.7	R	1.732	1	1	1.0	1.0
Variation in SAR due to drift in output of DUT	2.5	N	1	1	1	2.5	2.5
Validation antenna uncertainty (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Uncertainty in accepted power (validation measurement only)	0.0	N	1	1	1	0.0	0.0
Correction to the SAR results							
Phantom deviation from target (ε´,σ)	1.9	N	1	1	0.84	1.9	1.6
SAR scaling	0.0	R	1.732	1	1	0.0	0.0
Combined Std. Uncertainty						**14.5%**	**14.4%**
Coverage Factor for 95 %						**K=2**	**K=2**
Expanded STD Uncertainty						**29.0%**	**28.8%**

SAR Uncertainty Budget for frequency range 4MHz to 10GHz

cDASY6 Module mmWave Uncertainty Budget Evaluation Distances to the Antennas > λ/2π In Compliance with IEC TR 63170					
Error Description	**Uncertainty Value (±dB)**	**Probability**	**Divisor**	**(Ci)**	**Standard Uncertainty (±dB)**
Uncertainty terms dep endent on the measurement system					
Probe Calibration	0.49	N	1	1	0.49
Probe correction	0.00	R	1.732	1	0.00
Frequency response	0.20	R	1.732	1	0.12
Sensor cross coupling	0.00	R	1.732	1	0.00
Isotropy	0.50	R	1.732	1	0.29
Linearity	0.20	R	1.732	1	0.12
Probe scattering	0.00	R	1.732	1	0.00
Probe positioning offset	0.30	R	1.732	1	0.17
Probe positioning repeatability	0.04	R	1.732	1	0.02
Sensor mechanical offset	0.00	R	1.732	1	0.00
Probe spatial resolution	0.00	R	1.732	1	0.00
Field impedance dependence	0.00	R	1.732	1	0.00
Amplitude and phase drift	0.00	R	1.732	1	0.00
Amplitude and phase noise	0.04	R	1.732	1	0.02
Measurement area truncation	0.00	R	1.732	1	0.00
Data acquisition	0.03	N	1	1	0.03
Sampling	0.00	R	1.732	1	0.00
Field reconstruction	2.00	R	1.732	1	1.15
Forward transformation	0.00	R	1.732	1	0.00
Power density scaling	0.00	R	1.732	1	0.00
Spatial averaging	0.10	R	1.732	1	0.06
System detection limit	0.04	R	1.732	1	0.02
Uncertainty terms dep endent on the DUT and environmental factors					
Probe coupling with DUT	0.00	R	1.732	1	0.0
Modulation response	0.40	R	1.732	1	0.2
Integration time	0.00	R	1.732	1	0.0
Response time	0.00	R	1.732	1	0.0
Device holder influence	0.10	R	1.732	1	0.1
DUT alignment	0.00	R	1.732	1	0.0
RF ambient conditions	0.04	R	1.732	1	0.0
Ambient reflections	0.04	R	1.732	1	0.0
Immunity / secondary reception	0.00	R	1.732	1	0.0
Drift of the DUT		R	1.732	1	
Combined Std. Uncertainty					1.34
Expanded STD Uncertainty (95%)					**2.68**

PD Uncertainty Budget

15. References

[1] FCC 47 CFR Part 2 "Frequency Allocations and Radio Treaty Matters; General Rules and Regulations"

[2] ANSI/IEEE Std. C95.1-1992, "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz", September 1992

[3] IEEE Std. 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", Sep 2013

[4] FCC KDB 248227 D01 v02r02, "SAR Guidance for IEEE 802.11 (WiFi) Transmitters", Oct 2015.

[5] FCC KDB 447498 D01 v06, "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", Oct 2015

[6] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[7] FCC KDB 865664 D02 v01r02, "RF Exposure Compliance Reporting and Documentation Considerations" Oct 2015.

[8] FCC KDB 941225 D06 v02r01, "SAR Evaluation Procedures for Portable Devices with Wireless Router Capabilities", Oct 2015.

[9] 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)", Oct. 2020

[10] IEC 62479:2010 Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)

[11] 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

[12] SPEAG DASY System Handbook

[13] SPEAG DASY6 Application Note (Interim Procedures for Devices Operating at 6-10 GHz)

------THE END------